Background: The prisoner population is aging rapidly, increasing the need to provide geriatric and palliative care for incarcerated patients. Yet, Advance Care Planning (ACP), an essential component of palliative care, is not widely performed in correctional health-care settings. To address this gap in care, we investigated clinicians’ perspectives on barriers to implementing ACP in correctional facilities.

Methods: This qualitative study engaged 22 correctional clinicians and caregiving staff (e.g. nurses, social workers, chaplains) from 2 geographically disparate states in semi-structured interviews on knowledge, attitudes and experience with ACP. Interviews were conducted by phone, transcribed, and analyzed iteratively using grounded theory. Transcripts were coded by two reviewers using the constant comparative method. Inter-rater reliability was calculated and disagreements were resolved by consensus with a third reviewer.

Results: Overall, participants demonstrated poor conceptual understanding of ACP. While 91% of participants reported familiarity with ACP, only 35% of definitions were accurate. Common misconceptions included: ACP is only for patients with advanced disease, ACP is limited to signing legal documents, and ACP does not require the participation of the patient. Many clinicians perceived ACP as falling outside of their clinical “role” and/or stated they needed training in ACP. Other reported barriers to engaging patients in ACP included: patient-provider mistrust, lack of familial support for patients, and restrictive institutional policies. For example, participants reported that geographic distance and prison visitation policies often limited incarcerated patients’ family members from participating in the ACP process, and providers from one state described a burdensome policy that physicians must document a terminal illness diagnosis before a prisoner is able to sign a DNR order.

Conclusions: Correctional healthcare providers would benefit from additional training in how to engage patients in advance care planning, including education on ACP content, patient counseling, and trust-building. Furthermore, institutional policies that create unnecessary barriers to ACP should be revised to allow universal access to ACP as well as reliable family involvement in the process.

P2
Age Threshold for Primary Osteoporosis Screening in Men
C. S. Colon-Emeric,1 C. Pieper,1 R. Sloane,1 R. Lee,1 K. Lyles,1 R. Adler,2 I. Duke University, Durham, NC; 2. Richmond VA, Richmond, VA.

Background: Guidelines vary on what age to begin screening men for osteoporosis. We previously reported that primary osteoporosis screening in men was ineffective overall, but associated with lower hazard of fracture for those over 65 with risk factors. The specific age threshold at which primary osteoporosis screening becomes effective for men without other fracture risk factors is unknown.

Methods: Propensity score matched case-control study using CMS and VA data among 2,539,812 men aged 65-99 years without prior fracture. Propensity scores indicating the probability of screening within the next year were calculated annually. Landmark analysis compared time to fracture between cases and controls who survived at least 12 months. A plot of restricted cubic splines with 5 knots compared the hazard of fracture in cases and controls by age at match date, adjusted for risk factors and competing mortality.

Results: Overall 183,943 men were screened; 33,224 (18%) were over age 80 years. Screening was associated with a 15% lower hazard of fracture in men over age 80 relative to screening in the overall population (Hazard Ratio 0.85, 95% CI 0.81-0.90). The proportion of men who met treatment thresholds and received at least 1 prescription for an osteoporosis medication was low overall, but slightly higher in men over age 80 years (16.3% vs. 13.4%). Plots demonstrated that the age at which screening became more effective than not screening was approximately 85 years (see figure).

Conclusion: Our results support screening men over age ≥85 years for osteoporosis regardless of risk factors, and men over 65 with fracture risk factors.
overall comorbidity (Elixhauser score 6.4 vs. 5.9; p=.004), but less dementia (55% vs. 61%; p=.008), than those who did not, and did not differ in age or physical function. The 30-day subsequent fall risk was lower in patients with de-intensified blood pressure medication than those without: 11.0% vs. 18.1% (relative risk (RR) 0.61; 95%CI 0.41-0.91; p=.013) with falls preceded by SBP 80-100 and 12.9% vs. 17.6% (RR 0.73; 95%CI 0.55-0.98; p=.030) with falls preceded by SBP 101-120.

Conclusions: Among VA NH residents who had a fall and low SBP, 25%-34% had de-intensification of their antihypertensive medication. Those who experienced drug de-intensification had a significantly lower risk of subsequent fall. Antihypertensive de-intensification may reduce recurrent falls in NH residents with evidence of aggressive blood pressure control.

### Paper Session
#### COST AND QUALITY OF GERIATRIC CARE

**Thursday, May 3**

**11:15 am – 12:15 pm**

**P4**

The association between quality of care and 5-year mortality risk in elderly population.

H. Gotanda,1,2 Y. Tsugawa,3 N. Wenger,3 1. Geriatrics, VA Greater Los Angeles Healthcare System, Los Angeles, CA; 2. Health Policy and Management, University of California, Los Angeles, Los Angeles, CA; 3. Division of General Internal Medicine & Health Services Research, David Geffen School of Medicine at UCLA, Los Angeles, CA.

**BACKGROUND:** Processes of care (e.g., routine breast cancer screening) are frequently measured to evaluate quality of care provided by clinicians and organizations. However, this may not be a fair comparison without risk adjustment – especially in geriatrics – because clinicians may withhold recommended care based on patient prognosis or preference. We examined the association between process of care performance and 5-year mortality risk in an older population.

**METHODS:** Community-dwelling participants 65 years and older (n=17,266) from 2007-2015 Medical Expenditure Panel Survey were analyzed. Participants were divided into three 5-year mortality risk groups (low [<25%], intermediate [25%-49%], and high [≥50%]) based on previously validated index derived from age, sex, body mass index, diagnoses, activities of daily living (ADL), instrumental ADL, smoking status, and recent hospitalizations. We analyzed the association between performance score defined as the percentage of processes of care and mortality risk.

**RESULTS:** Crude and adjusted performance scores were statistically significantly lower in high- and intermediate-risk groups compared to low-risk group (Table). Conclusions: Process of care performance score was lower in older people with high risk of 5-year mortality than in those with low or intermediate mortality risk. This suggests that risk adjustment may be needed for a fair comparison when evaluating commonly used measures of quality of care.

### Table. Crude and adjusted performance score by 5-year mortality risk group

<table>
<thead>
<tr>
<th>Risk Group</th>
<th>Low Risk (≤25%)</th>
<th>Intermediate Risk (25%-49%)</th>
<th>High Risk (≥50%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Crude Performance Score</td>
<td>74.1% (73.9-74.6%)</td>
<td>71.0% (70.7-71.3%)</td>
<td>60.7% (60.1-71.0%)</td>
</tr>
<tr>
<td>Adjusted Performance Score</td>
<td>74.1% (73.9-74.6%)</td>
<td>72.2% (71.8-72.9%)</td>
<td>69.3% (68.7-70.0%)</td>
</tr>
</tbody>
</table>

Note: Scores were calculated using population-based sampling weights. 95% confidence intervals are presented in parentheses. Covariates for adjusted scores include race/ethnicity, marital status, poverty, insurance, usual source of care, attitude toward healthcare, number of chronic conditions and eligible processes of care, and survey year. *** indicates statistically significant difference from low-risk group with p < 0.001.

### P5 Student Presentation

**Finding Readmissions: Comparison of State Health Information Exchange to Patient Self-Report**

A. Daddato,1 B. Dollar,1 H. Lum,1,2 R. E. Burke,1,2 R. S. Boxer,1,2 1. University of Colorado School of Medicine, Aurora, CO; 2. Denver VA MC, Denver, CO.

**BACKGROUND:** Patient attrition and recall bias can affect the validity of patient report of outcomes in research studies. While administrative data may be used, it also can be incomplete. For example, Medicare data only includes Fee-for-Service (FFS) beneficiary data, not those with Medicare Advantage (MA) plans. State-level health information exchanges (HIEs) may be a more complete outcomes data source however it is unknown how the data may compare to patient self-report.

**METHODS:** Outcomes data on readmissions from a Randomized Controlled Trial of Heart Failure Disease Management in SNFs conducted from 2014-2017 was used to evaluate data sources. Patients with heart failure receiving skilled nursing facility (SNF) care were enrolled and followed for 60 days from SNF admission. Patients received a phone call at 60 days to self-report readmissions. Patient self-reported hospitalizations were compared to hospitalization records in the Colorado Regional Health Information Organization (CORHIO), a statewide HIE. CORHIO was also used for patients lost to follow-up to find hospitalizations that did not occur during the SNF stay.

**RESULTS:** Of the 657 participants from SNF Connect, the mean age was 79±10, 49% had FFS and 51% MA. There were 302 unplanned readmissions within 60 days of SNF admission among 223 patients (28% had 2+ readmissions). For 405 patients able to be reached at 60 days, 163 readmissions were identified (66% self-reported vs. 34% not reported but found in CORHIO). Of the 252 patients lost to follow-up at 60 days, there were 139 readmissions (43% occurred during the SNF stay vs. 57% found in CORHIO and occurred after SNF discharge). Without use of CORHIO, 44% of readmissions would have been missed due to poor patient self-report. In total, FFS patients accounted for 53% of readmissions and MA patients 47%.

**CONCLUSION:** The method for acquiring outcomes data for patients receiving SNF care is important to obtain reliable results. Both attrition and poor self-report can underestimate outcome results. This research demonstrates the importance for the use of state-based all-payers data since it captures both FFS and MA data and is superior to relying on FFS claims data and/or patient self-report both of which are widely used to ascertain outcomes and may provide incomplete data.
Independence at Home Qualified Elders who Receive Home
Based Primary Care have Higher Costs than all IAH-Qualified
Medicare Beneficiaries

B. Kinosian, R. Kronick, G. Norman, T. Kent, J. Kubisiak.
1. Medicine, University of Pennsylvania, Philadelphia, PA; 2. West
Health Institute, La Jolla, CA; 3. JEN Associates, Ann Arbor, MI.

Background: The Independence at Home (IAH) demonstration is a shared savings program in which practices receive a share of the difference between actual Medicare spending on demonstration patients and the spending that would have been expected in the absence of the demonstration. A key question in estimating what would have been spent in the absence of the demonstration is whether the spending target should be based on the expenditure patterns of all beneficiaries who qualify for IAH, or on the subset of qualified patients who have chosen to receive home-based primary care (HBPC).

Methods: We used 100% Medicare claims for 2012-2013 to identify all beneficiaries who met IAH qualifying criteria: hospitalization in the prior 12 months, post-acute care in the prior 12 months, 2 or more chronic conditions, and 2 or more ADLs (IAH-Q cohort). We then identified the subset of those IAH-Qualified beneficiaries who received 2 or more home calls in 2012 or 2013 (HBPC IAH-Q cohort).

Results: We identified 2,084,399 beneficiaries who met IAH-qualifying criteria, of whom 136,761 (6.5%) received house calls (HBPC cohort). Average spending for the HBPC IAH-Q was 39% higher than average spending for the IAH-Q cohort ($2507 vs $1804 p/bpm). The HBPC cohort had higher mortality than the broader IAH-Q cohort (17.8% compared to 11.7%), with those in their terminal year having higher spending ($5403 p/bpm terminal v $2201 non-terminal). The higher mortality rate accounts for nearly 50% of the difference in spending between HBPC and IAH-Q cohorts. HBPC patients had higher HCC scores (3.1 vs 2.6), chronic condition count (7.2 vs 6.3), JEN frailty index (6.8 vs 5.8) and ADL counts (5.1 vs 4.7) than the broader IAH-Q cohort. Costs were greater for HBPC IAH-Q beneficiaries for inpatient (19%), SNF (41%) as well as home health (124%), and part B physician services (15%).

Conclusion: IAH-Q patients who receive HBPC are a more costly and frail subset of the larger IAH qualified population, with nearly half of the cost difference due to the higher mortality rate of the HBPC IAH-Q population. Using the general eligible (IAH-Q) population to calibrate predicted spending in the absence of IAH would result in underestimating the costs of those who receive home based primary care under IAH.

Association between Clinician Specialization in Nursing Home Care and Clinical Quality Scores

K. Ryskina, H. Jung.

Background: Between 2012-2015, the number of physicians and advanced practitioners who specialized in nursing home (NH) care increased by 34%. Whether this was associated with improvements in NH quality is unknown. Specialization in hospital care (i.e., hospitalists) has been associated with lower readmission and mortality rates. However, site-specific specialization may worsen outcomes through increased care fragmentation across settings. Our objective was to measure the association between regional trends in clinician specialization in NH care and NH quality.

Methods: For 2012-2015, CMS Provider Utilization Files were used to measure clinician specialization in NH care using Medicare fee-for-service billings. The Nursing Home Compare database was used to obtain NH scores on 6 quality measures for 2013-2016. NH specialists were defined as generalist physicians (internal medicine, family medicine, geriatrics, and general practice) and advanced practitioners (nurse practitioners and physician assistants) with at least 90% of their billings for care in NHs. The number of clinicians was aggregated at the hospital referral region (HRR) level and divided by the number of occupied Medicare-certified NH beds. Quality measure data for 16,187 NHs were also aggregated at the HHR level and weighted by NH beds. We measured the association between quality measure rates and the number of NH specialists per 1,000 beds in the prior year using linear regression.

Results: The median number of NH specialists per 1,000 beds was 3.36 (interquartile range, 1.99 to 5.41). Regional prevalence of NH specialists was associated with lower use of long-stay antipsychotic medications and indwelling bladder catheters but not with urinary tract infections, use of restraints, prevalence of depressive symptoms, or short-stay antipsychotic use (Table).

Conclusions: Increased prevalence of NH specialists was associated with regional improvements in 2 of 6 quality measures.

Impact of Interprofessional (IP) Learning Community in Geriatric Primary Care

P. Chen, M. Clark, M. Sharma, Y. Troya.
1. Clinical Pharmacy, UCSF School of Pharmacy, San Francisco, CA; 2. Center for Geriatric Care, UCSF, San Francisco, CA; 3. UC Hastings College of the Law, San Francisco, CA; 4. Medicine, Geriatrics, UCSF, San Francisco, CA.

Interprofessional collaboration (IPC) is an integral part of high quality healthcare; however, health professions learners have few opportunities to apply collaborative skills and learn together in busy ambulatory care settings. Geriatrics relies heavily on IPC to provide integrated care to older adults. We piloted an IP learners’ clinic to provide an interface between medical education and health system for geriatrics fellows, pharmacy residents and students, social work intern, and law students to learn and utilize IPC to manage a panel of complex older adults. We assessed the IP learning environment, the impact of the pilot on IPC competencies, and the impact on patient care.

Learners participated in huddle with clinical staff, interacted with patients and families synchronously or asynchronously, and led team meetings. Learners completed Interprofessional Competencies Attainment Survey (ICCAS) at team meetings and Assessment for Collaborative Environment (ACE-15) at the beginning and end of each semester. Members of the IP learners’ team and clinical staff completed feedback surveys on each IP learner and team at the end of each semester. Patients and families completed surveys on the IP learners and team during the second semester. Data was analyzed using descriptive statistics, paired t-test, and thematic analysis.

After the first semester, 26 learners participated in team meetings, with 15 participating in at least 2 meetings. There were significant improvements in 15 of the 20-item ICCAS in each team meeting.
Learners perceived that members listened actively and managed disagreement constructively. Preliminary themes included constructive feedback to each learner and team, and positive impact of IPC on patient care.

This pilot demonstrated the feasibility of implementing workplace IP learning in an ambulatory geriatrics practice and provided a nurturing environment for the development of IPC competencies. IP learners gained experience working with one another and managed a panel of complex older adults longitudinally. Anticipated positive impact of the IP learners’ clinic on older adults sets the stage for future dissemination of this learning model.

P9
Taking Action for Personal Health: Benefits of a Senior Learning Project
L. Granville,1 N. Castagna,1 J. Mum.2 1. Geriatrics, Florida State Univ, Tallahassee, FL; 2. Social Work, Florida State University, Tallahassee, FL.

Background:
Fostering older adults’ engagement in their health, while challenging, can contribute to improvements in health care outcomes and quality of life. We describe a novel approach to such engagement that leverages the creative ability of interprofessional student teams as well as the skills of senior medical students’ in disseminating geriatric content to lay audiences.

Methods:
We used a 3 step process. 1 Focus group methodology identified older adult concerns about health literacy; requested topics were Brain Health, Falls Prevention, Heart Health, and Advance Care Planning (ACP). 2 Interprofessional teams of students (Social Work, Public Health, Nursing, Medicine) developed modules for each topic. Modules introduce content (What), relevance to health (So what), and steps an individual can take to reduce risk (Now what). Each module has slides with detailed speakers’ notes and background information, and audience handouts of take home messages with action plan template. 3 Presentations are delivered by 4th year medical students on required geriatrics rotation to senior living communities across state of Florida. Audience and presenters complete quantitative and qualitative evaluation survey.

Results:
By December 2017: 753+ older adults were reached by 124 medical students.
Qualitative feedback indicate presentations were informative, interactive and empowered seniors to better manage their own health. Select comments include: “It is my responsibility to take charge of my own health”; “I enjoyed that the presenters answered questions and allowed participants to share their experiences”; “Medical students identify this as a valuable learning experience. Select comments include “I really enjoyed getting the opportunity to speak with this population. I think every medical student should have at least one opportunity to do this”. Lessons learned about adequate support for students’ success and audience engagement for action will be shared.

Conclusions:
This community based activity is worthwhile for older adults to learn about health topics and stimulates action planning. Senior medical students are effective at and engaged in delivering geriatrics topics.

P10
Rapid Cycle Quality Improvement (RCQI): A Strategy to Improve Implementation of Annual Wellness Visits in Primary Care Practices
A. Chopra,1 E. Perweiler,1 L. Bodenheimer,1 S. Pomerantz,1 J. DeGennaro,1 D. Long,2 I. Zayas.2 1. Rowan University School of Osteopathic Medicine, Stratford, NJ; 2. Lourdes Medical Associates, Haddon Heights, NJ.

Background:
The NJ Geriatrics Workforce Enhancement Program (NJGWE) team and Accountable Care Organization (ACO) partner, Lourdes Medical Associates, utilized a RCQI strategy to facilitate geriatrics infusion and implementation of the Medicare Annual Wellness Visit (AWV) in primary care practices. An iterative RCQI approach enabled evaluation of success and permitted mid-course corrections to address barriers and challenges.

Methods:
Multiple RCQI cycles focused on: 1) Creation of a pre-appointment questionnaire to be used by primary care practices including all AWV elements; 2) Training primary care providers to implement the AWV. Problems related to implementation of the AWV identified throughout the RCQI cycles led to modifications in structure, process, or the data collection plan.

Results:
Baseline data in a pilot practice showed that very few eligible patients had received an AWV. A pre-appointment questionnaire and supporting AWV materials were designed with the goal of providing a standardized, structured approach to the AWV. Training materials, including a Competency Checklist for staff, were developed for consistency and sustainability of the AWV process. Competency Checklist training was delivered to 56 staff at 6 practices. Retrospective chart review of 75 patients pre/post training across 3 practices compared documentation of critical AWV elements. After training, documentation of cognitive assessment increased 20% to 34% per practice and social supports increased 20% to 50%. Documentation of the personalized intervention plan increased 20% in two practices but decreased 20% in the third. Notably, the AWV Competency Checklist has now been embedded into the ACO orientation training for new staff.

Conclusions:
The RCQI strategy directed the development of standardized AWV materials and a Competency Checklist. Creation of these valuable tools increased consistency and completion of AWVs among eligible patients, including assessment of cognitive function and social support. This initial step of geriatrics infusion into primary care has laid the foundation for subsequent integration of geriatric best practices that will facilitate chronic care management and tracking of longitudinal patient outcomes data.

P11
Impact of an Geriatrics Case Presentation on Medicine Residents Patient Care
M. Bogaisky,1 D. Greenberg,1 P. Wald Cagan,1 M. Ceide,3 A. R. Ehrlich,1 T. A. Cortes.2 1. Medicine, Montefiore Medical Center, Bronx, NY; 2. NYU Meyers, Hartford Institute of Geriatric Nursing, New York, NY; 3. Psychiatry, Montefiore Medical Center, Bronx, NY.

Background:
The number of geriatricians in the U.S. is declining. Educational offerings that show trainees the powerful impact of geriatric care on patient outcomes may help recruit residents to the field. We instituted an interdisciplinary case presentation for medicine residents to demonstrate the utility of geriatrics for their own patients. We present data on the effect of the case presentations on patient care.

Methods:
The conference is modeled on one developed by the Well Cornell Geriatrics Division. Residents pick a complex older patient from their own ambulatory practice to present to a panel consisting of a geriatric social worker, geriatric nurse practitioner, geriatricians and geriatric psychiatrists. The residents are given concrete recommendations. The conference was done in two settings:

<table>
<thead>
<tr>
<th>Senior Audience</th>
<th>Brand</th>
<th>Fall</th>
<th>Fall</th>
<th>Mean</th>
<th>Mean</th>
<th>Mean</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall how worthwhile was this presentation?</td>
<td>1.27</td>
<td>1.15</td>
<td>1.27</td>
<td>0.38</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>(1=Very worthwhile 2=Somewhat Worthwhile 3=Not Worthwhile)</td>
<td>0.63</td>
<td>0.67</td>
<td>0.66</td>
<td>0.52</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 completed an action plan today.</td>
<td>0.63</td>
<td>0.67</td>
<td>0.66</td>
<td>0.52</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
from 2015-16, as a stand-alone educational activity during the resident’s internal medicine ambulatory block and from 2016-17, as part of a new mandatory geriatrics rotation. We did a chart review to determine the proportion of patient care recommendations that were carried out by the residents after the conference. We excluded patients not seen by their resident within 6 months after the case presentation.

**Results:** From 2015 to 2017, 38 patients were presented. A mean of 4.6 recommendations were made per patient (range 2-7). The most common recommendations were for cognitive screening, advance care planning and medication changes. 30 patients were seen within 6 months of the case presentation. Adherence with recommendations was significantly higher after conferences done during the resident’s geriatrics rotation than when it was done during their ambulatory block with 56% vs. 30% of all recommendations carried out \((p<0.01)\). 73% vs.17% of recommendations for cognitive screening were followed, 64% vs.38% of recommendations for advance care planning and 60% vs.17% of recommendations for medication changes.

**Conclusions:** A multidisciplinary conference designed to show the utility of geriatrics to residents led to moderate to high levels of adherence with recommendations for patient care. Adherence was substantially higher when the conference was part of a structured geriatrics rotation rather than a stand-alone educational activity.

**Paper Session**

**GERIATRIC BIOSCIENCE**

**Thursday, May 3**

2:45 pm – 3:45 pm

**P12 Encore Presentation**

Postoperative Changes in CSF AD Markers, Cognition, and fMRI activity

M. Berger,1,2 J. Browndyke,3 M. Cooter,1 W. Bullock,1 B. Colin,1 fMRI activity

**Background:** Anesthesia/surgery accelerate AD pathology in mice, and are associated with increased mitochondrial DNA mutations and mitochondrial death. With cell death, fragments of mitochondrial DNA are released into the circulation. Based on the size, mitochondrial DNA can be used as biomarker for increased apoptotic (79bp) vs necrotic (230bp) cell death. The role of Losartan, an angiotensin receptor blocker, in increased muscle repair and cell turnover has been suggested in animal studies. In this study we examined the impact of oral treatment with Losartan on the circulating cell-free mtDNA (ccf-mtDNA) fragments in prefrail older adults.

**Methods:** 143 community-dwelling adults from Baltimore (age: 20-93 yo) were recruited (40 young, 77 robust and 26 frail old subjects). A subset of 12 prefrail older adults were treated with an escalating dose of Losartan (25mg, 50 mg and 100 mg over a 6-month period). Changes in functional performance and in serum level of ccf-mtDNA fragments (total, apoptotic and necrotic fragments) were studied. Changes in inflammatory mediators such as tumor necrosis factor-alpha receptor 1 (TNFαR1) and interleukin-6 (IL-6) were also measured. The relative content of ccf-mtDNA was determined by 2ΔCT.

**Results:** With aging and frailty we observed a decrease in the amount of total ccf-mtDNA (COX-1) \((p<0.05)\) as well as the apoptotic (mtDNA-79) \((p<0.05)\) and necrotic (mtDNA-230) \((p<0.05)\). Higher levels of apoptotic ccf-mtDNA were correlated with faster walking speed \((r=0.418, p<0.05)\), stronger grip strength \((r=0.258, p<0.05)\) and higher levels of apoptotic ccf-mtDNA in serum of older adults were associated with faster walking speed \((r=0.258, p<0.05)\). Losartan treatment significantly increased the apoptotic (mtDNA-79) fragments \([\text{median}} (25\%, 75\%), 29.64 (23.70, 49.96) \text{vs} 104.06 (19.14, 191.33), p<0.05\] and COX-1 \([37.56 (22.38, 55.44) \text{vs} 107.67 (22.41, 339.92), p<0.05]\). Losartan treatment significantly increased the amount of ccf-mtDNA (ptDNA-79) fragments \([\text{median}} (25\%, 75\%), 29.64 (23.70, 49.96) \text{vs} 104.06 (19.14, 191.33), p<0.05]\) and COX-1 \([37.56 (22.38, 55.44) \text{vs} 107.67 (22.41, 339.92), p<0.05]\), while no significant effect on mtDNA-230.

**Conclusion:** Our findings suggest that oral treatment with Losartan was associated with increased cell turnover via apoptosis in prefrail older adults. Ccf-mtDNA fragments is potentially a promising biomarker to study changes in the rates of cell turnover as well as to test impact of interventions.

**P13**

Losartan increases circulating apoptotic mitochondrial DNA turnover in prefrail older adults

L. Ma,1,2 M. Davalos-Bichara,1 J. Lee,1 H. Yang,1 J. Walston,1 P. Abadir,1 1. Division of Geriatric Medicine and Gerontology, Johns Hopkins University, Baltimore, MD; 2. Xuanwu Hospital, Capital Medical University, Beijing, China.

**Background:** Decline in mitochondrial function is a primary theory of aging. With aging, higher levels of free radical are generated and are associated with increased mitochondrial DNA mutations and mitochondrial death. With cell death, fragments of mitochondrial DNA are released into the circulation. Based on the size, mitochondrial DNA fragment can be used as biomarker for increased apoptotic (79bp) vs necrotic (230bp) cell death. The role of Losartan, an angiotensin receptor blocker, in increased muscle repair and cell turnover has been suggested in animal studies. In this study we examined the impact of oral treatment with Losartan on the circulating cell-free mtDNA (ccf-mtDNA) fragments in prefrail older adults.

**Methods:** 143 community-dwelling adults from Baltimore (age: 20-93 yo) were recruited (40 young, 77 robust and 26 frail old subjects). A subset of 12 prefrail older adults were treated with an escalating dose of Losartan (25mg, 50 mg and 100 mg over a 6-month period). Changes in functional performance and in serum level of ccf-mtDNA fragments (total, apoptotic and necrotic fragments) were studied. Changes in inflammatory mediators such as tumor necrosis factor-alpha receptor 1 (TNFαR1) and interleukin-6 (IL-6) were also measured. The relative content of ccf-mtDNA was determined by 2ΔCT.

**Results:** With aging and frailty we observed a decrease in the amount of total ccf-mtDNA (COX-1) \((p<0.05)\) as well as the apoptotic (mtDNA-79) \((p<0.05)\) and necrotic (mtDNA-230) \((p<0.05)\). Higher levels of apoptotic ccf-mtDNA were correlated with faster walking speed \((r=0.418, p<0.05)\), stronger grip strength \((r=0.258, p<0.05)\) and higher levels of apoptotic ccf-mtDNA in serum of older adults were associated with faster walking speed \((r=0.258, p<0.05)\). Losartan treatment significantly increased the amount of ccf-mtDNA (ptDNA-79) fragments \([\text{median}} (25\%, 75\%), 29.64 (23.70, 49.96) \text{vs} 104.06 (19.14, 191.33), p<0.05\] and COX-1 \([37.56 (22.38, 55.44) \text{vs} 107.67 (22.41, 339.92), p<0.05]\), while no significant effect on mtDNA-230.

**Conclusion:** Our findings suggest that oral treatment with Losartan was associated with increased cell turnover via apoptosis in prefrail older adults. Ccf-mtDNA fragments is potentially a promising biomarker to study changes in the rates of cell turnover as well as to test impact of interventions.
P14
Nitrite Improves Skeletal Muscle Mitochondrial Coupling and Walking Efficiency in Older Adults
R. Eleazu,1,2 K. Allsup,1 G. Distefano,3 S. Perera,2 P. Coen,3 D. Forman.1,2 1. V.A Pittsburgh Healthcare System, Pittsburgh, PA; 2. University of Pittsburgh, Pittsburgh, PA; 3. Florida Hospital, Orlando, FL.

Background: Older adults commonly experience fatigue and decreased capacity to tolerate activity workloads. While therapeutic options are few, age-related changes in skeletal muscle mitochondrial bioenergetics likely contribute to these susceptibilities, and may offer therapeutic targets. Chronic nitrite therapy can alter bioenergetics; reducing electron transport chain, and may increase mitochondrial efficiency in skeletal muscle. To determine whether these benefits extend to older adults, we studied the association between mitochondrial efficiency and oxygen uptake (VO2) at a steady-state submaximal walking workload following nitrite therapy.

Methods: Mitochondrial bioenergetics and VO2 consumption was assessed pre vs. post oral nitrite therapy (40 mg nitrite capsules tid for 4 weeks) in 7 healthy older adults (mean age 78.1 years; 4M, 3F). VO2 was assessed during treadmill walking at a steady-state of 1.5 mph. Mitochondrial respiration (Oroboros) was assessed in skeletal muscle biopsies from the non-dominant vastus lateralis. Leak/OXPHOS (L/P) coupling control ratios were determined as an estimate of mitochondrial coupling efficiency.

Results: L/P showed a significantly decreased from pre to post. VO2 showed a clinically significant change and is trending toward statistically significant decrease from pre- to post-nitrite therapy. See Table 1.

Conclusions: Decreased L/P signifies increased mitochondrial coupling efficiency, consistent with reported effect of nitrite benefit. In addition, the decrease in VO2 during steady state suggests a clinically significant increase in exercise efficacy to perform the same level of work. More study is needed to further establish the efficacy of nitrite to improve mitochondrial function and physical function in older adults.

Table 1. Results

<table>
<thead>
<tr>
<th></th>
<th>Pre</th>
<th>Post</th>
<th>Change</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>L/P</td>
<td>0.31±0.05</td>
<td>0.23±0.06</td>
<td>0.08±0.06</td>
<td>p=0.034</td>
</tr>
<tr>
<td>VO2</td>
<td>15.9±1.5</td>
<td>13.6±1.5</td>
<td>2.3±0.4</td>
<td>p=0.073</td>
</tr>
</tbody>
</table>

P15
Chronic Inflammation-related Metabolomic Profile Discovery and Translation into Older Adults
R. Westbrook,1 H. Yang,1 A. Le,2 R. Moaddel,2 J. Walston,1 P. Abadir.1 1. Geriatrics & Gerontology, JHU, Baltimore, MD; 2. NIA/IRP, NIH, Baltimore, MD; 3. Department of Oncology, JHU, Baltimore, MD.

Background: Frailty is associated with adverse health outcomes and mortality. In older patients, chronic inflammation accompanies frailty and late life decline. How chronic inflammation impacts functional status is not understood but changes in energy production and utilization have been suggested. However, comprehensive analysis and identification of the actual metabolic products that drive the development of frailty in older adults have not been investigated.

Method: Demographic and physiological covariates were measured in a set of community-dwelling (age 20-97, N=120) individuals. Serum IL6, TNFα, TNFα r1, IL1β, and IFNγ were assayed. Further, we used LC/MS technology to profile 186 metabolites from five classes including acylcarnitines, amino acids, lyso and phosphatidyl choline-, sphingomyelins and biogenic amines. Associations of the cytokines and metabolites with grip strength, walking speed, falls and outcomes was assessed in young, robust, pre-frail and frail participants.
Conclusions: The MMRI-R can be successfully adapted to MDS v3.0 by substituting similar assessment items and has comparable accuracy in predicting 6-month mortality. In addition, the MMRI-R is valid for predicting 6-month mortality in Veteran NH residents, a population distinct from other NH populations.

P17 Cost Benefit of High-Dose vs Standard-Dose Influenza Vaccine for a Mild A/H1N1 Predominant Influenza Season in a Long-Term Care Population

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Background: In a recently completed cluster-randomized trial, we demonstrated that a more immunogenic high-dose trivalent influenza (flu) vaccine (HD) reduced the number of long-stay nursing home (NH) residents hospitalized in facilities offering HD (adjusted RR 0.873, 0.776-0.982) as compared to those in facilities offering standard-dose flu vaccine (SD). We expand those findings by considering the relative direct medical care costs.

Methods: We extracted long-stay NH residents’ Medicare Parts A, B, and D fee-for-service claims for participating facilities from two flu seasons, the pilot (n=39 NHs, 2012-2013) and full trial (n=823 NHs, 2013-2014). Medicare expenditures for all services occurring from November 1 through May 31 for each season were summed at the person level and compared between residents of HD and SD NHs. Individuals with extreme costs (> $100,000) were excluded (n=63 HD; n=71 SD). Expenditures were adjusted for clustering of residents within NHs, person-time, and pre-specified covariates using generalized linear models. The costs of HD ($31.82) and SD ($12.04) vaccines were obtained from the Centers for Medicare & Medicaid Services fee schedule. We examined the incremental cost-benefit of HD versus SD vaccines from a Medicare (payer) perspective.

Results: There were 19,417 and 19,690 FFS long-stay residents, respectively, in the HD and SD treated NHs. Unadjusted total expenditures were $464 lower within HD NHs: $11,003 (95% CI, $10,609-11,398) for SD and $10,539 (95% CI, $10,157-10,921) for HD, (p < 0.001). Adjusted total expenditures also differed significantly between groups by $432 (p < 0.001). The incremental cost of HD to SD ($19.78) was offset by the adjusted expenditures ($432) for a net benefit of $412 per nursing home resident [or a benefit-cost ratio 432/19.78 = 21.81].

Conclusions: The use of HD influenza vaccine in long-stay NH residents significantly reduced total health care expenditures generating a net cost benefit.

P18 What is important to older adults when making cancer screening decisions? – results from a national survey using discrete choice experiment


Background: Older adults with limited life expectancy continue to be screened for cancer at high rates even though screening exposes them to short-term harms with little chance for benefit. We aimed to examine the influence of life expectancy on older adults’ cancer screening decisions relative to three other factors that have been identified as important in patients’ screening decisions: age, quality of life, and physician recommendation.

Methods: Participants were recruited in 2016 from a national, probability-based online survey panel. Eligible panelists (age≥65) were randomly selected to participate (n=1272). Using a discrete choice experiment, we presented 9 choice tasks that assessed whether the participant would choose cancer screening if they were a hypothetical patient. We systematically varied the hypothetical patient’s age (65, 75, 85), quality of life (good, medium, poor), life expectancy (10 years, 5 years 1 year), and physician recommendation (screen, neutral, don’t screen). Participants were randomized to questions about colorectal cancer screening or prostate (males) / breast (females) cancer screening. Logistic regression examined the relative influence of the 4 factors on screening decisions.

Results: A total of 881 panelists (69.3%) completed the survey with a mean age of 71.8 years. Thirteen percent (115/881) chose no screening in all choice tasks. Among the rest of participants, age of the hypothetical patient (65 versus 85) had the largest influence on choosing screening (odds ratio [OR] 4.86, standard error [SE] 0.30) independent of other factors. Life expectancy (10 years versus 1 year) had the second largest influence (OR 2.77, SE 0.17), quality of life (good versus poor) and doctor’s recommendation (screen versus don’t screen) were the least influential with ORs of 1.65 (SE 0.09) and 1.66 (SE 0.10) respectively. All comparisons had p-value <0.01. The effects were consistent across cancer screening types.

Conclusions: Although clinical practice guidelines increasingly incorporate life expectancy to inform cancer screening decisions, age, independent of life expectancy, remains a significant influence on older adults’ screening decisions. Different strategies to reduce over-screening among those with limited life expectancy may be needed for younger versus older patients.

P19 Encore Presentation

How should clinicians communicate about stopping cancer screening: results from a national survey of older adults using best-worst scaling


Background: Older adults with limited life expectancy continue to be screened for cancer at high rates even though screening exposes them to short-term harms with little chance for benefit. One potential contributor to over-screening may be clinicians’ discomfort with discussing screening cessation. This study examines older adults’ preferences for different approaches that clinicians may use to explain screening cessation.

Methods: Participants were recruited in 2016 from a national, probability-based online survey panel. Panelists with ages ≥65 were randomly selected to participate (n=1272). Using the best-worst scaling (BWS) method, we assessed the relative preference for different ways to explain screening cessation for breast, colorectal, or prostate cancers. We tested 13 different phrases that were identified based on literature and results from our prior qualitative interview study with older adults. We constructed 13 choice tasks, each presenting a subset of 4 explanations, and asked participants to choose among each set the best and the worst explanations. We examined the frequency with which different phrases were chosen as best and as worst and calculated standardized BWS scores, ranging from -1.0 (worst) to 1.0 (best).

Results: The sample included 881 participants (response rate 69.3%) with mean age 71.8. The most preferred explanation was “your other health issues should take priority” with a standardized BWS score of 0.41. The least preferred was if “the doctor does not give an explanation” with a BWS score of -0.42. Explanations that mention guidelines, age, lack of benefit, potential harms were more preferred than explanations that mention life expectancy, discomfort or inconvenience of the screening test, or that the screening test may lead to additional testing. The rankings were consistent across cancer screening types. When stratified by age, the most preferred explanation for those 85+ was one that mentions age - “we usually stop screening at your age”.

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Conclusions: Despite recommendations to stop cancer screening in older adults with limited life expectancy, how these recommendations should be communicated to patients has not been clear. This study provides the first empirical data from a national sample of older adults on their preferences for how screening cessation can be messaged.

Paper Session

OPTIMIZING COGNITION ACROSS THE CARE CONTINUUM

Friday, May 4
10:00 am – 11:00 am

P20
The Impact of the Annual Wellness Visit (AWV) on Cognitive Screening
R. Malik,2 J. Zwerling,2 M. Vachna,2 D. Lepore,2 J. Verghese,2 S. Hodgson,1 T. A. Cortes,1 A. R. Ehrlich.1 1. Family Medicine, Montefiore Medical Center/ Albert Einstein College of Medicine, Bronx, NY; 2. Neurology, Montefiore Medical Center, Bronx, NY; 3. Medicine, Montefiore Medical Center, Bronx, NY; 4. Hartford Institute of Geriatric Nursing, New York University, NYC, NY; 5. Geriatrics, Montefiore Medical Center, Bronx, NY.

Background: Dementia is often under recognized in primary care settings. Center for Medicare & Medicaid Services introduced the AWV in 2011 to incentivize preventive care for older adults. Cognitive screening is required for the AWV but there is no consensus on the preferred instrument. Less than 16% of eligible beneficiary’s nationwide receive an AWV and there are marked socioeconomic disparities in its use.

Methods: The Montefiore Medical Group provides primary care to over 40,000 older adults in underserved neighborhoods in the Bronx, NY. In 2017, a template for the AWV was built into our electronic health record. All patients are asked a question about “difficulty with memory or confusion.” Patients answering affirmatively, undergo testing with the Picture Based Memory Impairment Screen (PMIS). The PMIS is validated in the Bronx in a population with poor literacy testing with the Picture Based Memory Impairment Screen (PMIS). We present the results of the first 4 months of use. Clinical Looking Glass, a data repository in Montefiore Medical Center provided demographic data. Data analysis with SPSS 20.

Results: 1,470 AWV were completed. Demographics: 68% female with average age of 75 ± 7 years (range 47 – 100 years). Twelve percent (169) answered affirmatively to the initial cognitive screening question and completed the PMIS. The PMIS is validated in the Bronx in a population with poor literacy (sensitivity 68%, specificity 81%). The AWV was piloted in 5 sites using licensed practical nurses and patient care technicians. We present the results of the first 4 months of use. Clinical Looking Glass, a data repository in Montefiore Medical Center provided demographic data. Data analysis with SPSS 20.

Conclusions: Postoperative delirium has a negative impact on clinical outcomes and recovery after aortic valve replacement.

P21 Encore Presentation
Incidence and Outcomes of Postoperative Delirium after Transcatheter and Surgical Aortic Valve Replacement
S. Shi,1 M. Sung,2 C. Kim,3 L. Lipsitz,1,4 J. Popma,1,2 K. Habibaz,1 R. Laham,1 K. Guibone,1 J. Afifalo,1 Q. Hosler,1 J. Lee,1 E. Marcantonio,1 D. Kim.1,2 1. Beth Israel Deaconess Medical Center, Boston, MA; 2. Boston University Medical Center, Boston, MA; 3. South Shore Hospital, South Weymouth, MA; 4. Hebrew SeniorLife, Boston, MA; 5. McGill University, Montreal, QC, Canada; 6. Brigham and Women's Hospital, Boston, MA.

Background: The incidence and outcomes of postoperative delirium have not been compared between patients undergoing transcatheter aortic valve replacement (TAVR) and surgical aortic valve replacement (SAVR).

Methods: We prospectively assessed patients 70 years or older who underwent TAVR (n=110) or SAVR (n=77). Delirium was assessed daily using the Confusion Assessment Method (CAM) with severity defined as maximum CAM-severity score from all postoperative assessments (range: 0-19; mild if ≤9 and severe if ≥10). Outcomes assessed included prolonged hospitalization (length of stay ≥9 days), institutional discharge, and the ability to perform 22 daily activities and physical tasks at 1, 3, 6, 9, 12 months after procedure.

Results: Despite older age (mean: 84 vs 78 years) and lower Mini-Mental State Examination scores (mean: 25 vs 27 points), TAVR patients had a lower incidence of delirium than SAVR patients (25.4% vs 50.6%; p<0.01). Among those with delirium, TAVR patients seemed to have more severe delirium (53.6% vs 33.3%; p=0.10). Increasing severity of delirium was associated with prolonged hospitalization after TAVR (no, mild, and severe delirium: 26.8%, 38.5%, and 73.3%; p<0.01) and SAVR (18.4%, 30.8%, and 61.5%; p<0.01), and with institutional discharge after TAVR (32.5%, 69.2%, and 80.0%; p<0.01) and SAVR (42.1%, 58.3%, and 84.6%; p=0.01). Severe delirium was associated with persistent functional impairment after TAVR and delayed functional recovery after SAVR (Figure).

Conclusion: Postoperative delirium has a negative impact on clinical outcomes and recovery after aortic valve replacement.

P22
An Alzheimer’s Disease and Related Disorders (ADRD) Primary Care Engagement Campaign
L. O’Neill,1,2 M. Fain, MD,3,4 M. Hartford,2 R. Sukerji,1,3 J. Mohler, MPH, PhD.5,1 1. U of AZ, Tucson, AZ; 2. Alzheimer’s Association, Phoenix, AZ; 3. AZ-GWEP, Tucson, AZ.

Background: This campaign involved increasing awareness of ADRD and related caregiver stress among primary care providers (PCPs) and trainees in an academic resident teaching clinic. Education focused on patients with memory concerns and patients serving as caregivers for those with ADRD. Data show early diagnosis allows patients to plan and avoid unnecessary sequelae. For caregivers, the stress of providing 24/7 care has a negative health impact. Improving providers’ skills with ADRD diagnosis and management impacts both.

Methods: First, PCPs received training on ADRD diagnosis and management, and community resources. Then, at clinic check-in, patients aged 50+ were provided an informational brochure from the Alzheimer’s Association. At intake, the medical assistant asked two
questions: 1) Are you concerned about memory or thinking problems? 2) Are you (the patient) a caregiver for someone with memory issues? A yes response to question 1 resulted in an AD8 screen and a follow up appointment scheduled to evaluate cognitive impairment. A yes response to question 2 resulted in a referral to the social worker who administered the Caregiver Strain Screen. In both cases, with the patients’ permission, referrals were faxed to the Alzheimer’s Association Desert Southwest Chapter for follow up.

Results: After 3 months, pilot data confirmed: 1) the campaign resulted in increased patient and caregiver support via referrals to the social worker and the Alzheimer’s Association Desert Southwest Chapter; and 2) many PCPs and trainees in the teaching clinic benefited from education on diagnosis and management of dementia. After 6 months, data showed 8% of patients/family screened were in need of assistance: 6% of patients had self-reported memory concerns, and 2% of patients who were caregivers of persons with ADRD received support.

Conclusion: The project offered a low cost, efficient and acceptable intervention that improved identification of patients with dementia, improved management, and provided support for family caregivers. The program has the potential to improve health and quality of life and help reduce the annual Medicare costs that are 3x higher in people with dementia vs those without ($46,000 vs $14,772) and reduce acute & long term costs.

P23
Examining disparities in community resources for persons with dementia and their caregivers in an urban setting

Background: CommunityRx (CRx) is a large scale health IT intervention connecting patients to tailored community resources for 37 medical and social conditions via a resource list (“HealtheRx”) delivered at the point of care. From 12/2014 –5/2015, CRx was active at 33 health centers and ambulatory care clinics across the South and West sides of Chicago. Our sample includes 738 people residing in a 42 community area region who were given a HealtheRx for dementia resources. Most participants were African-American (90%) and ≥65 years (93%). This study aims to better understand access to community resources among persons with dementia (PWD) and their caregivers.

Methods: Patient home location and community referral data were obtained from the CRx database. GIS software was used to assign patients to respective community areas (defined by the City of Chicago)1 and evaluate access to the most commonly-referred resources: group exercise classes, walking groups, daycare, group meals, and group therapy. These community areas range in size from 1 mi2 to 10 mi2. “Options access” was defined for a patient as having 2 or more options in their area.

Results: Only 2 communities where PWD lived had at least one of the 5 indicated resource types and no community had options access. Options access varied by resource type: group exercise classes (n=19 communities), group counseling (n=7), daycare services (n=5), walking groups (n=3), and group meal sites (n=1). CRx generated an average 200 referrals/month to 7 group meals and to 5 daycare services, but these resources were offered in fewer than 10 communities. Eighty-five percent of PWD lived in a community area with only 1 or no option for at least 3 of the 5 most referred services.

Conclusion: This work supports the National Alzheimer’s Project Act (2016 update) recommendation to “optimize existing resources”2 available to address dementia care and provide caregiver support in the community. As a first step to optimization, evidence is needed to understand the distribution of dementia-related community resources in relation to geospatial demand for these resources.

1 Chicago Data Portal. Available at: https://data.cityofchicago.org/

P25  
**Subjective and objective sleep disturbance correlate poorly in older adults**  
B. Miner,1 A. Hajduk,1 H. K. Yaggi,1,2 C. A. Vaz Fragoso,1,2  
1. Internal Medicine, Yale University, New Haven, CT; 2. Clinical Epidemiology Research Center, Veterans Affairs, West Haven, CT.

**Background:** There is growing evidence that advancing age is associated with reduced sleep quality, including sleep symptoms. This may have important implications for the ability to detect and prevent adverse outcomes of sleep disturbance in older adults.

**Methods:** We used data on 5,710 older adults from the Study of Osteoporotic Fractures and the Osteoporotic Fractures in Men Sleep Study to evaluate the prevalence of subjective and objective sleep disturbance. Subjective sleep disturbance was assessed by self-report using the Pittsburgh Sleep Quality Index and defined as sleep onset latency (SOL) >30 minutes, total sleep time (TST) <6 hours, or sleep efficiency (SE) <75%. Objective sleep disturbance was assessed by actigraphy and defined as SOL >30 minutes, TST <6 hours, or SE <75%. We used Cramer’s phi coefficient to examine agreement between subjective and objective sleep measures. We used multivariable-adjusted logistic regression to identify correlates (age, sex, cognitive impairment [3MS ≤82 in men; MMSE <24 in women]) of congruence in subjective and objective measures of sleep disturbance.

**Results:** The mean (SD) for age was 80.1 (5.8) years; 52% were female. Prevalences of subjective and objective sleep disturbance were 30.8% and 73.8%, respectively; the resulting correlation between these two measures was weak (φ = 0.13). Sixty-six percent of older adults with objective sleep disturbance did not report subjective sleep disturbance. In adjusted analyses, these participants were more likely to be male (OR = 1.98, 95% CI = 1.66-2.34) and were less likely to have depressive symptoms (OR = 0.41, 95% CI = 0.33-0.51), when compared to participants who had both objective and subjective sleep disturbance. There was no difference in age or prevalence of cognitive impairment between these groups.

**Conclusions:** Subjective and objective sleep measures correlate poorly in older adults, and a large proportion have objective but not subjective sleep disturbance. These participants were more likely to be men and less likely to report depressive symptoms. Future work should investigate the mechanisms underlying the dissociation between subjective and objective sleep measures.

P26 Student Presentation  
**Racial Disparities in Surveillance Mammography among Older Breast Cancer Survivors**  
J. Tevisir,1 N. Gegechorki,3 J. P. Wisnivesky,1 J. J. Lin,1 1. Internal Medicine, Icahn School of Medicine at Mount Sinai, NYC, NY; 2. Icahn School of Medicine at Mount Sinai, NYC, NY; 3. Internal Medicine, Maimonides Medical Center, New York City, NY.

**Background:** A study evaluating data from 1990-2000 found a racial disparity in the receipt of surveillance mammography among older breast cancer (BC) survivors. These data may partially explain the widening gap in BC mortality rates between black and white women in the US, despite lower incidence rates among black women and a national decline in BC deaths. The objective of this study was to evaluate whether racial disparity in receipt of surveillance mammography persists among older women diagnosed with early-stage BC between 2000 and 2011.

**Methods:** We conducted a retrospective analysis of women >65 years who were diagnosed with early-stage (0-IIA) BC in the Surveillance, Epidemiology and End Results-Medicare registry who underwent BC surgery. The primary outcome was receipt of surveillance mammography within 12 months of surgery. Chi-square analyses were used to compare characteristics between black and white women. Multivariate logistic regression was used to assess receipt of surveillance mammography after controlling for age, income, marital status, urban/rural, BC stage, comorbidities and BC treatment.

**Results:** There were 3,353 black and 44,727 white women in the cohort. 58% of black received surveillance mammography within 12 months of surgery, compared to 67% of white women (p = 0.0001). Those who were married, younger, in the highest income quartile, diagnosed at earlier stages, had a lower comorbidity score, or who resided in metropolitan areas were more likely to receive surveillance mammography (p < 0.05). After adjusting for confounders, black women were still 24% less likely than white women to receive surveillance mammography (AOR = 0.76, 95% CI = 0.70-0.82).

**Conclusion:** In an updated analysis, we found that older black BC survivors continue to experience lower surveillance mammography rates, even after adjusting for multiple potential confounders. There remains a need to investigate which individual and systemic factors affect disparities in breast care.

P27 Student Presentation  
**Neighborhood Environments and Recent Falls among Community-dwelling Older Adults: 1-Year Prospective Cohort Study**  
S. Lee, C. Lee. Landscape Architecture and Urban Planning, Texas A&M University, College Station, TX.

**Background:** Falls, the most frequent cause of injury among older adults, are substantial barriers to walking and physical activity. Neighborhood environments have been increasingly recognized to be associated with fall events and fear of falling. However little is known about the causal impact of the neighborhood environment on falls. This prospective observational study identified whether changes in outdoor environmental attributes influence changes in falls through a longitudinal analysis.

**Methods:** We used the interview data from community-dwelling adults aged ≥65 from the 2011 and 2012 National Health and Aging Trends Study (NHATS), a nationally representative sample selected from 35.3 million Medicare beneficiaries aged ≥65 living in the US. Neighborhood environmental barriers were assessed by the interviewers. Using the subset of samples who did not fall in 2011, logistics regressions were estimated to identify neighborhood risk factors linked to the odds of having recent falls in 2012.

**Results:** Almost one out of ten (9.6% of 4,765) having recent falls in 2012. The fallers were more likely to live in the neighborhood environments that had obstructions on sidewalks/streets in both 2011 and 2012 (OR = 1.787, 95% CI = 1.058-3.017) and had an increase in uneven walking surfaces or broken steps in the area leading to their home from 2011 to 2012 (OR = 1.506, 95% CI = 1.070-2.121), after adjusting for socio-demographic, health, and walking-related behavioral covariates.

**Conclusions:** Our findings suggest that safe and well-maintained outdoor environments may help prevent falls among those older adults who engage in outdoor activities. Policy and planning strategies to reduce fall-related hazardous environments can help public health experts and gerontologists as well as urban planners to create safe and barrier-free neighborhoods which can contribute to promoting and maintaining health, mobility, and well-being of all residents especially older adults.
P28 Encore Presentation
Behavioral therapy improves urinary symptoms in Parkinson disease
C. P. Vaughan,1,2 K. Burgio,1,3 P. Goode,1,3 J. Juncos,2 L. Muirhead,1,2 G. McGwin,13 T. Johnson,12 I. Birmingham/Atlanta GRECC, Atlanta, GA; 2. Emory Univ, Atlanta, GA; 3. Univ of Alabama at Birmingham, Birmingham, AL.

Background: Overactive bladder (OAB) symptoms, including urgency, frequency, nocturia, and urgency urinary incontinence are common in Parkinson disease (PD) and further worsen quality of life (QOL). We sought to determine the efficacy of behavioral therapy for OAB symptoms in PD.

Methods: Randomized controlled trial of behavioral therapy compared to a control condition at two VA medical centers. Participants were diagnosed with PD by a movement disorders neurologist and had ≥ 4 episodes of incontinence/week. Behavioral therapy included pelvic floor muscle exercises with urge suppression training, fluid modification, constipation management, and self-monitoring with a bladder diary. The control condition included a bladder diary and mirrored shape drawing. Outcomes were measured 8 weeks post-randomization and included the International Consultation on Incontinence OAB symptom score (range 0-16) accompanied by bother and QOL. Weekly incontinence and urgency urinary incontinence were calculated.

Results: 53 participants were randomized and 47 reported 8-week outcome data including 26 randomized to behavioral therapy and 21 to control (6 dropouts in control). Behavioral vs. control participants were similar with respect to age (71.0 ± 6.1 vs. 69.7 ± 8.2 years), gender (70% vs. 78% male), PD motor severity score, cognition, mean weekly incontinence episodes (13.6 ± 9.8 vs. 15.2 ± 11.1) and OAB symptoms (8.9 ± 2.4 vs. 8.3 ± 2.2). Behavioral therapy participants reported greater reduction in OAB symptoms compared to control (-4.9 ± 11.5) vs. (-1.3 ± 2.1), p=0.02). Weekly incontinence reduction was similar between behavioral (-5.3 ± 8.7) and control participants (-4.9 ± 11.5) (p=0.4). After 8 weeks, QOL and bother related to OAB were significantly improved among participants in behavioral therapy compared to control (p=0.001 and p=0.03).

Conclusion: Behavioral therapy resulted in significantly greater improvement in OAB symptoms, bother, and QOL compared with control. Weekly incontinence episodes improved in both groups, but without between-group differences. Providers should consider behavioral therapy as initial therapy for OAB symptoms in PD.

P30 Geriatric Emergency Department (ED) Innovations: ED-based Social Work associated with reduced Medicare expenditures
U. Hwang,1 S. Dresden,2 M. Garrido,1 R. Kang,1 J. Sze,1 C. Vargas-Torres,1 G. Loo,1 C. Zhu,1 D. M. Courtney,2 M. Rosenberg,2 L. Richardson,1 G. E.D.I. W.I.S.E. Investigators.1,2 1. Icahn School of Medicine at Mount Sinai, New York, NY; 2. Northwestern University Feinberg School of Medicine, Chicago, IL; 3. Northwestern University, Chicago, IL; 4. St. Josephs Regional Medical Center, Paterson, NJ.

Background: Transitional care interventions have been shown to decrease hospitalization during and after an emergency department (ED) visit for older adults. In this study, we examined the association between an ED-based social work evaluation and Medicare expenditures after an ED visit.

Methods: This was a prospective observational study of Medicare beneficiaries age 65+ with an ED visit at 2 US hospitals from 1/1/13 - 6/30/15. Our cohort included Medicare beneficiaries (those having Medicare Fee For Service coverage for at least 12 months prior to a Medicare claim on the day of an ED visit). The intervention was first social work (SW) contact during the study period. Comparison patients (control) were those never seen by a SW during the study period. We used ebalance to account for differences in sociodemographic and clinical characteristics across the SW and control groups. In balanced samples, we used generalized linear models (gamma distribution, log link) to examine the association between SW evaluation and the primary outcome of Medicare inpatient and outpatient expenditures in the 30 and 60 day periods starting from an index ED visit.

Results: Our analytic cohort included 21,113 (30 Day) and 21,131 (60 Day) Medicare beneficiaries with Medicare claims on the day of their index ED visit. 1,027 (4.86%) study subjects received the benefits and harms of screening. The IU CHOICE trial was conducted to measure the benefits and harms of routine screening for dementia in primary care.

Methods: CHOICE was a single-blinded, parallel, randomized controlled clinical trial with 1:1 allocation. A total of 4,005 individuals aged ≥ 65 years without a diagnosis of dementia, cognitive impairment, or serious mental illness receiving care at primary care practices within two cities in Indiana. Subjects were randomized to either (1) screening for dementia using the Memory Impairment Screen (in-person or telephone) or (2) no screening. Subjects who screened positive were referred to the local Aging Brain Care program for diagnostic assessment and evidence-based collaborative care, if cognitive impairment was diagnosed. Outcomes included the 15 item Health Utility Index (HUI), 9 item Patient Health Questionnaire (PHQ-9), and the 7 item Generalized Anxiety Disorder Scale (GAD-7) at baseline, 1, 6, and 12 months. All tests for outcomes were calculated with mixed effect models using all time points including baseline.

Results: Patient age averaged 74.5 years (SD 7.0), 33.4% were male, 71.0% were white, 95.6% had at least a high school education and the mean Charlson comorbidity score was 2.9 (SD 3.0). There were no significant differences in socio-demographics between the groups at baseline, but the group randomized to screening had higher levels of depression at baseline (p=0.018). The interaction p-value was negative for all models indicating that the effect of the intervention did not differ across group or time. The overall p-value tests was only significant for moderate and severe depression (p=0.024 and p=0.010 respectively), meaning that subjects who were screened were more likely to have depression at all time points including baseline.

Conclusions: Routine dementia screening in primary care does not appear to provide benefits, as measured by health related quality of life nor does it induce risk by increasing depression or anxiety.
the SW intervention. After ebalanc, the SW intervention was associ-
ated with significantly reduced Medicare expenditures in the 30 days
starting from the index ED visit [site 1: $-4,935 95% CI (-$5,631 to
-$4,239), site 2: -$2,588 ($-3,127 to -$2,049)]. These savings contin-
ued to be sustained at 60 days [site 1: -$4,734 ($-5,675 to -$3,792), site
2: -$2,842 ($-3,593 to -$2,090)].

Conclusion: Targeted evaluation by ED social workers for older
ED patients is associated with reduced Medicare expenditures and
may be a cost saving intervention in the care of older ED patients.

P31 Efficacy of the Herpes Zoster Subunit Vaccine in Adults 65 Years
of Age or Older
J. McElhaney, Health Sciences North Research Institute, Sudbury,
ON, Canada.

McElhaney J, on behalf of the ZOE-50 Study Group

Background: Herpes zoster (HZ) typically manifests as a painful
dermatomal vesicular rash resulting from the reactivation of latent
varicella zoster virus, and is often followed by prolonged intractable
pain, known as post herpetic neuralgia. The incidence and severity of
HZ and resulting complications increase with age due to immuno-
nescence. In the US, the annual incidence of HZ cases in the popu-
lation over 65 years of age is estimated between 10 and 13 cases per
1000 person years. The U.S. Food and Drug Administration licensed
herpes zoster subunit vaccine (HZ/su) in adults aged 50 years and
older.

Methods: We conducted a randomized, observer-blind, place-
bo-controlled phase 3 trial in 18 countries to evaluate the efficacy and
safety of HZ/su in adults ≥50 years of age (NCT 01165177). Subjects
were randomized 1:1 to receive 2 doses of HZ/su or placebo (saline
solution) by intramuscular injection 2 months apart. Vaccine efficacy
in reducing the incidence of HZ was analyzed in subjects who received
two doses and who did not develop a confirmed case of HZ within
the study period beginning one month after dose 2 and continuing for
4-years. All suspected HZ cases were confirmed by polymerase chain
reaction and/or a case adjudication committee. This post-hoc analy-
sis was conducted to determine the efficacy of HZ/su in adults over
65 years of age.

Results: A total of 5503 subjects over 65 years of age were
included in this analysis (2734 in the HZ/su group and 2769 in the
placebo group). Overall, 5 cases of HZ were observed in the HZ/
su group compared to 93 cases in the placebo group, resulting in an
efficacy of 94.7% (95% CI: 87.1-98.3). The efficacy of HZ/su was
sustained with no significant decline over 4 years, at a rate of 100.0%
(95% CI: 83.9-100.0) after the first year, 92.6% (95% CI: 70.7-99.2)
after the second year, 100.0% (95% CI: 72.6-100.0) after the third year
and 98.8% (95% CI: 63.4-97.8) after the fourth-year post-vaccina-
tion. There were no safety imbalances between the HZ/su and placebo
groups.

Conclusion: After 2 doses of HZ/su, the risk reduction rate of HZ
was 94.7% in adults over 65 years of age, without significant decline
over 4 years post-vaccination with HZ/su

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POSTER SESSION A
Thursday, May 3
12:30 pm – 1:30 pm

A1 Sometimes the Answer IS Steroids: Failure to Thrive and
Hormones
A. Moskowitz, M. A. Drickamer, G. Warshaw. University of North
Carolina, Chapel Hill, NC.

Background: Failure to thrive is a common syndrome among
geriatric patients. While some underlying etiologies are seen
frequently, rare causes of this condition are also possible.

Case Presentation: A 69-year-old female with history of
Hashimoto’s thyroiditis presented complaining of unintentional weight
loss, fatigue, depression, and poor appetite. These symptoms had been
ongoing for almost a year, prompting the patient to move near family
for support. She reported poor taste to food and 30-pound weight loss
in total. Her fatigue and weakness led to significant physical decon-
ditioning and all of these symptoms led to depression. Broad workup
including cognitive testing, cancer screening, inflammatory markers,
HIV, hepatitis, and rheumatologic workup were all completely unre-
markable. She underwent trials of mirtazapine and citalopram to treat
concomitant depression and improve appetite but this was not toler-
ated secondary to extreme fatigue and nausea.

Ultimately the patient’s condition declined to the point of severe
dehydration and electrolyte imbalance. She was admitted to the hospi-
tal where morning cortisol was found to markedly low at 0.9 mcg/dL.
After 250 mcg of ACTH, the patient’s cortisol rose from a baseline of
<0.5 mcg/dL to 4.5 mcg/dL and 1 hour later 6.6 mcg/dL. Endogenous
ACTH was undetectable. Other than her preexisting hypothyroidism,
the remainder of her pituitary axis remained intact. She was started
on hydrocortisone and felt immediate improvement in appetite and
energy level. She has continued to improve markedly and is regain-
ing weight and strength. Further workup including MRI revealed a
partially empty sella with small anterior pituitary however no discrete
lesion identified.

Discussion: In this patient, no obvious cause for her symptoms
was elucidated by history and broad workup was unrevealing. She was
ultimately diagnosed with secondary adrenal insufficiency. She had
no previous steroid exposure and without detectable serum ACTH,
her condition is felt to be due to a central cause. We were concerned
for CNS malignancy or pituitary adenoma but MRI findings are more
suggestive of previous hypophysitis. Additionally, her history of
Hashimoto’s thyroiditis makes this more likely.

Conclusion: In general, failure to thrive is a significantly poor
prognostic sign. In this case, however, a rare but fully treatable cause
was identified. An extensive evaluation should always be considered
when the etiology of failure to thrive is unknown.

A2 Full Frontal: Drugs, Depression or Lewy Bodies?
A. Moskowitz, M. A. Drickamer. University of North Carolina,
Chapel Hill, NC.

Case Presentation: A 70-year-old female with a significant, but
well-controlled, psychiatric history presented with functional decline
and cognitive impairment over the prior year. In the preceding months,
she also struggled with resting tremor, falls, and bothersome audi-
tory and visual hallucinations. Multiple medication trials had been
attempted by previous providers with little effect. She had a signific-
ificant medication burden and polypharmacy including high doses of
paroxetine, lamotrigine, buspirone, and quetiapine. On exam she was
fully oriented; however, SLUMS revealed severe cognitive dysfunc-
tion with a score of 11 out of 30. She had a prominent resting tremor.
Her gait was unsteady, but this was felt more related to disinhibition rather than parkinsonian, magnetic gait.

Over the next several weeks her polypharmacy was addressed, specifically her antipsychotic regimen. Quetiapine, lamotrigine, and buspirone were all weaned. Her hallucinations persisted, necessitating an alternative regimen. She was started on Lurasidone and valproic acid which she tolerated well. Paroxetine was also changed to citalopram due to anticholinergic properties of paroxetine. She slowly began to have improvement in her hallucinations on this regimen and after approximately 6-8 weeks her caregivers began noticing cognitive improvement. After 3 months she had returned to her previous baseline and scored 27 out of 30 on repeat SLUMS.

Discussion: At the time of initial presentation, medications were thought to be contributing however, her syndrome was highly suggestive of dementia with lewy bodies as an underlying etiology. Her psychiatric conditions had been well controlled for years, and was initially thought to be non-contributory. However, after seeing vast improvement two to three months after achieving a therapeutic dose of citalopram, it was determined that her presentation was caused by an episode of major depression with psychotic features in addition to polypharmacy.

Conclusion: Most diagnostic criteria for dementia require that the syndrome cannot be explained by another cause. Psychiatric illness and medication side effects are some of the most common confounders of the diagnosis; however, occasionally significant overlap in symptoms results in a diagnostic dilemma. It is important to remain patient while treating reversible causes of cognitive dysfunction; in some cases, it can take months to reveal that the condition is truly reversible.

A3
Image This: Interesting Case of Cognitive impairment
A. Cheema, L. Gleason. University of Chicago, Chicago, IL.

A. Cheema, L.J. Gleason

Introduction: Meningiomas are the most common incidental tumor identified on MRI’s and prevalence increases with age. Although most tumors are slow growing with insidious symptoms, depending their location in the CNS, can result in significant morbidity or mortality.

Case presentation: 70 year old F with hypertension presented to clinic with a complaint of worsening memory loss and falls for the last year. Memory loss was picked up by her family which prompted the clinic visit. Co-existing symptoms included gait instability with near falls. She was unable to provide specific details pertaining to the episodes. She reported independence in ADL’s but had become increasingly dependent for IADL’s which was in stark contrast to the previous level of function 18 months ago. Family history was significant for Alzheimer’s dementia in patient’s mother (GL-M1). She scored 14/30 on MOCA with major deficits in executive function, body 4/5 as compared to 5/5 on the left.

MRI brain without contrast, obtained after her initial visit, demonstrated a large extra-axial mass along the left convexity with significant mass effect on the underlying brain resulting in midline shift, left uncal herniation and entrapment of right lateral ventricle.

She underwent emergent craniotomy and tumor resection. Subsequent pathology showed atypical meningioma WHO grade II with brain invasion requiring localized radiation therapy. MOCA repeated 3 months later demonstrated significant improvement with a total score 23/30 and notable improvements in the executive function as well as recall.

Conclusion: Cases as this one emphasize the necessity for physicians to remember that cognitive impairment may present an organic disease of the brain especially in light of subtle neurologic findings. A thorough neurologic exam should be pursued in patients with new diagnosis of dementia followed by neuroimaging if warranted by physical exam findings. Meningiomas involving the frontal lobe may not produce overt symptoms other than progressive memory loss, inattention and personality changes mimicking dementia. In this patient subtle neurologic deficits as well as rapid memory decline led to further investigation with neuroimaging. Eventual resection of the meningioma relieved intracranial pressure with significant improvement in memory as well as function.

A4
Histoplasmosis Osteomyelitis in Immunocompetent Geriatric Patient

Introduction: Histoplasmosis has been described as the most common endemic mycosis in the US. The highest incidence is in Ohio and Mississippi areas. The disease is seen in immunocompromised patients who had association with disturbance of birds, bat or chicken droppings, soil or plant matter disruption, or demolitions or constructions. Pulmonary infection with Histoplasma capsulatum is common, but osteomyelitis and discitis are rare.

Case description: A 73-year old white immunocompetent male with history of chronic back pain and worsening symptoms of peripheral neuropathy was diagnosed of osteomyelitis on MRI of the lumbar spine. IR guided disc aspiration and culture results were negative for bacterial cultures. He was empirically treated with antibacterial agents to cover for common bacterial infections. After 6 weeks of antimicrobial therapy did not improve patient’s symptoms and repeat MRI of lumbar spine showed worsening inflammatory changes. The repeat IR aspiration of the L3-L4 disc was sent for extensive work up to look for other causes of chronic osteomyelitis: fungal organisms, tuberculosis and brucellosis.

All the work up was negative except for positive serum Histoplasma antibody, elevated ESR and CRP and positive beta D glucan assay. Treatment with itraconazole to cover for histoplasmosis was started empirically. Within 2 weeks of initiation of anti-fungal therapy there was marked improvement in both imaging studies and patient’s symptoms.

Discussion: In immunocompetent patients, histoplasmosis is usually asymptomatic. It is important to have a high index of clinical suspicion to look for fungal sources of infections in immunocompetent individuals, especially in older adults, as the preliminary data might not be very reliable to exclude fungal infections. In summary, we report a unique case of localized histoplasma spondylodiscitis who had no evidence of immunodeficiency and no history of travel to endemic regions and without any role of occupation involving environmental disturbance. To best of our knowledge, this is the second case in the literature of histoplasma affecting the vertebra and causing osteomyelitis.


A5
Tachycardia is Not Always Due to Dehydration in Elderly Patients with Advanced Dementia
A. Alsarah, R. Nakhleh. Geriatric Medicine, Hurley Medical Center, Flint, MI.

Background: Tachycardia is very common symptom in the elderly with wide differential diagnosis. Reaching the accurate diagnosis can be challenging sometimes especially in those with advanced dementia and it is usually attributed to dehydration.

Methods: 73 year old Female with advanced Alzheimer’s dementia (Stage 7a) presented by her daughter for evaluation of
frequent falls. She is mostly immobile and totally dependent on her daughter to do her activities of daily living (ADLs) and instrumental activities of daily living (IADLs).

Review of systems were limited due to dementia. Physical exam demonstrated a frail lady with a bruise on her head and regular tachycardia (HR 107 bpm). EKG showed sinus tachycardia. Her tachycardia improved after IV fluids, so it was attributed to dehydration and was sent home. Few days later, she visited Geriatric’s clinic for follow up. During this visit, she was still tachycardic and she has uncontrolled blood pressure, so we decided to start her on Carvedilol to control her pulse and blood pressure.

On her follow up visit one month later, her blood pressure was better controlled but her tachycardia continued despite taking Carvedilol regularly. EKG showed sinus tachycardia with McGinn White (SIQ3T3) sign, and P pulmonale in lead 2, consisted with right ventricular strain. Having in mind her age, sedentary lifestyle, and those EKG changes pulmonary embolism needed to be excluded as a serious cause of her sinus tachycardia. D-Dimer Quantitative was >10000.00 (H), the normal range is 0 - 499 NG/ML. CT chest with contrast demonstrates acute bilateral pulmonary embolism.

Results: Coagulation activity is increased in the elderly, and long-term immobilization further accelerates their hemostatic hyperactivity. Our patient was at high risk of having pulmonary embolism due to her advanced age, immobility, and hypertension. Most elderly patients with severe dementia have the same risk factors.

Conclusions: Elderly patients have high risk to develop coagulopathic events, this risk increases when they are immobile. It is important to keep these factors in mind when evaluating and treating sinus tachycardia in this age group. EKG is very simple and important tool and it should be carefully evaluated in patients with tachycardia who are not able to provide good history due to dementia.

References:
1. Kazuomi Kario et al. which factors affect high D-dimer levels in the elderly?

A6 Kyphoplasty in Vertebral Compression Fracture in the Elderly
A. Sinha, M. Otto. Geriatric Medicine, University of Florida, Gainesville, FL.

Introduction
Osteoporotic vertebral compression fracture (OVCF) is the most common sequela of osteoporosis, at an estimated annual incidence of 700,000 of 1.5 million osteoporotic fractures. Vertebroplasty (VP) and Kyphoplasty (KP) are minimally invasive procedures as an alternate to conservative management. Our case study focuses on reviewing the existing data in conservative versus operative management of OVCF in elderly.

Case Report
93-year-old previously independent and functional woman, with history of hypertension, and post-traumatic L1 compression fracture presented to the ER with worsening lower back pain since 6 weeks. Her L1 compression fracture was diagnosed 6 months ago, and managed conservatively with NSAIDs, brace, and calcium-Vitamin D supplementation. Her CT scan showed progression of the OVCF, 50% loss of height, and significant lucency of vertebrae, without signs or symptoms of spinal compression (Figure 1a/b). She continued to have severe pain requiring frequent intravenous narcotics. She was evaluated by interventional radiology, and elected to undergo KP (Figure 1c/d). She was eventually discharged to rehabilitation with physical therapy, acetaminophen for pain control, and follow up for osteoporosis treatment.

Discussion
Treatment of OVCF includes pain control, mobility and secondary prevention of fractures. There is conflicting data in pain control and functional outcome in conservative treatment versus VP/KP. Prior randomized controlled trials comparing VP with sham procedure did not reveal any difference in pain control, while a recent meta-analysis found that both KP and VP had better results with pain control in short term follow up but equivalent results on long term follow up. A recent prospective study concluded that elderly female patients with OVCF in the junctional region are at risk of conservative treatment failure, and should be offered KP/VP. All studies noted equivalent results in incidence of new fractures. Larger studies are required comparing BK and conservative management in acute and sub-acute OVCF.
A8
An atypical presentation of B cell lymphoma in the setting of advanced dementia
A. RIAH,1 E. Mohan.2 1. GERIATRICS, UPMC, MONROEVILLE, PA; 2. UPMC St. Margaret, Pittsburgh, PA.

BACKGROUND: Non-Hodgkin’s Lymphoma (NHL) can originate in lymphocytes of any cell line including B cells, commonly presenting at the GI tract and salivary glands. NHL of the ear is rare; primary NHL of the external auditory canal occurring in only a few reported cases internationally. This patient with advanced dementia presented with otalgia and otorrhea and was diagnosed with B cell lymphoma. The diagnosis and management are challenging due to her atypical presentation, care setting and dementia.

CASE: 87 y/o female with Alzheimer’s Disease in long-term care presents with otorhea and otalgia. Patient’s agitation and poor participation limit the exam. She is unable to communicate due to advanced dementia; history is obtained from family and staff. Exam of the R ear shows purulent, malodorous discharge in the canal without visualization of the TM. We treated for perforated TM with otitis externa/media with course of topical and oral antibiotics with some improvement. On follow-up, a new preauricular mass is noted with foul-smelling drainage in the ear canal. The mass is soft and mobile with discoloration (pic 1). Given persistence of mass followed by development of a new post-auralic mass, ENT is consulted. CT of the temporal bones is ordered. She required premedication for agitation. CT revealed masses at the right external auditory canal (pic 2), postauricular region and occipital soft tissue, all suspicious for malignancy. FNA of the right post auralic mass shows malignant cells favoring B-cell NHL. There is ongoing discussion with family and care team, eventually resulting in hospice care for the patient.

DISCUSSION: B cell lymphomas account for 85% of NHL in the United States and 2.5% of head and neck cancer. Risk factors: age >60, gender, Caucasian race, autoimmune disease, immunocompromise, radiation exposure. Oタルgia with ototonomia is not an uncommon complaint in the elderly population, but it is a rare manifestation of malignancy. Management is challenging in the setting of a patient with advanced dementia who is unable to relay her symptoms. Appropriate evaluation without subjecting the patient to undue anxiety requires an ongoing conversation between the patient’s family and care team. In this case, the family opted to investigate until a diagnosis was made and then advocate for the patient’s comfort.

A9
Drug induced Parkinsonism Impacting Functional Status and Treatment Options in an Elderly Female Patient
A. C. Thomas,1 M. A. Bender.2 1. Division of Geriatrics and Gerontology, University of Washington, Seattle, WA; 2. Department of Family Medicine, Palliative Care Section, University of Washington, Seattle, WA.

Background: Drug-Induced Parkinsonism (DIP) is a rare adverse effect of anti-psychotics, many anti-emetics, and anti-epileptic drugs—medications commonly used in geriatric and palliative-care patients. Incidence is higher with older age, with cognitive impairment, and in females. In one study, up to 50% of patients diagnosed with Parkinson Disease in a geriatrics clinic were found to have DIP.

Methods: Palliative Care was consulted for symptom management and goals of care on a 72-year-old woman with high-grade mullerian adenocarcinoma admitted one month after her 2nd cycle of chemotherapy with intractable nausea, vomiting, and rapid decline in functional status. Anti-emetics included scheduled prochlorperazine and ondansetron, with as-needed metoclopramide and lorazepam.

The patient reportedly had “contractures” that made participating in therapy difficult. On exam, patient demonstrated flat affect, slowed speech, upper extremity rigidity, and resting tremor. The patient expressed a wish “to live” and receive more cancer treatment. Given her antiemetic regimen and physical exam findings, we worried that she may have DIP, and we recommended a Neurology consult.

Results: Neurology agreed with likely diagnosis of Drug-Induced Parkinsonism and recommended stopping metoclopramide and prochlorperazine and avoiding other dopamine-depleting drugs. Idiopathic Parkinson Disease and metabolic and infectious causes of Parkinsonism were unlikely due to rapid onset of symptoms and normal LFTs/calcium and negative HIV test. The patient’s nausea was controlled with ondansetron and lorazepam. She was discharged to a nursing facility, and she improved enough to have more chemotherapy.

Conclusion: Geriatric and palliative-care clinicians should be familiar with diagnosis and treatment of DIP given higher incidence with older age and polypharmacy. It can cause significant functional decline, and 80% of patients with DIP return to their baseline functional status with discontinuation of inciting medications. In this case, the patient had some resolution of DIP that helped improve her functional status enough to receive more chemotherapy, but she had serious complications and was later discharged to a nursing facility on hospice.

A10
Physical performance, functionality and frailty in older adults living in urban and rural communities in Parana - Brazil
A. K. Kayano,1 A. H. Scandolara,1 F. Bortolfo,2 C. Venturin,1 D. Sernas,1 A. Feronatto,1 F. Costa,1 A. Beule,1 T. Ramon,1 F. Brandt,1 A. Neves,1 M. Santos,3 T. Coelho,1 J. Geriatria, Prefeitura Municipal Renascença, Francisco Beltrão, Brazil; 2. Physiotherapy, Unisep, Francisco Beltrão, Brazil; 3. Medicina Francisco Beltrão, Unioeste, Francisco Beltrão, Brazil.

Background: The independence in activities of daily living impacts elderly quality of life. Improve elderly physical performance and functionality is one of the outcome in intervention studies. Frailty is a clinical phenotype and identify pre-frail patients is important in clinical practice. In our Geriatric outpatient unit we assist patients from urban and rural area. The aim of this study is compare the physical performance, functionality and the prevalence of pre-frailty and frailty, between elderly patients living in rural or urban communities in Renascença – PR.

Methods: In this cross sectional study we assessed 48 patients from Geriatric Outpatient Clinic at Renascença-PR Health Unit. We applied the Short Physical Performance Battery (SPPB) test validated for Brazilian Portuguese, Frail Scale adapted for Portuguese, and functionality scales from Katz and Lawton. We also evaluated memory (MMSE), nutritional status (MNA) and Charlson comorbidity index (CCI).

Results: We evaluated 48 patients, 29 women and 19 men, mean age 69,06 years (SD=8,24). 33 individuals living in urban and 15 in rural community. The mean SPPB score was 8,13 (+-1,40) in rural and 8,09 (+-2,15) in urban area. There is no correlation between rural area and SPPB (r=0,010, p ns). The prevalence of frailty in rural area was 7% and urban 9%. We found 11 (73%) pre-frail patients in rural and 21(64%) pre-frail patients in urban area. The functionality evaluated by Katz score was 5,80 (+-0,41) in rural area and 5,48 (+-0,66) in urban area. The evaluation of Instrumental activities of daily living was 25,53 (+-3,09) in rural and 25,75 (+-3,27) in urban area. There are no correlations between functionality and living area (r=0,241 Katz and r=0,033 Lawton, p ns).

Conclusion: There are no difference in physical performance, functionality and prevalence of frailty and pre-frailty between elderly living in urban and rural area in our sample of patients. We found a high prevalence of pre-frailty in our population (73% rural area and 64% urban area).
A11
A Hard Case to Crack: Hypercalcemia in the Setting of Acute Encephalopathy

Background:
Hypercalcemia is commonly found with primary hyperparathyroidism and malignancy, comprising more than 90% of cases. Clinical manifestations range from gastrointestinal complaints, hypertension and encephalopathy. We present a case of delirium in the setting of hypercalcemia of unknown etiology.

Case Report:
Our patient is a 75 year old female nursing home resident with chronic kidney disease, rheumatoid arthritis, CREST syndrome, and history of subtotal parathyroidectomy. The patient exhibited increased confusion, paranoia, and hallucinations. The initial work up revealed hypercalcemia and acute on chronic renal injury. She was administered IV fluids in the facility in an attempt to lower the calcium via hydration. Such efforts resulted in improved renal function but failed to lower the serum calcium or improve delirium. She was hospitalized for further work up, which revealed a suppressed PTH and elevated PTH-rp. Extensive computed tomography failed to reveal a source for the PTH-rp. The patient’s hypercalcemia and mental status ultimately returned to baseline with a one-time dose of IV pamidronate and hydration. Her calcium has since remained within normal limits.

Discussion:
This case highlights the importance of a systematic approach to treating delirium caused by hypercalcemia in older adults. Treating with IV hydration to help correct calcium levels and improve renal function is a critical initial step. If only mild improvement of calcium results, it is appropriate to trial IV pamidronate. Further testing is warranted to investigate other causes of hypercalcemia. Primary hyperparathyroidism is diagnosed with normal and elevated PTH levels. Low to normal PTH levels suggest a non-parathyroid etiology. Our patient’s low PTH was not surprising given her history of subtotal parathyroidectomy. Her PTH-rp was elevated, suggesting a solid tumor given that PTH-rp is overexpressed in many neoplasms. The critical next step is imaging to locate a solid mass. None was found in our patient but she refused mammography, hence we cannot be certain of the absence of a breast malignancy. She has no constitutional symptoms and has refused further work up, as it is inconsistent with her goals of care. We continue weekly monitoring of serum calcium with the plan to treat with pamidronate in the event of recurrent calcium elevation and delirium.

A12
An atypical case of moyamoya syndrome
A. Lwanga,1,2 W. Herrera,3 K. Cruz,1,2 A. Irungu,3 1. IM/Geri, UIC, Chicago, IL; 2. IM/Geri, Jessi Brown VA, Chicago, IL; 3. IM, Northshore University HealthSystem, Evanston, IL; 4. Ross, Portsmouth, Dominica.

Introduction: Moyamoya disease is a rare condition where chronic, progressive occlusion of the internal carotid arteries (ICA) & circle of Willis occurs. The resultant ischemia produces compensatory angiogenesis, stimulating growth of a network of collateral blood vessels that on angiography resemble a “puff of smoke” or “moyamoya” in Japanese. In the USA the incidence is 0.086/100,000; it is more common in females, individuals of Asian descent, & those in their 1st and 4th decades of life. In African Americans (AA) moyamoya tends to occur at younger age in association with sickle cell. It can be congenital, acquired, or idiopathic; the pathophysiology is not well understood, & the cause remains unknown. In cases where the individual has a preexisting hemoglobinopathy, autoimmune disorder, or congenital syndrome, such as Down syndrome, associated with moyamoya, the diagnosis is moyamoya syndrome rather than moyamoya disease. It is often identified on CTA, or MRA of the brain after patient a presents with CVA or seizures. Unilateral cases must be confirmed with catheter angiography. Urgent revascularization is the first line treatment.

Case: A 55-year-old female presented to the ER complaining of headache, vision loss, and dysarthria, and ataxia. She had a history of Down syndrome, and a CVA with mild leg weakness. She lived with her sister, was able to perform her ADLs but needed assistance with her IADLs. Her family history was unremarkable; she took aspirin & atorvastatin. Her blood pressure was 144/85, she was obese, had Down-like facies, left facial droop, right gaze preference, blindness, dysarthria, 3/5 strength in the left upper extremity, & 2/5 strength in the left lower extremity. Brain CT showed a right occipital/temporal/parietal hypodensities. CTA of the head and neck, showed occlusion of the bilateral supraclinoid ICA & right PCA, with collateral arterial flow within the right MCA & ACA consistent with moyamoya.

Discussion: This case is unusual because of the occurrence of moyamoya syndrome in an African American female with Down & Geriatric syndromes. This case is relevant to geriatricians as Down syndrome is a progeroid syndrome; by the time affected individuals reach their 40s they have medical comorbidities, neuropathological changes, functional deficits, and social problems commonly seen in older adults.

A13
“She can walk”...miracles happen when we de-prescribe
A. Lwanga,1,2 T. Kaur,1 G. Luna,3 J. IM-Geri, UIC, Chicago, IL; 2. IM-Geri, Jessi Brown VA, Chicago, IL; 3. IM-Geri, UIC, Chicago, IL.

Introduction: Second generation antipsychotics (SGA) are the agents of choice to manage behavioral disturbance and psychosis in older adults with dementia. Risperidone, a SGA with SHT2, D2, alpha 1, alpha 2, and H1 antagonistic properties, is no longer indicated for treatment of dementia related psychosis in older adults because of the increased risk of death. Additional side effects include mild sedation, EEG abnormalities, orthostatic hypotension, EPS, tardive dyskinesia, hyperprolactinemia, and cognitive impairment.

Case: A 62-year-old female, who had been bed bound for 10 months, suddenly got up and walked to the nursing station. The nursing home (NH) staff were surprised because they had never seen the patient walk. The day prior her risperidone, 0.5mg PO BID PRN, had been discontinued. The patient had been put on the medication, while residing at another NH, to manage aggression & agitation. She had a history of frontotemporal dementia with psychosis & behavioral disturbance, and CVA with residual dysphagia & aphasia. We were unable to obtain a social history, but confirmed that she had a family history of dementia. She did not have allergies; in addition to risperidone, she took aspirin, atorvastatin, and acetaminophen. Her vitals were within normal limits. The physical exam was remarkable for a slim build, dyskinesia of the right upper extremity, hemibalism, and akathasia. She was alert, not verbal, not oriented to person place & time, and did not follow commands. The rest of her exam was limited by poor cooperation.

Discussion: We were surprised to discover that a small dose of risperidone sedated the patient to the point that she became non-ambulatory. Risperidone increases in concentration, at higher doses, in patients with dementia. It is possible that the patient did not adapt to the lower dose of risperidone, resulting in sedation. She was able to walk shortly after discontinuing the medication. It is likely that other individual factors, such as CYP2D6 enzyme level, played a role in how she metabolized risperidone.
**A14**

Cowden-like syndrome in a geriatric patient

A. Lwanga,1,2 G. Luna,1 K. Cruz,1,2 1. Geriatrics, UIC, Chicago, IL; 2. Geriatrics, Jessi Brown VA, Chicago, IL.

**Introduction:** Cowden syndrome (CS), a PTEN hamartoma tumor syndrome (PHTS), was initially thought to be a dermatologic condition, but recently the phenotypic spectrum has been expanded to include neurodevelopmental disorders, & increased risk of inheriting benign & malignant tumors. Pathognomonic cutaneous lesions include trichilemmomas, acral keratosis, papillomatous lesions & mucosal lesions. Major clinical features include breast cancer, thyroid cancer, macrocephaly & endometrial cancer. Minor clinical features include thyroid lesions, intellectual disability, hamartomatous intestinal polyps, fibrocystic breast disease, lipomas, fibromas, genitourinary tumors & uterine fibroids. The diagnosis of CS is confirmed by pathognomonic mucocutaneous lesions, or Lhermitte-Duclos disease, or ≥2 major criteria, or one major & three minor criteria, or ≥4 minor criteria. Those, with characteristic features, who don’t meet the diagnostic criteria may have Cowden-like syndrome (CLS). Patients suspected of having CS/CLS, can have their clinical features entered into Cleveland Clinic’s risk calculation tool for estimating the risk of having a PTEN mutation; those with a score of ≥10 should be referred to a geneticist.

**Case:** An 81-year-old male presented to the clinic to refill his medications. He had a history of neurocognitive disorder, hypothyroidism, abdominal neuroangiomatosis, Warthin’s tumor of the parotid gland, brain AVM, benign left vocal cord tumor, colonic tubular adenomas, esophageal aperistalsis, HTN, chronic CAD, & multiple unprovoked PEs. He didn’t have a family history of malignancies. His physical exam was remarkable for obesity & unsteady gait. He was able to recall ¾ objects & had a normal clock-drawing test. Based on the risk calculation tool his score was 11 therefore we referred him to a geneticist.

**Discussion:** The presence of multiple anomalies in 1 patient, suggests that the occurrence is not due to chance. This patient has an unusual history & some clinical features consistent with CS, but doesn’t meet the diagnostic criteria therefore we suspect he has CLS. Older adults suspected of having a PHTS should be referred to a geneticist; the family history & information that they provide may be time sensitive & difficult to obtain as the patient ages. Even if the findings don’t change the management, they may have implications for the patient’s family.

**A15**

Non-traumatic lateral wall abdominal hernias in the setting of multiple bee stings

A. Lwanga,1,2 A. Sharma,1,2 G. Luna,1 T. Kaur.1 1. IM/Geri, UIC, Chicago, IL; 2. IM/Geri, Jessi Brown VA, Chicago, IL.

**Introduction:** Non-traumatic lateral abdominal wall hernias (NTLAWH) are rare. Risk factors include older age, diabetes mellitus, steroid use and tobacco abuse. We identified 3 case reports of NTLAWH, in adults, secondary to a congenital abdominal wall defect, excessive coughing, and lipodystrophy.

**Case:** A 68-year-old male presented with complaints of a painless “swelling” at his left flank. He was stung by 10 bees, in the same area, 1-month prior and noticed the swelling 2 weeks after completing a course of oral prednisone. He had a history of diabetes, hypertension, migraines, strokes, and COPD. His family history was unremarkable. His social history was remarkable for tobacco use. He was allergic to bee venom, and took albuterol, atorvastatin, lisinopril, metformin, and sumatRIPTAN. His vital signs and physical were remarkable for obesity, and a 15cm wide by 7 cm tall left sided flank mass that disappeared while lying in the right lateral decubitus position, and reappeared with coughing. CT of the chest and abdomen showed atrophy of the transverse abdominus and internal oblique muscles just below the costal margin at the mid-axillary line. The internal oblique muscles were intact. The patient felt that the mass was related to the bee stings.

**Discussion:** There are several case reports of atypical delayed reactions to bee stings such as soft tissue necrosis and mucosal lysis. Bee venom contains mellitin, which can cause hemolysis, inflammation, increased capillary permeability, smooth muscle contraction, & cell membrane lysis; it also contains mastoparan, phospholipase A, and hyaluronidase which can damage cell membranes. We suspect that bee venom obesity, steroid use, older age, and tobacco abuse thinned his collagen and caused atrophy of the muscles. The patient is scheduled to follow up with his surgeon.

**A16**

Drug-drug Interaction Leading to Fanconi’s Syndrome in a Geriatric Patient.

A. V. Sharma. Geriatric, University of Illinois at Chicago, Chicago, IL.

Polypharmacy is a major issue in geriatric practice. In cases where medications are necessary, knowing different drug-drug interactions can prevent undesirable consequences. We hereby present a case of 73-year-old man with a past medical history of HIV (on ritonavir, atazanavir, efavirenz, and tenofovir disoproxil fumarate) and hepatitis C (on ledipasvir-sofosbuvir) who presented to the geriatric clinic with chest pain, nausea, and vomiting. The patient was sent to ED subsequently where he was found to have serum potassium of 2.3 mEq/L, serum bicarbonate of 6.0 mEq/L, serum creatinine of 3.5 mg/dL, serum chloride of 118 mEq/L. Other significant urine studies included urine glucose of 573 mg/dL, urine protein levels of 27 mg/dL, urine creatinine of 16 mg/dL, urine sodium of 31 mEq/L with fractional excretion of sodium 4.8 % and transtubular potassium of 11.98 mEq/L suggestive of renal potassium wasting. Given the laboratory results, diagnosis of Fanconi’s syndrome was made. Fanconi’s syndrome (FS) was thought to be secondary to ledipasvir-sofosbuvir and tenofovir disoproxil fumarate (TDF) interaction. As such ledipasvir—sofosbuvir and TDF were discontinued resulting in improvement of his electrolyte derangement. The use of TDF has been associated with FS. Studies have shown that ledipasvir alone can cause an increase in tenofovir concentrations by 38 to 64 %. Hence, a theoretical increased risk of Fanconi Syndrome does exist with concomitant use of these drugs. Identifying such drug interactions is of clinical importance as early dose adjustment or drug cessation can help to prevent undesirable consequences. Furthermore, alternate therapy for HCV or HIV should be considered where there is a higher risk of having side effects caused by TDF. One such alternative therapy is the relatively new formulation of tenofovir, that is, tenofovir alafenamide (TAF) which has less renal toxicity as compared to TDF. In cases where such co-administration of these drugs is necessary, a systematic and periodic monitoring such as periodic renal function test can be done to monitor such side effects.

**REFERENCE:**


**A17**

Deaf, Blind and now Mute: An uncommon presentation of a common illness.

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**Introduction:** Depression can present with atypical features in the elderly and severe depression can mimic hypoactive delirium or worsening
A18 Markel cell cancer – An uncommon but aggressive “geriatric” cancer
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Background: Markel cell carcinoma (MCC) is a highly aggressive skin cancer that can start as indurated plaques or violaceous nodules and is considered to be a neuro endocrine tumor. More than half of MCC’s occur in the head & neck area of elderly patients in areas of actinic damage. The mean age at presentation is 68.

Case: Mr. PD is a 90 year old male with moderate dementia, HTN, DM II and a history of falls. He was hospitalized for a fall with scalp laceration. He arrived at our skilled nursing facility (SNF) for sub-acute rehab in May 2017. He was noted to have a bluish 3cm sized lesion on right temple. His family was advocated to seek dermatological attention at discharge. After finally getting to see Derm, a biopsy revealed an invasive Markel cell cancer. ENT advocated surgery as the tumor was growing rapidly. He was readmitted to our SNF in Nov 2017 after back to back hospital stays; first with another fall, rib fractures and hemothorax then for severe nutritional anasarca and frailty. He was placed on a wheelchair. During a 5 month period she had an acute decline with HCAP x 2, UTI, weight loss, worsening cognition, non-infectious diarrhea & anorexia. After ongoing discussions with POA, her code status became DNR with acute non-ICU level care. There was a limited trial of IV hydration and antibiotics for +HCAP in the SNF. Patient continued to decline and adamantly refused hospitalization and IV’s. POA then de-escalated goals of care to comfort & no AB. Patient was placed on hospice but improved remarkably. She is now eating, visiting with other patients, attending social activities, maintaining her weight, and thriving. Ever since care plans were de-escalated, she has had no fevers, worsening confusion, and her usual complaints of pain or diarrhea have ceased. Hospice has signed off.

Conclusions: Goals of care discussion should occur on an ongoing basis. De-escalation of care can improve outcomes. Quality of life is improved instead of the patient often times putting his/her energy into resisting unwanted aggressive and invasive therapies and testing.

A19 The importance of value based, patient directed care in Skilled Nursing facilities (SNF’s)
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Background: Many patients with dementia in SNF’s receive burdensome care near end of life that neither improves outcomes nor quality. Two case studies will illustrate that as the geriatric patient’s health declines it is imperative to revisit goals of care which can improve quality of life and not always hasten death.

Case 1: 72 y.o male & a long term care patient with a PMH of recurrent UTI’s, COPD, aspiration pneumonias, schizoafffective disorder, cognitive decline & seizures. He had multiple episodes of encephalopathy and UTI’s over the last year. At baseline he would be slightly agitated even on high doses of antipsychotics. He continued with intermittent UTIs that required IV AB for resistant bacteria that triggered severe agitation. Upon goal of care discussion with his POA, she de-escalated treatment in stages from limited interventions to comfort measures only. Patient has been without episodes of infection or agitation. Since de-escalation of therapy (3 months and counting) this patient is now more interactive and enjoys activities and eating and is on historically lowest doses of anti-psychotics.

Case 2: 88 y.o F and long term care patient with PMHx: HCAP, UTI’s, dementia, depression, post-herpetic neuralgia and frailty. Over the 4 years she has declined from using a walker to now getting around in a wheelchair. During a 5 month period she had an acute decline with HCAP x 2, UTI, weight loss, worsening cognition, non-infectious diarrhea & anorexia. After ongoing discussions with POA, her code status became DNR with acute non-ICU level care. There was a limited trial of IV hydration and antibiotics for +HCAP in the SNF. Patient continued to decline and adamantly refused hospitalization and IV’s. POA then de-escalated goals of care to comfort & no AB. Patient was placed on hospice but improved remarkably. She is now eating, visiting with other patients, attending social activities, maintaining her weight, and thriving. Ever since care plans were de-escalated, she has had no fevers, worsening confusion, and her usual complaints of pain or diarrhea have ceased. Hospice has signed off.

Conclusions: Goals of care discussion should occur on an ongoing basis. De-escalation of care can improve outcomes. Quality of life is improved instead of the patient often times putting his/her energy into resisting unwanted aggressive and invasive therapies and testing.
resuscitation. After 5 days of treating his underlying condition and seeing no improvement in his mental status from anoxic brain injury, the Geriatric and Palliative Medicine team was consulted to find a surrogate and address goals of care. After an extensive search, a close friend from the patient’s workplace was identified. He confirmed that the patient was estranged from his family with no contact for over 20 years, which he attributed to his sexual orientation. The friend was willing to act as a surrogate for health care decisions. After much deliberation, the friend believed that the patient would not want to be kept alive via technological support and authorized withdrawal of care.

Discussion
There is little in the realm of research and literature on the topic of Geriatric LGBTQ care. One common issue is hesitancy to reveal their sexual identity to others and mistrust of the medical system. This leads to a decreased likelihood of advanced care planning. It is imperative as Geriatricians that we create an inclusive environment and overtly recognize, place importance on, and involve an individual’s partner in advance care planning. Further research and government advocacy is needed to increase the number of advance care directives completed and usage of partners or families of choice in end of life care.

A21
Non-surgical treatment for BCC
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Background: Basal cell carcinoma (BCC) is the most common type of skin cancer. Surgery is the gold standard treatment of BCC, but there are other effective non-surgical options such as imiquimod cream, fluorouracil cream, and photodynamic therapy. In this case, we describe the successful treatment of BCC with imiquimod cream with a patient who was unable to undergo surgery.

Case: A 96-year-old woman is homebound due to ambulatory dysfunction, osteoarthritis, and generalized anxiety disorder with agoraphobia. She lives with her son in a 2-story home. On a home visit, she presented with a painless, red ulcer with raised edges on the left side of her nose. She reported that the ulcer did not bother her, except that it would occasionally bleed. At that visit, we recommended that she have the lesion excised by a dermatologist due. However, the patient was adamant that she did not want to leave her home and undergo surgery, so no treatment was recommended at that time. The patient’s son called a few weeks later and requested an alternative treatment for the ulcer, as it was growing in size and bleeding more frequently. The physician contacted a dermatologist about non-surgical options who recommended a trial with imiquimod cream. The cream was applied daily for 8 weeks with complete resolution of the lesion (see Figure 1).

Discussion: Imiquimod 5% cream, brand name Aldara, has an FDA approved indication for the treatment of superficial BCC. The FDA approved treatment regimen is the use of imiquimod 5 times per week for 8 hours per day for 6 weeks total. The use of imiquimod for BCC has been studied to test its non-inferiority to surgery. The study found that imiquimod was inferior to surgery for patients with superficial and nodular tumors. The 5-year success rate for those who received imiquimod was 82.5% (170/206) and 97.7% (173/177) for those who received surgery. Even though the success rate was lower in those who were treated with imiquimod, it is noted that most of the treatment failures occurred within the first year. There is potential for imiquimod therapy to be used as treatment for BCC for those who may not tolerate surgery and recurrence is decreased in those who respond early to imiquimod therapy.

Conclusion: Although surgery is the gold standard treatment for BCC, effective non-surgical therapies are important to consider and may be more appropriate for frail older adults with limited life expectancy.

A22
Geriatric End-Stage Depression
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Geriatric depression can progress to severe disease refractory to medication and electroconvulsive therapy requiring reassessment of quality of life and goals of care at the end of life. A 69yo male veteran with depression, Parkinson’s disease and dementia was admitted to the Geriatric Evaluation Management Unit at the VA for rehabilitation after a fall. Admission was complicated by severe depression.

His psychiatric history was notable for 21-year history of depression with multiple episodes catatonic state with nihilism and delusions. In addition to trialing numerous psychotropic medications, patient received ECT every 2 weeks for refractory depression soon after diagnosis. He required several hospitalizations in the mental health unit for major depressive episodes. In the year prior to admission he had three admissions for severe depression.

Upon admission, patient was depressed with prominent nihilism. He was interactive and participating in therapy. During prolonged course, patient was noted to have cognitive and functional decline. Complications included persistent hypoactive delirium, Parkinsonian crisis and major depressive episode with catatonia. Medical work up did not elucidate cause for delirium. Pharmacotherapy was titrated with poor response. ECT was resumed, however, he started to have less improvement of catatonia post-ECT. The veteran expressed desire to stop ECT, however his activated HCPOA wanted to continue as he had improved with treatment historically. Eventually patient became non-responsive and was unable to perform any ADLs including maintaining nutrition and hydration status. Multiple discussions ensued between the primary geriatrics team, psychiatry and palliative care consultants to discuss risks and benefits in continuing with ECT. ECT was stopped per medical recommendations and the vet was transitioned to hospice care. He died four days later.

Depression is the most common mental health problem in the geriatric population. Treatment resistance is associated with increased morbidity and mortality. This case highlights the progression to end-stage depression in the setting of comorbid dementia and Parkinson’s disease. Severe depression requires reassessment of ability to effectively and ethically treat patients. For this patient, it was difficult for his medical providers and family to finally conclude that there was no further therapeutic benefit in treating his depression. In such cases, palliative care can help provide better quality of life to prevent further suffering.

A23
Giant Cell Arteritis in the Oldest Old
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Background: Giant cell arteritis (GCA), or temporal arteritis, is characteristically a vasculitis affecting older adults. It is a rare disease that poses the threat of vision loss and must be promptly recognized, diagnosed and treated. ESR remains one of the mainstays in the diagnostic workup of GCA and the tracking of it over time.

Case: A 91-year-old female with major neurocognitive impairment developed acute onset, bilateral temporal headache and photophobia for one day. On physical exam, her vital signs were within normal limits. She appeared uncomfortable, lying in bed, holding her head in her hands. Her mandible was not tender to palpation. The remainder of her examination was unremarkable. A moderate dose of prednisone 20 mg a day was initiated for suspected GCA while
A24 Tumor Infiltration of Inferior Vena Cava Masquerading as Right-Sided Heart Failure


Right-sided heart failure (RHF) can often be managed successfully with diuretics. When clinical symptoms of dyspnea and volume overload are not responsive to escalation of pharmacologic treatment, alternative etiologies should be investigated.

An 80 year old female nursing home resident with a past medical history significant for morbid obesity, OSA on CPAP, COPD, colon cancer and RHF controlled with diuretics, presented with rapid weight gain and worsening peripheral edema. Aggressive titration of diuretics was ineffective in reducing these symptoms and resulted in acute kidney insufficiency (Cr = 2.22). Enlarging cervical lymphadenopathy prompted a CT scan that revealed a renal pelvis mass in the right kidney. Subsequent biopsy results confirmed clear cell renal cell carcinoma. With progression of her CKD from stage III to stage IV and new malignancy, nephrology and oncology were consulted. Prerenal azotemia was suspected and her diuretics were reduced, but her AKI failed to improve. The patient continued to have progressive symptoms of dyspnea at rest and paroxysmal nocturnal dyspnea. An echocardiogram identified tumor infiltration in the IVC extending into the right atrium. With poor functional status and vascular complication, the patient was not a candidate for treatment. She transitioned to hospice and died six weeks after the initial diagnosis of renal cell carcinoma.

Consideration of alternative differential diagnoses is necessary when patients are presenting with refractory volume overload despite appropriate treatment of decompensated right-sided heart failure. Tumor thrombus of inferior vena cava infiltration occurs in 15% of renal cell carcinoma cases and up to 1% with extension into the right atrium (1,2) and may present with venous congestion, peripheral edema and dyspnea (1,2). In this case, further imaging was crucial in discovering the etiology of her symptoms, allowing appropriate end of life care.


A25 Not Culturally Demented – A Case Report


Introduction: Americans are aging, and about 20% of total US population will be reaching 65 by year 2030. Asians Americans are one of the fastest growing ethnicity in the US, and Chinese American is the largest sub-group among Asian Americans. Chinese tend to view memory issues as part of normal aging, and behavioral problems of dementia brings shame and embarrassment to the family. This report describes a case of failure to recognize dementia with behavioral disturbances in a Chinese American elderly male leading to serious health issue and an extensive workup.

Case discussion: A 70-year-old Chinese-American male with a remote history of duodenal ulcer was admitted to the hospital for microcytic anemia. He denied any acute symptoms of anemia or recent history of GI bleeding. His only symptom was chronic bilateral foot pain. His baseline hemoglobin was around 8 g/dL from six months ago. Patient’s initial labs showed Hb 4.1 g/dL, Hct 13.9%, MCV 62.8 fl, ferritin 3.8 mg/mL, B12 190 pg/mL, folate 12.3 mg/L and TSH 0.525 micro IU/mL. During his admission, patient received 3 units of pRBC transfusion. He had an extensive GI workup including endoscopy, colonoscopy and barium swallow, which are all unremarkable. Upon further questioning, family revealed that patient performs a self-invented technique of “acupuncture with cupping” to induce bleeding from his lower extremities veins daily to ease his leg pain. The family does not consider this technique an odd behavior because both acupuncture and cupping are usual Chinese practices. A Chinese geriatrician was consulted for cognitive evaluation. Family indicated patient has been increasingly forgetful which was attributed to normal aging. He was found to have MMSE score of 15/30. He was discharged after both he and his family were counseled about dementia with behavioral disturbances.

Discussion: Dementia is viewed differently among different cultures. Some communities, such as the East Asians population, associate dementia as part of normal aging, while others may consider it as a mental illness. Initiatives to improve dementia literacy and awareness among ethnic minorities would help in early detection of the illness. Further studies are also needed to provide culturally sensitive care to patients with dementia.

A26 Pseudo-Dystonia: It’s Not Me; It’s You


Introduction: Pseudo-dystonia (psychogenic/functional dystonia) is a movement disorder (MD) of unknown neurological cause. Awareness has increased recently. Not fully understood, pathogenesis is presumed due to underlying psychological factors. One theory invokes the subconscious, the person unaware symptoms may be under voluntary control. Some are a form of conversion disorder, triggered by psychic trauma. It is similar to the organic form with abnormal posturing, repeated movements, or tics. MDs are common in geriatrics, and without awareness of pseudo-dystonia, they may go unrecognized or inappropriately treated.
Clinical Scenario: A 70-year-old man with anxiety and depression presented to the ED with 6 months of increased anxiety, one of involuntary movements/grunting. Fed up, his wife had called EMS. Initially noted were involuntary throat clearing/grunting, neck and facial tics, and RUE movements. Non-contrast CT head/brain, CBC, CMP, drug screen and EKG were normal. He was admitted. He felt worse after a move from Indiana, blaming his wife who wanted to be closer to their grandchildren. He denied mania, alcohol use, illicit drugs, or tobacco. In frustration he drove to Indiana in hopes of improving. Hospitalized there, he returned to Arizona. He was only minimally improved with Zyprexa, Lexapro, and Klonopin despite 6 hospitalizations. New movement symptoms suggested an AE; Zyprexa was decreased, Cogentin added, Klonopin and Lexapro discontinued. We saw higher tic/grunting frequency in his wife’s presence, increasing as her voice became higher. He was able to prevent them in her absence. Transferred to Mikatapine, he weaned off Zyprexa. Abnormal movements/grunting continued, improved with group and CBT. On discharge, he recognized marital issues and inability to communicate with his wife, agreeing to marital counseling, continued CBT, and regular psychiatric care.

Discussion: These complex patients require a multidisciplinary team approach (psychiatrist, MD neurologist, psychotherapist and PT). Conveying the diagnosis non-judgmentally is critical, as is helping understand treatment options. The goal is to lessen symptoms/improve function by helping the brain override triggers. Actively participating patients benefit most from treatment, and provider awareness avoids re-testing and re-admission.

A27 Ogilvie’s Syndrome: A Not So Common Case of Constipation
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Introduction: Ogilvie’s syndrome (acute colonic pseudo-obstruction) is non-obstructive dilation of the colon with hindered intestinal flow. Usually in the cecum and right hemi-colon, it may extend to the rectum. In a study of 400 cases it was commonest in the 6th decade of life, mostly in men. Cause remains unknown, but disruption to the rectum. In a study of 400 cases it was commonest in the 6th decade of life, mostly in men. Cause remains unknown, but disruption to the rectum.

Clinical Scenario: A 97 year old hypertensive, hyperlipidemic man presented to our ED with decreased cognition and distended abdomen noted at his independent living facility. A poor historian, he mentioned recent constipation treated with senna bid. CT head was normal; bowel sounds, no pain or tenderness. CT abdomen/pelvis noted significant distension from the sigmoid to the LQ; volvulus was suspected. Incidental bladder displacement and right hydronephrosis, due to compression from distended bowel, was also present. Gastrografin study showed marked distention of the sigmoid colon, no volvulus. He was admitted with the diagnosis of Ogilvie’s syndrome. Managed conservatively, he improved cognitively; however, distension continued to worsen. Coronary calcification and stents on CT indicated a history of CAD. Colorectal surgery was not possible; he had colonoscopy and decompression on day 6. No mechanical obstruction or volvulus were noted. Improved, he was transferred to rehab and aggressive bowel care was continued.

Discussion: Abdominal distention, gradual or acute, is the main clinical finding in Ogilvie’s. Symptoms can be vague; patients present with constipation or diarrhea. Bowel sounds are usually present. Presentation and imaging establish the diagnosis. Perforation risk increases with distention > 6 days or cecal diameter > 10 cm. Despite outpatient Rx with stimulants, he had a large amount of retained stool; dilation was likely chronic, occurring over weeks. Early recognition and appropriate management is critical in minimizing complications. Vigilance is imperative in geriatric patients; a simple constipation visit may not be so simple.

A28 The other side of the coin: Urinary tract Infection, dementia, and preventable morbidity
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Introduction: Urinary tract infection (UTI) is commonly over diagnosed leading to inappropriate treatment among nursing home (NH) residents with dementia, but must be considered with acute onset of behavioral symptoms. Appropriate history, identification of signs and symptoms, and prompt communication between caregivers and medical providers are essential to making an accurate diagnosis and preventing morbidity.

Case: A 75 year old woman with frontotemporal dementia residing in a NH exhibited increased incidents of physical aggression, paranoid delusions, and hollering out. Risperidone 0.5mg BID ppr and a behavior log to evaluate for triggers were initiated. Symptoms persisted without clear environmental triggers and 10 days after initial presentation, staff observed crying with urination. Exam at that time showed no suprapubic or costovertebral angle tenderness and documented vital signs were repeatedly normal with a temperature of 36.9°C. Unsuccessful attempts were made to obtain a urinalysis with culture. Subsequently, the resident sustained a fall complicated by a comminuted right intertrochanteric femur fracture for which she underwent open reduction and internal fixation. Urinalysis was positive for nitrates, moderate leukocyte esterase, and 100+ WBCs. Urine culture grew >100,000 colonies/ml of E. coli and the resident was treated with five days of IV ceftriaxone 1 g daily. Root cause analysis revealed several temperatures of <36°C during the 2 week span of increased behaviors that were not communicated to providers or documented in the section of the chart designated for vital signs.

Discussion: Behavioral and psychological symptoms in dementia (BPSD) are often incorrectly attributed to UTIs though the literature suggests the prevalence of underlying medical conditions in BPSD is significant. We present a common scenario of BPSD with an uncommon or easily missed objective finding of a temperature <36°C as a marker of infection. It is imperative to educate NH staff regarding the importance of appropriate documentation and communication of both elevated and decreased temperatures as was done in our NH based on this case.


A29 Learning from a National Mentoring Program in Long-Term Care
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Now in its fifth year, the American College of Health Care Administrator’s (ACHCA) signature National Mentoring Program seeks to transform and enhance leadership through mentoring in the field of long-term care. Efforts began in 2008 to recruit experienced “Fellows” of ACHCA that would be mentors to inexperienced or soon-to-be administrators. A grant from a national nursing home organization was established in 2011 providing the foundation to promulgate the ACHCA Mentoring Program. In 2012, the first cohort was chosen from experienced field of long-term care. Efforts began in 2008 to recruit experienced “Fellows” of ACHCA that would be mentors to inexperienced or soon-to-be administrators. A grant from a national nursing home organization was established in 2011 providing the foundation to promulgate the ACHCA Mentoring Program. In 2012, the first cohort was chosen from experienced
the state and chapter level, resulting in dramatically increased participation. In addition, a research study is now underway to examine the quantitative and qualitative aspects of the program in order to sustain its growth and viability. This session will introduce the model chosen to implement the program that engenders relational success between the mentors and protégés. Participants will learn about the barriers and obstacles encountered and best practices utilized by the ACHCA members that have facilitated its success.

A30 Colovesical fistula: an insidious presentation delaying diagnosis
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Introduction
We describe a case of a colovesical fistula (CVF) with insidious presentation, longstanding symptoms, and was finally diagnosed after an extensive workup. CVFs commonly present in the eighth decade of life, usually with dysuria, and are often misdiagnosed as recurrent urinary tract infections (UTIs). Given its benign presentation patients often undergo costly diagnostic procedures before a diagnosis is made. Case
An 83 year old female, with a history of hypertension, diverticulosis, and a complete vaginal hysterectomy, initially presented to her primary care provider with complaints of ‘vaginal bleeding’. Over the course of three years the patient frequently presented with symptoms of dysuria, suprapubic pain, urinary frequency and incontinence. Multiple urinalysis were indicative of a urinary tract infection, and urine cultures grew multiple bacterial morphotypes. The patient was treated for recurrent urinary tract infections. Symptoms progressed to pneumaturia; she then noticed dark urine, and then specks of feces in her urine (or fecaluria). A CT scan with oral and intravenous contrast was done, demonstrating diverticulitis and air within the urinary bladder, strongly suggestive of a fistula but no evidence of a fistulous tract. A urologist suggested a cystoscopy, which was negative, followed by a poppy seed test, which was positive and definitively diagnosed a colovesical fistula. The patient underwent a successful laparoscopic repair of a colovesical fistula, likely secondary to diverticulitis.

Conclusion
Elderly patients often suffer from recurrent UTIs, and can present with atypical symptoms that may complicate diagnosis and delay treatment of the underlying pathology. Due to its unusual presentation patients are usually subjected to an intensive, sometimes invasive, workup, before a diagnosis is reached. We should have high index of suspicion for colovesical fistulae in patients with a history of diverticulosis, who present with recurrent UTIs, pneumaturia or fecaluria. Early recognition and diagnosis is essential to avoiding prolonged morbidity and an excessive work up.

A31 Diagnosis of neurocysticercosis in a patient with early onset advanced dementia
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Introduction
Neurocysticercosis (NCC) is the most frequent CNS parasitic disease, affecting 50 million people worldwide. Observed manifestations of parenchymal disease include seizures, while extraparenchymal disease is associated with hydrocephalus. Neuropsychiatric manifestations have been documented, but remain poorly characterized due to lack of controlled studies. Patients with NCC may present with mood disorders, with depression being the most commonly observed presentation, as well as cognitive impairment, affecting memory and executive function. Dementia, while a common geriatric syndrome, is a rare and not well studied presentation of NCC, with variations in prevalence estimated between 12.5% to 87.5% of patients with neurocysticercosis. We describe a case of NCC in a 59-year-old male, who presented with advanced dementia.

Case
A 59-year-old male from the Dominican Republic, with a history of early-onset severe dementia (MoCA 3/30) on donepezil and memantine, presented to establish care with a geriatrician. He experienced significant memory problems, which progressed rapidly over the last five years, affecting his job as a taxi driver. He emigrated from the Dominican Republic at 17 years old; he never lived on a farm or ate undercooked pork, but worked in a restaurant for many years. Family history was positive for late onset dementia in his father. His history was negative for head trauma, or psychosocial stressors, but positive for a prior history of heavy alcohol use. Neuropsychiatric testing in 2014 was consistent with a neurodegenerative process, likely Alzheimer’s disease or a combine Alzheimer’s disease and vascular dementia. A 2014 head CT scan demonstrated calcifications, without mention of etiology, and a repeat 2016 head CT reported punctate parenchymal multifocal dystrophic calcifications, most consistent with prior NCC. Patient was referred to infectious disease and neurology for co-management.

Conclusion
Dementia can be multifactorial and in this patient numerous factors likely played a role. He carries a diagnosis of Alzheimer’s disease, but recognition of active NCC and potential treatment might affect his prognosis. We highlight the importance of a thorough history, a detailed transition of care, and discuss the relevance of imaging in the setting of dementia.

A32 How much morphine can I pack in my luggage? Smooth sailing (and flying) when seriously ill
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Background
When cure is not possible, our elderly living with serious illness may pursue “final wish” travel plans to visit distant loved ones or special destinations. Geriatricians can help patients optimize comfort and avoid mishaps by preparing for possible challenges. Strategies include assessing medical stability for travel, anticipating symptoms, understanding local laws regarding opiates and other medications needed for comfort, having a plan for access to emergency care, and preparing for possible death while away.

Case Description
A 76-year-old Veteran was diagnosed with metastatic gastroesophageal cancer, without curative treatment options. Knowing his limited life expectancy, he made plans to travel and spend time with family in Nevada (for 2 weeks), Honduras (for 1 month), and London (for 3 months). The Geriatrics and Palliative care team had prescribed daily oral opiates (long and short acting) for his cancer-related abdominal pain. A community hospice agency had enrolled him for his home-based care. He had Veterans Affairs medical benefits and no other health insurance. We will describe the challenges overcome for his successful travel through coordinated interdisciplinary planning and collaborative efforts. We will review the elements of comprehensive medical assessment for travel safety, current legal requirements for US and international travel with opiates, VA health care international benefits, emergency palliative care for travelers, and preparation for expected death while traveling. We will share example letters, documents, and internet-based resources for seriously ill travelers, families, and health care providers.

Conclusion
Geriatricians can provide vital support for seriously ill patients wishing to travel. Comprehensive medical assessment, review of
international travel laws, and planning for symptom management and emergency care are key elements of planning.

A33
Baffling Back Pain
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Introduction:
Spinal epidural abscess (SEA) is a rare but serious infection, requiring prompt recognition and management. Presentation of SEA in older adults may be subtle. This may cause a delay in diagnosis and treatment and increase in morbidity and mortality.

Case:
An 82-year-old woman with cervical stenosis was seen in geriatric clinic for worsening upper back pain for two weeks. She had chronic back pain requiring spinal steroid injections with some relief a few months ago. She had no fever, but reported malaise and poor appetite. At baseline she was independent; however she had become unable to ambulate due to the malaise. The only finding on exam was cervical spine tenderness. Labs showed leukocytosis, elevated bone-specific alkaline phosphatase, ESR, and CRP. She was sent to the ED and found to have extensive SEAs. Neurosurgery recommended IV antibiotics only since there were no neurologic deficits. Seven days into the hospitalization she could not lift her legs and then emergently had spinal decompression. Her condition continued to worsen, which needed further surgeries. She was then stabilized and discharged home. Shortly after she developed septic shock and was admitted to the ICU. She did not respond to IV antibiotics. Her family decided to transfer her to the palliative care unit where she died comfortably.

Discussion:
Back pain with fever is a common presentation seen with SEA. Older adults may present atypically, such as this patient who lacked fever. The choice between surgery versus IV antibiotics continues to be a constant dilemma due to the paucity of evidence in treatment from poorly powered retrospective studies. There is even less evidence with the geriatric population. One study stratified treatment option based on age, but there was no statistical significance on defining the superior treatment. Further studies have confirmed that when treating with IV antibiotics older patients have higher mortality than those younger than 65.

Conclusion:
Back pain in older adults should be worked up thoroughly. Clinicians should have a low threshold for diagnosing SEA especially in the older adult who may present with atypical signs and symptoms. Once SEA is diagnosed prompt decision should be made to determine appropriate management. Although few studies have noted that there is no superior treatment comparing age groups, adults over 65 years have a higher failure rate to treatment with IV antibiotic alone with an increased mortality.

A34
Broken Heart Syndrome: Takotsubo Cardiomyopathy in a Grieving Widow
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Background: Takotsubo cardiomyopathy (TCM) is also known as broken heart syndrome or stress cardiomyopathy as it is often preceded by emotional or physical stressors, particularly in post-menopausal women. It usually presents as an acute coronary syndrome (ACS) with chest pain, dyspnea, and syncope. Hospital complications (including shock, need for cardiac resuscitation, and death) are comparable to those seen in ACS, but most patients recover fully within a few months1.

Case: The patient is a previously healthy 71 year old woman with intermittent asthma and chronic sinusitis. Her husband died in August 2016 after which she struggled with grief for many months. In August 2017, she sought medical attention for cough, wheezing, and dyspnea. She was treated for an asthma exacerbation, and several days later, a viral respiratory infection. The following week, she awoke with severe cough and dyspnea that did not improve with her rescue inhaler. She went to the emergency room and was, again, treated for a respiratory infection with antibiotics and nebulizer treatments. Evaluation revealed an abnormal EKG and elevated troponin. The patient urgently underwent a heart catheterization which revealed left ventricular apical ballooning and a reduced ejection fraction, but no coronary artery disease. She was diagnosed with TCM and received medications typically used to treat heart failure (beta blocker, aspirin, ACE inhibitor, diuretics). The patient recovered within one month and viewed the event as a “wake-up call.” She now attends grief counseling.

Conclusion: The pathophysiology of TCM is not fully understood, but it is likely due to cardiac toxicity from increased plasma catecholamines during stress. Traditionally, our patient’s TCM would have been attributed to her respiratory illness or the loss of her spouse. Recently, several cases have reported TCM triggered by exogenous sympathomimetic agents, specifically albuterol use2. Because the exact etiology of our patient’s TCM remains unclear, this case is a reminder that medical diagnoses are not always as straightforward in clinical practice as they are in literature.

References:

A35
Diagnosis solved by the family member
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Background: Frontotemporal dementia is the third most common type of dementia, characterized by a combination of behavioral and cognitive presentations which may pose a diagnostic challenge. Memory loss is not a rare complaint in geriatric clinic patients. Family members, caregivers or friends typically provide information. At times though, the patient may present alone, thereby making diagnosis difficult. Here we present a case in which the diagnosis was finally made after gathering collateral history.

Case: A 65 year old female with past medical history of vitamin D deficiency, osteopenia, and hypertension presented to clinic with complaints of memory difficulty that seemed to become more apparent after her husband’s death. The patient described repeating sentences and short term memory deficits. She was independent of ADLs but required assistance with IADLs. She was a former smoker and denied drinking alcohol. Her physical exam, specifically neurologic testing was unremarkable. Her St. Louis University Mental Status Exam score was surprisingly low at 8/30 indicating dementia. Labs were within normal limits, with the exception of Vitamin D. Her CT head/brain showed a lacunar infarct so it was presumed she had dementia with some vascular features. Patient was referred for neuropsychological testing which was inconclusive due to poor effort. She was seen in follow up with her boyfriend who stated she had worsening short term memory and behaviors like hand washing clothes despite having a washing machine at the home. After this appointment, the daughter reached out to the clinic and provided critical information. Per the daughter, the patient began using a vape pen, excessively consuming junk food and leaving clothes on an electric heater to dry.
The daughter reported odd, disinhibited and almost obsessive compulsive type behavior. Shortly after, the patient obtained an MRI which showed generalized atrophy but more prominent in the frontal and parietal lobes and an old basal ganglia infarct. The patient was diagnosed with Frontotemporal dementia, behavioral variant.

Conclusion: This case illustrates the importance of obtaining supporting history from those close to the patient to make an accurate diagnosis. In this particular patient, memory loss was the chief complaint rather than behavioral issues. The daughter provided additional information that shed light towards the final diagnosis.

A36 Unraveling the Enigma of Mental Illness for Successful Treatment of Opioid Dependence

Background: Opioid abuse has caused a severe drug crisis in the US. It is estimated that half of opioid prescriptions are issued to people with anxiety and depression. Because mental illness is a prominent risk factor for overdose and other adverse outcomes, appropriate diagnosis and pain management among this specific group of patients is critical. This case study demonstrates a holistic approach to combating this epidemic by addressing mental illness, the major underlying cause of addiction.

Case Description: This is a 67 F with history of chronic back pain from multi-level prolapsed intervertebral discs, fibromyalgia, insomnia, depression, dysfunctional family with tragedy in her life. She has taken fentanyl patch 200 mcg Q72 hrs and clonazepam for her back pain for 12 years. Patient was sent for rheumatology referral for suspected spondyloarthropathy of her low back and neck pain in association with peripheral arthritis and enthesitis. She had a trial of methotrexate and prednisone, which were stopped when all of the rheumatologic workup was negative. Upon re-evaluation, patient stated that she always had mind-racing, crying, agitation, irritability, insomnia, depression. She had an alcoholic brother who abused her. She felt she was smart, but did poorly in school because her mind was distracted, and barely graduated from 6th grade. Unable to focus, the patient always had trouble balancing her life. She married early, and lost both her husband and her son at a young age. She denied suicidal ideation. Patient took antidepressants in the past, which made her worse.

During her exam, she was oriented to person, place, and time, had poor insight, was anxious, depressed, and agitated. Her psychiatric interview was consistent with a mixed bipolar affective disorder. The patient was found to be hyper-focusing on her physical health and thus treated with high-dose opioids and clonazepam. After treating patient’s mixed bipolar affective disorder with olanzapine 10mg at bedtime, and generalized anxiety disorder with clonazepam 1mg orally three times a day as needed, patient was successfully liberated off of opioids over a one month period.

Conclusion: Chronic pain can mask or be a manifestation of underlying, undiagnosed mental illness. It is important for physicians to recognize and treat mental illness appropriately as this can potentially reduce inappropriate opioid use.

A37 Two cases of sialolithiasis causing sialadenitis in geriatric patients

Background: Sialolithiasis is the presence of calculi in either the salivary glands or ducts. Many times these stones go undetected in the absence of symptoms; but, sialolithiasis can result in stenosis or blockage of the ducts causing gland swelling, pain, and possible infection (sialadenitis). The exact cause of stone formation is not well understood, but some risk factors include medications causing xerostomia, periodontal disease, and acute illness. We observed two recent cases of sialolithiasis resulting in sialadenitis in geriatric patients.

Methods: In Case #1, an 84 year old veteran presented to the geriatrics office with 3 days of severe “tooth and neck pain” not relieved by his prescribed Tramadol. He was noted to have tender, right-sided submandibular swelling and a white nodule at the base of his tongue. In Case #2, a 74 year old man was approaching discharge after a prolonged hospitalization for PRES requiring a period of intubation, when his family noted he was refusing to eat. On exam, he had a white nodule on his left cheek near his upper molars and was mildly swollen, although he did not otherwise have any parotid gland pain.

Results: Both patients had suspected sialoliths causing acute sialadenitis. In Case #1, periodontalitis and xerostomia were felt to be the likely causative factors of his submandibular stone. In Case #2, acute illness and prior intubation likely precipitated his parotid stone. Interestingly, in both cases the stones were visible at the duct orifice, confirming diagnosis without the use of imaging. Additionally, both cases were managed conservatively with massage, sialogogues, pain control, and antibiotics with complete resolution of symptoms.

Discussion: Although the etiology of sialolithiasis is not well understood, it appears that the geriatric population may be particularly vulnerable given comorbidities, polypharmacy, and risk of periodontitis. When an older adult notes mouth pain or swelling, or has decreased oral intake, a comprehensive oral assessment should include wide examination of the submandibular and parotid glands for swelling and evidence of stones and infection. Although sialolithiasis can sometimes be managed conservatively, patients should have close follow up to monitor for resolution of symptoms with low threshold to refer to specialists if not improving.

A38 Consider The Pill Burden. Is There Room to De-prescribe?
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Introduction: This case helps illustrate opportunities to de-prescribe medications depending on a patient’s functional, mental and health status.

Case Presentation: 99 y/o F pmhx advanced dementia, HTN, DM2 resides in community nursing home for many years, in 2016 transferred care to resident NH continuity panel. At baseline was largely nonverbal, ambulated with wheeled walker when prompted and feeds self with set up. Remainder of her care was dependent on nursing staff. Medications at transfer: losartan 25mg daily, HCTZ 12.5mg daily, glipizide 5mg daily and depakote 125mg daily. Vitals remained appropriate for age, blood sugars range from 180-250s. Over the next year slowly tapered off her losartan, HCTZ and glipizide without worsening blood pressure or blood sugars. Due to fatigue slowly discontinued her depakote without changes in behaviors. Currently on as needed medications for comfort and at 101y/o continues to ambulate with walker, feed herself and smile.

Case Discussion: Medication use in elderly is on the rise, from 2005-2011 there was a 30.6% to 35.8% increase in the use of five prescription medications[1]. Geriatric patients are being discharged from the acute hospital to nursing facilities with on average 14 medications and 40% are associated with geriatric syndromes especially falls[2]. As our patients age, many of them are maintained on preventative medications[3]. It is our job as geriatricians to determine the appropriateness of preventative and prescribed medications by looking at our patient’s functional, mental and health status as we review their medication lists at every visit.

References:
Leptomeningeal Metastases Causing Acute Visual Disturbances


A39

"She’s Just Not Acting Like Herself": Atypical Presentation of a Deadly Disease

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**Case:** An 83 year old woman with moderate dementia presented to a geriatrics office with two days of anorexia, fatigue, and “not acting like herself.” Symptoms started with one episode of vomiting at her adult day care. When she came home, she was newly unable to feed herself and remained in bed for the next day. Her niece, with whom she lives, became concerned and brought her to the office. On presentation, the patient had no complaints. Her blood pressure was 95/64, and her heart rate was 108. She appeared thin and frail but in no distress. Her mucous membranes were dry. She was sent to the emergency department for intravenous hydration. An electrocardiogram performed at the emergency room revealed ST-segment elevation in lateral leads consistent with an anterior myocardial infarction. She was admitted to the hospital and started on standard therapy. Percutaneous cardiac intervention was offered but the family elected to pursue medical management only.

**Discussion:** A literature search showed a general paucity of evidence regarding management of myocardial infarction in older adults but revealed several trends in diagnosis and presentation of the disease. In summary, older adults, especially women, are less likely to have classic anginal symptoms, and are more likely to have vague symptoms like malaise, fatigue. Some present in overt heart failure or cardiogenic shock. If classic symptoms do exist, they are often more difficult to elicit as a result of cognitive decline or other comorbidities. In one study, women over 65 years had 2.39 times the risk of delayed presentation of over two hours1. Older age and absence of chest pain were both independent risk factors of increased in-hospital mortality2.

**Conclusion:** Presentation of myocardial ischemia tends to be less overt than that of younger patients and often is characterized by nonspecific symptoms, delayed presentation, and increased in-hospital mortality.

**References:**


A40

Leptomeningeal Metastases Causing Acute Visual Disturbances

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**Introduction:** Visual hallucinations and blindness are rare manifestations of leptomeningeal metastases (LM). This case demonstrates the unanticipated finding of LM as the etiology of a patient’s new onset of visual disturbances.

**Description:** A 77 year-old female with history of mood disorder NOS, glaucoma and recent weight loss was transferred from an outside hospital for a pituitary macroadenoma with apoplexy. On the days leading up to admission she noted headache and decreased visual acuity, prompting her to present to her local hospital where she was found to have a hemorrhagic sellar mass. Due to acute vision loss from the mass, she was transferred for emergent neurosurgical evaluation. On arrival, she was treated with endoscopic transnasal transepidual hypophysectomy. Despite surgical intervention, her visual complaints persisted and she began having symptoms of visual hallucinations and delirium. Geriatric consultation was obtained on hospital day 2 to assist in her evaluation and treatment. Further diagnostic work up including chest imaging for new onset hypoxia was done, and she was found to have a large hilar mass and evidence of widely metastatic disease including concerns for leptomeningeal involvement. Pulmonary biopsy confirmed small cell lung cancer. Due to her overall clinical condition and poor level of function, she was not offered chemotherapy. Unfortunately, she acutely decompensated with increasing oxygen requirement and persistent desaturation. She was transitioned to the inpatient palliative care unit for end of life care, and died several days later.

**Discussion:** Leptomeningeal metastases, though rare, is a devastating complication of progressive malignancy. It occurs in approximately 2-11% of patients with cancer, and is diagnosed with increasing frequency as patients live longer and the ability to imaging the CNS improves. Patients often present with multifocal, nonspecific neurological complaints including headache, visual changes and encephalopathy. Due to its nonspecific presentation and broad range of symptoms, medical providers must have a high degree of suspicion for LM in patients presenting with multiple neurological complaints.

A41

No Stones About It, Atypical Disease Presentation Delays Diagnosis: A Case of Missed Cholecystitis Leading to Perforation In An Elderly Patient

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**CASE:** A community-dwelling, 85-year-old woman presented emergently with vague abdominal discomfort and low-grade fever. She had a history of intestinal lung disease on home oxygen, immunosuppression on mycophenolate and prednisone, severe aortic stenosis, diabetes mellitus type 2, chronic kidney disease stage 3, gastroesophageal reflux, hypertension, and hyperlipidemia. On arrival to the emergency room, she was at her baseline healthy weight, afibrile, and had mild tenderness of the right abdomen without rebound or guarding. Laboratory studies revealed a WBC of 33.8×10^9/L; liver function tests (LFT), lipase, and urinalysis were unremarkable. Abdominal CT showed gallbladder distention and common bili duct dilation without wall thickening, stones, sludge, or pericholecystic inflammatory changes. The patient was discharged home and continued to have low-grade fevers (99-100 °F) and abdominal pain. Her symptoms were noted to be mild and improving in a follow-up visit 4 days later. 8 days after discharge, she presented again with similar complaints and had a positive Murphy’s sign, mildly elevated LFT, and persistent leukocytosis. Emergent ultrasound revealed gallbladder distention, wall thickening with discontinuity, inspissated bile (sludge), and surrounding fluid collections. CT confirmed gallbladder rupture. The patient was successfully treated with CT-guided drainage and antibiotic therapy directed against *Escherichia coli* grown from the purulent aspirate. She refused cholecystectomy.

**DISCUSSION:** Acute cholecystitis is increasingly common in the aged, who also have the highest mortality and complication rates. Sepsis, advanced age, and surgical delay are risk factors for perforation. Additionally, elderly patients may not mount fevers by traditional definition due to lower basal body temperatures. In fact, the majority of patients >80 years old with cholecystitis never register a temperature over 99.5 °F, and many lack peritoneal signs. This patient’s blunted
clinical presentation, albeit not atypical for age, likely biased physicians to disregard the significance of her leukocytosis and suggestive imaging findings.

CONCLUSION: Disease processes often present atypically in elderly patients, and potentially serious illnesses require a high index of suspicion.

A42
Linezolid Toxicity Mimics Septic Shock in a Subacute Rehab Patient
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Background: Linezolid toxicity is a known complication of this antibiotic therapy with a presentation similar to shock and lactic acidosis. Here we present a case of linezolid toxicity in a patient undergoing sub-acute rehab post discharge. The proposed mechanism is that linezolid interferes directly with mitochondrial protein synthesis and respiratory chain activity resulting in severe clinical consequences such as lactic acidosis, myelosuppression, and peripheral and ocular neuropathies. Toxicity occurs in 6.8% of patients receiving linezolid and is associated with longer treatment duration.

Case Presentation: Patient is a 52 y/o African American female with multiple comorbidities and prolonged hospitalizations for recurrent diverticulitis complicated by multiple perforations and abscess formation, multiple IR drainages, exploratory laparotomy, and laparoscopic ileostomy with small bowel resection who was discharged to SNF on ertapenem and linezolid with an open ended treatment duration.

Patient had been on linezolid for 33 days prior to presenting to SNF. On day 56 of linezolid, she developed acute on chronic abdominal pain, altered mental status, and asthenia. She was hypoglycemic to 32, WBC 21, lactate 16, tachycardic, and hypotensive to 44/35. Septic shock due to intraabdominal abscesses was presumed and she was subsequently transferred to the hospital.

In the hospital, she was initially treated for acute pancreatitis given radiographic evidence of peri-pancreatic fat stranding. She was started on fluids, levoephed, urgently dialyzed and placed on vancomycin and piperacillin-tazobactam. ID team noted the marked and persistent lactic acidosis which was out of proportion to her hypotension. She had no fever, lipase was normal, and no other laboratory confirmation of infection, making infectious etiology less likely. All antibiotics were discontinued and her labs gradually normalized supporting linezolid induced mitochondrial toxicity. She was then transferred back to SNF for further rehabilitation.

Conclusion: In high risk patients undergoing linezolid therapy presenting with a constellation of metabolic acidosis, lactic acidosis, hypotension, altered mental status and asthenia, consider linezolid toxicity as it is easily reversible with discontinuation of the offending agent. Inflammatory markers including ESR, CRP and procalcitonin should be considered to further rule out infectious etiologies.

A43
A Case report of Creutzfeldt-Jakob disease in a man with recurrent falls.
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Background: Creutzfeldt-Jakob disease (CJD) is an extremely rare prion disease associated with rapidly progressive dementia (RPD), typically difficult to diagnose, and requiring a high index of suspicion. Death usually occurs within a year of diagnosis.

Method: We are presenting a case of probable CJD in a patient that presented with rapidly progressive dementia. Scholarly articles on CJD and RPD were reviewed.

Case: 83 yo female who lives independently admitted with generalized weakness. She experienced sudden weakness and was unable to get off her commode for 6 hours, but able to roll onto the floor where she slept for the night. The next morning, EMS was called due to her persistent inability to get up. There was large amount of clutter along with buckets of excrement and urine in her condominium.
was contacted and the fire department deemed her condominium to be inhabitable. There was also no water in the home for days because of plumbing issues. MMSE was 30/30. She was discharged to a rehabilitation facility and unable to go back to her condominium until it was habitable.

**Conclusion:** Compulsive hoarding is unrecognized and untreated in older adults. It is unclear whether there is an idiopathic or secondary condition that may affect onset and course of compulsive hoarding in older adults. Factors to consider include cognitive and physical limitations and/or underlying mental disorders. In young adult populations, cognitive behavioral therapy (CBT) has shown benefit for hoarding behaviors. However, this was less effective in geriatric populations, which could be attributed to possible neurocognitive deficits that limit their ability to engage in or respond to CBT. It will be important to the safety of our older adult population to determine these factors and provide interventions that are targeted at this population.

**References:**

**A46 Med Wrecked: Bedbound from Medication Error**

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**Introduction:** Medication reconciliation errors in care transitions are extremely common and can have deleterious consequences.

**Case:** A 71-year-old man with Parkinson’s disease and severe malnutrition was walking with a walker at home when he fell and suffered pubic rami fractures. He was hospitalized, managed conservatively, and discharged to a skilled nursing facility (SNF) for rehabilitation. He was unable to participate in physical therapy (PT) and developed a stage 4 sacral pressure ulcer due to immobility and malnutrition. He was discharged home after 20 days due to unwillingness to pay his copay. He then developed sepsis from wound infection and was admitted to the VA hospital. He was again unable to participate in PT due to bradykinesia, and PT was discontinued. He was transferred to VA SNF for wound care, where he remained bedbound for three months. His wound healed slowly, and his nutritional status declined.

Upon team change at VA SNF, physical exam revealed extreme bradykinesia, rigidity, and absence of contractures. We discovered his carbidopa-levodopa dose was substantially lower than his home dose. The dose was increased, and PT was reconsulted. He started participating well and progressed dramatically over 5 weeks. His BMI increased from 16 to 18, and his wound healed faster. Prior to discharge home, he walked 350 feet with a walker.

**Discussion:** By the time we saw the patient, he had already undergone 5 transitions of care. Given the prevalence of medication reconciliation errors across these transitions, we expected to find discrepancies between his current and home medications. This mindset prompted us to prioritize reviewing his outpatient records, which held the key information regarding his carbidopa-levodopa dose. The dose decrease on admission caused uncontrolled Parkinson’s symptoms, which greatly accelerated his decline. This went unrecognized for three months, and it was assumed he had reached a new functional baseline. Remarkably, he regained much of his losses quickly after the dose correction.

**Conclusion:** When evaluating patients after care transitions, providers should maintain a high degree of suspicion for medication reconciliation errors and potential consequences. It is essential to understand premorbid functional status and optimize medications to maximize rehabilitation potential for Parkinson’s disease patients.

**A47 Chew on This: Awake Bruxism in Late stage Dementia**

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**Bruxism** is an oral parafunctional activity characterized by excessive teeth-grinding or jaw clenching which primarily occurs at night and is relatively common. Awake bruxism, in contrast, is a rarer phenomenon and is always pathological. Bruxism may be severe, leading to damage of the dentition and is associated with pain, problems chewing and swallowing and can also interfere with speech. There is little in the literature about the prevalence of awake bruxism or effective treatments.

**HH** is an 85 year old female living in an assisted living facility with history of advanced Alzheimer’s dementia and remote history of a “small stroke” without residual deficits. She was brought to our geriatric clinic for evaluation of dementia and teeth grinding. She is nonverbal and dependent for her ADLs. A trial of citalopram was initiated to treat possible anxiety, with some mild improvement noted by family members. Several months later, Clonidine was added for further control of her hypertension as well as its limited evidence of relief of nocturnal bruxism. Facility staff expressed concern that her teeth grinding was a nonverbal indicator of pain and started scheduled Tylenol. Her family also decided to try a mouth guard but the patient was unable to tolerate it.

At this point the presumptive diagnosis is awake bruxism secondary to advanced Alzheimer’s dementia. Other treatment options including returning to the dentist, botulinum toxin A injections or trial of other medications were discussed with the family. Based on her advanced dementia, they felt that further intervention without proven benefits would be more stressful to the patient and would not improve her quality of life. This case illustrates the challenges of awake bruxism diagnosis and management in vulnerable patients with neurological conditions. Physicians and other health care providers should be aware of this potential presenting sign and be sure to differentiate it from nocturnal bruxism. A multidisciplinary approach involving the patient, their family, the facility staff and any necessary specialists is important from initial diagnosis to choice of treatment.

**A48 A Case of Severe Hand-Foot Syndrome in a Nonagenarian Receiving Capecitabine**

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Hand-foot syndrome is a well-known side effect of chemotherapeutic agents. The majority of patients receiving capecitabine experience some form of palmar-plantar erythema and pain, which usually resolve in 1 to 2 weeks of stopping the medication. However, a fraction of the patients will develop severe skin changes in the palms and soles that could cause significant impairment in daily activities.

Mr. H is a 91-year-old male with known diagnoses of type II diabetes mellitus, hypertension, and congestive heart failure. He was diagnosed with metastatic colorectal cancer to lungs and liver during an evaluation for progressive weight loss. He was living at home alone with fully independent activities of daily living at the time of the diagnosis. The patient wished a trial of chemotherapy after several discussions with the oncologist and was started on palliative chemotherapy.

**Conclusion:** When evaluating patients for care transitions, providers should maintain a high degree of suspicion for medication reconciliation errors and potential consequences. It is essential to understand premorbid functional status and optimize medications to maximize rehabilitation potential for Parkinson’s disease patients.
A Case of Posterior Reversible Encephalopathy as a Result of Lithium Toxicity

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Posterior Reversible Encephalopathy (PRES) is thought to be a rare disorder caused by an underlying metabolic derangement that results in endothelial dysfunction and edema in the posterior cerebrum. Most frequent distinctive findings on neuroimaging indicate symmetric parietal and occipital lobe edema. Symptoms can include headache, vomiting, seizures, alteration of consciousness, and cortical blindness. Hypertension, acute or chronic renal failure, and organ transplant are the most frequently observed co-morbid conditions. Lithium toxicity has rarely been reported in the literature as an underlying cause of PRES. This case involves a woman who was admitted to a locked inpatient psychogeriatric unit who had a long history of psychiatric disturbance. She had been maintained successfully for years on Lithium and was living independently at the time of admission. She became toxic on her Lithium and suffered an acute kidney injury and had significant altered mental status. Lithium was stopped and in spite of her renal functioning returning to normal, she continued to suffer significant cognitive impairment. Neuroimaging was consistent with edema noted in the bilateral parietal and occipital lobes. Two weeks into her hospitalization, she was interviewed and noted to have an odd gaze pattern and stated that she could not see items visually presented to her, possibly indicating symptoms of cortical blindness. The patient blamed her vision problems on not having her glasses. A neuropsychological evaluation was conducted a month after initial presentation to the hospital with access to her glasses. Testing revealed significant impairment in multiple areas of functioning with relatively spared auditory and some improvement in visual abilities.
Although the patient had resolving medical symptoms, neuropsychological functioning had not returned to baseline at the time of discharge. Recommendations were made for post-hospital disposition to ensure her safety and follow-up neuropsychological testing to reassess her cognitive functioning. This case represents the importance of interdisciplinary teams for identifying, evaluating and treating complex multisystem disorders.

A52 Atypical Chest Pain in the Old: May be More than Meets the Eye!

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Introduction: The presentation of myocardial ischemia in the old is often atypical, warranting recognition for timely intervention. Atypical presentations are especially common in those with diabetes and neuropsychiatric disorders.

Case: 78 yr Caucasian male with HTN, vascular dementia, CAD s/p PCI and DM type 2 came to the ER with cough and fever. Initial lab tests: normal; WBC (11.7, normal in 12 hrs); Xray lungs normal; left posterior rib fracture. He was placed on analgesics. Chest pain persisted, left sided, non-pleuritic, waxing and waning in intensity. The patient was unable to express duration / character of the pain. He had documented memory loss from dementia for a year. The left chest wall tenderness was reproducible. EKG, CPK, troponins were normal. Towards evening, EKG was repeated which revealed ST depressions in V2, V3, V4, V5, V6. CPK was 118. Troponin was 0.02. As he remained symptomatic, cardiac catheterization was done; stent restenosis required balloon angioplasty. Discussion: Cardiovascular Disease is the leading cause of mortality. Several physiological autonomic changes with age alter pain threshold. Acute coronary syndrome (ACS) in the old may present atypically, with no pain, dyspnea, palpitation or jaw pain. Presentation is confounded by comorbidities in the old (in our case left rib fracture) such as diabetes, depression and dementia. Due to dementia, our patient was unable to describe his chest pain adequately. Our patient presented with cough and developed chest pain >12 hours post admission, with an interval gap between EKG ST-T depression and onset of angina. The index of suspicion for ACS was high due to prior cardiac history. Consecutive EKGs confirmed ST-1 changes despite negative troponins suggestive of unstable angina. Evidence suggests that telemetry helps in diagnosis of ACS in those with atypical chest pain. Missed diagnosis of ACS may delay interventions; in those >65 yrs without chest pain, ACS carries a 40% mortality.

Lessons Learnt: Older adults with significant cardiac history and comorbidities presenting with atypical features require consideration for possible ACS. Those with dementia (or delirium) are often incapable of providing a helpful history, warranting a broad differential diagnosis.


A53 Challenges of Managing Diabetes Mellitus in Patients with Psychiatric Disorders

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Background: The prevalence of diabetes mellitus type II (DM2) increases with age. Per the CDC, an estimated 27% of people age 65 or older have diagnosed or undiagnosed diabetes. In addition, the use of antipsychotics and antidepressants is associated with higher risk of new onset diabetes.

Case: A 65-year-old male with history of dementia, major depressive disorder, essential hypertension, congestive heart failure, seizure disorder and schizophrenia was sent from a skilled nursing facility to the emergency room due to increased paranoia, agitation and having punched a staff member at the SNF. His initial lab revealed normal renal function, serum glucose of 445, A1c 11.6. On review of patient’s SNF diabetes regime, he was prescribed Detemir 35U BID. After his transfer to the geriatric psychiatry unit, the patient was started on twice daily basal insulin and three-times daily prandial insulin with sliding scale and metformin. However, he continued to have episodes of hyperglycemia in the high 400s, with wide fluctuations of his blood glucose due to dietary nonadherence. Furthermore, his diabetes management was also complicated by difficulty administering prandial insulin due to agitation, and trials of multiple antipsychotic medications, including divalproex, risperidone, chlorpromazine, olanzapam, olanzapine and paliperidone. Endocrinology was consulted and initiated a daily liraglutide injection, which was titrated up to the maximum tolerating dose along with insulin adjustments. His blood glucose levels were stabilized after initiation of liraglutide, and he required only once daily basal insulin to achieve glucose control for the remainder of the hospitalization.

Conclusion: Diabetes management can often be challenging for older patients with underlying neurocognitive disorder and/or psychiatric disorder due to frequent finger-stick, medication noncompliance, and antipsychotic or antidepressant use, which have high association of increased metabolic syndrome. For this patient, first line strategies were ineffective and the GLP-1 receptor agonist therapy combined with basal insulin was necessary. A diabetes treatment plan should be patient specific reflecting patient’s goal and health status. Keeping an insulin regimen as simple as possible was particularly important for this patient given his underlying neurocognitive disorder.

A54 Warning Signs of a Red Eye: A Case of Orbital Cellulitis


Background: Eye problems account for 2-3% of all primary care visits. While conjunctivitis is the most common cause of “red eye” it can be difficult to distinguish between conjunctivitis and ophthalmologic emergencies. We present a case of “red eye” in which diagnosis took several days resulting in hospitalization for IV antibiotics and ultimate orbitotomy.

Case: 72 year old female came to the office complaining of left eye redness, itching, and mucous-like discharge for one day. The left eye was closed shut and crusted over, with burning sensation when she woke up that morning. She denied blurry vision, eye pain, eye trauma, photophobia or headaches. She had recent contact with her daughter who had conjunctivitis. The patient was using warm compresses and felt symptoms were improving. She was sent home from the office with presumed viral conjunctivitis, instructed to continue warm compresses and call the office if she did not improve. She called back 2 days later with no improvement and was prescribed Erythromycin drops for treatment of possible bacterial conjunctivitis. The next day, she was evaluated in the office again, now with pain and more redness. On exam, she had increased swelling of left eyelid and pain with lateral abduction. She was sent for urgent ophthalmology referral and subsequently to the hospital for further evaluation. CT scan result was consistent with orbital cellulitis and possible abscess formation. She was admitted to the hospital for IV Vancomycin and Zyvox, and left orbitotomy resulting in full recovery.

Discussion: Orbital cellulitis is often caused by the spread of infection from the paranasal sinuses or other periorbital structures, inoculation from trauma or surgery, or spread from hematogenous bacteremia. Clinical signs of orbital cellulitis include orbital pain with eye movement, extracocular motility restriction, eyelid swelling and ptosis. Further evaluation and treatment of orbital cellulitis includes immediate referral to ophthalmology, CT scan and hospitalization for IV antibiotics to treat and prevent serious complications including blindness. In this patient’s initial presentation, she did not have any...
warning signs of orbital cellulitis and had a sick contact with conjunctivitis which could be misleading. However, she subsequently developed eyelid swelling and pain with eye movement, highlighting the importance of close follow-up in patients with worsening symptoms and recognizing "red flag" symptoms of ophthalmologic emergencies.

A55  
**Gabapentin-Induced Urine Incontinence**  
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**Background:** Urinary incontinence was estimated at $19.5 billion in the year 2000, of which more than half were expended in routine care articles as pads, protection, and laundry. The prevalence is about 30% in patients over 80 years-old in the community and 60 – 78% in nursing home residents.  

We present a case of an 82 years-old woman who presented with urinary incontinence after initiating gabapentin 100 mg twice daily as treatment for essential tremor after multiple medication failure. Patient reported that after the second day of therapy she noticed increased day time urinary frequency with symptoms of urgency and nocturia up to six times per night. Patient denied urinary symptoms suggesting a urinary tract infection or changing in the amount of fluid intake, particularly late in the evening. Subsequently gabapentin dose was decreased to 100 mg at night with no improvement on the urinary incontinence and nocturia, for which medication was discontinued with subsequent resolution of the urinary symptoms. It is important to remark that she never reported having lower extremity edema at any point on the therapy.  

**Methods:** Case Report  

**Discussion:** Few cases of gabapentin-induced urinary incontinence have been reported in the literature, however we know that one of the side effects of gabapentin is nocturia due to lower extremity edema resulting in polyuria when patient is in a supine position, worsening the nocturia and night time incontinence. Gabapentin can decrease the detrusor hyperactivity via reducing the afferent signaling of the C- and A-alpha fibers blocking the filling sensation of the bladder, hence now being tested as a treatment for urge incontinence. This gabapentin effect results in a decreased detrusor hyperactivity with the potential of increase maximal capacity of the bladder and subsequent incontinence. It can also affect the normal relaxation of the striated urethral sphincter by stimulating via GABA B receptors resulting in relaxation of the external sphincter leading to urinary incontinence.  

**Conclusion:** Physicians should account urinary incontinence as a potential side effects of gabapentin and not underestimate it, as well as to associate gabapentin as a possible cause of sudden urinary incontinence after initiating it.

A56  
**Functional Recovery of a 90-year-old Female with Polymyalgia Rheumatica**  
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**Background**  
Polymyalgia rheumatica (PMR) affects mostly elderly females, with peak incidences at the age of 70 to 80 years. Early diagnosis can lead to faster recovery with improved quality of life.  

**Case**  
A 90-year-old female with bilateral carpal tunnel syndrome and osteoarthritis presented to the Emergency Department with two months of progressive functional decline, weakness and extremity pain. She underwent left carpal tunnel release surgery one month ago without improvement in function. Investigations done including infection work-up, head CT and spine MRI did not reveal the exact etiology. Arthritis and decondition were assumed causes and she was discharged to Skilled Nursing Facility (SNF) for rehabilitation. At the SNF, she had lethargy, poor appetite, stiffness and pain of all extremities. She was unable to lift her arms past 30 degrees. She was bed bound and could not sit or adjust her position in bed. Pain regimes including opioids did not help. She denied visual impairment, headaches and temporal tenderness. She could not participate in therapy. She was depressed and unhappy as she wanted to go back to her assisted living facility. Further work-up showed CRP 230, ESR 40, CPK 19 and elevated liver enzymes. PMR was suspected and therapeutic trial with prednisone 30 mg daily was started. She showed dramatic response within a few days and CRP went down to 11, ESR to 7 and liver enzymes normalized. Pain resolved completely. Functional impairment measure FIM scores improved from 40 to 49 within a week. She was successfully discharged back to her previous level of functioning.  

**Discussion**  
Although PMR is not uncommon, the diagnosis is frequently missed or delayed especially in elderly. Treatment with steroids are generally effective. Physical therapy aids in maintaining muscle strength and minimizing the side effects of glucocorticoids. Calcium and vitamin D supplementation should be given with corticosteroid therapy in all patients with polymyalgia rheumatica and efforts should be made to minimize the duration of treatment and the cumulative glucocorticoid dose.  

**Reference**  
differentiate from seizures, CVA, and Conversion disorder. The clinician should consider it when work up for these two entities is negative in the setting of parkinsonism, hallucinations, or cognitive impairment.

A58 Acrokeratosis Paraneoplastica: A Harbinger of Hidden Malignancy
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Introduction: A rare case of severe seborrhoeic type dermatoses which is not responding to conventional treatment can be the first presenting symptom of an underlying Malignancy.

Case Description: An 88-year-old female presented with itchy pigmented lesions on her extremities, face, and trunk. The lesions were not responsive to topical steroids. She had a history of mild cognitive impairment, hypertension, and hyperlipidemia. The lesions were sharply demarcated with raised scaly surface. Lesions were visibly scaling and intensely pruritic. A physical exam discovered a breast lump. Malignancy was suspected, although the patient did not wish to get any diagnostic work-up. Her skin lesions were very symptomatic with intense itching. Her initial dermatology consultant diagnosed her with Pityriasis rosea but topical steroids did not improve skin lesions. Her symptoms continued to get worsen resulting in a skin biopsy. The biopsy showed vacuolar dermatitis with lymphohistiocytic inflammation and hyperkeratosis which is consistent but not specific for paraneoplastic dermatitis. Due to possible underlying malignancy, a subtype of Bazex syndrome, Acrokeratosis paraneoplastica, was diagnosed. To better establish the diagnosis and aid treatment, a biopsy of her breast lesion was done showing triple negative breast malignancy. Chest radiography showed a large lung hilar lesion. The patient refused any intervention, but was initiated on oral steroids after which there was significant improvement in her lesions. She was later transitioned to hospice care after an admission for respiratory failure.

Discussion: First described in 1965, Bazex syndrome is thought to be a marker for internal malignancy. (1) Skin findings include well-defined erythematous to violaceous, scaly papules in acral distribution, although the trunk is involved in some cases. Symptoms precede diagnosis of malignancy but may be concurrent in up to third of cases. A high level of suspicion and search for underlying malignancy in appropriate patients may be life-saving. Treatment can involve multiple topical agents or oral steroids, but complete resolution is achieved only with treatment of cancer.


A59 Systemic lupus erythematosus and gastric carcinoma: a report of a case and a critical review of the literature
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Background: Although malignancy and chronic inflammatory diseases seem to be associated to one another, gastric carcinoma with systemic lupus erythematosus (SLE) remains a very rare association.

Methods: We describe a case of gastric cancer associated with systemic lupus erythematosus in an older patient. We also review other reported cases of gastric cancer associated with SLE.

Results: A review of the literature revealed 14 cases of gastric cancer associated with SLE, consisting of 10 females and 4 males (age ranging 23-72 years old). There were 9 cases of adenocarcinoma, 4 cases of carcinoid tumor, and 1 case of neuroendocrine carcinoma of the stomach. SLE appeared months to years before the diagnosis of cancer in 8 cases, and in the other 6 cases, the two conditions were diagnosed simultaneously. Remission in SLE or reduced SLE disease activity were reported in 8 cases after treatment for cancer.

In our case, the patient was given an interdisciplinary management including postoperative adjuvant chemotherapy, corticosteroids and immunosuppressants for SLE, oral nutrition support, as well as physical rehabilitation. Eighteen-month follow-up showed preserved physical function with no evidence of cancer relapse, as well as remission in SLE.

Conclusion: SLE may represents a paraneoplastic manifestation on occasion. An interdisciplinary care help achieve the required balance between the potential benefits and side effects of therapy for older patients with cancer and comorbid chronic inflammatory diseases.

A60 Metastatic Medullary Thyroid Carcinoma presenting with Recurrent Falls in a Functionally Independent Elderly
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Background: Falls constitute a major geriatric syndrome, with prevalence increasing with age and frailty level. Many diseases have been shown to be associated with an increased risk of falls, including diabetes, Parkinson’s disease, depression, cognitive impairment, and incontinence.

Methods: An 85-year old woman, previously well with past medical history of hypertension and hyperlipidemia presented with recurrent falls over the past nine months. She was independent in activities of daily living (ADLs). Examination of the patient revealed significant brisk reflexes in her upper limbs and knees, impaired proprioception of the lower limbs, and no sensory or motor power deficits. Her gait was broad based. Initial impression was recurrent falls due to cervical myelopathy.

Results: A magnetic resonance imaging (MRI) scan of the cervical spine revealed T1W hypointense, T2W hyperintense foci in C2 and T4, almost completely replacing the latter and causing moderate spinal stenosis. These were suspicious for osseous metastases. INCIDENTAL notes made of T2W hyperintense foci in the thyroid gland. A CT scan of the neck revealed a multinodular goitre with internal calcifications, and bilateral cervical lymphadenopathy. The patient underwent an incisional biopsy of a left dominant thyroid nodule, and histology returned positive for medullary thyroid carcinoma which expressed calcitonin. Her final diagnosis was medullary thyroid carcinoma with bone and lymph node metastases, with resultant cervical spinal stenosis. The patient declined surgical spinal stabilization, and underwent palliative radiotherapy for the T4 metastasis. Goals of care were discussed and patient is currently supported by home palliative care services.

Conclusion: Our patient did not display any symptoms of malignancy such as bone pain or significant weight loss, and the only significant findings were brisk reflexes and broad based gait. As elderly tend to present atypically, a thorough neurological examination is crucial for all patients presenting with recurrent falls. Falls in an elderly patient with relatively well controlled pre-existing medical conditions and good functional independence may herald the onset of a serious illness, such as metastatic cancer in this case.
A61 Encore Presentation
Prevalence of and Possible Risk Factors for Prolonged Hospital Stay in Departments of Internal Medicine

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Background: Prolonged hospitalization (PH) is associated with increasing rates of complications and cost.

Methods: PH was defined as higher than the 70th percentile of the mean hospitalization duration for each department (two medical departments and one acute geriatric ward). Demographic and clinical data were collected on admission in order to determine predictive factors for PH. Actual causes for PH were tested on the 4th day of hospitalization for all patients, by (1) questioning the patients’ attending physicians using a structured questionnaire, (2) assessing the patients’ charts using a validated tool.

Results: Data were collected during a 5-month study period for all 1092 consecutively admitted patients hospitalized in the three study departments of whom 337 (30%) had a PH. In the multivariate analysis we detected the following independent predictors for PH: (1) unmarried patients; (2) dependent-patients; (3) hospitalization in the geriatric versus medical department; (4) an expected high mortality rate according to a validated prediction score; (5) renal failure on admission; (6) prior admission in the previous 6 months. The disease leading to the current admissions was the reason for continued admission on day 4 in the patients with eventual PH in 85% of the cases, as compared to 93% in the control group with regular-duration of hospitalization (p=0.014). On day 4, non-medical reasons for prolonged duration were detected in 7% of those with eventual PH as compared to 1% in the control group (p=0.018).

Conclusion: We detected demographic and clinical predictors for PH already on admission, some of which may be amenable to intervention.

A62 Comparison of frailty of elders living in community and residential care homes: To what extent

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Background: Frailty has been a health indicator for populations, especially those facing aging problems, to assess how well the population is aging and predict potential risks facing vulnerability. For population-based frailty studies on various types of older people, multidimensional perspectives on frailty measurement were of emphasis. This study aims to compare the difference between community-dwelling and residential care home (RCH) elders regarding frailty level and its respective frailty domains.

Methods: A convenience sample of 108 community-dwelling elders and 44 RCH elders were recruited. Questionnaires consisted of demographic information and Groningen Frailty Indicator-Chinese version (GFI-C). GFI-C is a 15-item frailty screening instrument for older people embedded with multidimensional constructs including physical, psychological, social and cognitive domains. The score ranged from 0 (normal) to 15 (completely frail) with a cutoff of 4 (≥4 for frail). T-test and Chi-square test was used appropriately.

Results: There was no significant difference of age (80.1 vs 80.8 years old), gender (56.5% vs 56.8% of male) and marital status (55.6% vs 69.8% without partner) between community and RCH elders. Significant group difference was found on number of comorbidities (1.98 vs 3.14, t=4.96), and GFI total score (3.41 vs 7.21, t=7.06) and all subscale scores (t=2.99-8.44) (p<0.001). Prevalence of frailty was 49.5% in community and 81.0% in RCHs.

Conclusions: The results indicated that RCH elders demonstrated remarkably frailer than community counterpart did in terms of physical, psychological, social and cognitive domains. Findings pose implications for gerontologist on frailty assessment to both community and RCH elders.

A63 Evaluation of a Choosing Wisely™ Initiative to Reduce Low-Value Preoperative Care for Older Adults Undergoing Cataract Surgery at LA County

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BACKGROUND: We evaluated a multidisciplinary quality improvement (QI) initiative to reduce routine pre-operative testing for cataract surgery—testing which provides no discernible benefit to older adults.

METHODS: Design and Setting: pre-post quasi-experimental study comparing pre-operative care for cataract surgery at LAC+USC Medical Center (intervention site) vs. Harbor-UCLA (control site), two urban academic medical centers within a large safety net health system. Data: administrative data to identify patients with a cataract surgery procedure code from 10/15/14-4/15/16. Intervention: a QI nurse at LAC+USC 1) reviewed charts of cataract surgery patients, 2) presented data on overuse, obtaining buy-in from anesthesia/ophthalmology chairs, 3) recruited a resident champion, and 4) empowered nurses to stop scheduling pre-operative visits. On 10/13/15, the team emailed pre-operative guidelines to the departments, promoting avoidance of routine pre-operative testing for cataract surgery. Outcomes: pre-operative visits, labs, EKGs, and wait-times between cataract diagnosis and surgery. Analysis: difference-in-difference (DinD) comparing utilization between sites using logistic regression models adjusting for patient characteristics.

RESULTS: We identified 1,009 intervention and 959 control patients undergoing cataract surgery during the study period. Baseline mean age/sex (61 years/53% female) was similar between both groups. The proportion of pre-operative visits, labs, and EKGs declined more for intervention than control patients: intervention patients: 77%, 91%, and 74% before the intervention vs. 20%, 39% and 27% after the intervention respectively; control patients: 62%, 40%, and 66% before vs. 86%, 72%, and 86% after the intervention respectively (DinD -81%, p<0.001, -83%, p<0.001, and -67%, p<0.001 respectively). Median surgical wait-time declined for intervention patients, 245 days before vs. 64 days after the intervention (p<0.001). CONCLUSIONS: This multidisciplinary QI initiative in a large safety net health system substantially reduced low-value pre-operative care and on average provided each patient with an additional 6 months of improved vision.

A64 Comparing Baseline Activity Assessment Using a Wearable Smartwatch and Physical Therapy in Older Adults undergoing Post-Acute Care


Background: Physical rehabilitation after acute hospitalization or elective joint surgery is an integral component in the transition to home for many older adults. The use of wearable devices to assess...
physical activity and follow rehabilitation progress has been increasing. As technology improves and advances, wearable sensors will become an important adjunct in healthcare. This pilot observational study was implemented using a wearable smartwatch (SW) to evaluate and monitor the physical activity of older adults in a post-acute setting.

**Methods:** Patients admitted to a UCLA-affiliated community hospital (NH) were fitted with a fully-charged SW daily for the duration of their NH stay. Standard of care physical therapy (PT) assessments and treatments were given per NH protocol in accordance with Medicare guidelines. SW data was collected remotely and transmitted wirelessly to a HIPAA-compliant server, independent of PT assessed metrics. Baseline energy of motion signal (EM), active time (AT), and walking time (WT) were totaled for the initial day of NH stay. Baseline PT scores for bed mobility, transfers, and gait were coded using the functional independence measurement (FIM) scale. Spearman correlation was calculated between PT metrics and SW activity data.

**Results:** 176 patients (median age 81 [53-99], 69% female, 90% right-handed) were accrued from 7/2016 to 6/2017. 75% were admitted to NH after acute hospitalization and the remainder were admitted after elective joint surgery. Median NH length of stay was 21 days, range 2-151 days. AT was correlated with independently assessed bed mobility (ρ = 0.44, p < 0.001), transfers (ρ = 0.38, p < 0.001), and gait (ρ = 0.46, p < 0.001).

**Conclusions:** Baseline physical therapy assessments correlated with baseline smartwatch activity data in a population of older adults undergoing post-acute physical rehabilitation in a community nursing home setting. The rank correlation coefficients suggest potential differences in the predictive value of SW & PT variables. Further studies are ongoing to determine if wearable activity data is predictive of post-acute disposition or hospital readmission.

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### A66

**Use of the 4AT to Detect Delirium in Older Hospitalized Cancer Patients**


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2. Hematology/Oncology, Kansas University, Kansas City, KS.

**Background:** Delirium, a neurocognitive disorder causing generalized brain dysfunction, is characterized by acute onset, fluctuating course, and inattention. Delirium results in significant morbidity and mortality, increased healthcare costs, prolonged length of stay, and nursing home placement. Delirium is common in those with advanced cancer, partly due to disease processes, but also as a consequence of therapeutic interventions. Houston Methodist Hospital adopted a modified version of the 4AT Screening Instrument for Delirium and Cognitive Impairment in November 2015 for use by nurses in screening older non-ICU acute care patients. The goal of this study was to evaluate sensitivity and specificity of the 4AT for delirium in older hospitalized hematology/oncology patients when administered by nurses during routine care.

**Methods:** This cross-sectional quality improvement study was conducted at Houston Methodist Hospital, a major 907 bed quaternary care hospital. We included 95 patients with 160 admissions from May 2016 to February 2017, who were 70 years and older and admitted to hematology/oncology wards. The validated chart review tool by Inceoglu was used to evaluate delirium admissions for delirium, with the chart identified as negative, present on admission, not present on admission, or unable to validate. Chart status was compared to results of the 4AT screens performed by nurses. Data was summarized to quantify prevalence and incidence of delirium, sensitivity and specificity of 4AT. Data analyses were performed using MedCalc for Windows.

**Results:** The study prevalence of delirium by chart review was 12.50%. Mean age of non-delirious patients was 76.18 years (53.57% male); mean age of delirious patients was 77.11 years (50.00% male). Administration of the 4AT by nurses, compared to detailed chart review for detection of delirium, had 95.00% sensitivity, 92.86% specificity, 65.52% positive predictive value, 99.24% negative predictive value. Positive likelihood ratio was 13.30, negative likelihood ratio was 0.05.

**Conclusions:** The 4AT had excellent sensitivity and specificity in nurse screenings for delirium when compared to a validated chart review tool in this special group of older hematolgy/oncology patients. While delirium prevention is preferable, early detection by nurses may lead to earlier diagnosis with improved morbidity and mortality rates, and reduced healthcare costs.
A67
BiPAP Tolerability as Reported by Hospitalized Elderly: A Prospective Survey

Background: Bi-Level Positive Airway Pressure (BiPAP) is used in patients with acute respiratory failure to decrease work of breathing and minimize intubation. Despite prevalent BiPAP use, limited studies examine patient comfort and tolerability, and sample sizes are small. Our findings will contribute to the literature with a larger patient sample size with different diagnoses and enhance understanding of patients’ experience with BiPAP.

Methods: Prospective survey from Oct-Nov 2017 at NewYork-Presbyterian Queens, a 500-bed community teaching hospital with a diverse patient population. Subjects were patients admitted with respiratory failure placed on BiPAP and able to self-report symptoms. Data included age, gender, ethnicity, diagnoses, and responses to survey. Patients who declined participation, on CPAP, and with altered mental status were excluded.

Results: Overall, 54 subjects were evaluated. Average age was 73 (41–97), 57% female, and ethnically diverse (48% Caucasian, 13% Asian, 17% African-American, 7% Hispanic). Diagnostic categories were: acute respiratory failure (39%); acute CHF exacerbation (35%); acute COPD exacerbation (7%); Cancer (6%); Other (13%). Table 1 exhibits survey results. Overall, 37 (70%) felt better after BiPAP use; 30 (56%) were comfortable with continuing BiPAP use, and 40 (74%) would use BiPAP again in the future, despite mask discomfort.

Conclusion: Many elderly hospitalized patients with respiratory failure on BiPAP reported mask discomfort but felt improvement in breathing & alertness. Patients report BiPAP limits their activities of daily living (moving, speaking, eating). Clinical implications include more timely assessment of mask fitting, patient tolerability, and reassessment of appropriate BiPAP use. Future research should include assessment of tolerability in nonverbal vulnerable patients.

<table>
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<th>Question</th>
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<th>Percentage (%)</th>
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<td>82%</td>
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<tr>
<td>Discomfort with mask</td>
<td>34</td>
<td>63%</td>
</tr>
<tr>
<td>BiPAP improves sleep</td>
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<td>50%</td>
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<tr>
<td>BiPAP improved alertness</td>
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<tr>
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</table>

A68
Standardizing the Assessment of At-Risk Inpatient Adults Who Lack Capacity: Developing the SAFE DC Framework

Background: At our urban safety net hospital, 15% of hospitalized adults do not have an acute care need. Many remain hospitalized due to impaired capacity. We undertook an initiative to understand barriers to discharge and to develop a model to promote safe and efficient return to the community.

Methods: We performed a chart review of adults (n=102) without an acute inpatient need in April-May 2017 at an urban, safety net hospital. We conducted, recorded, and transcribed interviews with hospital staff, administrators and other stakeholders (n=20) in June-August 2017 to understand the process and challenges around caring for adults lacking capacity. Through an interprofessional workgroup, we created a framework for assessing adults at-risk for impaired capacity.

Results: In our chart review, the principle barrier to discharge for 51 (50%) adults was impaired capacity. Of those with impaired capacity, 30 (59%) had impaired cognition, most due to dementia (22, 65%). By the end of the hospitalization, half did not have a surrogate decision maker and one third were in the process to receive a conservator. Having a surrogate decision maker increased the likelihood of returning home. Interviews revealed that there are often lengthy searches for potential surrogates and variable processes for assessing medical decision-making and function or independent-living capacity. Additional barriers to discharge included provider concern over patient safety in the community, unclear criteria for neuropsychological evaluation and inefficient communication between team members. To address these barriers, we created a framework with four domains: Surrogates, Assess Function, Evaluate Decisions and Cognition (SAFE DC). Each domain contains steps, validated tools, team member roles, and criteria for consultation as needed.

Conclusion: The SAFE DC framework standardizes an interprofessional approach to assessing and caring for inpatient adults with impaired capacity. SAFE DC may serve as a starting point for other hospitals to address similar challenges.

A69
Impact of Baseline Executive Function on Adherence to a Walking Program in Older Veterans

Background: Despite its many known benefits, older adults do not participate in regular physical activity including home-based exercise programs. Biological factors underpinning adherence to exercise programs are poorly understood. Our objective was to assess whether poor executive function (CLOX2 score ≤12) was associated with adherence to a walking clinic follow-up visit in a cohort of community-residing older Veterans.

Methods: Sedentary older Veterans (age range 60-88 years, N=225) were seen in the Geriatric Walking clinic at Central Arkansas Veterans Healthcare System. At the initial visit, an executive function assessment (CLOX2 test) and a detailed gait and balance assessment were performed. Participants received a pedometer, step log, and a walking prescription tailored to their current physical condition, self-identified goals, and perceived barriers. Participants were then followed with weekly phone calls to review the step log and facilitate motivation and an in-person follow-up occurred at 6-weeks. Subjects that came for follow-up visit were compared to those who did not in terms of baseline CLOX2, and the impact of age on the relationship was also examined.

Results: Mean age of the subjects was 66.3 (±5.6) years, 92% were male, 60% were Caucasian, 39% African Americans, 61% were rural, and 72% were obese. At the baseline visit, 24% of the subjects had CLOX2 scores ≤12, and 54% returned for the 6-week visit. Overall, 45% of those with low EF (CLOX2 score ≤12) returned for the 6-week visit compared to 57% of those with normal EF (CLOX2 score >12) (p=0.133). Among subjects aged 65-74 years (N=106), only 35% of those with low EF returned at 6 weeks compared to 58% of those with normal EF (p=0.042). Among subjects aged 60-64 (N=100) or ≥75 years (N=19), EF was not associated with follow-up visit adherence.
Conclusion: These results indicate that impaired executive function may impact adherence to a walking program in Veterans aged 65-74 years.

A70 Improving Adherence to a Fall Prevention Exercise Program Among Older Adults at High Risk of Falls

Background: Individuals at high fall risk often have poor adherence to physical therapy (PT) fall-prevention programs. In our clinic, patients found to be at risk of falling had low attendance and completion of PT services (44% and 22%, respectively). However, among those who presented for their first follow-up PT visit, half completed the PT plan of care. Therefore, we hypothesized that an intervention to improve attendance to the first PT visit would also increase the likelihood of completing PT services.

Methods: Community-dwelling persons managed in an outpatient osteoporosis clinic from September through March of 2017 were screened for fall risk by a PT. Those at risk of falling were offered a plan of care involving a home exercise program (HEP) to reduce fall risk overseen by a PT. A person had completed the plan of care once they were independent in the HEP. Prior to the intervention, follow-up visits were scheduled by telephone days after the initial evaluation. The intervention instead scheduled the first PT follow-up visit at the time of the initial screening evaluation. Participant characteristics, PT visit attendance and completion of plan of care were extracted from medical records in May 2017. Program improvement was defined by an increase in ten percentage points in both visit attendance and completion rate.

Results: Eighteen (40%) persons screened and found to be at high fall risk agreed to PT. The rest did not need, declined or chose outside PT. The majority were male (94%), with a mean (SD) age of 76 (±10) years; 45% had a history of falling. Performance on tests of fall risk was poor (Timed Up-and-Go, mean (SD) 16.4 (±5.4) seconds; 30-second Chair Stand test, 94% below cut-off for fall risk). Thirteen (72%) attended the first PT follow-up visit, and nine (50%) completed the plan of care, a 28% increase from pre-intervention baseline for both measures.

Conclusions: Scheduling future PT visits at the time of initial fall risk assessment improved both PT visit follow-up and completion of the PT plan of care to a greater-than-anticipated degree. Real-time scheduling represents a simple improvement strategy to increase the receipt of fall-prevention services in a group at high risk of falls and fractures.

A71 Peaceful Night at the Hospital?
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Background: As many as 50% of geriatric population develop delirium at some point during hospitalization. Facilitation of physiologic sleep is one vital, non-pharmacological intervention for the primary prevention of delirium. The aim of this project is to understand the level and causes of noise in one hospital unit, in order to plan a quality improvement project to reduce the noise level surrounding patients at night.

Methods: Monthly data was obtained using the Stanford Health Care survey sent out to patients who were discharged from the hospital. Patients were asked “During your hospital stay, how often was the area around your room quiet at night? never/sometimes/usual/always.” Only always answers were reported. Patients in one hospital unit who were cognitively intact to answer questions and stayed in the unit for at least one night also were surveyed to see if there were noises that interrupted their sleep. If there were noises that interrupted their sleep, patients were further asked what those specific noises were.

Results: Baseline data from Stanford Health Care survey from January to August 2017, showed that the area around patients’ room was always quiet 17.6-57.9% of the time. 5 of the 14 patients interviewed in the unit complained of noise that interrupted their sleep. Staff noise was identified as one reason for interrupted sleep; Table 1 lists other causes identified through patient interviews.

Conclusion: The area around the rooms at night is not always quiet and is variable. Baseline data shows that there are areas for improvement, including staff noise. We are planning a quality improvement project to increase the patient’s room quietness at night. Based on these results, interventions will target minimizing staff noise. These interventions include educating nurses, and reminding nurses during huddle the importance of minimizing staff noise. Signs stating that “patients are sleeping” around the break room and Pyxis machine will be used to remind nurses to lower their voices. This quality improvement project aims for a long term reduction in the noise level at night.

A72 Advancing how we order “Advanced Care Planning”
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Background: While geriatricians and their patients widely recognize the importance of Advanced Care Planning (ACP), it is often challenging for providers to conduct these thoughtful, time-intensive discussions in a busy clinic setting. At VCU Center for Advanced Health Management (CAHM), two trained non-physician facilitators are available on site to conduct ACP discussions using the Honoring Choices methodology.1 The objective of this project was to increase the utilization of embedded ACP facilitators in our geriatrics clinic by incorporating a streamlined electronic order.

Methods: This project was conducted at the academic geriatric medicine clinic at VCU CAHM. A “Follow-Up: Advanced Care Planning” electronic order was created in the electronic medical record (EMR) system and placed prominently on “Quick Links” menu next to the order used by providers to schedule a follow-up appointment. Selecting this order triggered an administrative assistant to schedule the patient for an ACP session with a trained facilitator that would ideally coincide with their next provider appointment for patient convenience. Providers in clinic (4 attendings, 2 fellows) were reminded to offer these ACP referrals to their patients and instructed on how to place the order using step-by-step screenshots. ACP appointment referrals were tracked by ACP facilitators. Feedback was obtained from providers.

Results: In the 60 days prior to implementation of the Advanced Care Planning electronic quick order, 9 patients were referred for ACP appointments. In the 60 days following the implementation of the order, 14 patients were referred for ACP appointments, an increase of 56%. Providers appreciated the ease of placing the order and noted that the prominent placement of the order in the EMR served as a helpful reminder.

Conclusion: Creation of an easily visible electronic order for facilitated ACP discussion has increased the number of ACP referrals. Data collection is ongoing given recent implementation of EMR quick order. VCU information technology is in the process of creating a report that will track the use of the ACP referral at the provider level. This data will be instrumental in determining the percentage
of electronic referral orders that result in attended appointments and advanced directive documentation. We anticipate using this information for provider feedback and ongoing process improvement.


**A73**

Promoting Active Aging: Innovation in Primary Care

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**Background:** Poor mobility predicts morbidity and mortality for older adults; physical activity (PA) preserves mobility. However, primary care practices rarely screen for mobility impairment. This pilot employed a hybrid implementation/effectiveness design to a) implement mobility screening for older adults, and b) assess the effectiveness of video-based motivational counseling to foster older adults’ readiness to increase PA.

**Methods:** We partnered with three diverse practices serving Medicare beneficiaries 65+ years old to implement a mobility tool-kit consisting of 1) survey of self-perceived risk for mobility loss; 2) 4-meter gait speed; and 3) the Mobility Assessment Tool, short form (MAT-sf), a 3-minute tablet-based self-report tool featuring an avatar. Participants were then randomized either to a motivational counseling video to enhance PA or an active control video on healthy eating (HE). Outcome measures included: change in self-perceived risk of mobility impairment; attendance at a monthly PA information session at each practice; and providers’ perception of feasibility and acceptability.

**Results:** Stakeholders from each site (3 physicians/4 staff) anticipated benefit to patients and providers. Concerns were inadequate time and space; 12.5% voiced concerns for falls. Fifty-nine older adults were enrolled (Downtown Health Plaza (DHP)=20; Geriatrics Clinic (GC)=20; Peacemorch Practice (PH)=19). Attendance at the PA session by enrolled participants (PA n=29, HE n=30) did not vary by randomization group (PA: 38% attended, HE: 40% attended; p=0.99). However, attendance differed among sites (DHP: 57%, GC:45%, PH: 11%; P=0.02). Self-perception of risk for mobility impairment differed between randomization groups (group*time p=0.02). For the PA video group, the number of participants who estimated an increase in risk were the same as those who stated decrease in risk. In the HE group, all participants that changed their risk assessment after the video stated a higher level of risk than before. The mobility tool-kit was perceived as more feasible and acceptable than the counseling videos.

**Conclusions:** A mobility tool-kit for older adults is feasible in primary care and may augment interest in PA. A PA counseling video did not impact self-assessment of mobility risk or attendance at a PA information session.

**A74**

Assessing the Quality Improvement Needs of Home-Based Primary Care and Palliative Care Practices


**Background:** The National Home-Based Primary Care and Palliative Care Network is developing a registry and national learning collaborative focused on quality improvement (QI) to support the provision of quality home-based medical care to homebound older adults. We piloted a survey to assess the QI needs of home-based medical care practices.

**Methods:** We developed and piloted a thirteen-question needs assessment in a sample of home based medical-care practices. The survey assessed knowledge of QI, previous experience with QI, areas for additional training, perceived barriers and benefits to QI, the quality-of-care registry and a learning collaborative. The survey was administered to practice managers and providers at five United States Medical Management (USMM) home-based medical care sites in the Midwest (3), South (1) and Northeast (1) United States.

**Results:** The survey was completed by 5 practice managers and 21 providers (response rate 78%). Most respondents rated themselves familiar with QI (5 or 25% “very”, 19 or 73% “somewhat”) and confident in their ability to implement a QI process in their practice (5 or 19% “very”, 18 or 60% “somewhat”). Most respondents (14/26, 54%) reported previous personal experience with QI activities and all practices were engaged in QI. Requests for QI training included identifying an intervention (16/26), engaging other team members in QI process (15/26) and evaluating data (13/26). Managers predicted using registry data to identify quality gaps (21/26 respondents) and for reimbursement reporting requirements (18/26). Perceived barriers to QI included time (19/25) and provider engagement (16/26), while barriers to using registry data included time (17/26) and unclear benefits (15/26). Despite this concern, benefits of using the registry were predicted to be: improving patient care quality (23/26), improving reimbursement (17/26), and improving practice efficiency (15/26).

**Conclusions:** This survey indicated that while home-based medical care practices have familiarity and confidence in QI, 46% had no personal experience with QI and request help with fundamental QI tasks. Results are being used to tailor QI training and activities within a nationwide learning collaborative to support home-based medical care within a movement towards value-based care.

**A75**

Improving the Electronic Capture of Best Practice Metrics in a Geriatrics Ambulatory Clinic

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**Background:** Clinical quality measures (CQM) aim to improve patient outcomes and quality of care, and are requirements for providers to receive meaningful use payments. Example performance of CQMs is associated with education and electronic medical record (EMR) optimization. The objective of this study is to determine the effectiveness of interventions aimed at increasing performance rates of 4 CQMs (influenza and pneumococcal vaccine administration and depression and fall risk screening) in a Geriatric Medicine clinic through a 3-pronged approach: (1) physician education; (2) augmenting first line gate-keeper training (MAs, LPNs, RNs); and (3) optimizing EMR utilization and interface.

**Methods:** Baseline CQM rates were analyzed for patients aged ≥65 attributed to Geriatrics Clinic providers over an 18-month lookback period (n range 319-644, varied for each CQM) and compared to CQM rates in the 2-month study period (n range 164-708) following physician and gate-keeper education. EMR optimization is planned for 2018 and analysis will continue through completion of the 3-pronged approach. **Results:** Compliance rates increased during the study period: influenza vaccine administration (70.5% to 82.3%), pneumococcal vaccine administration (66.8% to 67.7%), depression screen (30.6% to 34.5%) and fall risk screen (68.2% to 69.4%). Influenza and pneumococcal vaccine administration percent change rates were +16.7% and +1.25%, respectively. Annual depression screen percent change was +12.9% and annual fall risk screen assessment percent change was +1.73%. The highest rates of CQM completion were observed at the end of the study period for influenza and pneumococcal vaccine administration and depression screening. **Conclusions:** A series of quality improvement interventions in a Geriatric Medicine outpatient clinic were successful in improving the completion and capture rates of 4 CQMs. This project highlights the importance of physician education in clinical practice.
tandem with a multidisciplinary team effort in impacting patient care through improved clinical quality metrics. The interventions noted herein represent potential approaches to improving CQM in Geriatrics outpatient practices.

A76
Advance Care Planning for Older Adults in Federally Qualified Health Centers
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Background: The advance directive (AD) is an important component of the older adult patient’s medical record. In the absence of an AD, the provision of unwanted medical care may result in unnecessary health care expenditures and care measures that are inconsistent with patient and family preferences. As a component of the Geriatric Workforce Enhancement Program, University of South Florida faculty and the staff at Tom Lee Suncoast Community Health Center targeted Advance Care Planning (ACP) as a priority quality improvement (QI) metric. In July 2017 a project team utilized the Dartmouth Clinical Microsystems model to launch a PDSA rapid cycle improvement initiative to increase the proportion of patients who participated in ACP activities.

Methods: The staff utilized current procedural terminology codes (CPT) 1158F and 1157F and determined that 0.03% of patients received ACP counseling during September 2017. Clinic staff generated a fishbone diagram and a process map to examine potential drivers and target process components for improvement. The results of the fishbone diagram cause-and-effect analysis showed that ancillary staff was not consistently introducing the ACP or documenting completion of ACP procedures. Based on these results, the staff created a process map and identified steps that could be re-engineered to increase adherence. The staff implemented four process changes. The front office staff queried patient records for documentation of ACP completion. The staff began distributing laminated ACP information to patients in the waiting room. Staff nurses provided ACP teaching to patients without an ACP. Lastly, providers completed ACP counseling and recorded the CPT code in the medical record. The staff used an internal checklist to manage the process from initiation to completion.

Results: The process map helped redefine the workflow. After the workflow redesign, the numbers of ACP counseling visits increased from the baseline of 11 patients in September 2017 to 60 patients in October 2017.

Conclusions: Following a single PDSA quality improvement cycle, the ACP indicator increased in the initial site and at the additional site. While the detailed process mapping and work process redesign require collaboration and coordination, these processes appear to be transferrable to other primary care settings and can be used to increase the proportion of older adult who complete ACP.

A77
The Allen Cognitive Level Screen (ACLS) Initiation and Evaluation in a Community Based Program

Background: The Program of All-Inclusive Care for the Elderly (PACE) is a community based care program for frail older adults who are nursing home eligible and able to remain in their home and community safely. Given the vulnerability of this population, it is vital the team determines a participant’s cognitive baseline to provide optimal care. At Centra PACE, the Mini Mental State Examination (MMSE) is a tool used to assess a participant’s cognitive baseline. We found it provided limited information and it was a challenge to identify needs related to medication compliance, falls and weight loss. Subsequently, the ACLS tool was implemented. Methods: Our PACE occupational therapist (OT) or certified occupational therapy assistant (COTA) administered the ACLS test as part of a quality improvement project at the PACE center in Gretna, a rural town in southeastern Virginia. Each participant received a score of 1 (comatose) to 6 (highest function) with 9 subcategories. The OT team developed a color coding system and trained all disciplines on the ACLS and how to integrate it into the plan of care. With similar demographics, the Farmville site was used as the control group. Data was collected from April to September 2017. Results: By using ACLS, the interdisciplinary team (IDT) was able to reduce medication errors. Falls were more complex than cognition; therefore, root cause analysis included acute illness, mental health influences and environmental issues. ACLS did not impact weight loss. Refer to attached tables. Conclusions: ACLS was beneficial for the PACE IDT as compared to only using the MMSE. With increased awareness of our participants’ cognitive abilities, our team was better able to anticipate their needs and provide appropriate support to participants and their caregivers.

A78
INTERACT training coupled with root cause analysis results in a significant reduction of preventable adverse drug events in skilled nursing facilities.
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Background: Adverse Drug Events (ADEs) cause death or injury to 770,000 patients annually with associated medical costs of $3.5 billion dollars. There has been an increased demand for the identification of potentially preventable adverse drug events (pADEs) because a correction of a pADE reduces the probability of an ADE from occurring. As part of the Utah Geriatric Education Consortium, a Geriatric Workforce Enhancement Program, we trained staff at skilled nursing facilities (SNF) on the usage of the Interventions to Reduce Acute Care Transfers (INTERACT) quality improvement program with an emphasis on the medication reconciliations that occur with transitions of care between hospitals and SNFs.

Methods: Data on pADEs associated with transitions of care are collected weekly utilizing an online reporting system. No personal identifiable data is collected to ensure patient confidentiality. Data are compiled and results shared in a de-identified manner with 70 participating SNFs and their affiliated hospitals utilizing a combination of structured reports and group meetings. These data are a core component in root cause analysis and quality improvement activities associated with improving medication orders between SNF and hospitals.

Results: Between January 1, 2015 and October 30, 2017, 26,883 transitions of care and their associated medication reconciliations were recorded; during this timeframe at total of 6,114 (23%) medication order sets had one or more pADEs, for a total of 11,384 individual medications orders needing clarification. Baseline data revealed that 31 percent of transitions had one or more pADE’s in their medication order set. As of October 30, 2017 the percentage of transitions that had pADEs had been reduced to 19 percent, for an overall reduction of 39 percent (p<0.001).

Conclusions: Reduction of pADEs associated with transitions of care, and their associated ADEs, is possible within SNF settings. The use of timely and suitable data in conjunction with quality improvement tools such as the INTERACT medication reconciliation tool along with effective root cause analysis are methods that produce positive outcomes.
A79 Encore Presentation
Improving medication reconciliation in a Veterans Affairs (VA) Nursing Home as part of MARQUIS
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Background: Accurate, efficient medication reconciliation (MedRec) is challenging, and high rates of discrepancies have been found among nursing home (NH) patients. Best practices for this setting have not yet been identified. To address this gap, the VA Boston NH is participating in a national AHRQ funded MultiCenter Medication Reconciliation Quality Improvement Study 2 (MARQUIS2) from October 2016 - June 2018.

Methods: Baseline assessments included a provider survey, process mapping, and a modified healthcare failure modes effects analysis (HFMEA). Results informed quality improvement interventions including pharmacist-led MedRec and MedRec training. A system for medication discrepancy data collection was established.

Results: Provider survey results indicated MedRec was extremely time-consuming and error-prone; respondents reported inadequate resources to perform MedRec optimally. MedRec processes were mapped by the interdisciplinary team to understand all MedRec related activities. These process maps were used for the HFMEA and intervention planning. Interventions included a medication history teaching session, specifically designed for NH patients who have high baseline comorbidities and multiple transitions in care. Other interventions included a discharge medication note template, MedRec software and pharmacist performed MedRec. Baseline data revealed an average of approximately 4.5 discrepancies per patient. Since beginning interventions, there has been a 26% decrease in discrepancies per medication per patient in the intervention group, as compared with control groups.

Conclusion: NHs represent a unique and important study site for MedRec quality improvement efforts. Rigorous baseline assessments have revealed high rates of reconciliation errors and have provided important framework for developing targeted interventions. These interventions, such as training for high-quality medication reconciliation in NH patients, appear to be having a positive impact on the discrepancy rate.

A80
Group Medical Visits (GMV) for Falls Prevention in a Community Health Center

Background: Falls are the leading cause of fatal and non-fatal injuries for older adults. Interdisciplinary assessment of modifiable risk factors has been shown to reduce fall risk. GMVs provide a valuable model to increase access and enhance quality of care while improving patient and provider satisfaction. With support from a Geriatric Workforce Enhancement Program grant we devised an interdisciplinary medical visit model in Spanish for older adults at Brightwood Health Center.

Methods: Patients > 65 yrs of age who reported having fallen at any office visit in the prior 6 months were invited. Our team includes a medical assistant, nurse, advanced practitioner, community health educator and pharmacist. The GMV is provided in Spanish, lasts 2 hours and includes an interactive group session on risk factors and fall prevention strategies, followed by assessment of orthostatics, “timed get up and go” (TUG), medication review, physical exam and the development of a personalized care plan with the patient. The assessment and interventions are based on the CDC’s Stopping Elderly Accidents Deaths and Injuries (STEADI) initiative.

Results: We reviewed 39 records of patients referred from Jan-Oct 2017. Average number of falls over the year prior to GMV was 1.74 (0-5), 50 % occurred at home (32% were not at home); 52% reported a resulting injury. Prior to the GMV 76 % had been seen by ophthalmology, 47% had recorded vitamin D levels, of which 57% were ≤ 30, DEXA scans had been done in 38%. Average number of medications was 15 (3-33). Average TUG time was 16s (7-55). GMV recommendations included: medication changes in 70% and referrals in 23% (ophthalmology, physical therapy, clinical pharmacist, podiatry, VNA). Care plans were completed for 74% of patients.

Conclusion: GMV for falls risk reduction are feasible and provide structured assessment, education and comprehensive multifactorial individualized interventions. The most frequent interventions included medication changes, identification of gait disorders including imbalance and need for assistive devices, as well as referrals for home safety evaluations and physical therapy.

Availability of Spanish sessions at the community health center maximized access to services. Further follow up of participants is needed to assess the impact of GMV on subsequent fall and injury rates.

A81
The ABC’s of ACB: anticholinergics and deprescribing
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Background: Evidence suggests correlation of anticholinergic medications with increased falls, cognitive impairment, and health care utilization in geriatrics; hindering the ability to improve or even maintain patient health and independence. Unfortunately, anticholinergic use is quite common with at least 20% of elderly patients taking anticholinergic medications. Anticholinergic use can be quantified using the Anticholinergic Burden Scale (ACB score). Deprescribing efforts should focus on anticholinergics to improve quality of care to patients.

Methods: This study focuses on established geriatric patients in an academic, outpatient, community practice. Eighty-five patient medication lists were audited and individual ACB scores calculated. Before each appointment for the next 14 weeks (30 patient visits), the ACB score and list of contributing medications was communicated to the doctor seeing the patient. The ACB score after each patient visit was recorded. Qualitative data was obtained on barriers to deprescribing or contributors to successful deprescribing.

Results: Fifty-five percent (n=47) of patients had an ACB score of ≥ one. Of those patients, the mean ACB score was 2.75. The most common classes contributing to the ACB score were cardiovascular agents (n = 33) and antihistamines (n = 11). Of the 30 patient visits evaluated, deprescribing occurred in two visits, tapering down in two visits (with plan to discontinue in future), and prescribing of new possible anticholinergics in three visits. The net ACB score of the patient population did not change during this time. When the medication tapers are completed the net ACB score will decrease by 4 points.

Conclusion: Over half of the patients in our practice are prescribed possible or definite anticholinergic medications, despite suggested harms. Simply listing out the medications that were involved in the ACB score did not have a significant impact on deprescribing by physicians. Barriers to deprescribing included management by a subspecialty other than geriatrics, insufficient time to investigate and discuss alternative medications, or hesitancy to change therapy on a stable patient. Successes involved collaboration with subspecialty providers and providing patient education. Since inadequate
time seemed a major barrier, deprescribing may be more successful if a suitable alternative medication is suggested for each medication contributing to the ACB score.

A82

Did you bring your medications with you? Improving the medication reconciliation process in a geriatrics ambulatory practice

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Background: Accurate medication reconciliation can reduce adverse drug events, medication errors, and hospitalizations, yet many patients don’t bring medications/list to their appointments. The Joint Commission made medication reconciliation a National Patient Safety Goal to minimize adverse drug events. The aim of this project was to increase the percentage of patients bringing their medications or list of medications to their geriatric ambulatory practice appointments in order to improve medication reconciliation. 

Methods: Medical assistants and physicians asked patients at their appointments if they brought their medications/list, and if not, why. Factors that might affect compliance, which included type of visit, English proficiency, and self-administration of medications were tracked to understand the current state. The first Plan-Do-Study-Act (PDSA) cycle added the following sentence to the reminder phone call that patients receive the day prior to their appointment: “Please remember to bring your medications or an up-to-date list of your medications to your appointment. This is important to help us take the best care of you.” A second survey was conducted to assess the rate of patients bringing medications or list to clinic. We used a chi-squared test to compare the proportions of patients who brought their medications to clinic before and after the intervention.

Results: During our initial data collection period, we surveyed 68 consecutive patients. 32% (27/68) brought their medications or list to clinic. Among those who did not bring their medications/list with them, 43% “did not know they should” and 28% “forgot.” After the reminder call, a new group of 64 patients were surveyed. The rate significantly improved to 50% (32/64; p=0.04). 51% of patients reported receiving the phone call reminder, and of those patients, the rate of bringing medications or list to clinic was 82% (27/33).

Conclusions: A reminder phone call significantly increased the rate of patients bringing medications or list to clinic accurate medication reconciliation. Given that the improvement rate was highest among patients who had received the call, future interventions such as an automated reminder phone call or written reminder are next steps to sustain change.

A83

Rural older adult care transitions: Assessing need and identifying solutions to improve care


Background: Older adults (OA) living in rural areas risk inadequate care transitions (CT) because of geographical distance from care, fewer available services and supports, and socioeconomic factors such as lower education and increased poverty. New penalties for hospital readmissions increase financial implications of rural CTs.

Methods: The purpose of a small networking meeting with 4 Geriatric Workforce Enhancement Programs (GWEP) from western states with large rural areas was to identify rural CT needs, and identify future collaborations, through presentations and interprofessional round-table discussions by care transition and rural health experts, and rural community stakeholders. Academic, practice and community partner attendees (n=25) included RNs (31%), MDs (13%), and social workers (25%). Almost 2/3 of attendees (62%) worked in, or with, rural areas.

Results: During the two-day conference, attendees focused on 6 objectives and derived key finding from each. Per a post-meeting evaluation, attendee satisfaction with accomplishing meeting objectives ranged from 4.6-4.9 (on a 1-5 scale).

Conclusions: Patient-centered OA CTs can be facilitated by an interdisciplinary team approach utilizing rural resources, technology and protocols shared across care settings. GWEPs are uniquely qualified to foster collaborations with key stakeholders to strengthen rural CTs through work force training, quality improvement initiatives, and adaptation and implementation of evidence-based CT programs tailored to rural communities.

Key Findings

<table>
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<tr>
<th>Objective</th>
<th>Key Finding</th>
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<tr>
<td>Explore evidence-based CT practices and needs.</td>
<td>CT model communities include multiple components, risk assessment, standardized discharge processes, and a variety of rural CT resources.</td>
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<td>Identify facilitators, barriers and challenges to rural OA CTs.</td>
<td>Rural providers, patients and families share similar goals; are often not aware of available community resources to achieve goals.</td>
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<tr>
<td>Identify rural provider education and training needs to improve CTs.</td>
<td>Rural providers need training in geriatric assessment, cultural competency, goal-setting, end of life conversations, and community resources.</td>
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<td>Identify current programs and services within participating GWEPs that could be tailored to address rural CTs.</td>
<td>Successful collaborations with rural community partners can be adopted and expanded across care and community settings.</td>
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<tr>
<td>Propose new programs and partnerships to address rural OA CTs.</td>
<td>Interprofessional community-based telephone/internet-delivered program can be used to coordinate active-continent rural care.</td>
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<tr>
<td>Identify outcomes to measure effectiveness of rural CT interventions.</td>
<td>Although standardized CT outcomes are needed, proxy variables include hospital readmissions and patient/family satisfaction.</td>
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A84 Encore Presentation

Puff Puff, Wheeze Wheeze, Oh How I Wish I Could Breathe: Prevalence of Undiagnosed Asthma in Older Adults

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Background: Older adults have higher rates of hospitalization due to chronic disease and complex care needs. Chronic Obstructive Pulmonary Disease (COPD) is a progressive lung disease prevalent in 20-30% of older patients. Asthma is the most common type of obstructive lung disease (OLD) with a prevalence of 10% in patients > 60 years of age and mortality rate of 6%, the highest of all age groups. Asthma in older adults is rarely diagnosed. Ohio has a high prevalence of asthma affecting > 9% of adults. Ohio exceeds the Healthy People 2020 goal to reduce asthma hospitalizations by 150% for geriatrics.

Methods: Descriptive correlational study using a convenience sample. The investigation took place at senior health fairs. Inclusion criteria; age 65 and older, English speaking, literate. Potential participants were screened and if met criteria; A pulmonary function screen test (PFT) was performed and a pulse oximetry measurement was obtained. Results were documented and discussed with participants. If history of asthma, additional questions were asked based on the Asthma Control Test/Aultman’s Asthma Visit Documentation Form.

Results: Pearson’s Chi-square test was utilized. N=117, Male = 42%, female = 58%, Average age =73.3 years, non-smoker 95% 42% screened positive for OLD overall (FEV1 <80% of predicted value)

67% of these had no previous OLD diagnosis Pearson Chi-Square Value 10.7748, p-value <0.001 10% had history of asthma 58% of these were uncontrolled 37 % screened positive for undiagnosed asthma
The PFT demonstrated consistency by showing the FEV1 (% Pred) as expected for those participants diagnosed with OLD. The asthma questionnaire showed consistency and validity because the participants’ answers correlated as expected with the pulmonary function results; as the number of positive asthma screening questions increased, the FEF 25-75% value decreased, as would be expected.

Conclusion: The number of participants screening positive for OLD was not statistically significant however, clinical significance exists. The expected FVC values based on a previous diagnosis of OLD was not seen which further supports the hypothesis older adults are not being properly diagnosed. The number of undiagnosed participants in each OLD category further demonstrates a notable amount of participants being undiagnosed, misdiagnosed, or mismanaged. Those participants with known asthma were not well controlled.

A85
DePrescribing of Vitamin Supplements in Older Adults: A Quality Improvement Project
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Background: Nutritional supplement use is redundant and inappropriate; e.g. multivitamins (MVT) concurrently with tube feeding. In the U.S. 49% of adults use at least 1 dietary supplement. Reasons include: overall health, wound healing, prevention of stroke / cancer, etc. Dietary supplements are not particularly costly, yet spending is considerable. Evidence has failed to suggest that routine use of MVTs and minerals prevent disease, barring settings of nutrient deficiency. Excessive use may cause harm. DePrescribing (DeP) is the “safe, appropriate reduction in number or dosage of medications prescribed”, aimed to improve health outcomes and reduce cost.

Aim, Methods: As a QI Initiative, DeP was initiated to broadly evaluate prescribing practices in a fellowship program in geriatric medicine. The aim was to evaluate use of MVTs and minerals and discontinue the medication or reduce dosage as appropriate. Data gathered and tabulated from 107 patients; females 63.55%; 73.8% nursing home, 16.8% community, 9.4% hospital. Age groups: <65 yrs 18.69%; 66-75 yrs 17.76%; 76-85 yrs 29.91%; >86 yrs 33.64%. 1 was on PEG feeding, 11 with unspecified diet, rest on oral feeds.

Results: While the aim was to reduce dietary supplement use, the prevailing culture was not always receptive to the process. It was easier to reduce an analgesic than a supplement. Older adults, esp. females were more likely to take a supplement although the sample was skewed with more females. Regardless, evidence suggests that women more likely take supplements. Approximately 20% were not on a supplement. 73.26% of individuals (63 of 86 of total individuals) were on supplements in the nursing home, a matter that is addressable. Factors influencing use of supplements included input from patient/caregiver & physician/non-physician staff. Only 4.7% were taken off supplements (3 nursing home, 2 clinic).

Conclusions: DeP of nutritional supplements was difficult to accomplish in practice. Influences includes patient / caregiver reluctance and care provider opinions, that may be addressed by interdisciplinary efforts and education.


A86
Implementing a Geriatric-Orthopedic Co-management Model in a Large Integrated Delivery Network Health System
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Background: Hip fracture, a common complication of falls in older adults, often results in significant morbidity and mortality. Management of fragility fracture is an opportunity for co-management models to optimize care delivery and quality. Northwell Health (NWH), a large Integrated Delivery Network health system, partnered with the American Geriatrics Society (AGS) and the Hartford Foundation to disseminate a Geriatric-Orthopedic Co-management (GOCo) program.

Methods: Through this partnership, NWH set out to implement an evidenced-based GOCo program. An interdisciplinary Steering Committee (SC) comprised of system leaders in Geriatrics, Hospital Medicine, Orthopedics, Anesthesia, Data Analytics, Information Technology, and Post-Acute services was assembled to implement the program. The SC had regular meetings with AGS to prepare for implementation.

Results: Over 1 year, the SC worked to ensure a smooth rollout of the GOCo protocol. The SC performed a needs assessment for care delivery for this population and obtained buy-in from system leadership and stakeholders through a business plan and value proposition. Patient- and process-centered metrics were identified and a dashboard for data collection was created. Timelines with milestones for roll-out to hospital sites, including interdisciplinary educational lectures, were created. A clear contract of the co-management model was finalized and medicine consult forms and pre- and post-operative order sets were created and standardized. Challenges and barriers were openly addressed through SC meetings.

Conclusions: Dissemination of an evidenced-based program to improve care for fragility fractures can be complex. The mentorship from field experts through AGS and the creation of an interdisciplinary Steering Committee at the enterprise level were essential to implementation. Future steps include implementation of the GOCo program in health system sites, data monitoring to ensure improvement in care, and obtaining GOCo certification for selected faculty.

A87
Pilot of Occupational Therapy Technician Phone Follow Up after Distribution of Home Safety Equipment in a Specialty Osteoporosis Clinic
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Background: Individuals at risk of falling often ignore home safety recommendations but regular follow up improves adherence. A non-trained provider may be able to conduct follow-up evaluations, reducing time and labor costs. We hypothesized an occupational therapy technician (OTTech) could conduct follow-up assessments of the receipt and adherence to home safety recommendations and adaptive equipment for persons having received an initial evaluation by an occupational therapist (OT).

Methods: Veterans evaluated in an osteoporosis clinic who the OT found to have home safety and adaptive equipment needs were scheduled for a four-week phone follow-up. Lower complexity
Veterans (Mini-Cog Test™ (MCT > 3) and who received less than two equipment items) were called by the OTTech who followed a protocol designed by the OT. To verify the accuracy, competency and safety of the OTTech, the next day the OT completed the same telephone follow-up. Protocol success was determined by efficiency (20% eligibility for OTTech call and total time for the call was <10min), safety (the OTTech appropriately alerted the OT to participant concerns) and accuracy (at least 90% of notes by OTTech were complete and accurate as verified by OT). Data was collected by review of the electronic medical record 5 months after protocol initiation.

**Results:** During the first 2 months, over half of total patients receiving home safety equipment patients triggered OTTech phone follow up. Of these, 40% of the patients were incorrectly flagged by the OT for OTTech follow-up, not meeting protocol criteria. For those called by the OTTech, the average time spent on phone calls was 7 minutes, below the goal and only 2 minutes more than the OT. The OTTech could follow the script as validated by OT follow up calls and had complete documentation. When necessary, OT was notified if patient concerns or clinical need.

**Conclusions:** We showed that a non-provider can efficiently, accurately, and safely perform telephone assessments emphasizing home safety recommendations and receipt of adaptive equipment. Underscoring that lower skilled workers can support the clinical efforts of providers in a way that is effective, efficient and safe, potentially lowering costs of care.

### A88
**Identification of frailty—feasibility of a case finding process in the primary care setting.**

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**Background:** Major international agencies recommend the identification of frailty in primary healthcare (PHC) as part of routine clinical practice. However, frailty identification is challenging because many of the currently available frailty identification tools are used for research purposes rather than the PHC setting. Given seniors are at increased risk of frailty, we aimed to test feasibility and acceptability of a frailty case-finding process as part of an integrated PHC seniors’ program.

**Methods:** Guided by the developmental evaluation framework, we piloted a frailty case-finding process in one academic primary care clinic (6 physicians and 12 support staff) in Alberta, Canada. Target group was community-dwelling seniors ≥65 years of age. Frailty case-finding included PRISMA7 (self-administered questionnaire) and 4m-walk test (administered by nurse), as suggested by British Geriatric Society. Data was collected on training/special equipment/space required for each test, % completion rates, informal feedback from the clinic team, and the log of modifications of this process.

**Results:** 78 and 71 patients were screened with PRISMA7 and 4m-walk test, respectively. PRISMA7 had 100% completion rate, but in some cases required help from caregivers; the 4m-walk test had 91% completion rate (7 not able to physically do the test). PHC providers’ found the 4m-walk test space and time requirements disruptive to clinic flow. Though less resource intensive, PHC providers were concerned that PRISMA7, if used as a single test, would not be appropriate due to its perceived sensitivity and specificity in the PHC setting. In response to this feedback, the electronic frailty index (eFI) that uses readily available data in electronic medical records (EMRs) was added for frailty case-finding. 5 of 6 physicians agreed to screening by a research assistant (RA), and a total of 258 patient charts were screened. Despite the eFI requiring 10-20 mins/patient by the RA, physicians found it less intrusive, more helpful in stratifying patients, and felt this multidimensional tool was capturing complexity of frailty.

**Conclusions:** Case-finding tools should be tailored to the setting. Tools requiring training/space were not as well accepted by PHC but the eFI is a promising point of care tool.

### A89
**THE MAGIC CLINIC: RESULTS FROM A 2-YEAR PILOT PROGRAM PROVIDING INTERDISCIPLINARY GERIATRIC CONSULTATION**

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**BACKGROUND:** Chronically ill older adults in the primary care setting often require a team to address their health care needs. We designed an interdisciplinary geriatric consult service in a patient-centered medical home to optimize medication regimens, reduce health care utilization, and improve health outcomes.

**METHODS:** The MAGIC (Mount Auburn Geriatric Interdisciplinary Consultation) Clinic was created in 2015 to provide a geriatric consultative service to older adults referred by their PCPs in the Primary Care Center (PCC) at Mount Auburn Hospital (MAH). The MAGIC Clinic is staffed by a geriatrician, clinical pharmacist, and geriatric social worker, and a larger team of interdisciplinary members who meet monthly to coordinate ongoing care.

**RESULTS:** To date the MAGIC Clinic saw 52 patients during 150 encounters. The mean age was 80, range 65 – 92 years old. Many lived alone (44.2%), 1/3 were dependent in ADLs, and 3/4 were dependent in IADLs, with a mean of 11.8 chronic active conditions (range 5 – 23). One third had a high-school education or less, and about 21% were non-English speaking and racial minorities. When looking at a 6 month pre/post comparison for patients with at least 6 months of care in the MAGIC Clinic (n=21), there were 4 fewer ED visits (12 vs 8), 7 fewer hospitalizations (8 vs 1), and 4 fewer readmissions (4 vs 0). We made 20 new diagnoses of dementia. Vaccination rates increased significantly from 33% to 100% (p=.0001), and documentation of health care proxy increased from 33% to 81% (p=.0016). Our efforts to optimize medications show a decrease in anticholinergic risk score, total number of medications, daily dose burden, and reductions in potentially inappropriate medications. Our patient and provider surveys show high levels of satisfaction. Pre and post patient/caregiver surveys show improvements in all domains, with 90% reporting that the MAGIC Clinic improved their overall care and that they would recommend the service to others.

**CONCLUSIONS:** We created an innovative geriatric consult service that improved health outcomes, reduced utilization, reduced inappropriate medication use, and was valued by patients and providers.

### A90
**Sustaining Transitional Care in Skilled Nursing Facilities: A Pilot Study**

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**Background:** Little is known about sustaining effective interventions in skilled nursing facilities (SNFs). We report findings on the effectiveness of strategies to sustain a transitional care intervention in 3 SNFs over one year, following completion of the intervention phase of a non-randomized, historically controlled pilot study of transitional care for short stay patients.

**Methods:** Sustainment strategies included (a) in-person and computer-based “booster” intervention training for staff, (b) procedures for training new staff, (c) designated SNF site champions to coordinate sustainment activities, (d) quarterly quality improvement audit and feedback reports, and (e) quarterly meetings with an executive sponsor to monitor sustainment and identify resources for overcoming barriers. To evaluate the effectiveness of the sustainment...
strategies, quarterly data were collected in SNFs on three metrics: reach (the number of patients who received the intervention divided by the number of eligible patients), fidelity (rates of staff adherence to the intervention protocol’s five components) and patient preparedness for discharge (mean score on the Care Transitions Measure-3). Data were analyzed using descriptive statistics.

Results: 61 staff (nurses, social workers and rehabilitation therapists) in three SNFs participated in booster training and quality improvement activities. During the sustainment phase, transitional care was provided for 172/172 eligible patients (100%). Quality improvement data for 105 patients were used to assess fidelity and preparedness for discharge. Fidelity to intervention protocol components was: (1) completed transition plans, 87/105 patients (83%); (2) family caregivers attended care plan meetings, 72/105 patients (69%); (3) follow-up appointments scheduled, 102/105 patients (97%); (4) medical records faxed to follow-up provider, 96/105 patients (91%); and (5) patients called at home <72 hours after discharge, 65/105 patients (62%). Mean Care Transitions Measure-3 score, 10/12 (83.3%).

Conclusion: We used far fewer resources to sustain the intervention than we used to implement it (phase 1) and yet there was no decrease in the transitional care intervention’s reach, fidelity, or effects on patients’ preparedness for discharge. Research now is needed to see if SNFs can use the strategies to sustain the intervention without researcher involvement.

A91 Medication Problems Identified Among At-risk, Community Dwelling Older Adults: The Community Medication Education, Data, & Safety (C-MEDS) Program
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Background: Discrepancies exist in 30-66% of older adults between medications ordered and those taken. Moreover, two-thirds of adults 60+ have inadequate literacy skill. Few programs exist to assist community-dwelling older adults in managing their medications. The purpose of this study is to describe the myriad medication problems encountered by community-dwelling at-risk older adults.

Methods: This study uses data from the C-MEDS program, a brief, customized medication safety and management intervention delivered in-home by a team of geriatric experts (pharmacists, nurses, and pharmacy technicians). Program eligibility criteria include: intact caregiver and are referred from health or social service providers in two California counties. Patients must be cognitively intact or have a cognitively intact caregiver and are referred from health or social service providers or from the community at large. Medication data are collected during home visits made by C-MEDS staff.

Results: To date, 157 patients have been referred to C-MEDS and 85 enrolled. Among these, 68% are female and the mean age is 72 (SD=8.6). The sample is diverse, with 41% white, 19% African American, 28% Hispanic/Latino, and 11% Asian/Pacific Islander. Number of routine prescription medications taken ranges from 3 to 24, with an average of 9 (SD=4.2). Nearly half (45%) of participants lacked prerequisite cognition/literacy, 44% had one or more ER visits and 41% had one or more falls in the previous 6 months. Among these 85 patients, more than 1,500 medication-related problems were identified. About 13% of these problems were related to adherence issues (66% of patients were not taking medications as prescribed); 46% were related to safety issues (in storage, dispensing, or disposing); about 15% related to the lack of patient/caregiver skills or knowledge in drug administration; and 8.5% of identified problems were related to actual or potential drug interaction, duplication, or side effect.

Conclusion: Early findings demonstrate diverse, older, community-dwelling individuals have significant medication-related problems that require pharmacist intervention. Home-based interventions are needed to ensure older patients are able to safely administer their medications.

A92 Advance Care Planning Documentation in a Dementia Specialty Practice
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Background: Completion of an advance directive (AD) is important for all adults, but especially for patients in the early stages of dementia when they have capacity to understand, appreciate, and choose medical decisions and designate a surrogate decision maker. However documentation of an AD and advance care planning (ACP) conversations are typically low. The goal of this quality improvement project is to describe ACP documentation practices in the electronic health record, and assess physician knowledge, skill and confidence in having ACP conversations and using relevant Medicare codes.

Methods: This study used a sample of ten physicians in a multi-disciplinary dementia specialty practice (Geriatrics n = 2; Psychiatry n = 5; Neurology n = 3). We measured physician knowledge, skill, and confidence based on a 10-item survey. We also assessed the prevalence of ACP documentation, including AD, Medical Order for Life Sustaining Treatment (MOLST), and discussions in progress notes in the prior three months.

Results: We found that physicians believed ACP improves outcomes in patients with dementia (100%), and it is their responsibility to initiate ACP conversations in the early stages of dementia (90%). Most were unfamiliar with the Medicare billing codes and requirements for ACP (90%). We reviewed progress notes for 407 patient visits; mean age of patients was 74 years, diagnosed with any type of dementia. The prevalence of AD documentation in the medical record was low (1%-25%), and power of attorney was the most frequent term mentioned that may reflect ACP discussions (3%).

Conclusion: Physician’s documentation of ACP planning with patients diagnosed with dementia is not consistent with their opinions of its importance and role in initiating conversations. In order to improve ACP planning, ACP educational interventions are needed to increase knowledge and effect practice.

A93 Caring for Persons with Dementia Better – Development and Implementation of Standardized Dementia Educational Materials for Caregivers
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Background: Caring for a person with dementia (PWD) can be a stressful journey. Caregiver stress is associated with increased morbidity. There is evidence for dementia education in relieving caregiver stress. However, delivery of dementia education varies between staff (doctor or nurse), and existing printed material does not contain sufficient practical information for caregivers.

Conclusion: Early findings demonstrate diverse, older, community-dwelling individuals have significant medication-related problems that require pharmacist intervention. Home-based interventions are needed to ensure older patients are able to safely administer their medications.
Objective: To improve the knowledge on dementia and reduce caregiver stress in caregivers of PWDs who have been admitted to the acute geriatric ward over the course of 6 months.

Methods: Factors for inadequate dementia education were analyzed. Standardized dementia educational material with multidisciplinary input was created. Caregivers of patients admitted to acute geriatric ward over the course of 6 months. Written consent was obtained. Validated tools (Dementia Knowledge Assessment Tool version 2, Zarit Burden Interview) were used to assess caregiver knowledge of dementia and screen for caregiver stress in the ward prior to dementia education and 1 month post-discharge via follow-up phone call. Results of pre- and post-implementation of the new material were analyzed.

Results: 37 caregivers were recruited. 58.6% were female. Mean age was 56.7 ± 8.8, 82.8% were Chinese, 10.3% Indian, and 6.9% Malay. 71.4% were either a son or daughter. 76.4% spent at least 50% of their time in caregiving. 10% of caregivers had to quit their previous job to be a caregiver. 78.9% of caregivers had at least 6 years of formal education. With existing material, while there was a 4.5% improvement in their knowledge of dementia, there was a rise of 44.7% in terms of caregiver stress. With the new dementia educational material, the improvement in knowledge of dementia was sustained at 2%, while caregiver stress was reduced by 3.8%.

Conclusion: Our new dementia educational material was able to improve knowledge and reduce caregiver stress in PWD caregivers. We hope to make further improvements to our material through focus groups and multidisciplinary team input, and subsequently expand it to the rest of the inpatient wards, specialist outpatient clinics, and the community.

A94 The Extent and Nature of Palliative Care (PC) in Geriatrics Workforce Enhancement Program (GWEP) Projects: Results of a National Survey
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Background
In 2015 HRSA awarded $37.5 million to 44 new GWEP centers. This program is the main source of federal support for geriatrics workforce development. PC is critical for good geriatrics care but little is known about whether GWEP programs have included PC in their educational and clinical initiatives.

Methods
An anonymous survey with closed and open ended questions on PC content in GWEP programs was piloted with several physicians; the HRSA Program Officer (PO) provided input and the BH IRB determined the tool was “not research.” In late 2016, the PO emailed it 3X to GWEP Program Directors (PDs) and Project Managers (PMs).

Results
There were 51 responses (Both PDs and PMs from some GWEPs participated.) One respondent skipped many items yielding a response rate of 97% for most questions.

The GWEP leadership reported that:
*69% incorporated some PC. (35/51)
*4% of these, PC < 25% of total effort for 82% (28/34); 15% (5/34) reported 25-49% of effort was devoted to PC.
*Common topics included: advanced care planning (ACP), 89%, PC in dementia (60%), pain (51%) and symptom management (51%) and hospice eligibility. (49%)
*50% (17/34) reported < 25% of PC initiatives were clinical, 21% (7/34) reported 25-49% clinical PC work and 29% (10/34) reported over half of PC effort was clinical.
*Clinical care and education occurred at multiple sites: outpatient settings, acute care, home care and nursing homes.
*54% of GWEPs including PC (19/35) reported having patients/families as learners for their educational efforts

Conclusions
Due to the ranges in survey categories, it is impossible to calculate precisely the total GWEP effort devoted to PC. Roughly 2/3 of them include PC. Although efforts are largely educational, substantial clinical PC work is occurring and emphasizes dementia care, ACP and symptom management. The figures underestimate direct impact on patients and families since most programs included patients and families as learners.

A95 A Quality Improvement Initiative (QI) to Improve Prescribing in an Acute Care for Elders (ACE) Program by Integrating a Clinical Pharmacist

Background: Adverse drug events (ADEs) are a major hazard for hospitalized elders and ACE units improve clinical outcomes and decrease costs. Optimizing prescribing is a component of most ACE programs but little is known about the impact of including a pharmacist in ACE rounds.

Methods: In this cross-sectional QI project at a 715 bed teaching hospital, pharmacists prospectively recorded drug recommendations for elders admitted to a pilot ACE program. Analyses were performed six months before and 12 months after the launch of the ACE initiative. These include the number, type, and frequency of the pharmacists’ recommendations and the acceptance rate by the physicians.

Results: A total of 588 patients met ACE inclusion criteria; 1,243 pharmacy recommendations were made. The patients mean age was 81.2 yrs, 54.9% were female and 79.8% were white. The median number of recommendations per patient increased from 1 (range: 1-7) in the pre-intervention to 2 (1-13) in the post-intervention period, resulting in an incidence rate ratio of 1.25 (95% CI: 1.10-1.40). Main recommendation categories were: dose adjustment (about 40 % in both pre and post ACE) while avoidance of inappropriate therapy and prevention of adverse drug reactions consisted of <8% in both pre and post intervention cohorts. In the post-intervention period, recommendations rose for analgesics (from 3.7% to 7.5%), reductions in both Potentially Inappropriate Medications (PIMS) (from 12% to 14%) and psychoactive drugs (from 1.9% to 6.0%). The physicians’ acceptance rate remained stable (86.5% vs 84.4%).

Conclusion: Adding a clinical pharmacist to ACE rounds substantially increased the number of drug adjustments for pain control, psychoactive drugs, deprescribing and the need to avoid PIMs; a majority of these recommendations were accepted. Although the QI design precludes quantification of avoided ADEs, this effort improved prescribing thus limiting potential risk. It is highly likely to have contributed to the cost savings, decreased length of stay and lower rates of delirium achieved. Dedicated, consistent clinical pharmacy presence is critical for the success of ACE programs and inter-professional geriatrics teams.

A96 Therapeutic Value of Volunteers to an Acute Care for Elders (ACE) Program
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Background: Nutritional inadequacy has long been recognized as a primary risk factor for elderly patients, yet the effectiveness of assistance in feeding has rarely been evaluated. One study cited in JGN,2014, found that elder ACE patients assisted by volunteers consumed an average of 59% of their meal vs 32% when assisted by nurses. Medical professionals on an acute care unit are both focused...
and limited by their specific responsibilities, where the responsibility of a volunteer is 1:1 interaction affording comfort, assistance, support, and advocacy flexibly, according to the needs of the patient. Mealtime assistance is only one area in which volunteers can make an impact.

Methods: BMC established the ACE program in 2014. In 2016 efforts were made to recruit and train volunteers specifically for the ACE unit, with a “senior volunteer” coordinating the efforts with BMC Volunteer Dept, nursing staff, and the volunteers themselves. Outreach to both college programs in the area and to retired hospital staff proved successful. BMC OT and PT staff and nursing staff were involved in orienting and training the volunteers. After training, volunteers typically shadow an experienced volunteer. At the start of their shift the volunteers check in with the charge nurse for specific requests for contacts. They report food consumption and mobility attempts to specific patient nurses. There have been several volunteer research assistants helping collect and quantify the data.

Results: Volunteers have helped patients advocate for themselves when their stated wishes were at odds with those of family members. They have assisted patients and family members who had difficulty understanding “medical jargon”. They have coordinated support with Spiritual Services when needed and with Discharge Planning. They participate in interdisciplinary rounds and help complete the team’s understanding of the patient. They become, according to the needs of the patient, companions, advocates, coaches, listeners, and helpers.

Conclusion: The authors believe that the participation of volunteers on this acute care unit is instrumental in the evolution from a multidisciplinary to an interdisciplinary approach in health care delivery. It is the flexible 1:1 interactions driven by individual patient needs that make the difference, and bring humanity to the bedside.

A97

Breaking down barriers: Electronic Health Record (EHR) access for community based organizations (CBOs)

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Background: The Geriatric Workforce Enhancement Program (GWEP) aims to establish more robust linkages between primary care practices and CBOs caring for older adults. The use of EHRs may facilitate communication about the need for resources and services, but many barriers to access exist. The GWEP worked with one of our partner CBOs, Senior PharmAssist (SPA), to establish access to the Duke EHR and to measure its impact on medication therapy management (MTM) sessions conducted by pharmacists.

Methods: Establishing access to the EHR involved several key steps, including creating a business associates agreement between Duke University and SPA and creating agreements between Duke’s Office of Information Technology and SPA for external access to its Epic-based system EHR. To evaluate the impact of the use of the EHR on work flow and MTM sessions, we surveyed SPA pharmacists and participants before and after access to the EHR. Pharmacists responded to a pre and post survey, which included questions about preparation time, types of MTM recommendations made, adequacy of information for decision making and communication with PCPs. An additional telephone survey of participants gauged general attitudes regarding use of the EHR by SPA. Results: Pharmacists completed 23 pre and 23 post surveys. The mean reported preparation time for visits before the EHR was 3 min (range 2-6 min) and after EHR was 18 min (range 11-45 min). Pre-EHR messages were sent via email, phone, and fax; post-EHR messages were sent exclusively via in-basket messages in the EHR. Table reports pharmacists’ perception of the adequacy of information and access to providers. On follow-up telephone survey, the majority of participants (33/37) reported being “fine with” SPA having access to the EHR and most considered it “better care” (30/38). Conclusion: Establishing EHR access for CBO’s is complex but achievable. Our survey indicates that it takes more time to prepare for a visit, but that it adds important information that meaningfully impacts recommendations and enhances communication.

Table. Pharmacists’ perceptions of adequacy of information and provider communication pre and post EHR use

<table>
<thead>
<tr>
<th>Question</th>
<th>Pre</th>
<th>Disagree</th>
<th>Agree</th>
<th>Post</th>
<th>Disagree</th>
<th>Agree</th>
<th>Significance</th>
</tr>
</thead>
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<td>I had enough information to provide services</td>
<td>Pre</td>
<td>1</td>
<td>10</td>
<td>10</td>
<td>0</td>
<td>8</td>
<td>&lt;0.001</td>
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<tr>
<td>Post</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td>1</td>
<td>5</td>
<td>17</td>
<td></td>
</tr>
<tr>
<td>I had adequate access to providers to communicate recommendations</td>
<td>Pre</td>
<td>0</td>
<td>2</td>
<td>15</td>
<td>6</td>
<td>17</td>
<td>&lt;0.001</td>
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<tr>
<td>Post</td>
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<td>1</td>
<td>5</td>
<td>17</td>
<td>14</td>
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A98

Identification of Malnutrition in Hospitalized and Ambulatory Elderly Patients using a Nutrition Assessment App

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Background: Malnutrition significantly increases morbidity and mortality, delays recovery, prolongs hospitalization and interferes with quality of life, yet it is often overlooked by clinicians. We describe feasibility of implementing a nutrition assessment app designed to help identify the presence of malnutrition in hospitalized and ambulatory elderly patients.

Methods: Standardized nutrition assessment parameters were programmed in app format and included: height, weight, estimation of food intake, history of weight loss, skin appearance, presence of pressure wounds, temporal wasting, mobility status, and presence of dementia. Two clinicians scored successive patients utilizing the app and performed a retrospective clinical chart review to compare scores with anthropometric measurements, biochemical data, comorbidities and disposition.

Results: Initial assessment took an average of 5 minutes, but this gradually reduced to an average of 2 minutes with increased proficiency with the app. Eleven patients (5 hospitalized and 6 ambulatory) were evaluated. All were identified at risk for malnutrition by the app. They had a mean age of 80. Co-morbidities included: Stage IV sacral wound 33%, dementia 17%, failure to thrive 17%, congestive heart failure 17%, and spontaneous pneumothorax 17%. Some 18% of patients had BMI <20, 27% had BMI between 20-25, 18% had BMI between 25-30, and 36% had BMI>30. Of these patients 55% had a greater than 5 pound weight loss in the preceding three months and 64% had serum albumin < 3.5 g/dL. Mobility status included 27% bed-fast, and 73% utilized ambulatory assistance devices. The average LOS was 36 days in our hospitalized patients. For all patients dispositions included: 45% SNF, 45% home care with support services, and 9% died within 6 months due to complications.

Conclusion: The nutrition app is a clinically useful and rapid nutrition assessment tool that clinicians can utilize to improve identification of malnutrition in elderly patients. Further assessment of the app’s reliability and specificity is warranted.

A99

Advance Care Planning Workflow Implementation for Older Adults in Primary Care

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Background: Patients are more likely to complete advance care planning (ACP) if recommended by a primary care provider (PCP). CMS reimburses time spent by PCPs discussing ACP, however these efforts take time and can be challenging to implement in busy clinics.

Methods: We sought to increase rates of ACP completion in a primary care practice (PCP) within a regional practice group (RPG),
and design a workflow for dissemination across the RPG. A baseline needs assessment revealed most staff and providers were unfamiliar with ACP best practices, and were unaware of how to locate or file ACP documents in our electronic health record (EHR). We trained providers and staff to 1) assist provision and completion of ACP documents; 2) provide patient education and planning materials; 3) assure that documents were filed to the appropriate section of our EHR. Providers received education on cultural considerations, assessing patient readiness to discuss ACP, establishing goals of care, and coding and documentation for ACP. We implemented a team-based workflow that targeted specific appointment types for ACP discussions: Annual Wellness Visits (AWV) and preoperative visits for patients 65 and older. Pre-visit letters advised patients that ACP would be reviewed and requested they bring relevant documentation. During patient intake, staff asked patients if they had an advance directive. Affirmative answers prompted a medical record review and request for documentation if not present in the EHR. Patients without ACP were given information and if necessary were scheduled for a subsequent visit. ACP completion rates were measured in 2016 (development) and 2017 (pilot) across the RPG.

Results: The PCP completed .0030 ACP discussions per visit in 2016 and .0075 in 2017 (18,300 visits per year, 151% increase), 10-fold higher than the RPG average of 0.0003 and 0.0007 (275,260 visits annually, 11% increase) in 17 related practices. Chart reviews of 250 random charts pre and post workflow implementation showed a 134% increase in any type of ACP documentation. Barriers were identified including low rates of return of ACP forms taken home.

Conclusions: Changes in clinic workflow involving staff training and direct patient outreach can be used to successfully increase discussion and documentation of ACP in patients 65 and older. Further work involves improvement in the rate of return of ACP documentation forms.

A100
Battlefield Acupuncture for Pain Management for Home-Bound Veterans
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Background: Chronic pain affects at least 116 Million U.S. adults at an estimated cost of $650 billion annually in direct medical treatment and lost productivity. Approximately 25%-86% of community-dwelling older adults have substantial pain. Pain management is commonly medication-based and opioids are still widely used to treat pain. Although opioids may have some benefit for acute pain management, habitual use of these drugs for chronic pain carries many risks. Unfortunately, home-bound veterans have difficulty accessing acupuncture services. Battlefield Acupuncture (BFA), developed by Dr. Richard Niemtzow, is a highly effective, easily-learned pain management technique. It uses just the ear and can be taught in 4 hours. Providers can credential in the VA and integrate BFA into their Home Based Primary Care (HBPC) practice to successfully manage pain and reduce dependence on medications for their home-bound patients.

Quality Improvement Methods: One geriatrician received both formal medical acupuncture and BFA instructor training. Along with another BFA instructor, they provide 4 hours of hands-on classroom instruction for HBPC providers. BFA-trained provider then incorporate BFA as an additional modality for pain management in the VA HBPC.

Results: 28 veterans received BFA therapy. Average age was 69 y/o (50-94); Based on DoD Pain Scores: Pre-BFA: 7.3, Post-BFA: 4.1. Average pain score reduction was 3.1. More than 98% of patients responded to the BFA. Pain relief generally lasted for a few days. 2 physicians and 4 NPs voluntarily participated in BFA training. Limitations: Small sample size of 28 patients, with majority male. Data collected only for initial treatment.

Conclusion: BFA is a safe and effective treatment option for rapid pain reduction. Even frail, home-bound geriatric patients can tolerate BFA with minimal side effects. More than 98% of patients responded favorably to initial treatment. Average pain score reduction was 3.1. The BFA technique is easy to learn, effective and well-accepted.

A102
Use of the newly developed comprehensive geriatric assessment template in geriatric primary care office to prevent adverse outcomes.
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Background: It is important to evaluate elderly patients thoroughly due to their complex conditions with the goal to promote wellness and independent function. So far, at present, there is no standard assessment template. Hopefully a detailed and complete template will help the physician detect the problem early and prevent adverse outcomes such as emergency department (ED) visit, hospitalization and mortality.

Methods:
We developed a complete comprehensive template in the EPIC computer software for the new established elderly patients aged more than 65 years old in the geriatric primary care unit at Massachusetts General Hospital. The template included detailed history, physical examination with comprehensive geriatric assessment. Siebens domain management model is used for multiple domain approach. We presented and readjusted in order to get the appropriateness of the form in the clinic meeting. Then we encouraged 6 geriatricians to use this new template during February through May 2017. Percentages of template use were collected and reported to the physicians. Consequently, we did a retrospective chart review to evaluate 6 months rates of ED visit, hospitalization and mortality.

Results: There were total of 157 new established patients and the new template was used in 104 patients (66%). The mean age of the participants was 76 years, 62.4% were women. The older patient use less template than younger patients (odd ratio 0.93, 95% confidence interval [CI] 0.89-0.97). There were total of 52 (33.1%) ED visits 51 (32.5%) hospitalization and 4 (2.5%) death. There were no significant differences between the template use and outcome (rate of ED visits, hospitalization and mortality) in both univariate and multivariate analyses.

Conclusions: Although this study did not show the benefit of using comprehensive template in 6 months, it could be beneficial in longer follow up. Since we have a complete baseline record in this template, a physician can see the change in patient’s condition clearly. This will lead to early prevention, treatment and eventually decrease rate of adverse outcome.

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Methods:
We conducted the template in the EPIC computer software for the new established elderly patients aged more than 65 years old in the geriatric primary care unit. The template included detailed history, physical examination with comprehensive geriatric assessment and using Siebens domain management model for multiple domain approach. We presented and adjusted the appropriate form in the clinic meeting. Then we encouraged 6 geriatricians to use the new template during February through May 2017. Percentage of template use were collected and reported to the physicians. After that we did retrospective chart review study to evaluate 6 months rate of ED visit, hospitalization and mortality.

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Conclusions: Although this study did not show the benefit of using comprehensive template in 6 months but it could be beneficial in longer follow up. Because we have a complete baseline record, the physician can see the change in patient’s condition clearly.

A103
Reducing 30-day Readmissions of Patients with Heart Failure Residing in Long Term Care settings.
N. S. Patel. Geriatrics, UMMC, Jackson, MS.

Background: Heart failure is the most common cause of readmission of elderly patients from long term care facilities and more Medicare dollars are spent on managing elderly patients with heart failure than for any other diagnosis. Managing heart failure in these circumstances requires involvement of practitioners and interdisciplinary teams to prevent hospital readmissions, reduce healthcare costs, and improve quality of life.

Objectives of this study is to develop and implement a non-pharmacologic, multidisciplinary intervention based on American Medical Director Association’s guidelines so as to educate medical professionals involved with resident care in LTC facilities, reduce readmissions to the hospital, and to determine the potential impact of this intervention on patient outcomes.

Methods: The study setting included Gracedale Nursing Home, Cedar Brook Nursing Home, and St. Luke’s Hospital and Health Network. This is a pilot study using retrospective chart review methodology with randomly selected charts (based on a computer-generated random numbers table) to identify elderly patients ages 65 or older diagnosed with congestive heart failure (Class I-III) with readmissions within 30-days of hospitalization. As part of this pilot study, the researchers implemented a non-pharmacologic, multidisciplinary educational protocol based on standard of care for physicians and nursing staff. This pilot study obtained data on the following outcomes: number of hospital admissions for a 2- month period prior to initiation of the protocol in the long term care setting. This study identified and followed patients with congestive heart failure for 2 months after implementation of protocol to determine the impact of non-pharmacologic, multidisciplinary intervention. Protocol will be presented at conference

Results: All patients were followed for a 60-day period after initiating HF protocol. Out of 26 patients, 1 patient (4.7%) was readmitted with CHF exacerbation within a 1-month period after initiating HF protocol, and 5 patients (19%) died. In patients at risk for readmission (n=26), readmissions were reduced to 3.8%.

Conclusions: Implementing an evidence and guideline-based protocol reduces hospital readmissions, particularly in patients at moderate risk for early re-hospitalization, reduces costs of care, and increases adherence to guideline-based processes of care. Further evaluation of this intervention protocol for a longer period and incorporating length of stay is warranted.

A104
Patient-centered Goals of Care: Using the Chronic Care Management (CCM) code for cooperative goal setting in the multimorbid elderly
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BACKGROUND: In 2015, Medicare approved payment for non-face-to-face care management for selected patients with multi-morbidity in recognition of the importance of care coordination in patients with multiple chronic conditions. The guidelines include a requirement to elicit goals and create a care plan.

OBJECTIVE: To assess the feasibility of establishing and following goals among Chronic Care Management eligible patients.

METHODS: Eligible patients were recruited, gave verbal consent and were contacted by RN to establish and document care plans using a standard template in the electronic health record. These were followed by serial telephone encounters by an interdisciplinary team. Non-face-to-face care management time was recorded and a bill was automatically generated at the required 20 minute threshold. Data were obtained by manual chart audit and electronic report.

RESULTS: 70 patients were enrolled in the first 5 months and goals were established at initial encounter. 89% of goals were followed at least once per quarter. Most common diagnoses were hypertension (19%), diabetes (14%) and depression (9%). Goals fell into 6 categories: diet/weight (30%), function (26%), medical (19%), lifestyle (11%), medication (9%), and mood (5%). Of total encounters (273), 36% were conducted by physicians, 44% by RNs, 11% by CRNP, 5% by pharmacists, and 3% by social work. Only 7 patients left the program and the majority (96%) left because of hospice, death or moving away. Mean duration of outreach encounters was 7 minutes per patient per month. 44% of patients had advance care planning documentation, including POLST, power of attorney or advance directives.

CONCLUSION: Structured format for cooperative goal setting ensures that goals are established, monitored and documented consistently by an interdisciplinary team. A large proportion of patients met goal follow up criteria. Initial evaluation of the program suggests that goal setting and follow up within CMS CCM parameters is feasible with existing office staff and resources.

A105
Quality improvement – Knowledge and attitudes of nursing staff towards sexuality of elderly long-term care residents
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BACKGROUND: Myths and misconceptions exist regarding sexuality and intimacy of older adults. The stigma of sexuality is often heightened in nursing homes [1]. Older adults continue to desire intimacy and touch along with leading active sex lives [2]. The aim of this quality improvement (QI) project was to increase the knowledge and positive attitudes of nursing staff towards elderly sexuality in a long-term care (LTC) facility.

METHODS: The intervention was a thirty-minute educational session on sexuality and intimacy among older adults. Participants included all members of the nursing staff (i.e. RNs, LPNs, NAs) of a Veterans Affairs LTC facility. The Aging Sexual Knowledge and Attitude Scale (ASKAS) was utilized as the metric. The ASKAS is a validated 61-item questionnaire which includes 35-items measuring
knowledge and 26-items measuring attitudes. The value for reliable change in the knowledge and attitudes subscales were calculated as 12.65 and 27.69, respectively [3].

Results: Post-test attitude scores ($M = 66.93$, $SD = 20.80$) did not change significantly from pre-test attitude scores ($M = 67.33$, $SD = 18.50$), $p = .86$. Post-test knowledge scores ($M = 42.88$, $SD = 4.27$) demonstrated improvement over pre-test knowledge scores ($M = 52.94$, $SD = .90$), $p < .001$, as lower scores indicate better knowledge.

Conclusion: Overall, this QI project suggests education of nursing staff improves knowledge regarding sexuality in older adults.

References:
Results: Over 8 weeks, the GCS received 19 consults with an average patient age of 77 (58% male). Of these patients, 11% were from assisted living or nursing facilities and 37% had dementia. Fifty-eight percent were bedbound or used a mobility device. Of ambulatory patients, 58% had a fall directly related to the visit. The most common reasons for consult were for disposition assistance (63%), medication recommendations (47%), medical management (32%) and evaluation for home services (32%). For patients discharged, home services and primary care follow up were set up for 57% and 63% of patients respectively. Medication recommendations were made for 74% of all patients. A total of 42% of patients were admitted from the ED with the remainder discharged to home, rehab or hospice.

Conclusions: Our study confirms feasibility of a clinician driven ED GCS. Patients tended to be community dwelling, cognitively intact with more than half having suffered a recent fall. The most common reason for consult was to help facilitate disposition suggesting ED providers recognize the importance of avoiding hospitalizations in geriatric patients. For patients discharged, the GCS was often able to establish non-hospital services such as home physical therapy. Medication changes were the most common GCS recommendation. Future steps would include a prospective study to evaluate patient centered outcomes a GCS may offer.

A109 Interactive Learning Experience on Prognostication for Medical Residents

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Introduction: Prognostication is important in deciding and recommending treatment plans for an individual with life limiting illnesses. It can help patients and families set their goal of care. We present an interactive learning experience for medical residents in using different prognostication tools during their Academic Half Day (AHD) learning session.

Objectives: Perform self-assessment of their comfort level in prognostication. Assess whether the prognostication learning session improved learner comfort level after AHD.

Methods: A pre-and post-survey about resident self-assessment on prognostication. Survey was developed and distributed during the AHD which is a protected educational time to Internal Medicine and Medicine-Pediatrics residents at Baystate Medical Center in May 2016. The teaching session was two hours of multi modal educational intervention including a lecture, followed by a small group discussion, and role play with an expert facilitator. The prognostication topics focused on dementia, delirium, frailty, hospitalized elders and chronic diseases such as end stage renal disease, chronic obstructive pulmonary disease, cancer, stroke, congestive heart failure, and multi organ failure. After the session, residents were asked to complete the post-AHD survey.

Results: A total of 41 residents participated in the AHD. Of those, 21 (68%) completed both pre/post survey. There were 19 (46%) female residents, 18 (44%) residents were US/ Canada medical graduates and 23 (56%) were International Medical Graduates, 20 (49%) were senior residents. Only 10% of the residents have received prognostication lectures during their medical school. In addition, only 14 (35%) residents were comfortable discussing prognosis. Among those, 11 (78%) were senior residents. After AHD, there was an overall improvement in resident’s comfort level in prognosticating Dementia (51% to 76%), Delirium (39% to 60%), Frailty (39% to 60%) and Hospitalized elders (39% to 79%). Almost all residents agreed that the session and prognostic tools were useful. The residents preferred method in teaching prognostication were didactics, elective in palliative care and role play.

Conclusion: Our survey highlighted the need to improve palliative care curriculum in medical school and ongoing training throughout the residency program. In summary, our interactive learning session improved learner’s overall comfort level in prognostication especially in geriatrics syndromes.

A110 Patient Health Care Outcomes of a Dementia and Falls Care Co-Management Program: Preliminary Findings

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Background: In primary care, effective treatment for older patients with dementia and/or falls risk requires interdisciplinary care management. We developed and implemented the Cognition and Mobility Care Management (CMCM) Program in an underserved county clinic in Riverside, CA. This study evaluates the impact of a geriatric registered nurse (RN)-primary care co-management program on cognition and/or mobility outcomes.

Methods: In March 2016, we launched a systematic case identification protocol for patients ≥ 70 years with dementia and/or falls seen in a busy primary care clinic. Patients who screened positive for either condition were enrolled in the CMCM Program. McNemar’s Test was used to assess compliance to interventions by comparing patient care plan recommendations to patient- or caregiver-reported treatment 9-12 months post-intervention, specifically: 1) prescribing an acetylcholinesterase inhibitor; 2) ordering bone health measures; 3) recommending vitamin D supplementation; 4) discussing advance directives; and 5) enrolling in patient and caregiver community programs.

Results: Of the 182 patients enrolled to date, 36 have completed a follow-up phone call. Of these, 20 (56%) were at risk for falls and 16 (44%) were diagnosed with both dementia and falls risk. McNemar’s tests indicated no significant difference between the proportion of patients recommended for medical interventions and the proportion receiving interventions like an ace inhibitor (N=12, χ2(1)=0.00, p=1.000), bone health measures (N=30, χ2(1)=0.25, p=.617), or vitamin D supplementation (N=30, χ2(1)=0.80, p=.371). In contrast, there was a statistically significant difference in the proportion of patients who were educated about resources and social services and the proportion who pursuing such services, specifically the completion of advance directives (N=28, χ2(1)=7.69, p=.005) and the use of community-based organizations (N=36, χ2(1)=26.04, p=.001).

Conclusions: A geriatric RN-primary care co-management program improves the administration of medical interventions for underserved community-dwelling older adults diagnosed with dementia and/or falls. Greater effort must be made to ensure patients’ and caregivers’ compliance with pursuing appropriate community-based resources.

A111 Memory Clinic Group Visits In Federally Qualified Health Centers

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Background: Hawaii has 27,000 people 65 years and older with Alzheimer’s dementia. Access to dementia care and treatment in the state of Hawaii is limited with long waits for specialist appointments. The objective of this project was to replicate an established group visit memory clinic model in federally qualified health centers (FQHC), develop training curriculum, and assess the impact on healthcare utilization.

Methods: An inter-professional team of a geriatrician, psychiatrist, social worker, lawyer, nurse, and nutritionist provided comprehensive dementia management in a group visit setting. Core elements of the group visit training curriculum included medical, behavioral health, social services, cognitive testing, advance care planning,
laboratory and diagnostics, and brain health and fitness. Poisson regression was used to analyze the main effect of time on the number of emergency room visits and hospitalizations and McNemar’s chi-square test was used to examine changes in institutionalization rates.

**Results:** Over a period of two years, 51 seniors were assessed at the established memory clinic. The average age was 75 years and 67% were women. Seventy-five percent were Filipino ethnicity followed by other Pacific islanders and Asians. Fifty percent had completed advanced care directives, with copies on file. Sixty-five percent had Medicare, of these 27% were dual eligible. There was no significant reduction in emergency room or hospital visits. The rate of nursing home, foster home or care home placement did not increase significantly over time, with 87.5% of seniors continuing to live at home. Replicating the memory clinic model in a rural site faced challenges of staff turnover and limited human and community resources.

**Conclusions:** The memory clinic in a FQHC setting improved access to dementia care for seniors. Replication of this model at other FQHCs is being facilitated by the Hawaii Alzheimer’s Disease Initiative, specialized supportive services grant. For rural sites, replication must anticipate and address staff resources and retention in order to support the sustainability of the model.

**A112 Making Plan-Do-Study-Act (PDSA) Cycles Work for Improving Education in a Geriatrics Workforce Enhancement Program (GWEP)**

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Background: Using research-based interventions to educate health care professionals in primary care settings, the Rhode Island Geriatrics Workforce Enhancement Program is developing, implementing and evaluating inter-professional education to assist clinicians in enhancing patient-centered practice. Integral to effective program implementation is conducting quality improvement Plan-Do-Study-Act (PDSA) cycles of testing, studying and tracking modifications in processes and innovations. Methods: We researched PDSA guidelines and developed a template tailored for tracking iterative testing and implementation of changes to multiple interdisciplinary geriatrics education programming. We tested two methods of studying changes qualitatively and tracking decision-making and implementation: 1) independent evaluator collects data and completes tracking/analysis templates; 2) educators collect data and complete templates. Results: The independent evaluator engages learners in an open discussion of the educational experiences, and elicits their detailed positive and negative feedback and modification suggestions, which is then reviewed by the educators for required action. When educators engage learners themselves in discussion of training goals and experiences, they can probe learners for maximal understanding of the impact of the training components leading to ongoing iterative program improvement, and when educators personally prepare the PDSA tracking documents, they assure critical institutional memory for the rationale behind decisions and changes. Conclusions: Both methods of PDSA implementation provide data useful for immediate application to educational program quality improvement. As each method delivers different kinds of data, specific programming goals must drive selection of method for quality improvement data collection and tracking initiatives.

**A113 Encore Presentation**

ACP Initiative in Outpatient Geriatric & Palliative Care


Background: In January 2016, the Centers for Medicare and Medicaid Services began reimbursement for advance care planning (ACP) conversations with patients. These conversations allow patients, together with physicians and families, to establish their goals of care (GOC). Studies have shown patients prefer their physician to initiate these conversations. Outpatient offices provide an ideal setting to address ACP and hold ACP conversations to allow patients to establish GOC before a health event or crisis. These discussions may be billable if provided face to face with patient and/or family in a 30 minute or greater time frame. In a usual routine visit, an ACP discussion is typically not performed, or performed but not documented in a designated area in the electronic medical record (EMR), making the discussed information inaccessible to other providers. Our goal is to improve outpatient ACP discussions and documentation, and educate clinicians about the importance of having these discussions and ensuring proper, consistent, documentation.

Methods: This project began in July 2016 with collaboration from the Institute of Healthcare Improvement, in the outpatient Geriatric and Palliative Medicine office at the Northwell Health System, which sees approximately 4445 patients annually. Each patient is provided information about health care proxies (HCP), MOLST forms, and/or GOC. Our team assists with completion of HCP or MOLST forms in office. The ACP preferences are documented in a specifically identified area of the patient’s chart in the EMR. A social worker is available for help. Completed forms are scanned into the chart. Each week, an office staff nurse audits two charts/provider/week (56/month). The data is reviewed with the providers at monthly faculty meetings, during which barriers are identified and solutions are discussed and shared.

Results: Through this project there has been an increase in ACP discussions and documentation. Initially, 31.5 of the 56 cases (56.3%) had ACP documentation. Within 6 months that rate increased to 40.6 of the 56 cases (72.5%).

Conclusion: Through comprehensive evaluation of office processes and identification of barriers and possible solutions, we were able to demonstrate significant improvement on ACP discussion and documentation in an outpatient setting.

**A114 Improving follow up after reported falls in the ambulatory setting**

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Background: Complications resulting from falls are a leading cause of mortality and morbidity in adults aged 65 years and older. Falls account for over 95% of hip fractures. Mortality in men within 1 year of hip fracture is 37.5%, 51% higher than in women. American Geriatrics Society guidelines recommend screening all adults aged 65 years and older for fall risk annually and the 2012 United States Preventive Services Task Force recommends Vitamin D supplementation for adults aged 65 years or older with falls. Our objective was to increase documented follow up for Veterans in a single ambulatory clinic with a reported fall in the last year.

Methods: A model for quality improvement was utilized to iteratively test for change. Workflow and clinic processes were determined through staff interviews. An existing electronic fall screen was completed by nursing staff annually for all patients during triage, prompting an electronic reminder for follow up to the physician for
positive screens. To increase successful completion of fall follow up, nursing staff were encouraged to communicate positive screens effectively to providers and the providers were provided face to face education on best clinical practice and feedback on their rates for documented follow up.

**Results:** Patients with positive fall screens seen in a single ambulatory clinic between September 1, 2016, and September 1, 2017, served as the baseline, and rates of documented fall follow up and vitamin D prescription were determined. 356 patients (97% male, 53% Caucasian, average age 84 years) had a positive fall screen during baseline and 73/356 (20.5%) had follow up documented. Vitamin D was prescribed to 153/356 (42.9%). During the post-intervention period (a 3-week cycle of change 30 October-21 November 2017), fall follow up completion was 36/125 (28.8%) and vitamin D prescription rate was 53/125 (42.4%).

**Conclusion:** After a minimally burdensome awareness and education intervention, rates of documented follow up for falls increased by 8%, a 40% relative increase. Vitamin D use remained stable. Objective quality metrics for geriatric syndromes, such as falls, can encourage quality care by incorporating assessment and management into clinic workflow.

**A115**

VIONE: An Innovative DEPRESCRIBING Approach to Medication Management, Veterans Affairs Under Secretary for Health 3rd Shark Tank Gold Star Status winner project. VITAL, IMPORTANT, OPTIONAL, NOT INDICATED, EVERY Medicine has a diagnosis (VIONE) Sara Swathy Battar, MD, Kimberly Dickerson, PharmD, Tim Cmelik, RPh, MBA Central Arkansas VA Healthcare System (CAVHS), Little Rock, Arkansas 72205

**Objectives:**
- Implement a methodologic, end user friendly, SIMPLE medication reconciliation tool that focuses on DEPRESCRIBING INAPPROPRIATE / OPTIONAL MEDICATIONS at opportune times.
- Proactively and continuously foster clinician-pharmacist, patient collaborations to make informed decisions that are cost effective, personalized, compassionate and safe.
- Track outcomes including cost effectiveness, prescriber practices and expansion of project.
- Align implementation strategic solutions with national and health care accreditation directives regarding medication reconciliation.

**Background:** VIONE tool implemented twenty one months ago. Electronic tracking system embedded into clinical profiles. Pharmacists, providers educated. Won Shark tank competition for national roll out.

VIONE has a DEPRESCRIPTING FOCUS, which allows for decreased pill burden, improved patient safety, improved utilization of human and economic resources. VIONE approach considers the pharmacokinetics and pharmacodynamics of each prescribed medication and encourages discontinuation of Inappropriate drug therapy through its review and evaluation process at several opportune encounters.

It is different from medication reconciliation approaches which essentially confirm list of medications.

**Methodology:** Project expanded to inpatient, outpatient areas, end of life scenarios etc. Systems issues addressed to track the data in real time, share with appropriate staff, leaders, patients, stakeholders. Tracked provider, location profiles, medications, doses, dates, prescription and deprescription details, cost savings projects.

**RESULTS:**
- Medications deprescribed: 15,890 // Uniques reviewed: 5208
- Average decrease Rx: 3 / veteran // 30-day cost Rx: $14.73 (was 15.80)

**Total Rx Cost avoidance:** $2,549,246.40 (02/2016-10/2017)

**Conclusion:** VIONE is a simple and effective deprescribing tool. Within 21 months, we expanded it across 2 campuses, working with VA Central Office Diffusion of Excellence team, have begun rolling out to other VA medical centers across the nation.

**A116**

Electronic Consultation: Exploring Non-Traditional Ways to Enhance Organizational Performance
S. Meghan, Geriatrics and Extended Care, VA Eastern Kansas Healthcare System, Topeka, KS

**Hypothesis:** Electronic consultation (e-consult), a non-traditional way of providing hospice and palliative care (HPC), can influence healthcare delivery operations in an organization in addition to enhancing access beyond the traditional face-to-face services.

**Objective:** To assess the impact of HPC e-consult on organizational performance.

**Method:**
- Coding: Capability to respond to requests for HPC consultations using e-consults is assured using appropriate non-count clinic location and stop codes.
- Indications: HPC clinicians assess the consultation requests for appropriateness of an e-consult response e.g. immediate need that could otherwise result in ER or hospital visit, education, care co-ordination, care needs assessment.
- Services: Following services are provided through e-consult by HPC clinicians:
  1. Assess disease severity and prognosis
  2. Conversations regarding advance care planning, goals of care, education about HPC
  3. Recommendations on symptom management and community services
  4. Coordination of care
  5. Documentation: Assessment, recommendations, interventions are recorded in charts.

**Measurements:** Following are measured for FY17:
- Total number of HPC e-consults
- HPC e-consult usage: % of total number of unique patients with HPC e-consults
- Relative Value Units (RVU)

**Observations:** In FY17, VA Eastern Kansas Eastern Kansas

1. completed 73 HPC e-consults; it is the facility with highest number of HPC e-consults in VISN 15.
2. has a 0.21% of HPC e-consult usage; compared to 0.05% at the VHA national level and for VISN 15.
3. generated 137.24 RVUs (1.88 RVU/highest intensity e-consult) using HPC e-consults; compared to 54.75 RVU’s for similar intensity of telephone encounters (0.75 RVU/highest intensity telephone encounter) and no RVU for care coordination.
4. E-consults are counted towards the total number of HPC consultations.
5. E-consult for hospice using appropriates codes is an exclusion event for inpatient mortality performance measure of Standardized Mortality Ratio (SMR) for the VA facility.

**Conclusions:** HPC e-consults have a positive impact on performance measures of the entire VA Medical Center.
- 1. Increase in total number of HPC consultations
- 2. Increase in productivity and workload capture for clinicians
- 3. Potential improvement in standardized mortality ratio

**Future:** Impact of PC e-consults on decrease in ER visits and hospitalization needs to be studied.

Patients’/families experience with their care through e-consults remains to be assessed.
A117
Normalizing Palliative Care in Dementia Care: When, Where and How?
S. Meghani, Geriatrics and Extended Care, VA Eastern Kansas Healthcare System, Topeka, KS.

Background: Patients with dementia receive variable and inconsistent palliative care.

Objective: To propose clinical guidelines and model for incremental palliative care for persons with dementia in a long term care setting.

Hypothesis: Palliative care is not normalized in dementia care.

Method: In September 2016, a retrospective chart review was conducted for the following clinical events for patients admitted to Sunflower Memory Care (a long term care setting for persons with dementia within a VA Medical Center) from November 2015 to June 2016.

1. Code status discussion
2. Advanced directive discussion
3. Palliative care consultation
4. Acute care transfers
5. End-of-life care
6. Death

Observations: There were 14 patients admitted to this care setting during the above-stated period of time. All of these patients were men and had a diagnosis of mild or moderate dementia. Out of a total of 14 patients admitted, 7 patients received palliative care consultation. Out of these 7 patients with palliative care consultation, 4 patients were deceased at the time of this review. Out of these 4 patients, 3 patients received palliative care in final days of their lives. Only one patient received palliative care throughout the stay in the long term care setting.

Conclusions:
1. Palliative care timing and interventions were inconsistent and variable.
2. There is a lack of clinical guidance on timing and interventions for palliative care in dementia care.
3. Palliative care is not normalized in dementia care.

Recommendations: We propose a clinical framework to guide incremental palliative care in dementia care in a long term care setting. This framework provides clinical guidance on clinical events in dementia trajectory that would trigger various levels (Increment I to IV) of palliative care and recommended palliative care interventions for each increment of palliative care.

Clinical Guidance on Incremental Palliative Care in Dementia Care

<table>
<thead>
<tr>
<th>Palliative Care Increment</th>
<th>Clinical Triggers</th>
<th>Recommended Palliative Care Interventions</th>
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</table>
| Increment I               | Admission to a long term care setting | 1. Introduce palliative care
2. Discuss CPR and code status
3. Identify surrogate decision-maker |
| Increment II              | Dr. Bob’s "Do Not Resuscitate" | 1. Initiate goals of care conversation
2. Assist with decisions related to limiting life-sustaining care
3. Review medications for de-prescribing |
| Increment III             | Weight loss
2. Acute Physiologic Stress | 1. Establish goals of care
2. Assist with decisions related to acute care transfers
3. Review medications for de-prescribing
4. Educate about hospice care |
| Increment IV              | Clinical criteria for hospice | 1. Manage end-of-life symptoms
2. End of life care
3. Reinforcement |

A118
Palliative Care Fair: Educating and Engaging Our Patients and Community
S. Meghani, Geriatrics and Extended Care, VA Eastern Kansas Healthcare System, Topeka, KS.

Background: Understanding of palliative care among the community is generally limited to end-of-life care.

Objectives: To assess impact of a Palliative Care Fair on understanding and acceptance of palliative care services among the community.

Method:
Palliative Care Fair, an educational event for the community was held at the VA Medical Center in Topeka, KS. Booths with information about various aspects of palliative care services like advance care planning, goals of care conversations, hospice care, VA and community resources, creative arts, medications were set up. Education was provided using poster-boards, printed material, videos and discussions.

Measurements:
Using a survey, attendees could rate the impact of the Fair on a Likert Scale of 0 to 5, 0 being ‘Not At All’ and 5 being ‘Very Much’ on:

1. Increase in their understanding of palliative care
2. Increase in their understanding of advance care planning
3. Increase in their understanding of hospice care
4. Increase in their willingness to initiate palliative care discussion with patient/family
5. Increase in their willingness to initiate palliative care discussion with healthcare team

Conclusions: 1. Palliative Care Fair increased self-reported understanding of palliative care, advance care planning and hospice care among the attendees.
2. Palliative Care Fair showed a self-reported increased willingness to initiate palliative care discussion with patients, families and healthcare teams.
3. People want to know more about palliative care.

Future: 1. Explore innovative venues for healthcare education for the community.
2. Assess practices to engage patients in their healthcare decisions and planning.
3. Use of open houses and fairs for population-based health management.

A119
Integrated primary care medication management process for older adults with frailty

Background: When combined with frailty, polypharmacy in older adults is associated with potentially inappropriate prescribing (PIP) with resultant adverse events like longer hospital stays or disability. Despite evidence-based recommendations for routine medication reviews in older adults with frailty, there is currently no standard of...
practice in primary care. The objective is to evaluate feasibility and preliminary impact of a proposed seniors’ care model.

Methods: Using the developmental evaluation framework, we created a team based, pharmacist-led, structured medication management process, as a component of our integrated primary care model for identification and management of frailty in community-dwelling older adults (≥65 years of age), called the Seniors’ Community Hub (SCH). Structured medication process included identification of at-risk older adults, evidence-based assessment for PIP, and collaborative development of tailored medication plan. Data on participants were collected and analyzed using inferential statistics (a-priori significance level of p<0.05).

Results: 34 participants (58.8% females, mean age 80 [Me=82, SD=6.52]) were enrolled April – November 2017, with frailty levels of vulnerable (29.4%), mild (5.9%); moderate (50%), severe (5.9%) and very severe frailty (8.8%), and on average taking 12.12 (Me=12, SD=4.79) medications, and 73.5% had excessive polypharmacy (≥10 prescribed and OTC drugs). Reasons for medication reviews were SCH patients presenting with falls and decreased mobility (42.9%), cognitive impairment/dementia (32.1%), and only 10.7% for polypharmacy concerns. Drug-related problems noted on medication review, among 67.6% patients, included untreated indication (M=0.94 medications, SD=0.864) and inappropriate drugs (M=1.12 medications, SD=1.175). No significant correlation was found between level of frailty and number of drugs taken prior to the medication review, or level of frailty and number of inappropriate drugs according to STOPP/Beers’ criteria. No significant changes in total number of medications taken by patients before and after, but the intervention significantly decreased number of inappropriate medications (p=0.003).

Conclusions: Proof of concept project demonstrated medication management process is achievable in primary care and it can decrease PIP.

A120 Sensitivity and specificity of face validation in determining the comprehensibility of older people on quality of life items

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Background: Face validity refers to “whether the instrument looks like it is measuring the target construct”, which often asks the respondents to rate on a yes/no nominal scale for comprehensibility regarding the items. But little research examined the sensitivity and specificity of the conventional method in determining the incomprehensible item. This study provided empirical evidence on such knowledge gap.

Methods: A purposive sampling of 15 older people (with different educational levels) living in residential care homes (RCHs) was used to evaluate 106 items measuring quality of life (QOL). These QOL items were newly constructed through the literature review, focus group interview with experts, and individual interviews with residents. The respondents rated on yes/no regarding the comprehensibility of each item first. To validate the comprehensibility, with reference to a technique introduced by Nuckols on testing questions, the respondents were asked to interpret (i.e., rephrase or explain) the questions in their own words. The researcher coded their responses into one of four categories: fully correct, generally correct (less than one part of the meaning is altered or omitted), partially wrong (the respondent understood the intent), and completely wrong on interpretation or cannot be rephrased. The interviews were digitally recorded for follow-up. The sensitivity and specificity was computed based on 2x2 cross-tabulation table (i.e., comprehensibility vs interpretability).

Results: Fifteen elders from 3 RCHs were interviewed for face validation. The participants had diverse age range (73-86 years old), education backgrounds (illiterate to tertiary education), and length of stay (3 month to 10 years). Although 61 items obtained 100% comprehensibility, only 35 items obtained correct interpretation (i.e., fully or generally correct). Most of items (67%) could not be fully or generally rephrased or correctly explained the meaning. The sensitivity and specificity of the conventional method for identifying the incomprehensible items was 33.3% and 98.6% respectively.

Conclusions: This study revealed that conventional method was weak to determine the incomprehensible items because of low sensitivity. Findings pose implications for instrument developers or methodologists on the importance of examining the interpretability of items among older people.

A121 Findings from Key Stakeholders in Developing a Dementia Care Management Program

H. Reeder, School of Nursing and Health Studies, The Open University of Hong Kong, Hong Kong, Hong Kong.

Background: Awareness regarding challenges in caring for persons with dementia (PwD) continue to increase, however, significant gaps in care exist outside of the medical system. Geriatricians have the skills and knowledge to address medical needs and develop programs with allied professionals to address gaps in care. Appropriate, patient-centered care for PwD and their caregivers requires a link between healthcare and community resources.

Methods: To construct a dementia management program linking healthcare with community resources, researchers conducted focus groups with geriatricians (n=7), neurologists (n=5), and social workers (n=5) from Alzheimer’s Orange County (AOC). A focus group (n=13) and large group input (n=35) was held with PwD and their caregivers. Question topics included: PwD and caregiver experience with the diagnosis, barriers and enablers to providing care internal and external to the medical system, recommendations to improving care, reducing caregiver stress, and implementing the pilot program in development. Focus group recordings were transcribed and analyzed to identify themes and recommendations within and across groups.

Results: We identified as a key theme across all groups a need to improve communication at the time of diagnosis, during and in between clinic visits, and within healthcare as vital to caring for PwD and caregivers. PwD and their caregivers expressed a need for further information on how to cope with the disease, while noting benefits of AOC and community resources when accessed. The clinicians acknowledged the importance of community resources, however, needed a better understanding of them, and a reliable referral system which would communicate updates to physicians. Respondents agreed a health navigator role could fill gaps in the care continuum by providing direct support to PwD and their caregivers, link to community resources and relay crucial, and often undocumented, social information to healthcare teams.

Conclusions: Key stakeholder focus groups with clinicians, PwD, and caregivers provided data for a communications framework for the development of a patient-centered, physician and social worker relevant, dementia care program that utilizes a community health navigator to serve the needs of PwD and caregivers.

A122 Improving Diabetes Control using Electronic Secure Messaging

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BACKGROUND: Type 2 Diabetes (T2D) is highly prevalent among Veterans, affecting approximately 30% in Miami VA Primary Care (PC). Worsening glycemic control results in greater risk for complications and increasing costs. We proposed to use the Secure
Messaging (SM) feature of MyHealthVet (MHV), the VA’s personal health record (PHR), to engage patients and PC team pharmacists (PharmDs), to enhance diabetes control.

**METHODS:** We developed and implemented an educational program based on Diabetes Self-Management Education and Diabetes Prevention Program contents, and used SM to send weekly educational materials for 26 weeks and address questions related to T2D management.

We coordinated with PharmD’s to facilitate intensification of therapy promptly. This was done by identifying cases with above target HbA1c after six weeks of enrollment, and alerting the PharmDs. MHV and SM was used to continue the ongoing loop with more patient education and support.

We enrolled 119 Veterans with T2D and baseline HbA1c of 8.5-10.5%. We collected baseline demographics and administered questionnaires to evaluate MHV usability and captured SM and MHV use. We compared glycemic control at baseline and after 6-months of intervention.

**RESULTS:** Average age was 61.2 ± 9.9 years, range 29-86 years, 68.1% were non-Hispanic, 64.7% White and 34.5% Black; 52.1% were married, 34.5% were employed. All patients had at least a high school education, 30.3% were college graduates. Overall, 65.5% of participants found MHV easy to use and 43.7% logged once or more. We maintained HbA1c with MHV and SM was used to continue the ongoing loop with more patient education and support.

We enrolled 119 Veterans with T2D and baseline HbA1c of 8.5-10.5%. We collected baseline demographics and administered questionnaires to evaluate MHV usability and captured SM and MHV use. We compared glycemic control at baseline and after 6-months of intervention.

**CONCLUSION:** The use of a tethered electronic medical record (MHV) and its SM successfully improved coordination of care and outcomes for patients with T2D. Further evaluation and dissemination of this interdisciplinary team approach may be feasible for all Veterans, and potentially replicable in other healthcare systems.

A123

**STOP-FALLING: A Simple Checklist Tool for Fall Prevention in a Nursing Facility**

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1. BIDMC, Boston, MA; 2. HSL, Boston, MA.

**Background:** Falls are highly prevalent and lead to major health morbidity and mortality in older adults. We developed a “STOP-FALLING” checklist as a multifactorial intervention tool kit for a single long-term care facility. The objective of this study is to determine whether STOP-FALLING reduces total number of falls and fall related injuries.

**Method:** This is a quality improvement demonstration project comparing the effect on falls 3 months before and 3 months after introducing a STOP-FALLING checklist. All older adult patients (age above 65 years) who lived in the long-term care unit of the Orchard Cove nursing facility from 10/1/2017 to 12/31/2017 were included. Physical therapists, geriatricians, and registered nurses participated in the STOP-FALLING initiative. All multidisciplinary team members participated in at least one of three training sessions (45 minutes in length) to ensure intervention implementation. The multifactorial intervention included: Supplementation with Vitamin D, Foot examination, Hearing Aid and hearing evaluation, Medication List review, Low bed, IN house safety evaluation (Room inspection by registered nurse for adequate lighting, clear walkway, etc.), and Glasses (Vision evaluation) were applied to each patient as appropriate. Data on the rate of falls (number of falls per 100 person days), the number of recurrent fallers (more than one fall within the period of 3 months), the number of minor injuries and the number of major injuries (defined by fracture, or skin laceration requiring sutures) 3 month prior and 3 month after the intervention were collected by facility fall log.

**Result:** A total of 32 patients were screened using the STOP-FALLING checklist. Preliminary data at 1 month after initiation of the checklist revealed a reduction in the fall rates (0.75 to 0.40 falls per 100 persons day), number of frequent fallers (5 times per month before to 1 times per month after), number of falls without injuries (3 to 2), number of minor injuries (4 to 2), and number of major injuries (0.33 to 0).

**Conclusion:** The STOP-FALLING checklist has the potential to reduce number of falls and fall related injuries in a long-term care facility. Further data collection in the next 2 months will enable us to more fully evaluate the effectiveness of a STOP-FALLING checklist.

A124

**Medication Outcomes in an Interprofessional Falls Clinic**

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**Background:** Approximately 33% of community dwelling older patients fall within one year, leading to 689,000 hospitalizations and adding a significant burden on health care costs, quality of life and independence. The American Geriatric Society developed consensus guidelines for interventions to decrease falls, which includes performing a medication review to reduce high risk medications.1,2 The Summa Health Falls Clinic team performs an evaluation of risks for referred patients and implements or recommends interventions to decrease these risks. Recommendations for medication changes are communicated to primary care physician for implementation. The primary objective of this quality improvement (QI) project is to determine the number of high risk medications that a patient was taking at enrollment and 3 months after evaluation by the falls team.

**Methods:** This QI project looks at medication outcomes and number of falls before and 3 months after evaluation by the falls team. Inclusion criteria included evaluation by the falls team with an initial and 3 month medication list collected. High risk medication use was analyzed using a paired t test.

**Results:** Preliminary data for 21 patients were collected. The average number of high risk medications per patient was 2.2 medications before the falls team evaluation and 1.6 medications after the evaluation (p=0.049, 95% CI=0.0034-1.139). An average of 3.43 medication changes was recommended per patient. Benzodiazepine use occurred in 19% of patients prior to falls team visit and 14% after. Anticholinergic use decreased from 24% to 14%. Falls decreased from an average of 2.6 falls per patient to 0.67 falls per patient.

**Conclusion:** An interprofessional team was able to significantly decrease the number of high risk medications that patients were using and reduce falls in this population.

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Methods: We registered sixty elderly people living in the community who needed home visits by physicians in Kashiwa-city, Chiba, Japan, and prospectively conducted a questionnaire survey of the elderly every three months until 24 months after the registration or the termination of home care. The survey items included Edmonton Symptom Assessment System Revised Japanese version (ESAS-r-J), EuroQol-5D-5L Japanese version (EQ-5D-5L-J), The 5-item World Health Organization Well-Being Index Japanese version (WHO-5-J).

Results: We got answers from fifty-three elderly people. The average score of ESAS-r-J was high in drowsiness (5.4±3.1), tiredness (4.6±3.1), anxiety (4.2±3.4) at the beginning of the investigation. Both EQ-5D-5L-J and WHO-5-J scores were maintained throughout the study period in most of the elderly persons who lived at the end point, while these scores were gradually decreased in some of the deceased elderly persons. The average EQ-5D-5L-J and WHO-5-J score was 0.36±0.23, 12.0±5.8 at 18 months before the end point, and 0.27±0.26, 8.4±5.3 at the end point in the elderly persons who lived at the end point. For deceased elderly persons those were 0.57±0.10, 16.0±0.70 at 18 months before the end point, and 0.14±0.20, 5.9±4.4 at the end point respectively.

Conclusions: While disability at the End of Life usually progresses over time, QOL and Well-being were maintained in most elderly persons in the community who needed home care for a relatively long time. We should support elderlies’ living so that they can maintain QOL and Well-being as long as possible.

A127 Restructuring emergency care for older adults: experiences of a novel geriatric emergency department.
L. A. Gil-Jr,1,2,3 T. J. Avelino-Silva,2,3 H. K. Curiai,2,3 K. N. Cabral,2 L. F. Rangel,1,2 F. G. Correa,1 T. O. Domenico,1 J. A. Curiai,1 W. Jacob-Filho,1 F. Ganem.2 1. Division of Geriatrics, University of Sao Paulo, Sao Paulo, Brazil; 2. Emergency Department, Hospital Sirio-Libanes, Sao Paulo, Brazil.

Background: Older adults represent an increasing proportion of patients in the emergency department (ED). However, the usual framework of the ED is not necessarily well designed to meet the needs of the geriatric population. Our aim was to describe a novel geriatric ED and predictors of hospitalization in this setting.

Methods: Retrospective cohort study in a geriatric ED of a tertiary hospital in Brazil, including visits from August to November 2017. The geriatric ED was recently structured to care for patients aged ≥70 years who are clinically stable and have non-surgical complaints. Patients are primarily treated by clinical geriatricians and evaluated according to a standardized assessment including the Identification of Seniors at Risk (ISAR) tool, the FRAIL scale, and the CAM. Demographic and clinical characteristics were described, and predictors of hospitalization were explored using logistic regression models adjusted for possible confounders.

Results: We included 897 geriatric ED visits, with a mean age of 80 years. Overall, 56% were women, and we verified that patients had an ISAR score ≥2 (high risk) in 523 (58%) visits, and that 531 (59%) were frail or prefrail. History of dementia was observed in 135 (15%) visits and polypharmacy in 593 (66%). In 76 (8%) cases, patients had fallen before coming to the ED; in 76 (9%), delirium was detected upon arrival. A total of 197 (22%) patients had been hospitalized at least once in the previous 90 days, while new hospital admission occurred in 286 cases (32%) (IRR=0.12, p<0.01, CI:0.05-0.28). Only frailty among highly compliant patients increased the risk of major complications (OR=2.76, 95%CI=1.50-4.23). Only frailty among highly compliant patients increased the risk of major complications (OR=2.76, 95%CI=1.50-4.23).

Conclusions: Among this cohort, depression significantly increased the risk of major complications. However, compliance with ERP improved postoperative outcomes for high risk patients. Given our aging US population, development of pathways specific for the needs of the geriatric surgery patient may further improve postoperative outcomes.

A126 Trajectories of Quality of Life and Well-being In Elderly Home Care Patients
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Background: The number of the elderly needing supported daily living is increasing with demographic aging. Home care medicine is essential for disabled elderlies to continue living in the community. Though trajectory of disability at the End of Life was studied so far, that of quality of life (QOL) or well-being have not been elucidated yet. The aim of this study was to investigate the trajectories of QOL and Well-being in home care elderly patients.
of the complexities of caring for geriatric patients when structuring ED processes.

A128 Development and Evaluation of a Computer-Assisted Pharmacist Intervention Model on Use of Beers Criteria Medications (BCMs) in a Geriatric Ward

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Background: Study on use of Beers Criteria Medications (BCMs) and ways to reduce their use was lacking in Hong Kong. We established a computer-assisted pharmacist intervention model on use of BCMs in all patients of a geriatric ward. Pharmacists would review reports generated every day and intervene as needed. Objectives of the study were to review the process of development and to evaluate the effectiveness and impact of the model by measuring the change in use of BCMs after hospitalization.

Methods: A retrospective cohort study was conducted in QEH. Patient data before(Control) and after(Intervention) commencement of the service were collected and compared. Patients under palliative care or aged <65 years old were excluded. The primary outcome was the number of change in use of BCMs after hospitalization. Secondary outcomes were prevalence and use pattern of BCMs, intervention acceptance rate, clinical relevance of alerts and concordance of judgement among pharmacists.

Results: 318 patient data from 12/2015 to 4/2017 were reviewed with 6 of them excluded. 154 and 158 patients were recruited as intervention and control group. No significant baseline difference was found. The margin of control, male 53.2% vs. 44.9%, age 81.3±8.8 vs. 82.6±8.1, number of comorbidities 4.7±2.5 vs. 4.3±2.0, number of chronic medications 8.7±4.2 vs. 8.8±4.1). The number of change in use of BCMs of Beers Criteria (Table 2) was significantly higher in the intervention group (Mean difference, -0.18% (95%CI -0.33 to -0.02), p=0.03). The prevalence of use of BCMs was 68.2% and top 3 drug classes involved were proton pump inhibitors (28.8%), atypical antipsychotics (15.8%) and α-adrenoceptor blockers (14.7%) according to Beers Criteria (Table 2). The intervention acceptance rate was 92.5% and clinical relevance of alerts was 8.4%. Concordance of judgement was moderate (Kappa value = 0.50).

Conclusions: A computer-assisted pharmacist intervention model was developed to provide thorough and effective screening of BCMs. It significantly reduced the use of BCMs after hospitalization and could potentially reduce adverse clinical outcomes in the elderly.

A129 Testing and Treatments for “UTI”: Patterns in a Primary Care Geriatric Medicine Clinic

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Background: Urinary tract infection is a commonly diagnosed infection in older adults. It is second to respiratory infections in hospitalized and community-dwelling adults 65 years of age and older. There is a high incidence of antibiotic-resistant bacteria in community-dwelling older adults due to the frequency of prescribing antibiotics and repeated exposure to health-care acquired pathogens. Studies have demonstrated that prescribing patterns in the ambulatory care setting are variable despite IDSA guidelines for treatment of uncomplicated cystitis (AUC).

Methods: Provider specific data collection (2 RNs, 2 Nurse Practitioners, and 12 physicians) over a 3-month period at the University of Colorado “Seniors Clinic,” providing primary care to approximately 1800 patients > 70 years of age. Any urinalysis ordered within this clinic was recorded and analyzed for the following data: medical indication for collection, symptoms, patient characteristics (indwelling catheter, creatinine clearance, allergies), culture data and antibiotic prescribing. Chart review was performed by a single individual and quality assurance performed by duplicating 10% of these chart reviews by physician or pharmacist.

Results: A total of 89 urinalysis were performed in clinic from July 18, 2017 to September 18, 2017. The average age was 80 years with 69% being female. Of these, 52 were for ordered for symptoms and 62 (69%) were sent for culture. 27 (30%) of urinalysis sent resulted in antibiotics prescribed and <2% were appropriate according to IDSA guidelines for AUC. Most treatment courses exceeded the 3-5 day recommendation.

Conclusions: This study confirms previous findings that prescribing patterns are variable despite IDSA guidelines for treatment of AUC. It shows a need for quality improvement and improved provider education within the Seniors Clinic at University of Colorado.

A130 Facilitating Practice Change Initiatives to Improve Geriatrics in Rural Primary Care

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Background: The Carolina Geriatric Workforce Enhancement Programs (CGWEP) integrated education and workflow modifications into four primary care practices in 2017, expanding to twenty five in 2018. Practices included rural Federally Qualified Health Centers, family medicine clinics and internal medicine residencies.

Methods: The CGWEP partnered with practice support professionals in NC Area Health Education Centers (AHECs) to improve outcomes in falls, advanced care planning (ACP) and health literacy. Projects aligned with practice priorities including merit-based incentive payment systems (MIPS) and patient centered medical home (PCMH) criteria. Practice improvement resulted from innovative training, workflow redesign, and Plan, Do, Study, Act (PDSA) cycles. Practices 1 and 2 focused on fall risk identification and reduction. Practice 1 emphasized clinic-wide education while Practice 2 reorganized workflows. Practice 3 chose to perform at-the-elbow coaching of residents to facilitate ACP discussions. Practice 4 reorganized workflows and developed clinical competencies to improve Health Literacy.

Results: See Table 1. Partnerships facilitated linkages to community-based resources and increased referrals as seen in the falls intervention rate. Through these projects the GWEP team developed sixteen best practices.

Conclusions: Enhancing geriatrics in primary care is most successful when projects are grounded in practice priorities, respect existing quality metrics, provide whole team training and developing efficiencies in workflows. PDSA evaluation cycles can identify new opportunities in workflow patterns and training. Collaboration can lead to quality training, increases in the number of geriatric-trained primary care providers, and can build bridges between community and clinical settings.

Table 1

<table>
<thead>
<tr>
<th>Practice Area of Focus</th>
<th>Baseline Screening Rate</th>
<th>Post Project Screening Rate</th>
<th>Baseline Intervention</th>
<th>Post Project Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Practice 1 - Falls</td>
<td>80%</td>
<td>100%</td>
<td>0%</td>
<td>10%</td>
</tr>
<tr>
<td>Practice 2 - Falls</td>
<td>80%</td>
<td>100%</td>
<td>0%</td>
<td>10%</td>
</tr>
<tr>
<td>Practice 3 - ACP</td>
<td>4%</td>
<td>4%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Practice 4 - Health Literacy</td>
<td>N/A</td>
<td>N/A</td>
<td>21 patients per day</td>
<td>23 patients per day (10% increase)</td>
</tr>
</tbody>
</table>

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A131
The Effect of Implementing a Clinical Reminder for the Shingles Vaccine in a Geriatric Primary Care Clinic
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Background: The shingles (Herpes Zoster) vaccine is recommended by the CDC for all adults over the age of 60. To improve vaccination rates, our geriatric clinic implemented an intervention in the form of a “clinical reminder” in the electronic medical record (EMR) system in May of 2017. This quality improvement project aims to evaluate the impact of the “clinical reminder” for the shingles vaccine on patient vaccination.

Methods: The project took place in the Geriatric Evaluation and Management (GEM) Clinic at the South Texas Veterans Healthcare System in San Antonio, TX; and used data from existing medical records for patients seen between January to October, 2017. The number of patients vaccinated as a proportion of the total unique patients seen in the clinic were compared before (January to May) and after (June to October) the intervention. Pneumococcal (PPSV23) and tetanus (Td/Tdap) vaccination data were used as controls since no interventions were implemented for either during this timeframe.

Results: Before the intervention, 24 individuals out of a total of 973 patients received the shingles vaccine. After the intervention, 63 individuals out of a total of 906 patients received the vaccine. There was almost a 3-fold increase (p<0.001) in the proportion of patients who received the shingles vaccine after the intervention compared to the proportion of those that received the vaccine before. There was no difference between the proportion of patients that received the pneumococcal (p=NS) and tetanus (p=NS) vaccines in the “before” and “after” periods.

Conclusions: The implementation of a “clinical reminder” in the EMR was an effective quality improvement intervention that increased the number of patients vaccinated with the shingles vaccine. The fact that similar increases were not detected in the pneumococal and tetanus vaccination numbers provides evidence that the reminder tool led to a selective change in provider attention to a clinical guideline.

A132
Challenges implementing satisfaction survey within an interdisciplinary team (IPT)
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Background: With support from a Geriatrics Workforce Enhancement Program (GWEIP) grant, Baystate Health launched an IPT at 3 community health centers (CHC), a Home Care Program (HCP), and a Shared Group Medical Visits (SMV). The IPT consisted of 2 nurse practitioners (NP), a social worker (SW), a community health educator (CHE), a registered nurse (RN), 2 medical assistants (MA), and 2 geriatricians. The goal of the IPT is to increase access to geriatrics and palliative care team-based care, provide education to patients (pts) and their caregivers (CG) and to help address their unmet needs. A process has implemented to assess for CG and pts satisfaction.

Methods: A 5 question (Q) satisfaction survey was dispersed to gauge pt and CG experience with the IPT: (Q 1–Binary response; Q2–Likert scale; Q3–Open-ended; Q4–Open-ended; Q5–Likert Scale).

The MA was responsible for distributing surveys to pts and CGs, in the CHC. The SW, NP, and CHW shared the responsibility of providing surveys at HC visits. CHW distributed surveys during SMV. Surveys were anonymous and were given to all pts and their CGs at the end of all visits (new and follow-up). Surveys were submitted to a survey box (CHC pts) or a stamped envelope (HC pts).

Results: Between Sept 4, 2017 and Nov 14, 2017, surveys were given at all 119 visits in the CHC (n=86) and HC (n=33). 24% (n=29) of surveys were returned. The HC survey return rate was 19% higher (36%; n=12 of 33) than CHC surveys (19%; n=86). Of the surveys returned (n=29), 16 were completed by pts, and 10 by CGs (3 surveys unknown). Of the 17 pts and CG who attended a SMV, 100% of surveys were returned. Of the 46 surveys returned, the majority of the Qs left blank were Q3 (n=8) and Q4 (n=16). SMV surveys showed better completion rates for Q3 (n=1) and Q4 (n=6).

Conclusion: A quality improvement tool (Plan-Do-Study-Act) has been used to plan better processes for disseminating surveys. Some of our quick changes include larger text to aid those with vision impairment, and allowing the CHW to review surveys with pts after the SMV. We suspect Illiteracy or low education might explain low completion open-ended questions. Further implemented changes plan to address this issue.

A133
Usability and Feasibility of Smart Watch Sensing in At-Risk Populations (SARP) System for Older Adults - the SARP Study
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Background: A comprehensive physical function assessment is of paramount importance in implementing optimal rehab outcome. It is still challenging to adopt latest technologies such as wearable sensor to older adults. We developed an easy to use smart watch SARP system for real time physical function assessment.

Objective: Assess smart watch SARP system’s usability and feasibility in a rehab center and identify factors affecting its usage.

Design: Prospective cohort study

Setting: Skilled nursing facility

Participants: One hundred and seventy-four subjects enrolled in SARP longitudinal study and a subset of 60 was randomly selected for a post study survey.

Measurements: To determine the usability and feasibility, we measured the total number of hours the watch was worn everyday. To evaluate the adoption of SARP system, we surveyed participants’ experience and willingness to use and to pay at the end of the study.

Analysis Procedures: Chi square tests were used to evaluate the correlation between demographic characteristics and future willingness to use and to pay the system. Logistic regression was used to analyze current usage and other baseline variables to predict future willingness to use the system.

Results: Sixty percent of subjects wore the watch for at least 6 hours per day for more than 3 days. The mean of the days watch was worn was 10.5, 95% CI (8.8, 12.2). Among the survey respondents, 92% (N=59) felt the watch was easy to use; 81% (N=51) felt it comfortable to wear; 12.5% (N=8) had some problem with the watch; 71% (N=45) liked to use it again; 37% (N=22) liked to take it home, and 19% (N=12) was willing to pay. Watch comfort predicted wearing duration (p=0.026, OR=14.5) and future attitude to pay (p<0.001, r=0.633). The current wearing duration significantly predicted future willingness to wear the smart watch (p<0.003, OR=26.1). Subjects dependent on ADL were more likely to wear the watch again in the future (p<0.01, OR=1.15).
**Conclusion:** The SARP system is easy to use in a rehab center as a patient-centered approach to monitor health status in real time. Its usage is affected by the comfort and subjects’ ADL. Future study is aimed to further investigate and assess the usefulness of data provided from SARP in clinical decision-making.

**A134 Encore Presentation**  
**Reduction in potentially inappropriate medication use in community-dwelling older adults followed by a Family Health Team**  

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**Background:** Potentially inappropriate medications (PIMs) have been associated with a greater risk of adverse drug events, morbidity, mortality, hospitalizations, and inefficient use of healthcare resources. To improve medication prescribing in community-dwelling older adults and reduce PIMs use, our Family Health Team (FHT) implemented a knowledge translation (KT) strategy that included a pharmacist-physician intervention model based on alerts from a computerized alert system (CAS).

**Methods:** Our pragmatic, single-site, pilot study was conducted in a FHT clinic in the province of Quebec, Canada. We included community-dwelling older adults (≥ 65 years), with at least one alert for a selected PIM and a medical appointment during the study period. PIMs were selected from the Beers and STOPP criteria by a clinicians’ panel from the FHT. The primary outcome was selected PIMs cessation or dosage decrease. The secondary outcome was the clinical relevance of the alerts as assessed by the pharmacists.

**Results:** During the 134 days of the study, the CAS screened 369 individuals leading to the identification of 65 (18%) patients with at least one new alert. For those 65 patients, the mean age was 77 years, men accounted for 29% of the group and 55% were prescribed ten or more drugs. One or more clinically relevant alert was generated for 27 of 65 included patients for an overall clinical relevance of the alerts of 42%. Of the 27 patients with at least one relevant alert, 17 (63%) had at least one medication change as suggested by the pharmacist. The pharmacists targeted 43 medications for intervention, of which at least one alert for each of the 27 (63%) were reduced, stopped or replaced. The clinical relevance of the alerts, as assessed by the two intervention pharmacists was 40% and 43%.

**Conclusion:** An interdisciplinary pharmacist-physician intervention model, based on alerts generated by a CAS, reduced the use of high-risk medications in community-dwelling older adults followed by a FHT.

**A135 Encore Presentation**  
**Proteinuria in elderly hospitalized patients with acute urinary tract obstruction**  

D. S. Shapiro,¹ I. Alexandrovich,¹ N. Algur,² M. Sonnenblick,¹ I. Slotki.¹ ¹ Geriatrics, Shaare Zedek Medical Center, Jerusalem, Israel; ² Shaare Zedek Medical Center, Jerusalem, Israel.

**Background:** Urinary tract obstruction (UTO) induce tubular injury and the hypothesis explored in this study is that UTO can cause transient proteinuria.

The aims of this study were to determine whether patients with UTO have a higher incidence/severity of proteinuria compared with catheterized patients without UTO and whether proteinuria resolves at short term follow up.

**Methods:** This was a prospective, matched case-control study that included 50 patients with acute UTO and 50 controls. Proteinuria was quantified using three consecutive 24 hour urinary collections and its incidence, severity, and quantitative changes were compared between the study groups.

**Results:** There were no statistically significant differences between the groups in age (83.12± 7.94 versus 84.48±9.39 (p=0.44)), major co morbidities, chronic medical treatment and causes of hospitalization. Abnormal proteinuria was observed in all patients with UTO and 94% of the control group. The degree of proteinuria was similar between groups in first, second and third collections (638.07±419.69 vs. 620.99±639.57, 828.43±743.15 vs. 648.69±741.48, and 728.30±944.76 vs. 732.80±841.8 mg/24 hours; p=0.88, 0.23 and 0.99, respectively). Proteinuria did not change significantly during a week of in-hospital follow up in either study group (p=0.19 for trend).

**Conclusion:** This study demonstrated a very high incidence of significant proteinuria in a cohort of hospitalized elderly patients either with or without UTO. Proteinuria does not resolve in the early period after relief of UTO. Future study with longer follow up is needed to determine if this proteinuria resolves or persists following hospital discharge and if it has long-term prognostic significance.

**A136 Encore Presentation**  
**Multimodal interventions to prevent and manage cognitive frailty**  


**Background:** Cognitive frailty has been postulated to increase the risk of dementia and to be treatable by exercise. Exercise training is beneficial for cognition even in frail older adults and in those with low mobility. Multimodal exercise interventions have shown positive effects on muscle/lean mass, cognition and brain volume. In addition, cognitive training (e.g., computer based cognitive process training) has been linked to improvements in brain plasticity, cognition, mobility and postural control. The SYNERGIC Trial (SYNnchronizing Exercises, Remedies in Gait and Cognition) is a multisite clinical trial aimed to improve cognition and delay progression to dementia syndromes in older adults with cognitive frailty, using a combination of multimodal interventions.

**Methods:** A total of 200 participants with cognitive frailty will be assigned to active or sham interventions. Active interventions include combined aerobic and resistance training, cognitive training, and vitamin D supplementation. Control interventions consist of balance and toning exercises, control cognitive training, and placebo vitamin D.

**Results:** Preliminary results show that the effect of combined aerobic and resistance training improved ADAS-Cog 13 (combined training: 15.51 ±5.47; balance and toning: 26.93 ±8.39; p= 0.006) and ADAS-Cog plus scores (combined training: 0.22 ± 0.56; balance and toning: 0.45 ±0.36; p= 0.394) after 6 months of intervention, compared to balance and toning exercises. An active cognitive training also improved ADAS-Cog 13 (active cognitive training: 14.47 ±3.96; control cognitive training 20.01 ±8.62; p= 0.046) and ADAS-Cog plus scores (active cognitive training: 0.15 ±0.57; control cognitive training: 0.35 ±0.50; p= 0.070) after 6 months of intervention, compared to control cognitive training.

**Conclusion:** Our preliminary results show that a multimodal intervention with physical and cognitive training is feasible and may have a synergistic effect in improving cognitive function in participants with cognitive frailty.
A137
Effect of aerobic training on peak oxygen uptake in seniors ≥70 years: meta-analysis of randomized trials
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Background: Older adults undergo a progressive decline in cardiorespiratory fitness and functional capacity. The lower VO2peak level is associated with increased risk of frailty, dependency, and mortality from all causes. Regular aerobic training (AT) has been shown to contribute to better and healthy ageing.

Objective: To conduct a meta-analysis to measure the exact benefit of AT on VO2peak in seniors aged ≥70 years.

Method: A comprehensive, systematic database search for manuscripts was performed in Embase, Medline, PubMed Central, ScienceDirect, Scopus, and Web of Science using key words. Two reviewers independently assessed studies for inclusion.

Results: Ten randomized controlled trials (RCTs) were included totaling 348 seniors aged ≥70 years. Across the trials, no high risk of bias was measured and all considered open-label arms for controls. Significant heterogeneity between the RCTs (all P < 0.001), pooled analyses were computed for VO2peak. Not only VO2peak was found significantly higher in the training group compared to controls (mean difference – MD = 1.56; 95% confidence interval – CI: 0.90 – 2.23) in pooled analysis of the 10 RCTs, but also when the analysis was adjusted on the participants’ health status. MD among healthy and unhealthy seniors were respectively 1.72 (95% CI: 0.34 – 3.10) and 1.47 (95% CI: 0.60 – 2.34).

Conclusion: This meta-analysis confirms the AT-associated benefits on VO2peak in healthy and unhealthy seniors.

A138
Efficacy and safety of tigecycline monotherapy vs combination for the treatment of Hospital-Acquired Pneumonia (HAP): an meta-analysis of cohort study
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Background: Tigecycline is a broad spectrum glycylcycline antibiotic with antimicrobial activity against against multiple drug resistance (MDR) bacteria such as extended-spectrum beta lactamase producing Enterobacteriaceae (ESBL), carbapenemase -producing K. pneumoniae (KPC-Kp) and the Acinetobacter baumannii group. Whether tigecycline should be utilized as therapy for hospital acquired infections with a high likelihood of MDR pathogens is a complex issue. Meta Analysis showed that tigecycline is not better than standard antimicrobial agents for the treatment of serious infections. However, selection of combination drugs according to infection status and in vitro susceptibility testing was recommended. Facing this situation, it is necessary to evaluate the efficacy and safety of tigecycline monotherapy or combine for the treatment of HAP in our system review.

Methods: We searched PubMed, Cochrane Library, Embase, Elsevier, Web of Knowledge up to 29 February 2017, to identify published studies. Eligible studies were cohort study assessing the mortality, safety of tigecycline monotherapy versus combine with other antimicrobial agents for Hospital-Acquired Pneumonia. The primary outcome was treatment mortality, the secondary outcomes were adverse events. Meta-analysis was done with fix-effects models.

Results: Five trials were included. The monotherapy tigecycline had high mortality than combine group. There had a significant difference for the treatment of HAP. However, 2 prospective cohort studies showed that there was no significant difference in mortality between the tigecycline monotherapy or tigecycline combination therapy. 3 retrospective cohort studies showed that tigecycline monotherapy had high mortality.

Conclusions: Tigecycline combination therapy is efficient for the treatment of HAP. There is a great need for well-designed studies to evaluate the effectiveness and safety of combination therapy compared to tigecycline monotherapy.

Analysis of the mortality in the treatment of HAP.

A139
Exploring the prognostic meaning of delirium: a predictor of death or just part of dying?
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Background: Delirium has been reported as a predictor of mortality in acutely ill older adults. It has also been found that up to 90% of palliative care inpatients experience delirium in the last days of life. However, studies on delirium and prognosis do not usually make a distinction between its onset happening at the end of life or not. Our aim was to explore the association between delirium and hospital mortality according to different moments of onset. Methods: Retrospective cohort study in a geriatrics ward in Brazil. We included admissions of acutely ill patients aged ≥60 years, from 2010 to 2017. Our primary outcome was hospital mortality. Comprehensive geriatric assessments were performed at admission, and included diagnosis of prevalent delirium. Further clinical data were documented upon death or discharge, and included the occurrence of incident delirium. Our variables were collected from a REDCap managed database and from medical records review. Attending staff followed Short-CAM criteria to diagnose delirium. Time of onset of incident delirium was determined using CHART-DEL. We defined end-of-life delirium as episodes that only happened within 5 days of death. Associations between delirium and mortality were explored using logistic regression models adjusted for possible confounders. Results: We included 1439 admissions, with a mean age of 81 years and 60% of women. Prevalent delirium was detected in 488 admissions, and incident delirium in 183. End-of-life delirium was identified in 17 cases of incident delirium. Delirium was independently associated with hospital mortality, regardless of moment of onset and even after the exclusion of end-of-life delirium (Table 1). Conclusions: Delirium is an independent predictor of hospital mortality both when present at admission or when observed during hospital stay. Our results suggest this association does not result from delirium simply being an end-of-life symptom. Clinicians should be encouraged to detect and treat delirium as early as possible.
Table 1. Association between delirium and hospital mortality according to moment of onset.

<table>
<thead>
<tr>
<th></th>
<th>Death/Total (%)</th>
<th>Unadjusted odds ratio (95%CI)</th>
<th>Adjusted odds ratio (95%CI)</th>
<th>Adjusted p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>No delirium</td>
<td>56/766 (8.1)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total delirium</td>
<td>204/1671 (12.3)</td>
<td>3.25 (2.181-7.23)</td>
<td>3.06 (2.06-4.49)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Preventable delirium</td>
<td>140/680 (20.5)</td>
<td>3.13 (1.66-6.719)</td>
<td>2.70 (1.63-4.31)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Incident delirium</td>
<td>56/181 (31.2)</td>
<td>3.56 (1.68-8.44)</td>
<td>3.06 (1.24-9.98)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Incident delirium excluding 125 of 832 delirium</td>
<td>41/166 (25)</td>
<td>3.94 (2.52-6.16)</td>
<td>2.63 (1.54-4.48)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

A140
Prevalence of mild cognitive impairment and associated risk factors in ambulatory senior patients
G. Assaf,1 D. Rahme,1 J. El Khoury.2
Factors in ambulatory senior patients
Prevalence of mild cognitive impairment and associated risk factors

Mild cognitive impairment or MCI is defined as a transition state between normal cognition and Alzheimer’s disease. This cross-sectional study was designed to determine the prevalence of MCI and explore associated risk factors among ambulatory senior patients visiting their primary care clinics in a tertiary healthcare setting. A total of 375 individuals aged 60 years were screened. Cognitive function was measured using the Montreal Cognitive Assessment (MoCA) to screen eligible patients for MCI, the five item Geriatric Depression Scale (5-item GDS) was used to screen for at risk of depression and The Lawton Instrumental Activities of Daily Living Scale was used to screen for impairment in instrumental activities of daily living. The association between sociodemographics, lifestyle, history of chronic diseases and MCI were evaluated using the Pearson χ2-test and binary logistic regression. In the sample of 375 participants, 50 (14.8%) had MCI of which 42% were males and 58% were females. Binary logistic regression analysis showed that participants having more than 12 years of education (OR = 0.297; CI 0.112-0.788; P = 0.015) were less likely to develop MCI. In contrast, participants with a history of smoking (OR = 2.599; CI = 1.266-5.339; P = 0.012) or at risk of depression (OR = 2.847; CI = 1.392-5.819; P = 0.004) were more likely to develop MCI with hypertension (OR = 2.301; CI = 0.995-5.546; P = 0.063) approaching significance. This indicates that the role of several psychosocial and metabolic risk factors govern the occurrence of MCI in this unique population. Identifying individuals at high risk for MCI is crucial to better offer those patients interventions and counseling to modify these risk factors in the aim of preventing or slowing down the progression to MCI.

A141
Subjective Loneliness from Age 70 to 90 is Not Associated with Accelerated Functional Decline or Increased Mortality
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Background: Loneliness is a common concern among older people. In contrast to objective measures of social support, loneliness is primarily subjective, and debate surrounds the health related ramifications associated with feeling lonely. We described the frequency of loneliness among community dwelling people free from depression, followed from age 70-90, and examined the hypothesis that loneliness is associated with subsequent decline in health, function, and longevity.

Methods: This work is part of the Jerusalem Longitudinal Study, which follows an age homogenous, representative cohort, born 1920-21, of West Jerusalem residents. At age 70, 78, 85, and 90 (1990, 1997, 2005, 2010) a total of 605, 1021, 1222, 674 and subjects were enrolled. Subjects underwent comprehensive assessment of medical, functional, affective and social domains, including a single item global subjective assessment of loneliness. Subjects with depression were excluded from the current study. Mortality data were collected from age 70-95 (1990-2015). Logistic regression analyses and Cox proportional hazards analysis were performed.

Results: Among subjects free from depression, the prevalence of loneliness at ages 70, 78, 85, and 90 was 27.9% (n=95/341), 23.8% (n=124/520), 23.9% (n=169/707), and 25.7% (n=88/343) respectively. Loneliness was consistently associated with female gender and being unmarried at all ages; and commonly associated with physical inactivity, chronic joint pain, and difficulty in functional status. After adjusting for gender, marital status, education, self rated health, physical activity, hypertension, ischemic heart disease, diabetes mellitus, we found no association between loneliness and subsequent functional decline or chronic pain between ages 70-78, 78-85, and 85-90. Similarly, after adjusting for known mortality risk factors, no association between mortality and loneliness was observed from age 70-78, 78-85, 85-90, and 90-95.

Conclusions: Loneliness remained a common complaint between ages 70-90, affecting one in every four people. Despite the commonly accepted negative social connotations of loneliness, our findings do not the support the hypothesis that subjective loneliness is associated with functional decline or increased mortality.

A142
The prevalence of frailty in the elderly living in temporary apartments after the Great East Japan Earthquake
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Background: In 2011, an earthquake of magnitude 9.0 hit the northeast part of Japan, followed by enormous tsunamis. These seismic waves destroyed coastal cities, and many people who lost their houses in the disaster have been forced to live in temporary apartments. We previously reported that the prevalence of cognitive decline had increased in elderly who lived in temporary apartments, and that one of the considerable factors that accelerated this decline was the low frequency of performing activities outside home. There was a concern that not only cognitive status but also physical status of the elderly living in temporary apartments may be worse. To elucidate this issue, we evaluated the prevalence of frailty in the elderly who lived in the area that suffered the earthquake.

Methods: We recruited 1068 elderly individuals who lived in temporary apartments in Kesennuma, Japan, in 2013 (438 males and 630 females; age, 75.7 ± 6.1 years). The prevalence of frailty was examined by administering a health checkup questionnaire [Kihon Checklist (KCL)], which is a screening tool for the elderly at a high risk of frailty in the community settings. KCL consists of 25 questions about instrumental and social activities of daily living, physical function, nutritional status, oral function, cognitive function, and depression.

Results: Among the 1068 participants, 409 (38.3%) were found to be frail. The prevalence of frailty was much higher than that recently reported in Japan (11.3%). Furthermore, 31.1% of individuals had physical frailty, and 10.4% might have social frailty. There are also concerns about the high prevalence of oral frailty and depression in these individuals.

Conclusions: Our research revealed that there was a high prevalence of frailty in the elderly who lived in the earthquake-suffered area until 2 years after the disaster. To prevent frailty and its worsening into disability, support with a multidimensional approach should be provided after the disaster, including physical activity, dietary support, mental health, and social involvement.
A143
Association between HOMA-IR and frailty in the U.S. middle-aged and elderly population
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Background: Previous literatures revealed that HOMA-IR is one of the cardiometabolic risk factors. The aim of this study was to investigate the association between HOMA-IR and frailty in the U.S. middle-aged and elderly population.

Methods: From 1999 to 2006 National Health and Nutrition Examination Survey (NHANES), the study included 4,066 participants. To further explore the association between HOMA-IR and frailty in the middle-aged and older population through the regression model adjusted for multiple covariates, we divided the participants into middle aged (Age <65 years) and older aged (Age >=65 years) group in this study. Each group was then divided into quartiles depending on their HOMA-IR levels.

Results: Higher level of HOMA-IR was significantly associated with frailty in the older group, which was not the case in the middle-aged group. Additionally, subjects in the higher quartiles of HOMA-IR level tended to have higher frailty incidence with a significant association (P for trend < 0.001 in model 1, and 2; P for trend = 0.003 in model 3; P for trend = 0.081 in model 4).

Conclusions: These results demonstrated that the HOMA-IR level can be a novel risk assessment of frailty in older age individuals (Age >=65years).

A144
Association among fracture risk assessment tool (FRAX), sarcopenia and cognitive impairment in community-dwelling elderly in Japan

Background: Recently, it has been reported that osteoporosis is associated with sarcopenia and cognitive impairment. However, the relationship among FRAX, sarcopenia and cognitive impairment is still unclear. The aim of this study was to evaluate the association among FRAX, sarcopenia and cognitive impairment in community-dwelling elderly in Japan.

Methods: Participants were 148 (45 men and 103 women) community-dwelling elderly aged 65 years or older. Muscle mass was measured by bioelectrical impedance analysis. Muscle strength was assessed by handgrip strength. Physical performance was assessed by measuring usual gait speed. Sarcopenia was diagnosed according to the algorithm by the Asian Working Group for Sarcopenia (AWGS). We used the Japanese version of FRAX without BMD. Participants were divided into two groups: FRAX≥15% and FRAX<15%. The participant’s cognitive function was assessed using the Mini-Mental State Examination (MMSE).

Results: Of the men and women, 13.3% and 68%, respectively, had values greater than 15% for FRAX. Furthermore, 8.9% and 14.6% of men and women, respectively, were classified as having sarcopenia. First, multivariate logistic regression analysis was used to examine the association between FRAX, sarcopenia and MMSE and showed that there was no association between FRAX and sarcopenia (unadjusted OR = 1.49, CI = 0.54-4.09, p = 0.44). MMSE independently associated with FRAX (OR = 0.19, 95% CI = 0.03-0.99, p = 0.049). Second, the association between FRAX and the components of sarcopenia and MMSE were examined. The association between FRAX and gait speed was marginal (OR = 0.25, 95% CI = 0.06-1.07, p = 0.061). However, handgrip strength and MMSE was associated with FRAX significantly (unadjusted OR = 0.87, 95% CI = 0.80-0.95, p = 0.001, unadjusted OR = 0.19, 95% CI = 0.04-0.88, p = 0.034, respectively). After adjusting for age and gender, the association between FRAX and handgrip strength was not significant but the association between FRAX and MMSE remained significant (OR = 0.17, 95% CI = 0.03-0.92, p = 0.04).

Conclusion: This study showed that FRAX was associated with cognitive impairment but not sarcopenia. Furthermore, these results suggest an association between FRAX and handgrip strength. Further studies are required to assess the causal relationship between FRAX and cognitive impairment.

A145
Multi-morbidity Profile among elderly Nigerians seen at National Hospital Abuja (NHA)
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Background: Ageing predisposes to increasing prevalence of chronic illness, multiple morbidities, risk of disability and death. Multi-morbidity has been defined as the coexistence of more than one medical condition in the same individual. This background data will serve to guide clinicians in ensuring strategic assessment and prompt management of identified multiple co-morbidities to allow seniors live with acceptable functional states.

Study Aim: To identify the profile of multi-morbidity in elderly Nigerians seen at the National Hospital between February 2014 to February 2016.

Methodology: An observational analysis of patients 60 years and above who were attended to at the Geriatrics clinic of the NHA during the study period. The attendance register provided information including age, gender, the different chronic conditions/ multiple diagnoses. Simple statistical measures were used in analysing the data.

Results: Of the 87 total patients seen, 10 were less than 60years so not included in the data analysis. Of the 77 considered, 27 were males and 50 females. The age range for the study group was 96 to 60yrs. 63/77 had hypertension, 32/77 had Diabetes mellitus and 63/77 had 2 or more chronic conditions. The prevalence of 2 to 4 medical conditions was higher in women, 80% versus 66.7%. The common conditions identified were hypertension, diabetes mellitus, osteoarthritis of the knees and spondylosis of the spine (lumbo-sacral and cervical). Hypertension was the most prevalent condition seen in the entire population and was followed by Diabetes mellitus and osteoarthritis. The trend was same across genders. Interestingly obesity was more commonly observed in the males compared to the females. The elderly population representation according to age categories was as follows; 22%, 32% and 40% for ages 60-69, 70-79 and 80+ respectively in females and for the males was 33%, 48% and 19%.

Conclusion: The prevalence of multi-morbidity in our cohort of elderly Nigerians is significant. The three most common conditions hypertension, diabetes mellitus and osteoarthritis should be assessed for in elderly adults routinely and managed promptly. The gender differentials identified have consequences for cost of care, quality of life, degree of dependency and risk of depression in the older women who sometimes are still major carers themselves for significant family members.

A146
Using the FRAIL scale and the Identification of Seniors at Risk tool to predict delirium in hospitalized older adults: results from a novel geriatric emergency department.
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Background: Delirium is a common problem in acutely ill older adults, but even in the hospital setting it often goes unrecognized. Our aim was to explore the Identification of Seniors at Risk (ISAR)
tool and the FRAIL scale as predictors of delirium in hospitalized older adults. Methods: Retrospective cohort study in a tertiary hospital in Sao Paulo, Brazil. We included hospitalizations of patients aged >70 years admitted from a novel geriatric emergency department (ED), from August to November 2017. They were evaluated by clinical geriatricians according to a standardized assessment, which included: the ISAR tool; the FRAIL scale; and the Short-CAM, used to detect prevalent delirium. Our primary outcome was the incidence of delirium after admission, which was identified in medical records using the Chart-based Delirium Identification Instrument. The association between ISAR scores and frailty and delirium was explored using logistic regression models, adjusted for age, sex, and clinical history of dementia. Results: We included 286 admissions out of 897 visits to the geriatric ED. Hospitalized patients had a mean age of 82 years, 50% were woman, and 62% (22%) had a history of dementia. Delirium was detected at admission in 51 (18%) cases. Frailty, ISAR scores >3 and dementia were associated with prevalent delirium, with adjusted odds ratios (OR) of 2.93 (95%CI=1.05-8.19; p=0.04), 4.39 (95%CI=1.18-16.31; p=0.027), and 4.65 (95%CI=1.95-11.08; p=0.001), respectively. Incident delirium was detected in 32 (14%) of the 235 remaining admissions, but had been formally documented in medical records in only 14 cases. Frailty was also independently associated with incident delirium (OR=3.96; 95%CI=1.05-14.1; p=0.043), but ISAR >3 (OR=2.96; 95%CI=0.75-11.7; p=0.121) and dementia (OR=1.83; 95%CI=0.68-4.91; p=0.233) were not. Conclusions: Frailty was independently associated both with prevalent and incident delirium. Our results suggest that over half the cases of incident delirium went undetected in the hospital. Clinicians should be aware of the increased risk frail patients have for delirium.

A147 Peripheral Vascular Disease and Basic/Instrumental Activities of Daily Living: Comparisons between Demented and Non-Demented Older Adults

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Background: Dementia and peripheral vascular disease (PVD) are distinct disorders, but they are similarly associated with decline in activities of daily living (ADL). This study compared the characteristics of functional performance measures in subjects with and without dementia having PVD or not.

Methods: Patients with dementia (AD, VaD, and AD-VaD) and controls with no dementia were prospectively enrolled. Basic ADLs (BADLs) and instrumental ADLs (IADLs) were scored by the Barthel scale and the Lawton scale, respectively. PVD was diagnosed by the ankle brachial index.

Results: Dementia group included 57 subjects with PVD and 57 age and gender matched controls without PVD. No-dementia group consisted of 69 subjects with PVD and 69 matched subjects without PVD. Mean BADLs score was lower in subjects with PVD in both groups (dementia: PVD: 72±5.157 ± vs. no-PVD: 79±14, p=0.024; no-dementia: PVD: 85±12.5 vs. no-PVD: 89±9.8, p=0.014). Mean IADLs score was also lower in subjects with PAD in both groups (dementia: PVD: 4.9±4.6 vs. no-PVD:6.9±4.9, p=0.024; no-dementia: PVD: 11±8.4 vs. no-PVD: 14.4±10, p<0.001). Adjusted for age, CDR and depression, PVD was associated with higher likelihood of being in quartiles of lower BADLs scores in the demented group [OR: 2.30 (95% CI: 1.13-4.69), p=0.020]. Adjusted for age, gender, MMSE, depression, comorbidity count and drug count, PVD was also associated with higher likelihood of being in quartiles of lower BADLs scores among non-demented group [OR:2.07 (95% CI: 1.02-4.20), P=0.044]. Adjusted for age, CDR and depression, PVD was not associated with higher likelihood of being in quartiles of lower IADLs scores among demented group [OR:1.96 (95% CI: 0.97-3.97), p=0.061]. Adjusted for age, MMSE, education, depression and comorbidity count, PVD was associated with higher likelihood of being in quartiles of lower IADLs scores in the non-demented group [OR:3.60 (95% CI: 1.74-7.45), p=0.001].

Conclusions: Presence of PVD predicted poorer status of BADLs in both demented and non-demented individuals. The level of IADLs was not associated with the presence of PVD in demented subjects. Whether screening for and modification of risk factors for PVD might improve independence among demented needs to be elucidated.

A148 Grains Contribute Nutrient Density in Older US Adults

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Background: 2015 Dietary Guidelines have identified several shortfall nutrients in the US population, including dietary fiber, folate, and iron. Intake of some shortfall nutrients can be even lower in older adults. The present analyses determined the contribution of grain foods for energy and nutrients in older US adults relative to other food sources in the American diet.

Methods: Analyses of grain food sources were conducted using a 24-hour recall in adults (51-99 years-old; n=4,522) using data from the National Health and Nutrition Examination Survey, 2011-2014. Sources of nutrients were determined using USDA food groupings and nutrient composition databases. Mean energy and nutrient intakes from the total diet and from all food groups were adjusted for the sample design using appropriate weights.

Results: All grains provided 14±0.3% of all energy in the total diet, ranking as the 4th largest contributor of energy compared to 15 main food groups. Grain foods ranked 1st for thiamin (33±0.6%) and niacin (23±0.6%) intake relative to 15 main food groups. The grains category ranked 2nd highest of 15 main food groups for daily dietary fiber (23±0.5%), iron (38±0.8%), folate (40±0.9%), and magnesium (15±0.4%) and was the 3rd largest food group contributor for daily calcium intake (13±0.4%). Breads, rolls and tortillas provided 8±0.1% of all energy in the diet, ranking as the 2nd largest contributor of energy compared to 46 foods. The grain subcategory of breads, rolls and tortillas ranked 1st for some shortfall nutrients including thiamin (16±0.3%) and niacin (10±0.2%) intake and 2nd for dietary fiber (12±0.2%), iron (12±0.2%), folate (13±0.3%), and magnesium (7±0.2%). Breads, rolls and tortillas ranked 3rd largest food group contributor for daily calcium (5±0.2%) intake. Ready-to-eat cereals provided 2±0.1% of all energy in the diet, ranking as the 20th largest contributor of energy compared to 46 foods. All ready-to-eat cereals ranked 1st for dietary fiber (19±0.9%), 1st for niacin (9±0.5%), 8th for magnesium (4±0.2%), and 13th for calcium (2±0.2%) intake.

Conclusions: Given all grain foods and specific sub-categories of grain foods provided a greater percentage of several under consumed nutrients, including dietary fiber, iron, and folate, than calories, grain foods provide nutrient density to the older adult American diet.
A149
Toward the Older Person Friendly Hospital: barriers and enablers within the Australian context
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Background: Older people are the major inpatient group in most Australian hospitals, but gaps in delivering holistic, person-centred, evidence-based care for older people contribute to hospital-acquired harms. This study aimed to understand reasons for these gaps, from the perspective of educators, health professionals, health managers and consumers in Brisbane, Australia.

Methods: Purposive selection of key informants from two major health services and two universities. Informants were invited to reflect on findings from a state-wide survey of Older Person Friendly principles and practices. In-depth interviews using open-ended questions were undertaken by a single researcher, recorded and transcribed. Framework analysis was guided by the i-PARiHS framework to build-in-depth understanding of barriers and enablers to older person friendly care. Coding and charting was cross checked by three researchers and emerging themes validated by an expert reference group.

Results: Interviews were completed with 20 individuals (8 clinicians, 7 academics, 4 managers, 1 consumer representative). Key components to achieve holistic, patient-centred care were identified as skilled compassionate staff working in teams; older people and their families respected and valued in care; and evidence-based care models and environments. Major barriers included pervasive ageism; lack of undergraduate and postgraduate gerontology training; professional and organisational silos; and poor support for research translation. Key system enablers were identified as leading an older person friendly culture; building respectful partnerships; training and mentoring of staff; and developing and translating evidence.

Conclusions: Creating older person friendly hospitals will require significant culture change and training, better collaboration between traditional disciplines, and genuine partnerships between healthcare, training and research organisations.

A150
Preoperative experience of geriatric colorectal cancer patients participating in prehabilitation programme: A qualitative study
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Background: Colorectal cancer (CRC) is prevalent among elderly, and its incidence is growing as the population ages. More geriatric CRC patients will require CRC surgery in the future. Prehabilitation prepares patients for upcoming surgery by optimizing their physical function and providing psychological support (Dalton, 2017). Patients’ compliance is a key to success. It is thus important to understand the facilitators and barriers to participate, and evaluate its acceptability and feasibility through eliciting patients’ experience. This study explored patients’ experience in participating a prehabilitation programme composed of a 4-week personalized home-based exercise intervention, education, and geriatric consultation at pre-operative stage.

Methods: It was a descriptive qualitative study. Semi-structured individual face-to-face interviews were conducted on 14 geriatric CRC patients participated in a prehabilitation programme. Their preoperative experience and their perceived facilitators and barriers in complying with the programme were explored. Interviews were audio-taped and transcribed verbatim. Data collection and content analyses were conducted concurrently, themes were identified and emerged until data saturation.

Results: Key themes emerged about patients’ experiences included: i)enhanced trust with the healthcare team; ii)empowered and positively engaged to prepare for the surgery and disease management; iii)preoperative information reduces anxiety. Facilitators included: i)seamless care between healthcare teams; ii)personalized home-based exercise can fit in daily routine; iii)belief of exercise benefits can aid recovery. Barriers included: i)lack of motivation and persistence in lifestyle changes; ii)environmental barriers limit exercise.

Conclusions: The prehabilitation programme supported geriatric CRC patients a more active role in preparing for the surgery and disease management. This study elicited patients’ experience in participating in a prehabilitation programme, and the findings can guide future intervention design.


A151 Encore Presentation
Driving cessation in dementia: Perspectives on strategies from Healthcare Professionals and other stakeholders
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Background: Healthcare professionals (HCPs) are often hesitant to discuss driving issues with their patients for various reasons, including possible damage to the clinician-patient relationship and lack of training. This study addresses a gap in research exploring strategies employed by HCPs to assist persons with dementia and caregivers make the transition to non-driving.

Methods: Qualitative methodology was used to examine the strategies that HCPs use to facilitate decision-making about driving, as well as coping and adaptation following driving cessation for persons with dementia and their caregivers. HCPs as well as stakeholders from community organizations were included to broaden perspectives beyond the clinical environment. Semi-structured interviews were conducted with 10 HCPs and 6 other stakeholders. We employed inductive analysis techniques to generate descriptive themes around facilitating driving cessation.

Results: Four broad themes from the findings include the need to: 1) promote access to programs, resources and services to enable continued mobility and social participation; 2) integrate driving cessation resources and tools within broader support systems that address the psychosocial aspects of dementia; 3) address the gaps in emotional and psychological supports and 4) balance standardized approaches that can be employed widely, with those that target distinctive individual and local contexts.

Conclusions: Findings from this study emphasize the importance of addressing the gaps in support for persons with dementia and their family caregivers with respect to driving cessation through educational resources, social and alternative transportation programs, as well as attending to the emotional impacts, to facilitate coping with driving cessation.
A152  Assessment of Frailty Knowledge and Application Amongst Providers in an Academic Medical Center

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Background: The syndrome of frailty is well known in Geriatric Medicine. However we believe education is lacking in other medical disciplines since the impact of Frailty on the patients’ quality of life and clinical decision-making is not specialty specific.

Methods: Surveys were created and distributed to providers at an academic medical center serving more than 1.4 million people across 29 counties. We surveyed residents, fellows, attending physicians and midlevel providers. Questionnaires ascertained respondents’ knowledge of the diagnosis of frailty, how often they used the diagnosis, and how it would affect clinical decision-making. Respondents were provided handouts on the diagnosis of frailty and a quick reference card. We queried the Department of Family Medicine outpatient clinic to assess how often the frailty diagnosis (ICD-10 R54) was used as the primary diagnosis in a billable encounter for 2016.

Results: Among respondents, 22% were familiar with the syndrome of frailty, and 69% had never diagnosed a patient with frailty. In regard to clinical decision making: 16.1% would not change their clinical management; 16.5% might refer to our geriatric center; 22.4% might recommend against an elective surgery or deescalate the care plan; and 20.5% might discuss advance care directives. The coding query yielded 16 billed encounters with the primary diagnosis of frailty.

Conclusion: The data collected demonstrates that the diagnosis of frailty is underutilized within our survey population. The data suggests one reason for this underutilization is lack of education regarding the diagnosis and its implications. We believe that targeted education, awareness of the diagnosis of frailty will increase, thus positively effecting clinical management of frail patients. The diagnosis of frailty is clearly undiagnosed in our patient population based on our electronic health record query. One would surmise that the diagnosis of frailty would be utilized at a higher rate in our patient population, given the population of patients over age 65 is 11.5% within the largest county we serve. Further research is needed to determine the prevalence of frailty in our region before we can draw conclusions on how the syndrome affects clinical management and decision-making.

A154  Using a Strengths Model in Interprofessional Team Training to Improve Geriatric Care

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Background: Implementing clinical programs in interprofessional teamwork is often difficult. An innovative interprofessional geriatric education model was developed and integrated into resident physicians’ primary care clinics with a focus on improving geriatric patient outcomes. Methods: Resident physicians selected “at risk” community-dwelling, older adults to participate in the interprofessional team training in geriatric assessment program. The patients received an initial home assessment which included evaluations of social support, function, cognition, medication adherence and home and community safety. One week after the home assessment, the interprofessional team performed a comprehensive geriatric assessment at the primary care clinic. The interprofessional team included students, residents and faculty in family and internal medicine, nursing, pharmacy, dietetics, physical therapy and social work. A care plan for each patient was developed with the patient and caregiver using a Strengths Model. The strengths-based approach focuses on elements that enable the patient to deal with life challenges and meet their needs to achieve desired outcomes. Following identification of patients’ strengths, the interprofessional team reviewed and discussed patients’ psychosocial, economic and medical challenges.

Results: From 2015-2017, 110 learners participated in the program. Retrospective pre/post evaluation of interprofessional attitudes showed improvement from pre- and post-test and was statistically significant for most of the training programs. Increases in team training skills demonstrated statistical improvement for all programs. Overwhelmingly, residents and students reported that the experience allowed them to explore the perspectives of other health professionals, and practice integrating their own disciplinary skills with the others for a comprehensive geriatrics assessment.

Conclusion: This interprofessional team training in geriatric assessment was successfully integrated into three residency primary care training sites with few modifications. The model is useful in understanding the roles of other team members as well as developing skills and competencies in geriatric care.

A153  A Novel Interprofessional Student Training Program in Geriatric Assessment

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Background: Interprofessional geriatric assessment programs are limited in residency primary care practices. To address this gap, a model for interprofessional education in geriatric assessment was integrated into two family medicine and one internal medicine residency programs. Methods: Health professions students were recruited from local universities to participate in the clinical program at three primary care residency sites. Residents and health professions students participated in one to four sessions of the program. The monthly session included an in-home assessment of an at-risk older adult in the community, and a one-week follow-up session that entailed a one-hour seminar on interprofessional teamwork skills, followed by a two-hour, in-clinic comprehensive geriatric assessment. At each session, faculty and students of nursing, medicine, pharmacy, dietetics, physical therapy, and social work students participated in the clinical presentation, patient assessment, and development of the care plan. At the end of the sessions, learners completed a retrospective pre/post-test evaluation on interprofessional team values and skills and a questionnaire evaluating the clinical experience. Results: From 2015-2017, 110 learners participated in the program. Retrospective pre/post evaluation of interprofessional attitudes showed improvement from pre- and post-test and was statistically significant for most of the training programs. Increases in team training skills demonstrated statistical improvement for all programs. Overwhelmingly, residents and students reported that the experience allowed them to explore the perspectives of other health professionals, and practice integrating their own disciplinary skills with the others for a comprehensive geriatrics assessment.

Conclusion: Including patients and caregivers in the development of the interprofessional plan of care using a strengths approach allows for improved patient/caregiver satisfaction. Using an interprofessional team approach in geriatric care helps to identify strengths and challenges that may impact patients’ care longitudinally.
A155 Interprofessional Primary Care at Home for Internal Medicine Resident Training in Geriatrics
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Background: Internal medicine (IM) residency programs have minimal requirements for a longitudinal curriculum in geriatrics, despite the fact that most graduates will be taking care of older adults in acute care, primary care and/or specialty clinic settings.

Method: As a component of the Rhode Island Geriatric Workforce Enhancement Program, an interprofessional primary care at home program was developed for IM resident physicians and health care professionals (HCP) students to meet the needs of a frail population living in a low income community. The program included two annual presentations on geriatric assessment and home visiting, followed by a weekly, half day session of home visits. The half day sessions included orientation to teamwork, clarification of roles and responsibilities of team members, review of patient cases and discussion of the focus of the visit. The team concentrated on assessment of the patient’s functional, cognitive and psychosocial status, acute medical issues, and home and medication safety. An interprofessional faculty team served as mentors for the students. Post-rotation, a semi-structured qualitative interview was used to evaluate the residents’ and students’ learning and experiences.

Results: From 2015-2017, 20 IM residents and 30 HCP students (pharmacy, nursing and physical therapy) participated in the program which provided weekly home-based assessments for 35 older adult patients ranging in age of 78 to 97 years. The IM residents and HCP students found the interprofessional team assessments in patients’ homes to be extremely useful for enhancing their learning about geriatrics care and empathy toward geriatric patients; critical to recognizing how the home environment affects patients’ health status, self-care and safety and learning about appropriate associated modifications in the treatment plan; eye-opening for understanding how to integrate their own discipline’s skill set with those of the other team members; and instrumental in increasing their comfort in functioning as part of an interprofessional team.

Conclusion: A primary care at home program is an effective modality for interprofessional training in geriatrics, is well-received by IM residents and HCP students, and provides “added-value” that cannot be achieved by other types of geriatrics curricula.

A156 Telephonic Call Education for Geriatric Fellows
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Background: Telephone coverage of long-term care (LTC) facilities is a common fellowship activity and is recognized as a geriatric fellowship curricular milestone.1 Most incoming fellows have minimal experience or education regarding telephone call, with <10% of IM programs providing training.2 To prepare fellows to take telephone call, an educational session was developed, presented, and evaluated using a pre-post design.

Methods: A 1.5 hour educational session focused on providing telephone coverage for VA and community based LTC was presented to 6 first-year fellows in July 2017. The session included a mock telephone call regarding a missing patient; didactic session; question and answer; and distribution of a call “cheat sheet” developed with input from prior fellows.

Results: Pre-post assessment included questions about prior telephone call experience, comfort with common on-call situations, and knowledge assessment. 50% of fellows had engaged in telephone call during residency, but only one included LTC. On the pre-post assessment, fellows demonstrated statistically significant improvement on 3-4 confidence questions (see figure) and all knowledge based questions.

Conclusions: A multi-faceted educational session was successful in improving the confidence and knowledge of geriatric fellows regarding telephonic coverage of LTC facilities.

References:

A157 Integrating Community Resources for Older Adults into Primary Care
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Background: Community and health system programs for older adults enhance care but are often underutilized. The Indiana Geriatrics Education and Training Center (IGETC) collaborated with 9 primary care community health centers (CHCs) affiliated with a Federally Qualified Health Center and 4 nationally recognized programs for older adults that were unknown or infrequently used by the CHCs to develop and implement strategies to increase patient referrals.

Methods: Focus groups with each CHC identified 3 barriers to referral: 1) lack of knowledge about available services; 2) confusion regarding referral processes; and 3) lack of familiarity with organization personnel. The IGETC team partnered with representatives from two community-based and two health system-based programs to implement a three pronged strategy. With each CHC program representatives 1) implemented with all staff and clinicians brief interactive education sessions on services and referral processes; 2) joined older adult case conferences and partnered with clinic teams in facilitating referrals and services tailored to the needs of each patient discussed; 3) increased their presence to foster relationships, trust and communication.

Results: Three education sessions were conducted over a 1.5 year period totaling 318 participants. Over 91% of participants responding to the online evaluation reported improved knowledge and ability to discuss with patients the services and referral processes for the two programs supporting general geriatric care and over 85% reported improved knowledge and ability to discuss the services and referral processes for the two programs supporting patients with dementia. New referrals to the four programs totaled 290, an average increase of 500%. Program representatives participated in 54 CHC case conferences, facilitating referrals to program services for 42 patients.

Conclusions: Partnering with CHCs and programs providing services for older adults through a multipronged approach combining provider and staff education with program liaisons facilitates provider and staff knowledge, familiarity, and patient referral to programs that can improve older adult health and quality of life.
A158
Successful Implementation of “Five Keys to Older Adult Health” Curriculum in Primary Care and Community Services
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Background: Many community practitioners want to increase their geriatrics knowledge in key domains that will help their older patients and clients. As part of San Francisco’s Optimizing Aging Collaborative (OAC), a Geriatrics Workforce Enhancement Program, medical and social service providers collaborated to develop the “Five Keys” training curriculum on topics in older adult health: cognition, mental health, safety, independence, and decision making.

Methods: Over 27 months, the OAC delivered 129 trainings to laypersons, social service providers, and practicing primary care teams (n=2720), and 261 trainings to health professionals in clinical training programs (n=156). We used the Consolidated Framework for Implementation Research to guide a comprehensive evaluation, which included: 1) retrospective pre-post knowledge improvement among all trainees and commitment to practice change surveys among a sub-group of trainees; 2) factors affecting success of implementation of the Five Keys program through surveys of the OAC’s partners; and 3) compiling a complete list of training materials produced.

Results: 1) For all keys combined, trainee’s knowledge improved on average 0.9 points (scale 1-5). A subgroup (n=58) who received training in the Cognition key were surveyed about practice change at 6 months, and 12 (21%) reported that they implemented changes. 2) OAC medical and social service providers reported factors positively affecting implementation: relevance of trainings, support for community-based organizations to participate in trainings, and a supportive academic-community partnership. Negative factors cited included: high turnover of social-services staff and specific content gaps (e.g. self-care). 3) Training materials developed: 20 Five Keys training modules, a Medicare Annual Wellness Visit residency curriculum, 3 tip sheets for working with vulnerable elders, and on-line resource hubs for providers and for laypersons.

Conclusions: A large program to integrate geriatrics into the community and primary health care increased geriatrics knowledge, developed new trainings and resources, and determined factors affecting success of our program to “geriatricize” San Francisco’s older adult services.

A159
Development and Pilot Testing of a novel, milestone-based, direct observation feedback tool for Family Medicine residents conducting geriatric home visits
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Background: Geriatric home visits provide a unique opportunity for direct observation of resident physicians interacting with patients and caregivers. Milestones are now the standard for assessing resident competency development. Essential ACGME Milestones including professionalism, communication and system-based practice can be difficult to assess. To our knowledge, there are no studies evaluating milestone-based direct observation feedback forms for resident home visits.

Methods: A literature search identifying critical skills and attitudes central to home visits informed a longitudinal home visit curriculum for family medicine residents. Key objectives include improving medication management, augmenting home safety, addressing social determinants of health through interdisciplinary teams and community partners and promoting culturally sensitive decision-making and communication. These objectives were then mapped to the ACGME Family Medicine Milestones to develop a direct observation form that provides feedback in a consistent framework. The form was iteratively reviewed by the family medicine residency program director, faculty specialized in geriatrics and two other faculty with expertise in social determinants of health and communication for content validity. After multiple revisions, the form was pilot-tested on home visits with family medicine residents for feasibility testing before incorporating into the home visit curriculum.

Results: 6-month data of 12 evaluations showed an increase in level of independence from PGY1 to PGY3. Average level of independence in the Family Medicine Milestones range from Level 1 to Level 5. PGY1’s averaged 2.4 (n=8), PGY2’s averaged 3.5 (n=2) and PGY3’s averaged 4.0 (n=2). The initial PGY1 group will be followed longitudinally to assess milestone attainment.

Conclusion: This milestone-based direct observation form for geriatric home visits suggests an increase in level of independence with increase in number of home visits across residency training. This common language, formative feedback tool can be integrated with other periods of observation throughout residency progression to enhance evaluations in key domains of performance that are otherwise difficult to assess.

A160
Comparison of 3 student geriatric interprofessional educational programs
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Background: Clinical training in geriatrics across health professions continues to be lacking in curricula. Interprofessional team care is a cornerstone of geriatric practice and provides an ideal model for both geriatrics and interprofessional education. Despite the rise in IPE, research suggests that many graduates of US health professional programs are ill-equipped to effectively practice in a growing culture of team-based care (Zorek & Raehl, 2013).

Method: Students from seven professional schools participated in 3 geriatric IPE programs, two community based and one clinical, each with different foci and goals. Students were surveyed pre- and post-program participation using the Geriatric Attitude Scale (GAS) and the Geriatric Capability Scale (GCS).

Results: Based on a 97% response rate, the two community based programs produced significant improvement in overall GAS scores (p<.05) while the clinical program did not. Collapsing data across programs, effects were only significant for those in the lower quartile on pre-testing. The number of competency areas that students self-rate as “very” or “extremely” competent on the GCS increased significantly from pre-to post-testing across all programs.

Conclusions: Improvement in attitude and perceived competency can be achieved from participation in either clinical or community-based programs that expose health care professional students to older adults and issues of aging.

References:
A161
Is Perception Reality? Using Simulation to Improve Dementia Care
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Background: By 2025, people with ADRDs is estimated to reach 7.1 million, a 40% increase from 2016.1 Some health care providers defer diagnosis due to fear of patient stigma, lack of training, diagnostic uncertainty, and a shortage of diagnostic services.2 Moreover, reported reluctance to diagnose dementia was due to the poor prognosis and lack of therapeutic options.3 The Virtual Dementia Tour (VDT)4 has been suggested to help prepare clinicians recognize and diagnose dementia. Therefore, this qualitative research explored nurse practitioner (NP) students’ perception of dementia following the VDT.

Method: This qualitative study explored NP students’ perceptions of the experience of living with dementia following the VDT experience. Four focus group interviews were held with 21 NP students who volunteered to participate during “intensives.” Interviews were recorded, transcribed and analyzed for themes.

Results: The VDT experience allowed participants the opportunity to experience dementia. Following analysis, the main theme was developing empathic perspective and included subthemes of mirroring dementia behaviors, provoking emotions, wearing down and detaching. As one participant said, “I was kind of thinking… ‘I can’t imagine how that must feel.’ I think going through the virtual dementia gave us a tiny glimpse of what it would be like…”

Conclusion: The findings support the VDT as an experiential learning tool for NP students. Implications include improvement of recognition and diagnosis of dementia and promote holistic care of individuals living with dementia.

References

A162
Troika InterProfessional (TIP) Gerontology Education Model: An ECU GWEP Outcome
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Background: Intercollaborative team based learning models for primary care are critical to achieve optimal outcomes for elders in rural communities. The Troika InterProfessional (TIP) Gerontology Education Model describes a student team of three primary care professions who learn collaboratively to provide team based geriatric care in a rural setting.1

Method: 22 one day events were held in 2016-2017 for DNP (n=21); 2nd year medical students (MD3) (n=70) and PA students (n=23) using a cross sectional study design. Students made patient rounds at a Continuing Care Retirement Community in Greenville, NC in the morning and attended a Virtual Clinic Environment round table case study of a logger or farmer in need of complex geriatric team care in the afternoon.

Measures and Results: Patient care score (R= 83-97/100), 2-tailed paired t test with Likert scale (SD [1] to SA [5]) for:

- Attitudes Toward Interprofessional Health Care Teams3 (ATHICT; adapted with permission) (α = .928). n=82; 12/14 questions (p<.05), Greatest change +.29+.31 (p=.000-.006)

- Attitudes Toward Interprofessional Education Survey: 4 (n=875); n= 78; 11/15 questions (p < .05). Greatest change +.31-.42 (p=.000-.014)

Conclusion: DNP, PA, and MD3 students at ECU saw value in the interprofessional team care, improve patient outcomes and believed IPE teams helped to better understand clinical problems. Content is now embedded in all three curricula.


A163
One-Stop Geriatric Assessment Clinic for Interprofessional Education
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Background: Both the IOM and WHO recommend health professionals use interprofessional collaborative practice to improve health outcomes. As part of the HRSA Geriatric Workforce Enhancement Program, the University of Southern California created a one-stop interprofessional clinic with 8 schools that participated in a geriatric assessment program(GAP). The clinic was designed to help co-morbid older adults with cognitive impairment identify risks, then present recommendations to patients, families, and their primary doctor that would improve their overall function.

Methods: The GAP, a weekly half-day clinic, is a one-stop assessment for older adults. Of 108 GAP participants, 34 spoke English, agreed to participate, and were surveyed at baseline and at 6 months. Outcomes measured included 1) participant satisfaction with the clinical experience, 2) participant enablement, 3) health status and health-related quality of life (HRQOL), and 4) number of falls, ED visits, and hospitalizations.

Results: Mean age of participants was 83 years, 77% female, 32% dual-eligible, 50% white, and 29% Hispanic. More than 80% of respondents reported “excellent” or “very good” for 7 of 9 satisfaction measures. They also reported an increase in their “ability to cope with life” (64.5%) and feeling “confident about their health concerns” (72.7%). They reported fewer problems with mobility-related HRQOL (91.7% vs. 76.9% with any reported problem, p=0.017), but no change in other measures of HRQOL. There was no significant change at 6 months in the number of reported falls, ED visits, or hospitalizations.

Conclusions: Eight professional schools at an academic center can work collaboratively in an interprofessional assessment clinic for...
older adults with cognitive impairment. GAP participants reported high satisfaction with the experience, coping better with life, and having an increased level of confidence in their health concerns. Given the limitations of this patient population, it is a positive indication of the clinic’s effectiveness that there was no increase in falls, hospitalizations, or ED visits after 6 months. These preliminary data suggest the clinic may have a positive effect on patient health.

A164 Novel Geriatric Assessment Program for Student Interprofessional Education

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**Background:** The IOM and WHO have recommended inter-professional (IP) collaboration to improve patient outcomes. Skills necessary to function as part of an IP team require cultivation. Despite accreditation mandates, systemic implementation of IPE has been suboptimal. As part of a HRSA Geriatric Workforce Enhancement Program, University of Southern California developed a educational half-day IP clinic for older adults with cognitive impairment. Referrals were from primary care, specialists, and self-referred. Through this program, students of 8 professional schools trained in older adult team-based care and learned about effective IP relationships.

**Methods:** Over 2-years, 34 of the 43 students from the 8 professional schools completed pre-post surveys. Outcome measures were student 1) capabilities in conducting assessments with older adults, 2) attitudes towards learning in IP teams, and 3) attitudes towards working with older adults using the Geriatric Attitudes Scale.

**Results:** The students were diverse (44% Asian and 18.7% Latino), 20-29 years old (82%), and mostly female (82%). The most represented professions were pharmacy (47.1%), social work (11.8%), and psychology (11.8%). Half (49%) had prior IP experience and 55% had gerontologic experience. Students reported “very good” or “excellent” capability in 1.06 areas (out of 9) at baseline and 2.62 areas at follow-up (p<0.001). There was no change in student attitudes towards the value of IPE, and no change in attitudes toward older adults.

**Conclusions:** The development of this IPE clinic provides that professional schools within a health system can work together in a weekly clinic to incorporate IPE during training. This program provides the knowledge and appreciation for dimensions of geriatric care. The data suggest that this IP teaching program met students’ expectations and significantly improved their reported capability in evaluating common geriatric conditions (e.g. assessing fall risk, home safety issues). This is crucial when graduating students will be caring for a larger number of older adult patients. Perhaps a multi-centered evaluation with more students can provide further impacts of this IPE program.

A165 Interactive Distance Interprofessional Education in Post-Acute & Long-Term Care

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**Background:** There is increasing need for geriatrics education across health professions. The Utah Geriatric Education Consortium (UGECon) goal is to improve the quality of primary care and geriatric outcomes in Post-Acute and Long-Term Care (PALTC) through enhancing the workforce. UGEC implemented monthly Learning Communities via a distance learning platform to advance collaborative learning.

**Methods:** Nurses, social workers, aides, physicians, administrators and other disciplines from 18 PALTC facilities across Utah were invited to monthly distance learning communities with case-based presentations and group discussion. Didactic content was provided by UGEC interprofessional teams. Technical assistance and video conferencing best practices were utilized. The framework included a general timeline, sequence of events, and flexibility in content. Surveys were obtained on education needs, meeting times, and satisfaction with sessions.

**Results:** An average of 16 participants (rural and urban) representing 10 PALTC roles attended. Faculty were from 7 disciplines. Finding mutually available meeting times was a challenge. Topics generating greatest attendance and satisfaction included psychiatric care, de-prescribing, infection control, preventing falls and injury. Flexibility in content resulted in emergence of high priority topics: quality improvement to reduce readmissions, update on CMS and regulatory issues. UGEC supported 3 physicians to complete medical director certification.

**Conclusions:** Interests and education needs of the teams guided the geriatrics-rich, case-based learning sessions. Participants represented a wide range of disciplines, found the sessions useful, and contributed to the collaborative learning for their teams and for the group. UGEC provides an opportunity for state-wide geriatrics IPE that fosters resource sharing and solutions to complex issues. Increased focus on organization and engaging additional members are areas to improve.

A166 A novel multi-media delirium education program for acute care nurses


**Background:** Delirium is a multifactorial brain disorder that requires a broad work up and high level of suspicion. It has higher mortality rates and is associated with multiple adverse consequences including increasing length of hospital stay and readmission rates. Early recognition of delirium is crucial in hospitalized elders and developing a standardized process to report positive screens will help develop better prevention and treatment strategies.

**Methods:** A 3-step teaching approach was implemented to educate staff on evidence-based delirium care practices. These steps included: 1) self-directed pre-work; 2) a simulation learning experience in which cognitive decline and other aging syndromes could be understood and experienced firsthand; and 3) a multi-station delirium skills fair focused on prevention, early identification, assessment, non-pharmacological interventions, and documentation.

**Results:** From October 2015 to September 20017, 389 acute care nursing staff at NFSG VHS completed all three steps of the education program. To evaluate whether participants maintained their new skill sets, including evidence based delirium protocols, participating staff were invited to complete questionnaires. Evaluation findings included significant changes in their perceptions and sensitivity toward the impact of cognitive decline on everyday life. Additionally, increased self-confidence and skills were consistently reported in how to: 1) recognize signs and symptoms of delirium; 2) administer a delirium screening tool; 3) implement non-pharmacological interventions; and
4) provide better care overall to patients. These findings were corroborated anecdotally through observations of other care team members.

**Conclusion:** A multimodal education approach empowered the frontline nursing staff in recognition, assessment, and non-pharmacological management of delirium in the inpatient setting.

**A167**

**Patient Education around Advanced Directives: A Community-based approach**

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**Background:** In a survey from The American Journal of Preventive Medicine, 26.3% of 7946 respondents had an advance directive. The biggest barriers for not completing advance directives are education, denial and procrastination. We address these barriers by providing education regarding advance care planning, and assistance with completing Durable Power of Health Care (DPOA) at senior centers in Rhode Island (RI). Grant funding is provided by the Geriatric Workforce Enhancement Program (GWEP) and The Conversation Project curriculum is used. GWEP supports provider education on advance directives. By increasing education and access, we can increase the number of advance directives in Rhode Island, thereby improving care at end of life.

**Methods:** We began outreach to RI senior centers for our advance care planning program in Spring 2017. A registered nurse certified in palliative and hospice care and a social worker delivered the curriculum and assisted with DPOAs. The objectives were to enable participants to (1) understand why having conversations about their wishes is important, (2) use tools with family and doctor to express wishes, and (3) have confidence to talk to family about what matters most. The first session includes a power point presentation, short videos, and a question and answer period. In the second session seniors complete a DPOA.

**Results:** Five RI senior centers have participated to date. Fifty seniors received the “What Matters Most to You?” curriculum; participants rated the presentation as having met the learning objectives. Seniors were asked about their experience and comfort with advance directives before and after the session. Half of respondents reported that they had not talked to their love ones about their wishes, 70% reported not having a living will, and 91% reported feeling confident about the conversation. Eighteen participants completed a DPOA.

**Conclusions:** The two-part intervention has been well received by Rhode Island senior centers. Seniors have received education on end of life conversations with providers and family, and many have completed a DPOA that will preserve their end of life wishes. We will continue to evaluate the effectiveness and acceptability of the sessions. Outreach is being conducted to all 50 senior centers in Rhode Island.

**A168**

**Revalidating Geriatrics training in the Family Medicine residency curriculum**

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**Background:** Family Medicine (FM) physicians are expected to expertly care for patients throughout the life course, from birth through end of life. While many FM residency programs prioritize pediatric and women’s health, integrating geriatrics curricula is often deemphasized, creating a knowledge and skills gap. The ACGME and medical education literature provides little guidance on how to fill this gap. To improve workforce education and care for older adults, we redesigned and implemented a FM residency geriatrics curriculum.

**Method**

A program evaluation survey of an existing geriatrics curriculum served as the initial needs assessment and revealed areas of improvement. A detailed needs assessment followed, consisting of in-depth curricular review by a Geriatrics clinician educator. The curriculum was then redesigned to address identified knowledge and skill gaps and launched in July 2017. Qualitative and quantitative curriculum evaluations are ongoing.

**Results**

14 UCSF FM residents completed a program evaluation survey. 93% (n=13) agreed geriatric training was important, but 71% (n=10) cited insufficient training and patient volume. Review of the existing curriculum confirmed a lack of immersive and work-based geriatric clinical experiences throughout all three years. To increase such care opportunities, new partnerships across health systems and care settings were forged. A two-week PGY-1 immersion experience exposes residents to VA home-based care, an inpatient ACE unit, and community geriatric support services. A consolidated PGY-2 Geriatrics month provides intensive hands-on outpatient geriatric training in academic/community primary geriatric care and PACE. A new VA long-term care training site in PGY-2 diversifies this experience. Initial qualitative evaluations yielded positive ratings. Quantitative evaluations are being collected.

**Conclusion**

A new, well-received geriatrics curriculum spanning all 3 FM residency years emphasizes evidence-based geriatric care models and increases work-based and immersive geriatric patient care opportunities for residents. This revitalized Geriatric FM curriculum fills important knowledge gaps for FM residents with potentially long-lasting impacts on the care of older adults.

**A169**

**Seniors Assisting in Interprofessional Education of Student Healthcare Teams: Win-Win-Win for All**

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Seniors Assisting in Geriatric Education (SAGE) is a unique mentoring program designed to prepare healthcare professional students to better serve older individuals and work collaboratively as a team. SAGE is designed to enhance and strengthen healthcare professional students’ training in the compassionate care of older adults. The expectation for this program is for the students to develop competencies in attitudes, knowledge and skills in working as a team in the care of older adults as well as clinically apply classroom learning to real life.

For each interprofessional team of three to four students, this program spans three semesters/two visits per semester whereby students learn about each other’s professions, from each other in how to work together in the home as a healthcare setting and with each other about the nuances of this care delivery environment. The scope of this program for 2016-17 was 1336 students, 340 teams, over 375 senior mentors, and 64 faculty persons. Students learn what it is like to grow old and the challenges that are present for these individuals. The curriculum for SAGE consists of six visits with syllabi, guidelines, supporting material and grading rubrics. In order to measure learning and to evaluate changes in student attitudes on aging and teamwork from participating in SAGE, an 18-item survey using a five point Likert scale was administered to year 2 students (n=649) via Qualtrics Survey Software.

Results indicated that health care students were impacted positively by exposure to the SAGE Program, working with a senior mentor, and as part of an interprofessional team. Findings show that students gained enhanced skills and understanding over the two years,
A170
A 90-Minute Workshop on Initiating Advance Directive Discussions Increases Residents’ Comfort
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Background: Physicians and patients agree that primary care (PC) visits are the appropriate time to discuss advance directives (AD). This time normalizes discussions and builds the relationship between the physician and patient. Yet, AD completion rates for PC patients remain low due to multiple barriers (e.g., time, provider/patient discomfort). Can family medicine residents’ (FMRs) perception of barriers pre/post workshop on initiating AD discussions with geriatric patients be influenced?

Methods: An inter-professional team designed and implemented an AD focused Maintenance of Certification (MOC) PART IV session on initiating brief (2-3 min) AD conversations in primary care. The activity, using interactive educational strategies (quiz, video analysis, role-play) to demonstrate how to initiate AD conversations, was presented as a workshop for FMR’s (PGY1-3). Retrospective “post-post” evaluation focused on workshop processes and outcomes.

Results: 38 residents completed and evaluated the workshop. Post workshop FMRs reported: 1) improvement in 4 literature-based AD discussion barriers; 2) increased likelihood that they would initiate AD conversations; and 3) would likely (somewhat to very) recommend this workshop to a colleague. More specifically, four literature-based AD conversation barriers; and 3) would likely (somewhat to very) recommend this workshop to a colleague. More specifically, four literature-based AD conversation barriers: (1) perceived barriers to AD discussions pre workshop were judged to a colleague. More specifically, four literature-based AD conversation barriers: (1) perceived barriers to AD discussions pre workshop were judged.

Conclusions: Education to prepare for geriatric fracture center implementation provided an opportunity to introduce this management strategy to clinician as well as to review important concepts of acute care geriatrics. Given the success of the pilot, the next step will be to put the curriculum online to reach off-shift, weekend, per diem providers, and others through a widely-disseminated online learning platform focused on geriatric care education.

A171
Geriatric Management: Education to Prepare for Geriatric Fracture Center Implementation
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Background: As the number of older adults increases, acute care clinicians will see more patients with hip fractures, which are costly in terms of morbidity, mortality, functional impairment, and hospital care. The geriatric fracture center model of comanagement and interprofessional care has been shown to improve outcomes and quality for these patients. The Center for Medicare and Medicaid Services (CMS) bundled payment for hip fractures increases the incentive to develop this model. Acute care providers need education to prepare for implementation, which creates an opportunity to review principles of acute care geriatrics.

Methods: The audience for this pilot program was advanced practice providers (nurse practitioners and physician assistants) at an academic medical center. The curriculum was presented at a monthly grands rounds session, and covered fragility fracture epidemiology, preoperative planning, postoperative management, and best practices. A survey was distributed after the program to assess self-reported learning.

Results: 100% of survey completers reported meeting the majority of objectives for the program, and 80% recalled the need for preoperative optimization and avoiding delays to surgical fixation. 100% of survey completers were satisfied with the program.

Conclusions: The Geriatric Medicine Rotation at our institution is a month-long required rotation for PGY1 IM residents. In 2016, an “Interprofessional Education (IPE) Week” was added. The learner spends one-half day in 1:1 clinical sessions with physical, occupational, speech, and music therapists. Preceptors were chosen based on their geriatric expertise or excellence in teaching. Curriculum for the IPE week included: 1) learner objectives for each discipline; 2) reading on hazards of hospitalization; and 3) web-based module demonstrating effective team communication. At the end of the rotation, learners completed an online retrospective pre-post evaluation to rate their ability and knowledge using a Likert-scale and provide qualitative feedback about the whole month. Paired t-test was used to compare mean scores post vs pre-rotation.

Results: Between 9/16/16 and 10/31/17, 41/41 learners completed the survey; over 70% (N=29) had no prior exposure to geriatrics. The mean self-rated knowledge of the following were: “Performing a comprehensive geriatric assessment” (Pre 2.6/5.0 vs Post 4.1/5.0, p<0.001) and “Recognizing the roles of interprofessional providers” (Pre 2.9/5.0 vs Post 4.1/5.0, p<0.001). The mean self-rated ability in “Communicating with interdisciplinary team members regarding the care of an older adult” was Pre 3.3/5.0 vs Post 4.2/5.0, p<0.001. Qualitative comments reflected an increase in understanding of the interprofessional disciplines’ roles and the importance of functional assessment.

Conclusions: Adding a non-physician IPE component to a geriatric medicine rotation in a large university environment is feasible and valued by learners. IPE expands knowledge and positively impacts learner attitudes about working in interprofessional teams. Future directions will include objective feedback from IPE preceptors.
A173
Geriatric Mental Health Education for Primary Care Providers
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Background: Most older Americans receive mental health care through their primary care providers (PCPs). We developed an educational program that addressed key topics in geriatric mental health, to empower PCPs to deliver evidence-based care to older patients. We report here the outcome of knowledge acquisition by PCPs.

Methods: Five experienced geriatric mental health clinicians created educational materials for a monthly series of 7 talks, a scale to assess clinical confidence, and knowledge tests assessing evidence-based clinical management of common late life mental health concerns.

Results: Sixteen PCPs (38% aged > 55 years; 63% female; 88% Caucasian) from 2 practices participated. Pre-intervention, fewer than half of PCPs rated themselves as very confident in clinical management of depression (44%), suicide risk (18%), delirium (38%), dementia (32%), and psychosis (0%). All measures improved post-intervention (see Figure 1).

Conclusions: This small study suggests that PCPs are not confident in handling late life mental health issues but respond positively to training. Additional gains in confidence and knowledge may require additional educational opportunities and training techniques.

A174
Perspectives on Engaging Community-Based Organizations and Older Adults with Electronic Health Records: Results of a GWEP Regional Meeting
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Background: Optimal healthcare for older adults requires strong communication among providers, community-based organizations (CBOs), and patients. Effectively engaging all in the use of electronic health records (EHR) would help to achieve this goal but presents multiple challenges.

Method: Representatives from academia, primary care clinics, CBOs, and older adults from 5 Geriatric Workforce Enhancement Programs (GWEPs) convened for a two-day meeting to identify and develop best practices for utilizing EHRs. The group explored ways to engage CBOs in the health system and to respond to the information needs of patients. GWEPs shared their experiences including processes, protocols, and gaps in current practice. Experts on technology presented challenges and opportunities for engaging older adults in the use of EHRs for self-management.

A175
A Call for Inter-professional Geriatric Education
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Background: A healthcare workforce trained and prepared to care for older adults is needed. The ability to work in interdisciplinary teams has been identified as a key competency for all health professions. Various geriatric educational models for health professional trainees have been tried with experiential and clinical exposure, rather than didactic training, and have been effective at improving attitudes towards caring for older adults. This 4 year retrospective study examined the impact of a home-based, inter-disciplinary geriatrics team training program (Inter-professional Geriatrics Curriculum/IPGC) involving students from seven health professional programs.

Method: Four cohorts of students (2013/14 to 2016/17) participated in an online survey 1-2 weeks prior to the start of the program and 1 week after the conclusion of the program. 295 students completed both surveys that included the Geriatric Attitude Scale (GAS) as the main outcome measure.1

Results: Controlling for student age, gender, and race/ethnicity, there was slight improvement from baseline to follow-up in the overall GAS score (B=0.06 points on a 5-point scale, p=0.005), and in two specific subdomains of the scale (Social Value B=0.09, p=0.043, and Compassion B=0.10, p=0.000). Stratified analyses by quartiles of baseline GAS scores found improvements in overall GAS scores for students in the lowest two quartiles (bottom quartile gained 0.19 points, p=0.001; second lowest quartile gained 0.10 points, p=0.012). There was no change for third quartile students and the fourth (highest) quartile experienced a decline of 0.08 points (p=0.026).

Conclusions: Improvement in geriatric attitudes was found across a wide spectrum of inter-disciplinary students after completing an IP geriatrics team-training program in a community home-based setting. Students with the lowest initial geriatrics knowledge and attitudes improved the most. This study demonstrates an effective, novel, IP geriatrics curriculum combining didactics and experiential learning in a home-based setting.

A176
An Innovative Geriatrics Interprofessional Curriculum for Advanced Practice Nursing and Masters Level Social Work Students

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Background: Interprofessional (IP) experiences are essential to prepare health science students for collaborative care of complex older adults. As part of the Indiana University Geriatrics Workforce Enhancement Program (GWEP), we developed a new geriatrics IP curriculum for ten GWEP Fellows: five advanced practice nursing (APN) and five masters level social work students (MSW).

Methods: Beginning January 2016, nine IU faculty and staff in medicine, nursing, and social work collaborated to develop an innovative one-year geriatrics IP curriculum. The curriculum included a monthly IP Case Conference of which there were three parts. First, there was a geriatrics case review, initially using a paper case. Mid-way through the year we began using cases in teaching Electronic Medical Record (eMR) containing anonymous actual patient data. Finally, there was a process discussion during which faculty received feedback from Fellows. Fellows completed a written evaluation after each Conference.

Results: There was greater than 70% response rate of surveys for each Conference. All Fellows who responded found the process discussion to be helpful, and felt as a result of the monthly Conference they were prepared for their clinical experiences. When we changed from the paper to the eMR cases, Fellows’ comments showed enthusiasm for the format change. Overall, several items were most helpful: IP discussion, hearing other Fellow’s experiences, and geriatrician input.

Conclusions: We developed a new IP curriculum with a monthly Conference and clinical experiences. Conferences were valued by Fellows with particular enthusiasm for process discussions, the opportunity to share experiences, and case discussions using the innovative eMR.

A177
Advanced Geriatrics Evaluation Skills (AGES): Developing a New Intensive Geriatrics Skills Course for Primary Care Residents

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Background: A model for ensuring core competencies in clinical training is the use of intensive skill building courses, e.g., The AAFP’s Advanced Life Support in Obstetrics (ALSO) and the AHA’s ACLS courses. These courses emphasize didactics and hands on interactive procedure skill building. This model is also applicable to gain essential skills in the care of the older adult. We developed and tested an intensive, 1-day geriatrics training program for 1st-year primary care residents in Advanced Geriatrics Evaluation Skills.

Methods: Content: The curriculum focuses on assessing older adults in the ambulatory setting. The AGES curriculum includes: functional screening; assessing: cognition, falls, UI; prescribing: goals of care; hospice care; and referring to community resources. Format: The course is presented in two, 4-hour blocks. Teaching strategies include: mini-lectures, skill building exercises, e.g., rapid functional assessment, cognitive and gait assessments; and case-based problem solving.

Pilot Testing: The UNC FM and IM program directors arranged for 17 first-year residents (6 IM; 11 FM) to participate in January 2017. Evaluation included: pre and post multiple choice content exams; retrospective self-assessment, and qualitative debriefing of learners.

Results: Residents reported that the course was well organized, relevant, and well taught. They particularly valued the sessions on UI, prescribing, and goals of care. Median pre-post content exam scores were: 9/15 and 11/15 respectively. Areas of weakness included functional assessment, falls, and prescribing. Residents self-assessment of their current skill level was high, with lowest confidence related to: referral to community resources and hospice, and conducting a Medicare AWV. Residents reported that in the next 6 months they were very or somewhat likely to conduct a functional assessment, manage poly-pharmacy, assess a patient who had fallen or has memory problems.

Conclusions: The AGES course was well evaluated by first year residents. Although performance on the content exam was very good, the results varied widely among the residents, reflecting different medical school experiences. The small improvement on the post-test performance is encouraging. Only six-months into their training residents are motivated to learn more about ambulatory geriatrics care.
A179
Developing Faculty Knowledge and Skills for Geriatric Interprofessional Education: A Pilot Project
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Background: Interprofessional education (IPE) is a requirement in curriculums across healthcare disciplines. The primary purpose of IPE is to equip students with competency in interprofessional collaboration (IPC), yet most healthcare educators report that they are underprepared to teach interprofessional learners. One of the goals of Geriatric Workforce Enhancement Program (HRSA #U1QHP28707) was to develop IPE facilitation/debriefing skills of educators from healthcare, academic and community partners.

Methods: Educators (n=21) of different disciplines from all partners were recruited to train IP students through a progressive, active learning experience related to geriatric care. Participants in this pilot study underwent a 4 hour training session that embedded geriatric principles, TeamSTEPPS teamwork concepts, and interprofessional core competencies with a concentration on simulation debriefing skills. We pre-assigned online geriatric and teamwork concepts modules developed as part of another GWEP grant team. The live training reviewed online concepts and presented debriefing concepts/best practices. Trainees were immersed in debriefing practices through role modeling and guided simulation in small groups. One member acted as the debriever of an IP team discussion of a complex geriatric case. We collected demographics and evaluation of the training effectiveness using pre and post Interprofessional Collaborative Competencies Attainment Survey (ICCAS).

Results: Demographics of the 21 trainees (85% female, mean age 47.9) showed there were 7 disciplines. Results of the ICCAS revealed a 16.8 point increase (113.0 mean pre, 129.0 mean post, p=0.1795) in participants’ attitudes of interprofessional collaborative competencies. Overall feedback was positive. Fifteen of the 21 faculty subsequently facilitated an educational simulation with IP students.

Outcomes: Healthcare educators need training to teach IPE such as simulation. It is important to cultivate a positive attitude among educators for IPE and engage them in active learning methods. Presenting information in a step-wise fashion that addresses geriatric principles, IP team practice, and facilitation/debriefing skills is an effective way to equip faculty with the necessary knowledge and skills to facilitate interprofessional education.

A180
Nursing Facility Exposure Enhances Geriatric Medical Knowledge in Graduate Medical Education.
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Background: As the geriatric population grows, the demand for physicians qualified in nursing home training rapidly increases. Medical residents have little to no exposure with continuous skilled nursing facility (SNF) or long-term patient care (LTC). However, medical residents play pivotal roles in transition of care to and from SNF and LTC transfers. Accreditation Council for Graduate Medical Education (ACGME) requirements for family medicine resident training includes long-term care education over a 24 month period. In this project, we followed family medicine residents over the course of two years and assessed basic geriatric knowledge through a geriatric knowledge test consisting of board-style geriatric questions and surveys. We hypothesize that incorporation of nursing facility training increases resident-physician knowledge of geriatric medicine and therefore, LTC training is a crucial part of graduate medical education (GME).

METHODS: Family medicine residents of the same residency program working in one continuity long term care facility during the July 2014 to July 2017 were identified. Physicians-in-training were given surveys and randomized board-style geriatric questions at the beginning and end of nursing home training with a total of 2 years of long term care training. The knowledge test included a mixture of geriatric and nursing home pertinent multiple-choice questions (MCQ) and true or false assessment (TFA). The survey results were collected and analyzed. Administered knowledge-based questions assessed for geriatric syndromes, pharmacology, end-of-life, and interdisciplinary team understanding.

RESULTS: All resident physicians demonstrated improved scores in multiple choice questions and true-false assessments. The initial baseline average knowledge score was 52% and increased to 81% after completion of LTC training.

CONCLUSIONS: After 2 years of continuous nursing facility training, all medical residents scored better on geriatric knowledge assessment. The improved scores suggest better understanding and knowledge of geriatric medicine when learners are actively and continuously training in the post-acute and long-term setting.

A181
Supporting Rural Caregivers Through Academic and Community Partnerships
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Background: Caregivers are critical partners in the healthcare team for older adults with Alzheimer’s disease. Unfortunately, caregivers have heightened risks for stress and depression, and few resources and supports may be available in medically underserved rural areas. As part of a HRSA Geriatric Workforce Enhancement Program (GWEP), an academic medical center partnered with an Area Agency on Aging to conduct two community evidence-based caregiver training programs in rural areas to determine program value and impact on caregiver burden and depression.

Methods: The six-month REACH Program (individual intervention; n=34) and nine-week Stress Busting Program (group intervention; n=14) were delivered in rural North Texas areas in spring 2017. Participants completed pre- and post-surveys using validated tools designed to measure caregiver burden (including the Zarit Caregiver Burden scale and Screen for Caregiving Burden) and depression (including the Perceived Stress Scale and CES-Depression scale). Paired t-tests were conducted to compare caregiver pre- and post-intervention measures.

Results: Composite scores for caregiver burden for both programs showed significant reductions from baseline to program completion. Individual items showing improvement in both programs included those related to feelings of control and confidence; dealing with difficult emotions when caregiving, such as anger, stress, and uncertainty; and engagement in social relationships. In contrast, composite depression scores did not significantly change for either intervention, although individual item scores related to sleep loss and feelings of loneliness and depression did show significant improvement for REACH Program participants.

Conclusions: Overall, caregivers in rural areas may benefit from community-based programs. Although these programs may not impact depression, such programs can help alleviate caregiver burden. More specifically, caregiver confidence, emotional health, and self-efficacy may benefit from these one-on-one or group interventions. Despite different measures and small sample sizes in both programs, the study findings highlight the potential benefits of academic and community partnerships aimed at directing resources towards rural community-based caregiver supports.
A188
The Use of Simulation to Prepare Students for Interprofessional Practice in the Management of Geriatric Syndromes
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Background: Interprofessional (IP) collaboration is required to optimally manage patients with complex geriatric syndromes. The geriatric literature is lacking in effective educational models to equip students to effectively manage geriatric syndromes in an IP environment.

Methods: We developed an education curriculum that focused on a simulated IP team meeting for a patient with complex geriatric syndromes. Pre-simulation learning consisted of online didactic content including geriatric assessment/intervention skills and teamwork concepts. Simulation events began with interactive geriatric assessment skills practice incorporating TeamSTEPPS concepts. Students then reviewed findings for a simulated patient and engaged in a team meeting simulation, where they practiced team skills as they developed a care plan. Finally, a simulated family caregiver entered the simulation which caused the students to re-evaluate the plan of care to make it more patient-centered. Evaluation of IP competencies was measured pre and post education.

Results: Students (n=427) attended the simulations representing 13 professions. 96% of students reported increased understanding of how IP teams function, 96% reported increased valuing of the benefits of IP team work, 90% reported increased confidence in practicing in an IP team and 97% reported the experience with the simulated caregiver as valuable.

Discussion: The scaffolding of the didactic, skills practice and simulation proved effective in improving student’s perceptions of the value of IP practice in managing geriatric patients. The integration of the simulated caregiver enhanced the use of critical thinking skills.

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A183
Integration of Medication Safety in the Medical School Curriculum as Part of the Entrustable Professional Activities (EPAs) Project
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Background: In 2006, the Institute of Medicine estimated that there were at least 1.5 million preventable adverse drug events that occur in the United States each year. Student medical training focuses mostly on indication for medications and little in adverse drug events and side effects. Older adults are especially vulnerable to inappropriate prescriptions and serious adverse drug events. The integration of medication safety as part of the EPA project includes the following objectives:

- To develop a longitudinal patient safety curriculum based on medication management as part of the Entrustable Professional Activity (EPA) 13.
- To further the knowledge of medical students on medications and their side effects.
- To increase awareness of medical students on avoidance and cautious use of medications in older adults.

Methods: Longitudinal program integrated in the 4 years of the medical school curriculum as part of the patient safety curriculum (EPA 13). In addition to the pharmacology curriculum, we have added:

- During the First Year, two modules about safety of medications, including over-the-counter (OTC) medications.
- During the Second Year, five graded exercises about medications and their side effects as part of clinical skills geriatrics course.

And will include: During the Third Year and Fourth Year: two required exercises about identification of inappropriate prescription as part of the internal medicine and family medicine rotations. Also, students are required to write an incident report about potential problems of medications in one of their patients and take an exam about medications and common side effects in the advanced geriatrics clerkship.

Results: Curriculum about safety of medications has been successfully integrated in the first 2 years of medical school. Ninety eight percent (98%) of the First Year students have demonstrated competency on an exercise regarding OTC and patient safety on the first try. One hundred percent (100%) of the Second Year students have completed at least three (3) graded exercises about medications and indications/cautions in their older adult patients.

Conclusions: Patient safety (especially EPA 13) is an excellent way to integrate medication management in medical curriculum. Medication safety is not just a concern for the geriatrics curriculum, but also for the safety of any patient.
A185
SPICE-ing Up the Nursing Care of Hospitalized Older Adults
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Background: Prior to launching an Acute Care of Elders (ACE) unit at our institution, it was imperative to assess the level of geriatric nursing skills and identify areas for improvement. We assessed nurses’ baseline comfort level and knowledge, to tailor practical education to their needs.

Methods: The Geriatric Institutional Assessment Profile (GIAP) survey by Nurses Improving Care for Healthsystem Elders (NICHE) was administered on one nursing unit prior to the launch of an ACE unit. Nineteen questions assessed comfort level with geriatric principles on a Likert-type scale, with 1 as least comfortable to 5 as most comfortable. There were 28 knowledge questions answered as true/false. Questions were categorized into common geriatric principles using the acronym SPICES: Sleep; Polypharmacy; Pain; Immobility; Incontinence; Cognition; Enteral nutrition; and Social support. The SPICES acronym was also integrated to interdisciplinary rounds and nursing huddles to facilitate effective communication and reinforce the learning.

Results: Fifty-one nurses were invited to participate and 21 nurses completed the GIAP survey. Overall comfort level with geriatric care was rated 3.74. Nurses were least comfortable with Polypharmacy (3.33) and most comfortable with Immobility (3.93). For true/false knowledge questions, mean score was 67% correct. Nurses performed the worst in Enteral Nutrition (14%) and the best in Immobility (88%).

Conclusions: We integrated geriatric principles into daily nursing routine using the succinct and practical acronym SPICES. Our needs assessment identified polypharmacy and nutrition as areas in need of further education. We are providing traditional lectures, weekly coaching at rounds, and monthly newsletter pearls tailored to these needs. The GIAP survey will be repeated at the end of 6-month curriculum to assess for performance improvement.

A186
Enhancing Care of Older Adults across the Pacific Northwest through Support of Quality Improvement Projects in Primary Care Residencies
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Background: Healthcare of older adults falls disproportionately to primary care providers. Health professions trainees are increasingly required to participate in interdisciplinary clinical quality improvement (QI) activities; however clinical QI training rarely emphasizes simultaneous education in geriatrics care. We initiated a new virtual QI collaborative designed to simultaneously expose primary care residents to QI and geriatrics.

Methods: The NW GWEC offered modest funding and technical support for geriatrics-focused QI projects to practices affiliated with the University of Washington’s Family Medicine Residency Network, a group of 29 residency programs in the Pacific Northwest. Qualis Health, the regional Medicare Quality Improvement Organization (QIO), led QI training and provided one-on-one advising and technical assistance. QI project leaders (usually faculty physicians) met via video-conference three times per year for a learning collaborative with other QI project leaders, QIO’s QI expert, and academic geriatricians. Participants rated their satisfaction with the collaborative on a 5-point scale (range: 1, “Not at all,” to 5, “Very much”), answered open-ended questions aimed at capturing lessons learned and general feedback, and rated their project using the Institute for Health Improvement’s Project Progress Assessment Scale (PPAS) (range: 0.5 to 5.0; higher values = meeting improvement goals with sustainable results).

Results: Between March 2016 and November 2017, we funded five projects and convened four learning collaboratives. Seven of eight surveys (88%) were returned from the first 2 learning collaboratives. Respondents were somewhat satisfied (mean 3.3±1.1). Open-ended responses reflected an appreciation for learning and practicing QI methods. Comments noted the timing of the meetings was not ideal.

Conclusions: A virtual, geriatrics QI collaborative targeting primary care faculty and residents increases focus on a wide range of geriatric health issues while providing experience with QI methods.

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<th>Project Title</th>
<th>PPAS Score</th>
<th>Status</th>
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<tr>
<td>Online Problem-solving Intervention for Behaviors in Dementia</td>
<td>2.1</td>
<td>Ongoing</td>
</tr>
<tr>
<td>Reducing Polypharmacy and High Risk Medications</td>
<td>1.3</td>
<td>Ongoing</td>
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<tr>
<td>Improving Access to Behavioral Health of Caregivers of Void Elders</td>
<td>3.0</td>
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<tr>
<td>Using the Group Medical Visit Model for Welcome to Medicare Visits</td>
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<td>Completed</td>
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<tr>
<td>Improving Screening and Assessment of Fall Risk</td>
<td>0.5</td>
<td>Newly Started</td>
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A187
The New Jersey Geriatric Fellowship Consortium for Collaborative Didactics: a Follow Up Evaluation of its Second Year
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Background: Geriatric fellowship curriculum is extensive and complex. The program faculty is expected to provide didactic lectures on many different topics. Until June 2016, each Geriatric Fellowship Program in New Jersey (n=5) provided all the required didactics & there was no formal collaboration between them. To that end, starting in July 2016, the 5 programs started sharing didactic responsibilities. Since then the lectures are coordinated and delivered by experts monthly over four hours. Within the NJ programs there is significant diversity & variation in clinical settings (university vs. community), affiliation (allopathic vs. osteopathic institutions), faculty interest, institutional expertise & resources, all of which enrich the consortium experience. This model is now in its second year. The participants (fellows) were surveyed during the first year & the feedback was positive. The purpose of this study was to evaluate the experience of the second year participants.

Methods: A mid-year survey was sent to the Year 2 participants (n=5). The survey evaluated the caliber & utility of the collaborative didactics & was compared to the mid-year survey done in Year 1 (n=6) of the roll out. All of the fellows responded.

Results: Per the Year 2 mid-year survey 100% of the fellows “strongly agreed” that the lectures were relevant to their clinical practice (100% in Year 1) & 80% “strongly agreed” that they were high quality (100% in Year 1). 80% of the fellows “strongly agreed” that the in-person interaction with the faculty & fellows overcome the barrier of driving for consortium events (83% in Year 1).

Conclusions: This is the second year for the project & there is continued positive feedback & trend towards appreciating the experience. The distance between the programs was initially thought to be a deterrent but the quality of the didactics & the in person interaction with other fellows & faculty continues to overcome this barrier. Since most geriatrics fellowship programs struggle with limited faculty & trainee size it may be worthwhile for programs to collaborate with other geographically proximal programs. We found this to enrich the didactic experience & enhance future recruitments.
A188 Encore Presentation
Educational Initiative to Promote Knowledge of Cognitive Impairment in Minority Older Communities, Caregivers, and Clinicians

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Background:
In addition to the aging population, the US faces a significant sociodemographic challenge: the growth of minority groups. Minorities and older adults are particularly vulnerable to receiving suboptimal healthcare. Based on needs assessments and focus groups, cognitive dysfunction was identified as an important subject. Our developed education for minority older adults addressed linguistic and cultural barriers.

Methods:
In partnership with community organizations, the Geriatric Resource Interprofessional Program (GRIP) was set up at Memorial Sloan Kettering Cancer Center. GRIP spearheaded an educational initiative on cognitive dysfunction for minority communities in Queens County, the most ethnically diverse urban area in the world. Between 11/2015 and 4/2017 five sessions were conducted for community members at local centers. Another 3 sessions were conducted to address the needs of caregivers of older adults with dementia. Consecutive interpretation of the lectures was performed to the predominant language of the group. Nine sessions discussing the assessment and management of cognitive syndromes were delivered to clinical staff at 5 centers. Pre and post tests were distributed to assess knowledge.

Results:
A total of 171 people who spoke 15 different primary languages attended the community sessions. Their median age was 66 (28-99 years) and 65% were women. 53% were born in Bangladesh, the remaining in 16 other countries. 33 caregivers attended the caregiver sessions and 178 providers (RN, case managers, LCSWs and MDs)-attended the 9 clinical sessions. Their median age was 57.5 (31-73 years). 90% were female (N=31) and 82% identified as white (N=28). Knowledge significantly increased in caregivers and providers based on pre-post tests. Successes and challenges faced in implementing the educational initiative, as well as comments from participants will be presented.

Conclusions:
The educational program was well-received and overall successful in uptake of knowledge. Empowering the community and healthcare providers through geriatric education contributes to the understanding of geriatric syndromes and may improve outcomes and quality of life.

A189
Reduction in falls following an interprofessional geriatric workforce enhancement program on evidence-based falls management and prevention

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Background:
Falls are a common, serious and costly event among older adults. Community-based implementation of evidenced-based practice programming provides a tested means for addressing serious public health concerns such as falls. This work details the results of a community-academic partnership to address falls at a rural area agency on aging (AAA) operating a Program of All Inclusive Care for the Elderly (PACE).

Methods:
Evidence–based literature guided the development of the intervention: a training curriculum focused on interdisciplinary falls assessment and interventions. Participants were trained guided in the development of falls prevention and intervention strategies. Twenty-two professionals were engaged, including personal care staff and transit providers, along with the PACE team of healthcare providers. The quasi-experimental, repeated measures study design measured practice change through survey and focus group assessments. Outcome data, including the number and severity of falls, were abstracted from quarterly PACE Monitoring Reports for three periods: three months before (T1), three months after (T2) and six months post training (T3).

Results:
Of the 128 falls occurring over the 9-month period, 51% occurred in the three months before intervention (T1). This proportion dropped to 27.3% (p < .05) and 21.9% (p < .01) during T2 and T3 respectively. With respect to injurious falls (n = 62), again almost half of these occurred during T1. The proportion dropped to 30.64% (p = .06) and 22.58% (p < .005) during T2 and T3 respectively. The training also encouraged the engagement of more than one discipline in the assessment of falls, and we were able to document a statistically significant improvement in this aspect that was partially sustained into T3. Practice changes attributable to the training included re-examination of falls assessment and intervention documentation processes, as well as improvements in team communication and confidence for assessing fall risk.

Conclusions:
This community-based implementation of an evidenced-based, interprofessional curriculum resulted in a statistically significant improvement in fall rates and injuriousness through six months post-intervention. Qualitative and quantitative data suggest that the interprofessional team development engendered by the training contributed to the objective results.

A190
Common Threads of Care: Integrating Geriatrics and Specialty Practice for Medical Students


Background: While most medical students will not pursue a career in geriatrics, all will work with older adults. Early introduction to the relevance of geriatrics in diverse specialties may increase students’ application of geriatrics principles throughout their training and beyond. We present a novel small-group curriculum co-created and co-taught by geriatricians and specialists for 2nd year medical students illustrating practical application of geriatric principles for upcoming clerkships and future practice regardless of career choice.

Methods: As part of a new geriatrics block at UCSF, geriatricians and faculty representing surgery, psychiatry, OB/GYN, and pediatrics jointly developed case scenarios and discussion questions focused on key geriatric concepts commonly seen in each specialty’s practice (eg, late-life depression, grandparents as caregivers). The two-hour session utilized a ‘speed dating’ format in which a geriatrician (12 total) and specialist (3 of each) pair rotated through 4 student groups to discuss the case related to the specialist’s field. Students discussed all 4 specialty cases with 4 different geriatrician/specialist pairs and then completed a 5-point Likert-scale evaluation on session structure and effectiveness. Comments were thematically analyzed.

Results: Students (n=116) rated the overall session as 4.37/5.0, SD 0.75. They positively rated geriatrician/specialist co-facilitation (4.60/5.0, SD 0.63); their comments indicated this approach was “relevant,” “appreciated,” and “valuable.” They also highly rated the effectiveness of the 4 cases in highlighting the relevance of geriatrics to specialty care (average 4.41/5.0) and commented that the cases provided concrete take-home points for future practice. Facilitators highly enjoyed co-facilitating and commented that they also learned from each other during case discussion.

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Conclusions: Partnering with specialists to develop and teach this small group session provided an innovative and feasible method of teaching high-yield geriatric pearls for clerkships and future practice. Including specialists in co-facilitating discussions on how geriatrics is relevant to their specialty provided authenticity through their real-world practice examples. This replicable curriculum demonstrates a promising approach to role modeling geriatrician/specialist collaboration and introducing widely applicable geriatric concepts to learners.

A191 Outcomes of Education in using Music and Caregivers Singing as a tool to Person Centered Care when working with Persons with Dementia.


Background: A major concern in dementia care is communication problems, and thus problems in interaction with caregivers. A result of that might be that the person with dementia (PWD) express resistance of aggressiveness. Different kind of music activities, especially the method Caregivers Singing (CS) - when caregivers sing for or together with persons with dementia during caring, has shown to reduce these expressions and increase communication and cooperation.

Methods and aim: 30 professional caregivers at three nursing homes for persons with dementia participated in an education program with music and CS as a tool to person centered care. They participated in group discussions about their experiences of using CS as a method in their work. The discussions were recorded and analyzed with qualitative content analysis aiming to explore their experiences and preferences, as well as when it was preferable to use music and CS in their work with PWDs, and also what the outcomes were.

Results: The analysis resulted in two themes; “To facilitate caregiving situations” which included CS at the most, and the caregivers described singing songs favorable for the PWD to calm upset PWDs down and increase cooperation. The other theme; “To increase togetherness”, included mostly background music that were preferred by the PWD. This opened up for memories, and social activities such as dancing.

Conclusions: To educate caregivers in a structured way on how to use music and CS in their everyday work can be a way to reach person centered care for PWDs, and to facilitate problematic care situations, as well as increase socialization and communication between PWDs and their caregivers.

A192 Extended Support to increase Quality of Life in Spouse Caregivers of Older Adults with Dementia. A pilot study

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Background: When an older adult develops a neurocognitive disorder such as dementia, that person’s spouse often becomes their caregiver. Because a dementia condition can often require 24-hour supervision, the marital relationship can become strained, with the caregiver feeling lonely and trapped in their role, lacking support, and having no time to take care of their own health. In Sweden, there is generic support for informal caregivers, but not specific to the needs of spouse caregivers. The aim of our study was to determine the unique needs of spouse caregivers.

Methods and aim: Nine spouse caregivers of older adults with dementia living at home were recruited through memory clinics, and support groups. They were interviewed focusing on their experiences of providing care, and their support needs in relation to their caregiving role, their personal well-being, and their marital relationship. The interviews were transcribed and underwent qualitative content analysis.

Results: Results showed that the spouse caregivers had unmet needs for education mainly in handling problematic situations and communication, and greater support for routine care tasks. They also had an unmet need for venues where they could meet other couples in the same situation socially without being afraid of embarrassment due to the person with dementia’s behaviours. In addition they indicated a need for personal support in handling existential concerns of their own life journey. They had questions related to being a spouse and intimacy in their relationship and their own health and wellness.

Conclusions: There is a need to expand the support for spouse caregivers and target it to meet their unique needs. Education about this should be included in health professional programs, as well as for practitioners meeting couples with dementia. This pilot study will be followed up by a larger study in order to confirm findings and extend the remit of the work.

A193 Family Medicine Resident Attitudes About Geriatric Fellowship Training

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Background: Knowing factors affecting Family Medicine residents’ decisions to choose geriatrics training is essential to increasing this workforce

Methods: Family Medicine residents from a large Family Medicine Residency were surveyed. Questions covered geriatrics education in medical school and residency, and it included the desire for a geriatric fellowship. For quantitative data, descriptive statistics were performed. For open-ended questions, textual analysis of thematic content was coded and compared by three of the investigators. Differences were resolved by consensus.

Results: 45 residents completed the surveys evenly split among the 3 trainee years. 76% of the residents indicated they had geriatric training in medical school, including 37% completing required geriatrics training and 18% of residents completing geriatric training as an elective or as integrated content during a rotation. 24% of the residents had no geriatric training in medical school. After completing general training for delivering care to elderly patients in their family medicine residency, over one-third of residents (35%) would be interested in pursuing additional geriatric training; however, 6% would be interested in completing a geriatric fellowship. Some subjects agreed with the importance of geriatric training, but they expressed reservations about a fellowship year due to the complexity of geriatric patients. Others had almost the opposite view: doing geriatrics for an extra year would diminish the breadth of their family medicine training, including providing some procedures. Subjects also felt that the return on investment for completing a geriatric fellowship was low because they expected to care for the elderly upon graduation without doing a fellowship, and they associated a geriatrics career with a reduced income and career options compared to general family medicine.

Conclusions: Most family medicine residents did not wish to pursue a geriatrics fellowship. To improve the supply of primary care physicians caring for the elderly, policymakers should consider accepting alternative geriatric training approaches in addition to geriatric fellowships. The work life and income of primary care physicians who care for geriatric populations should also be improved.
A194

Evaluation of HOPE: A workshop for Hoarding Disorder
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Background: Hoarding Disorder affects about 16 million people in the US, and is an underreported mental health condition. Costs to city and state agencies are estimated at $1 million/year. Based on the evidence-based program Buried in Treasures, but restructured to accommodate a class 4 times larger, HOPE is a 10-week facilitated workshop designed to help community members manage their hoarding behaviors by learning new skills in acquiring, discarding, sorting and organizing possessions.

Methods: Since 2015, five cohorts have completed the HOPE workshop with class sizes averaging 47 participants. Each weekly session includes structured and interactive dialogue focused on specific topics and related barriers. Assigned homework includes readings, emotion journaling, photographing progress and working on individual behavior modification. Participants were asked to evaluate their progress as a result of participating in the course through retrospective reporting of prior behavior. This presentation shares results from the Fall 2017 cohort.

Results: Of 30 participants, 19 returned evaluations. Overall, those participating in the HOPE workshop improved their success rates for discarding, organizing, and acquiring: 64% said they were never or rarely successful at discarding prior to the class, while 100% stated they made fair to excellent progress after the workshop; 63% said they were never or rarely successful at organizing prior to the workshop, while 100% reported fair to excellent progress after the workshop; 64% reported they were never or rarely successful at reducing acquiring prior to the workshop, while 94% reported fair to excellent progress after the workshop. Additionally, the majority of participants reported the large class size made no difference in their ability to learn the material and participate in class.

Conclusion: Hoarding Disorder is a challenging mental health condition. Innovative solutions need to address this growing and costly public health concern. The HOPE workshop demonstrated that community members struggling with hoarding behaviors can make substantial progress after learning new behavior modification skills. The workshop also demonstrated that a significantly larger class size does not restrict participant ability to learn, participate or share personal thoughts and feelings.

A195

Meeting the Needs of Complex Patients Through the Use of the CATCH-ON Training Tool
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Background and Objectives: Treating patients with multiple chronic conditions who frequently present with a variety of psychosocial and medical problems can quickly intimidate trainees. While guidelines have been published pertaining to the care of complex patients, there is little in the way of a protocol for this process. As part of the CATCH-ON (Collaborative Action Team training for Community Health – Older Adult Network), a HRSA Geriatric Workforce Enhancement Program, we developed a clinical training process tool that aids learners new to geriatrics in increasing their skill set in assessment and creation of a comprehensive, patient-centered plan utilizing an interdisciplinary approach. Four unique evolving cases addressing the basics of geriatric assessment, interdisciplinary teamwork, patient-centered care, and resource management were used to teach the clinical process tool. Breaking this process down into several, easily reproducible steps that can be applied to different patients across various age groups simplifies an often daunting task.

Methods: Surveys and focus groups were used to assess the impact of the training and tool utilization.

Results: Between 2016 and 2017, 117 learners in urban academic centers in Chicago participated in the educational activity, including 55 medical students, 17 residents, 42 faculty and 3 Physician Assistants. Post training, 82% of learners felt confident that they will apply the skill set from the learning activity. 89% of learners strongly agreed the content of the learning session helped them develop new insights into team communication around care of older adults.

Conclusions: The CATCH ON Training Tool is a new teaching learning how to evaluate medically complex patients and design a patient-centered care plan utilizing an interdisciplinary care team. A curriculum consisting of 4 unique evolving cases focused on utilizing this clinical tool to teach the skill set necessary to care for complex patients with multiple chronic conditions. Trainees reported increased self-confidence and willingness to improve communication and interdisciplinary teamwork in the care of older adults.

A196

48-Hour Hospice Home Immersion Project: Innovative Medical Education Research
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Background: The University of New England College of Osteopathic Medicine (UNE COM) 48 Hour Hospice Home Immersion project was designed as an experiential medical education and research model. Palliative and end of life care education at U.S. medical schools and specifically at UNE COM tends to be accomplished through scant traditional medical education methods (lecture) that fail to provide in-depth understanding of hospice, end of life and palliative care.

Methods: Ethnographic and autobiographic research designs were applied. Fifty four second year medical schools have been immersed into the local Hospice of Southern Maine 18 bed in-patient Gosnell Memorial Hospice House for 48 hours, sleeping in a bed where others have died to answer the question: “What is it like for ME to live in the Hospice Home for 48 hours and how does this contribute to my future as a practitioner?” Students provided patient, family, and post mortem care with the interprofessional staff. Data were student journal notes written before (pre field work), during (field work), and after the immersion (post field work). NVivo analyses were conducted using thematic coding and standard qualitative research methods.

Results: Aggregate data analyses on all student journals elucidated a myriad of common student themes. Key themes included (1) Person Centered Care; (2) Community and Communication; (3) Role of Staff; (4) Facing Death and Dying; and (5) Clinical Pearls. Students reported skill development in patient/family care and realized the importance of physical touch, communication – including the power of silence, authenticity, and being “present.”

Conclusion: This project humanized dying and death, solidified student realization that dying is part of life, and what an honor it is to be part of the care process that alleviates pain, increases comfort, and values communication and human connections. All patients should be treated this way in health care, not just at the end of life.

A197

Assessing the Outcomes of a Chronic Disease Self-Management Program: Impacts on Health Behavior Change and Service Utilization
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Background: Rhode Island has one of the highest percentages of older adults in the US; the effective management of chronic illness is key to improving their quality of life. In conjunction with primary care provider education and as part of a state-wide collaborative, the RI Geriatric Workforce Enhancement Program (RI-GWEP) offered
a 6-week evidence-based chronic disease self-management program, Tools for Healthy Living (THL), taught by trained peer educators and offered to community-dwelling older adults at senior centers, housing sites, libraries, and physician offices.

**Methods:** Older adults recruited through physician referrals, advertisements, and posters attended 13 THL programs. Participants completed baseline (BL) and workshop completion (WC) surveys, and will receive a 6-month follow-up. Surveys assess participants’ perceived health status, daily fruit and vegetable (FV) intake, limitations to physical activity (PA), stage of readiness to change FV and PA, medical care utilization (primary care appointments, emergency department visits, and hospitalizations in prior 6 months), and demographics. In addition to survey data, focus groups are conducted to explore participants’ perceptions of health-related impacts.

**Results:** Since February, 2017, 141 individuals have enrolled: female (91%), white (94%), fair/poor health (33.1%), and physical activity limitation (50.1%). Participants had a mean of 3.75 (SD=3.55) primary care visits, 0.26 (SD=.73) emergency room visits, and 0.12 hospitalizations (SD=.42) in the previous 6 months. Preliminary quantitative analyses reveal a significant increase in FV intake from BL [mean= 2.82 (1.67) cups/day] to WC [mean= 3.61 (1.77) cups/day], t(61) = -3.89, p<.001, an early indicator of health behavior change. Initial qualitative analysis of focus group data reveals success factors, including the importance of social support, feedback from group members, accountability, and having an action plan. Ongoing six-month follow-up evaluation will include the sustainability of behavior change and health service utilization impacts.

**Conclusions:** Patient education can be an effective complement to provider education in changing important health-related behaviors and improving the management of chronic illness.

**A198**
Innovative Incorporation of Remote Site Standardized Patient Simulation into Interprofessional (IPE) Curricula
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**Background** Incorporating standardized patients into IPE simulated learning experiences (SLE) is an effective teaching approach used in advanced practice registered nurse (APRN), medicine, and Doctor of Pharmacy (PharmD) curricula. Traditional onsite standardized patient (SP) SLE are used to prepare students for assimilation into their role as contributing members of the IPE team. For rural and distant education sites, finding suitable SPs or transporting SPs and students can be costly. What is not known is if telecommunicated remote site (TRS) SP SLE provide the same effective IPE experience as onsite SLE.

The purpose of this pilot study is to test the feasibility of using a TRS SP SLE in the IPE training of student teams.

**Methods** After IRB approval, APRN, medicine, and PharmD students (n=43; combined total of three SLE) participated in a traditional onsite SP SLE (n=21) and from a through an interactive video of the TRS SP SLE (n=22). After debriefing, faculty provided immediate feedback. The IPE Collaborative Competencies Attainment Survey (ICCAS) pre/post data was used to evaluate student learning on communication, collaboration, roles/responsibilities, Collaborative Patient/Family-Centered Approach, Conflict Management/Resolution, and Team Functioning. ICCAS is a 20 item self-assessment tool on a 7-point scale to measure IP competencies.

**Results** There were significant changes (p<.05) on all six ICCAS variables. A one-way ANOVA comparing groups on-site and interactive video showed no statistically significant difference between groups on any scores or changes in scores following SLE.

**Conclusion** The use of a TRS SP SLE is a feasible learning activity that can be incorporated into IPE curricula for the training of APRN, medical, and Pharm D students and can prepare IP student teams to manage the mental health of older adults using telehealth technology.
**A200**

**Transformative Education to Build the Interprofessional Primary Care Geriatrics Workforce**

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**Background:** In USA, persons 65 and older were 46.2 million in 2014, 28% increase since 2004. The number of health professionals trained in comprehensive patient-and family centered care for older adults is insufficient. To address this health workforce gap, the Institute of Medicine calls for enhanced geriatric training across health professions and evidence supports the value of interprofessional education (IPE).1 Presenters will share content, process and outcomes of an IPE course in primary care geriatrics, Scholars and Leaders in Interprofessional Geriatrics (SLIG) which is part of a larger HRSA-funded training program.

**Methods:** Nursing, medicine, occupational therapy, pharmacy, and social work students participated in SLIG as interprofessional teams across diverse settings. Learning activities fostered active experiential learning, grounded in Knowles' adult learning principles and John Dewey's education in action philosophy. A mixed-methods program evaluation included testing students' self-efficacy for interprofessional collaborative practice, measured by a new instrument, IPECC-SET.1

**Results:** 100% reported program learning goals were met. Most valued: post-acute and hospice care; advocacy panel; and student papers-presentations. Least favored: Telehealth and weekly reflections. 100% reported program addressed all 4 Interprofessional Education Collaborative (IPEC) domains. We plan to continue and expand, with addition of 6th profession, Public Health.

**Conclusions:** Training an effective health workforce to provide patient-and family-centered care for older adults is a national priority. The SLIG program supports IPE, collaborative learning and preparation of a primary care geriatrics workforce in highly functioning interprofessional teams, as scholars, leaders and advocates for positive change.

**References:**


**A201**

**Facilitating Practice Change in Primary Care Nurses: An Educational Intervention**

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**Background:** Care of older adults in primary care is complex. There is a need for educational resources to increase the age-sensitive knowledge and skills of health care providers. The Primary Care of Older Adults (PCOA) Curriculum was modified for use by RNs. The PCOA-RN program includes content on chronic disease management, care coordination and quality improvement. We describe the impact of PCOA-RN training on practice patterns among nurses working in an urban primary care setting.

**Methods:** Twenty-two nurses working in 13 primary care practices at Montefiore Health System participated in the curriculum. The practices are patient-centered medical homes caring for over 25,000 older adults in under-served communities in the Bronx, NY. The PCOA-RN program consists of 16 modules ranging in length from 30 to 60 minutes. Each module was delivered to the nurses via group lectures done once per month over a one year period. Modules were also available for on-line review via computer over the internet. A follow-up survey to assess changes in practice was administered at 60 days.

**Results:** 22 RNs completed the PCOA training. 81% (18/22) completed the 60 day follow-up survey. At 60 days, 89% of those completing the survey reported having made a change in their practice due to the PCOA-RN training. The greatest impact on their practice was in the area of falls, advance directives and medication management.

**Conclusions:** The PCOA curriculum can be successfully adapted for use with RNs practicing in underserved primary care settings and lead to self-reported impact on clinical practice. Based on this initiative, the nursing staff is now facilitating team based performance improvement initiatives for Fall Prevention Care.
exposure to post-discharge sites of care and providing timely feedback on DC summaries.

A203 Geriatric Screening at a Community Health Fair
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**Background:** Health fairs are a cost-efficient platform for education, and dissemination of preventive services to vulnerable populations. Effectiveness of geriatric screenings and associated interventions in community health fairs warrants investigation.

**Methods**
University sponsored health fair for community dwelling older adults had 1700 attend it from state of Arkansas. The geriatrics booth staffed by faculty, residents and medical students provided services such as educational material created by medical students, screening tests for memory, depression, balance, and the falls. An anonymous voluntary survey was given to the community dwelling older adults post screening via google docs as part of a quality improvement assessment for education and screening effectiveness and the event.

**Results**
Most respondents were in the age group 65 to 75 years, 50 percent respondents were White/Caucasian, and 90 percent of the respondents had seen a physician in the last 2 years. Majority of the patients received all the three screening tests, mini cog, geriatric depression scale and timed get up to go test. About 25 % of the respondents had a positive memory screen and 14 % had a positive depression screen. Most respondents were able to conduct adl such as driving. More than 90 percent of the vision tests were either extremely satisfied or very satisfied with the screenings tests provided in the health fair. About two third of the respondents think that a fall clinic can make a difference in their health. All respondents were satisfied with the educational material provided during the health fair. 92% of the respondents said that they would like to attend the event again next year. Most medical students and residents enjoyed working in the health fair and found it a meaningful way of learning practical geriatrics.

**Conclusion**
Community health fairs reach vulnerable older adults and are an excellent resource to screen large number of older adults with help of various learners in geriatrics. By conducting various screening and providing onsite access to a geriatric health consultation at community health fairs, participants are better able to identify their geriatric syndromes and receive health education especially in a rural state.

A204 Geriatric Boot Camp: An Effective Transformational Strategy
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**Objective:** To create a robust learning experience designed to prepare medical students for a successful transition to residency using a 24 hour geriatric care boot camp and to study effectiveness a year later.

**Methods:** A quality improvement survey at end of the year was administered by the medical school. The surveys included student comfort level in caring for geriatrics patients, understanding needs and common problems of geriatric population measuring student confidence. The Geriatric Boot Camp delivers a blended learning model providing a robust curriculum using proven teaching strategies: interactive Blackboard courses, simulations, facilitated debriefing, role play, group discussions and team based learning sessions on delirium/dementia, medication management, prescribing palliative care, and transitions of care, Medicare at two sites. The geriatric simulation focused on delivering complex care for the patient with multiple comorbidities as they transition from home to acute care setting to home using an IPE approach to care grounded in the concepts of patient and family centered care.

**Evaluations:** The UCLA Geriatric Attitudes and Comfort Scales were delivered to all medical students using a pre/post test design. The surveys were delivered to all participants (College of Nursing and Pharmacy students) during the IPE Geriatric simulation.

**Results:**
Over 68% of the medical students self-reported a greater understanding of geriatrics and over 63% were confident in their care for geriatric patients. Over 60% had better understanding of delirium, cognition, dementia, palliative care, need for inter professional and team based learning and of various sites of patient care in geriatrics. Following the geriatric simulation, attitudes regarding the elderly (43%) improved significantly (N=56, p<0.05) as did student comfort with the geriatric client. All (100%) worked on self-paced interactive modules on med u portal, as well as interactive black board course and found it to be very useful.

**Conclusion:**
A focused boot camp addressing key knowledge and skills required for geriatrics was well received and led to improved performance of targeted skills and increased self-reported preparedness in many targeted domains. It gave fourth-year medical students the confidence and an opportunity to develop necessary prerequisite skills in geriatrics before starting their residencies.

A205 Creating Collaborative and Deliberate Geriatric Practice using a 3-Part Unfolding Geriatric Interprofessional Simulation.
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**Objective:** Create an effective method for preparing future health care professionals to evaluate, address and navigate the complex health care needs of a vulnerable older adult and their family using a novel interprofessional education (IPE) 3 part unfolding simulation focused on the four pillars of IPE: teamwork, between medical, nursing and pharmacy students as well as the concepts of patient and family centered care (PFCC) to result in safe, comprehensive deliberate practice in geriatrics throughout multiple transitions of care.

**Methods:** A 3 part unfolding geriatric simulation using 2 standardized patients (1 geriatric patient and 1 family member) was developed to educate health care professional students from three colleges: Medicine, Nursing, and Pharmacy. The simulation was conducted 44 times followed by debriefing by the same facilitator. Prebriefing and debriefing was held between each scenario. The scenarios began with a follow up home visit to a geriatric patient with multiple comorbidities and their family member for treatment of an open wound resulting in transition to the acute care facility and home again. Students worked as an IPE team to conduct the home visit, develop admission and discharge plans for patient and family. The goal was to teach specifics of a medical home model to medical students, home health care for nursing students, medication reconciliation and consultation for pharmacy students.

**Evaluations:** IPE and PFCC evaluations with comments regarding the experience were gathered for 11 months from 124 COM, 120 CON students and 19 COP students.

**Results:** The IPE survey revealed 90% - 98% of all participants agreed or strongly agreed that the simulation resulted in positive changes in the four pillars of IPE. 77% - 90% of the students performed the 8 behaviors of PFCC however students voiced new awareness of their behaviors and the need to improve in all areas.
Conclusions: This simulation is an effective educational method for creating safe deliberate practice for geriatric patients through interprofessional teamwork and PFCC. Students recognized the importance of an IP team to facilitate safe, patient-centered, team-based, interprofessional care for the geriatric population.

A206 Assessing Capacity: A Brief Curriculum for Medicine Interns on Assessing Decision-Making Capacity

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I. Background: Decision about treatment preferences at the end-of-life (EOL) occur frequently. Diminished capacity to participate in decision-making at EOL is common. Evaluation of medical decision-making capacity (MDMC) is an essential skill for providers caring for a patient at the end-of-life. There is a paucity of described curricula to teach this important skill.

II. Research Objectives: To assess a brief MDMC at EOL curriculum for interns (Cap-I).

III. Methods: Interns (n = 81) participated in Cap-I comprised of a 1-hour didactic, 1 modeled video simulation, 1 observed structured clinical encounter with real-time evaluation (skills checklist/written comments), and preceptor feedback between 2015-2017. Assessment of knowledge (2 questions: Q1 and Q2) and self-efficacy (3 items) from Self-Efficacy in Palliative Care Communication sub-section (SPEC-C) were performed pre and post curriculum.

IV. Results: Of the interns who participated in the curriculum, 65% (n = 53) were male and 14% (n = 11) had no prior palliative care training. All participants correctly identified MDMC in the simulated patient, 98.5% assessed expressing a choice, 100% assessed understanding, 98.5% assessed appreciation, and 100% assessed reasoning. Preceptor feedback identified themes for improvement such as empathy, compassionate silence, and avoiding medical jargon. Knowledge scores are as follows: Q1 were correctly identified by 52% in the pre-test and 66% in the post-test (p < 0.01); Q2 were correctly identified by 80% in the pre-test and 96% in the post-test (p < 0.002); Q1 and Q2 were both correctly identified by 45% in the pre-test and 62% in the post-test (p < 0.03). SPEC-C showed improvement in self-perceived confidence discussing the following: issues of death and dying (p < 0.02), patient’s own death with the patient (p < 0.03), and patient’s death with the family (p < 0.01).

V. Conclusion: Interns were able to properly assess MDMC in a simulated setting after Cap-I. Interns subjectively felt more confident to assess MDMC and communicate effectively as a result of the curriculum.

A207 A rural delta experience: The impact of geriatric training on outcomes

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Background: Federally Qualified Health Clinics (FQHC) have almost 700,000 visits annually in Arkansas. In one rural delta county where there are 14.4% older adults and 21.5% of the population are at or below the poverty level, the Arkansas Geriatric Education Collaborative partnered with a FQHC to pilot methods and tools that would help improve staff knowledge and skills for caring for older adults. The objectives of the pilot study were to 1) identify educational methods and tools that would be embraced by rural primary care practitioners in their care of older adults; and, 2) identify the clinical and behavior difference of patients with diabetes before and after implementation of specialized geriatric training of both staff and patients.

Methods: The AGEC and clinic staff, jointly decided to target older adults with diabetes for this pilot project. Case management methodology was determined and education and implementation processes initiated. Baseline HbA1c data were obtained for 130 patients who were initially identified to be a part of the study. Monthly education events for all staff were initiated and evidence-based diabetic self-management classes (Diabetic Empowerment Education Program, DEEP) were started for patients.

Results: Barriers to educate both rural health care practitioners and rural patients were encountered and identified. Tools and practices were implemented to minimize these issues and overcome barriers. Staff pre- and post-tests demonstrated that new clinical information is being learned and practiced by the rural health practitioners. Case management guidelines have been added and key indicators (i.e. foot and eye exams, regular HbA1c) are now being tracked. De-identified HbA1c data were collected for 130 identified patients with diabetes for two years (one year prior to the study for baseline and the year of the study) but no significant differences were identified between the years. Pre- and post-tests for the self-management DEEP classes were gathered and included quantitative and qualitative data that demonstrated that the attendees felt “more in control” and knowledgeable.

Discussion: Education to rural providers and patients poses many problems and obstacles that are less evident in urban areas. A more personalized and individualized approach is necessary and, since transportation is a huge issue, going to where they are important. Health literacy must also be considered and tools adjusted.

A208 Achieving medical student mastery in screening for cognitive impairment: Results from a blended learning curriculum

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Background: The UMMSM has a long standing competency-based curriculum to assess core AAMC geriatrics competencies. During the required 4-week Geriatrics and Palliative Medicine Clerkship, we expect each student to demonstrate mastery or competence in screening for cognitive impairment. This year we switched from teaching the MMSE to the Montreal Cognitive Assessment (MoCA) due to the MoCAs wider availability and superior performance in identifying Mild Cognitive Impairment. We describe the development of our curriculum and present results from the first cohort of students.

Methods: We developed a mastery learning curriculum that encourages deliberate practice. In the first week of the clerkship, students review two YouTube videos on administering and scoring the MoCA as well as the MoCA scoring sheet and instructions guide in preparation for a small group session on screening for cognitive impairment. During this session, students practice the MoCA as a group with the faculty facilitator playing the patient role. Students then perform at least one MoCA on the wards before taking a simulated patient (SP) competency assessment. For this assessment, we developed an SP script, a scoring rubric, and a guide towards completion of the SP score sheet. Two experienced assessors met to determine major administration and scoring errors (those resulting in point deductions) versus minor errors (only used to provide formative feedback).

Results: 60 students completed the curriculum. Preliminary assessments determined the competency performance standard and periodic reviews fine-tuned the scoring rubric. The total possible score was 31; performance standard was set at 26. 54/60 students (90%) achieved the performance standard on their first attempt. All students were given detailed feedback on their performance. The remaining students were asked to engage in further practice on the wards before returning for reassessment. All students demonstrated mastery by their second attempt.
Discussion: Most students indicated having administered the MoCA prior to our clerkship without formal instruction and freely admitted they had been administering and/or scoring it incorrectly. Screening for cognitive impairment is an essential competency all students should master. Our curriculum and materials are easily exportable and available for use by other institutions.

A209 Development and Evaluation of a “Geri-Lab” Experience for Medical Students at the University of Hawaii.
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Background: The John A. Burns School of Medicine at the University of Hawaii has a problem-based learning (PBL) curriculum. Second year medical students have a “Life Cycle” unit, from pre-natal to geriatrics and end of life. The Department of Geriatric Medicine provides geriatrics PBL paper cases, a lecture series, a workshop taught by an interdisciplinary panel, and two half days of clinical skills experiences. In 2016-17, we developed, taught and evaluated a half day “Geri-Lab” experience.

Methods: The Geri-Lab experience was 3 hours, including evaluations. First, three 10-minute mini-lectures were given by Geriatric Medicine Fellows, on Functional Status, Cognition and Depression. Then students met in small groups for hands-on experiences, with 10 students and 1 Geriatric Medicine Fellow. The fellow presented a case on a geriatrics patient who fell, was hospitalized and needed rehabilitation. Tied to the case, 4 workshop topics included: Mood; Cognition; Functional Status; and Interdisciplinary Team Care. The workshops were interactive, allowing students to practice screening tools on each other. The last hour was spent debriefing with all students, with 1 student from each small group presenting 2 key learning points and what they liked best. One week following the Geri-Lab, students participated in a 3-hour clinical skills session where they interviewed an older patient and discussed issues in small groups facilitated by Geriatric Medicine Fellows.

Results: We analyzed data from a total of 68 second year medical students. Evaluation included 7 knowledge questions before and after the Geri-Lab, and a retrospective post-attitudes and skills questionnaire at the end of the clinical skills session, using a 5 point Likert scale. We found statistically significant differences in knowledge scores in 4 of the 7 questions. Total knowledge score increased from 4.51 to 6.27, p<0.0001. Self-assessed attitudes and skills significantly improved in all 7 domains, all p<0.0001. A summary skills score was 3.69 before and 4.52 after the experience, p<0.0001.

Conclusions: This hands-on educational experience was very well received by second year medical students, and significantly improved their knowledge, attitudes and skills about geriatric issues. Future plans may include converting the Geri-Lab into an interprofessional education experience and including students from the School of Nursing.

A210 The Care Ecosystem Training Program: Preparing Lay Health Workers for a New Role in Dementia Care

Background: The growing social, economic, and health care burden of dementia could be alleviated by proactive interventions that prevent unnecessary complications. A major limitation of current health care systems is the shortage of clinicians with expertise that meets the needs of persons with dementia (PWD) and their families.

Aim: To develop a training program to prepare lay health workers to become Care Team Navigators (CTNs); a new role designed to supplement existing health care services for persons with dementia and their caregivers that offers personalized education, support, and dementia care planning.

Methods: The CTN training program was developed as part of the Care Ecosystem, an intervention designed to improve outcomes for PWD and their caregivers while decreasing unnecessary medical costs in three states (California, Nebraska and Iowa) with funding from the Center’s for Medicare and Medicaid Services (CMS). The Care Ecosystem intervention is a telephone-based support, education, and care coordination program that supplements primary and specialty care services. A comprehensive 80-hour training program was developed to prepare CTNs for their role as the primary point of contact for PWD and their caregivers. The training program incorporates training videos, lectures (in-person or video-conference), and observational learning.

Results: Seventeen CTN candidates were recruited and completed training at the University of California San Francisco(UCSF) or the University of Nebraska Medical Center (UNMC). CTNs rely on knowledge gained in the training program, care protocols, and guidance and supervision from a specialized clinical team (nurse, social worker, and pharmacist) to manage an average of 50 patient-caregiver dyads. Of the 17 CTNs trained, six continue to work in this role, two left to pursue higher education in healthcare, seven took another position in a health-related field, and one moved on to another profession.

Conclusions: Development of a CTN training program to prepare lay health workers for a new role that supplements existing health care services for PWD and their caregivers is feasible. With training, clinical guidance, and supervision, CTNs help expand access to a dementia-capable health care workforce.
participants appreciated learning about point-of-care tools for primary care, particularly for prognosticating and deprescribing.

**Conclusions**

The Geriatrics 5Ms is a helpful framework to teach core Geriatric competencies for residents in primary care outlined by the ACGME. This needs assessment and pilot workshop applies the 5Ms framework in an innovative way. Post workshop knowledge and self-efficacy assessments will be used to measure the impact of effective and memorable model for providing primary care geriatric education to residents.

**A212 Teaching Medicine Interns Minimum Geriatrics Competencies within a “4 + 2” Schedule**

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**Background:** With support from SGIM and AGS, a set of 26 “minimum geriatric competencies for IM-FM residents” (MGC) was published in 2010. Providing residents geriatrics training can be challenging in programs with an “X + Y” (“inpatient + ambulatory”) schedule. Reasons include lack of geriatrics faculty and spacing of sessions across time. We describe our medicine residency program’s experience in teaching MGC within the longitudinal geriatrics curriculum embedded in interns’ “4 + 2” schedule.

**Methods:** During the 2-week ambulatory block, interns spend 1 day in a geriatrics ambulatory site (house calls, PACE, nursing home). Geriatrics division faculty members give core lectures during the 4-8 clinical sessions that occur over the year. For AY16-17, we revamped lectures to address MGC related to medication management, cognitive health, complex chronic illnesses, palliative/end of life care, and ambulatory care. We also scheduled interns to spend more time in the house calls setting. Interns voluntarily completed anonymous self-assessment surveys pre- (7/16) and post-rotation (6/17), rating their level of confidence on MGC addressed by the curriculum (1=not confident to 5=very confident). On post-rotation surveys, residents also rated the curriculum’s contribution to enhancement of their skills (1=not helpful at all to 4=very helpful).

**Results:** On pre- and post-surveys, interns (total=8) reported improvement in confidence ratings on all items, with the greatest average point gains seen in practice of optimal geriatric pharmacotherapy (2), initiation of treatment for dementia patients (1.37), capacity determination (1.5), individualization of screening recommendations (1.63), and identification of older patients eligible for CHHA (2.13) and non-CHHA community services (1.5). They rated geriatrics curricular elements as being more helpful than other residency rotations and conferences (mean 3.84 vs. 2.73) to enhancing their geriatric skills.

**Conclusions:** We developed a longitudinal geriatrics curriculum within the context of our “4+2” immersion schedule which is easily reproducible by other programs. Aligning curricular content with the MGC has resulted in interns’ improved confidence in several important geriatrics skills. Collection of intern survey data is ongoing and will inform future curricular changes.

**A213 A SCALING-UP APPROACH TO EDUCATING HOME CARE NURSES ABOUT DEPRESCRIBING TO PROMOTE ACTIVE LIVING OF FRAIL OLDER ADULTS AT HOME**

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Introduction: Older adults with chronic diseases relies on multiple medications which often affects instrumental activity of daily life. One innovative way of optimizing medication management for older adults in home care is through de-prescribing unnecessary medication. The purpose of this research is to explore ways to promote the adoption of de-prescribing approaches among home care nurses working with frail older adults through the development of educational programs.

**Methods** – A focus group was conducted with 11 home care nurses to assess their understanding and learning needs in relation to de-prescribing approaches, and to identify the opportunities for appropriate use of non-pharmacological measures for older adult populations to overcome their challenges of polypharmacy.

**Results** – The preliminary findings of the study demonstrated that older adults’ psycho-social and physical well-being are deeply affected by the issues of polypharmacy while living at home. The findings highlighted the need for home care professionals, caregivers and older adults to be educated about the topics of deprescribing, such as the development of innovative training tools that help support home care nurses in identifying at risk older adults who are vulnerable in maintaining their independence in ADL and IADL due to polypharmacy. Moreover, participants recommended the successful implementation of deprescribing could be achieved through the development of centralized medication list to facilitate medication reconciliation, as well as the creation of a strong circle of care network to facilitate older adult’s access to non-drug therapies, available community resources and community partnerships.

**Discussion** – The study underscores the importance for home care professionals in the adoption of de-prescribing approach to mitigate the risks of polypharmacy and to promote the well-being of frail older adults. The findings will help lead to the future development of programs about safer medication management that will foster a supportive and collaborative relationship between the home care team, frail elders and their informal caregivers. The outcome of this project includes the development of assessment and training tools that will help support home care nurses incorporating de-prescribing approaches in their practice, which will be the next phase of this study.

**A214 Investigation of catheter-related bloodstream infection in elderly inpatients**

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**Background** Catheter-related bloodstream infection (CRBSI), which is one of the most serious complications associated with central venous catheters (CVC), increases mortality, lengthens the hospital stay and medical expenses. In real settings CVC is inserted not only in the acute phase of the disease but also continues to be used for chronically ill patients because of the vulnerability of the peripheral blood vessels in elderly people and the difficulty of nourishment management. However, few studies reported on CRBSI in elderly inpatients. Therefore, we investigated CRBSI-prognostic clinical factors on elderly inpatients suffering from CRBSI.

**Method** A retrospective observational cohort study was conducted in the geriatric ward in this 2 years. A total of 216 patients who underwent CVC out of 701 inpatients were enrolled. Patients who matched the criteria of the American Infectious Diseases Association Guidelines were defined as the CRBSI-occurrence (CRBSI-I) group and other patients who didn’t match the above criteria as the CRBSI-non-occurrence (CRBSI-NI) group. We analyzed in both groups as regards the laboratory findings, their characters, physical and cognitive functions, CVC-related factors such as CVC type, insertion point, duration of CVC insertion, and their mortality or place of residence after discharge, such as home, nursing home, etc.

**Result** Twenty-nine (13%) of the enrolled patients, were classified as the CRBSI-I group. There were no significant differences in age, gender, mortality, CVC-related factors between the CRBSI-I group and CRBSI-NI group. Conversely, hospitalization periods (82.8 ± 29.6 days vs 45.0 ± 26.5 days, P=0.001), the number of patients mediated by total parenteral nutrition during this hospitalization (79% vs 50%, P<0.01), and the number of patients whose ADL deteriorated...
more than 2 points during this hospitalization (70% vs 46%, P<0.05) differed significantly between two groups. Furthermore, we didn’t observe statistical differences in the coming home ratio between the two groups, whereas the nursing-coming home ratio in the CRBSI-I group was significantly lower than that in the CRBSI-NI group (12.5% vs 66.7%, P<0.05). Blood cultures of CRBSI-I group isolated mostly Candida albicans (34.5%).

Conclusions Our results suggest that CRBSI in geriatric patients may cause physical functions to deteriorate, resulting in a move to other facilities which can provide better care at the time of their discharge.

A215
NEED AND AWARENESS OF ASSISTIVE AND ENABLING DEVICES IN ELDERLY PEOPLE IN ASIAN AND EUROPEAN COUNTRIES: SIMILARITIES AND DIFFERENCES
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Background: Assitive and enabling technology encompasses a wide range of devices and services used to help older individuals. A major constraint in adequate availability of the AED in the country has been the lack of awareness among the users as well as among the concerned professionals. The paper presents these concepts and the result of a need assessment study conducted with the elderly percipients in India, Bangladesh, and Santiago community.

Method: A survey was conducted among a purposive sample in India (100 sample), Bangladesh (98 sample), and Chile (23 sample) of about in the age group of 60-85 years with the help of a semi – structured Assistive and Enabling Devices (AED) Questionnaire, which was designed to gather key information about the need of older persons for AEDs, based on self-assessment and preliminary interactions with the interviewers who are trained Occupational Therapist professionals. The questionnaire was translated into their regional language which is comprised of the section – the first section asked for general description like name, qualification, occupation, income, language which is comprised of the section –the first section asked.

A217
Displaced and undisplaced intra capsular neck of femur fracture: Do patient characteristics differ?
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Background: Following trauma causing fracture there is likely less bleeding in undisplaced neck of femur fractures (UDF) compared to displaced fractures (DF) because the bone integrity is more preserved. During operative treatment of UDF: usually cannulated screws or two holes DHS, there is usually less blood loss compared to operative management of DF, usually Hemiarthroplasty.

Aim: To study the difference in some of the patients’ characteristics between DF and UDF.

Methods: Retrospective analysis of consecutive hip fracture patients admitted to a UK teaching hospital between Oct 2008 and Jul 2017. Electronic records reviewed and demographics, preadmission mobility, ASA, length of stay, discharge destination and in hospital mortality were collected on Excel sheet and analysed using descriptive statistics.

Results: 3944 hip fracture patients were admitted in the study period. Patients with incomplete data or suspicion of malignant pathological fracture were excluded. 2148 IC fractures were included; 1852 DF and 296 UDF. The mean age was 83 and 82 years respectively. There was no statistically significant difference in indoor mobility between the two groups. 8% of DF patients did not go outdoor compared to 5% of UDF patients (P=0.172). Compared to UDF fewer patients with DF have ASA score 1 and 2, more patients have score 3 and 4. 83% of DF and 46% of UDF patients were treated with Hemiarthroplasty and 9% of DF and 40% of UDF were treated with
A219
Responsiveness Over Time of the Activity Measure for Post-Acute Care Basic Mobility Scale on Two Geriatric Rehabilitation Inpatient Units
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Background: In post-acute inpatient care rehabilitation settings, the ability to accurately assess patients at admission and discharge can help establish the clinical course of patients for more efficient targeting of resources. The purpose of this study was to assess the internal and external responsiveness over time of the Activity Measure for Post-Acute Care Basic Mobility scale (AM-PAC-BM) on two geriatric rehabilitation inpatient units. The Functional Independence Measure Motor scale (FIMM) was the external reference.

Methods: The study was carried out on a High Tolerance Short Duration (HTSD) unit and on a Low Tolerance Long Duration unit (LTLD). The AM-PAC-BM was interview-administered with patients and the FIMM was completed by the clinical team at admission and discharge. Internal responsiveness was assessed by paired t-tests and standardized response means (SRM) among the patients with complete data. External responsiveness was assessed by Pearson correlations of change in AM-PAC-BM and FIMM and regression analysis with change in FIMM as the outcome. Change in AM-PAC-BM and patient characteristics were considered to be explanatory variables and assessed for interaction effects.

Results: A total of 62 patients with 31 patients on each unit were recruited. Patients on LTLD were significantly older with the mean age 85.1 in comparison with HTSD mean age 79.6 years (p=0.03). HTSD had 71% female compared with LTLD which had 54.8%. The mean AM-PAC BM scores on admission and discharge were higher on HTSD compared with LTLD. A total of 51 patients had complete data. Both units showed improvement on the AM-PAC-BM scores (p<0.0001, SRM-HTSD=1.05, SRM-LTLD=1.34). Overall correlation in change scores between AM-PAC-BM and FIMM was 0.57. Unadjusted regression analysis of changes scores indicated there was 0.67 units of change in FIM motor score (p<0.0001, 95% CI 0.39, 0.95) per 1 unit change in AM-PAC BM. Level of responsiveness was not associated with inpatient unit.

Conclusion: The patient-rated AM-PAC-BM demonstrated responsiveness to change in clinical status from admission to discharge on HTSD and LTLD rehabilitation units.

A220 Encore Presentation
Mortality and Quality of Life in Elderly Patients on Dialysis in New Zealand: Results from the Dialysis Outcomes in the ≥65s Study (DOS65+)
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Background: New Zealand (NZ), and indeed the world, has a growing population of elderly patients with end-stage renal failure (ESRF) requiring dialysis. Physicians and patients making decisions around dialysis require information on the prognosis and quality of life (QoL) associated with all available options. However, there is limited evidence available on dialysis outcomes in the elderly, particularly QoL.

Methods: The Dialysis Outcomes in the ≥65s Study (DOS65+) is a prospective longitudinal cohort study of patients ≥65 with ESRF. This is a cross-sectional analysis of mortality and QoL outcomes at baseline and 2 years.

Results: We found that mortality nor QoL vary with dialysis vintage, modality or location of treatment, whereas high burdens of...

internal fixation. The preoperative AMT score was 9 for DF and 10 for UDF (P=0.020) and the postoperative AMT score was 8 and 9 respectively (P=0.013). 46% of DF patients were discharged to their residence compared to 57% of UDF (P=0.010). 7% of DF and 4% of UDF were discharged to nursing homes (P=0.103). The hospital stay was 14 days for DF and 13 days for UDF (P=0.109). The in hospital mortality rate was 10% and 6% respectively (P=0.068).

Conclusions: In this study, patients with displaced intracapsular neck of femur fracture compared to the undisplaced fracture were older, have lower pre and postoperative AMT, higher ASA score, and were less likely to be discharged to their usual place of residence (all statistically significant). They tend to stay longer in hospital and had higher mortality but this was statistically insignificant. It is not clear whether the difference is due to biological age and general health or the type of the orthopaedic intervention

A218
Extra and intra capsular hip fractures: Do patient characteristics differ?
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Background: Extra capsular (EC) and intracapsular (IC) neck of femur fractures have different femoral head consequences and require different surgical approach. The trauma leading to EC fracture is likely more forceful compared to that leading to IC fracture. Following the trauma there is potentially more blood loss in EC fracture compared to IC fracture.

Aim: To study the difference in some patient characteristics between EC and IC fracture.

Methods: Retrospective analysis of consecutive hip fracture patients admitted to a UK teaching hospital between Oct 2008 and Jul 2017. Electronic records reviewed and demographics, preadmission mobility, ASA, AMT, length of stay, discharge destination and in hospital mortality data were collected on Excel sheet and analysed using descriptive statistics.

Results: 3944 patients were admitted in the study period. Patients with incomplete data or suspicion of malignant pathological fracture were excluded. 3678 patients were included. There were 1530 EC fractures; 73% females and 27% males, and 2148 IC fractures; 73% females and 27% males. The median age of the EC and IC fracture patients was 84 and 83 years respectively (P<0.001). 45% of patients with EC fracture used to walk indoor without aids compared to 48% of IC fracture patients (P=0.019). 27% of patients with EC fracture walked with one aid and 26% with two aids compared to 25% and 23% respectively for IC fracture patients. 10% of EC fracture patients did not go outdoors compared to 7% of IC patients (P<0.018). The pre and postoperative AMT for both types were the same. Compared to IC fractures, fewer patients with EC fracture have ASA score 1 and 2 and more patients have score 3, 4 and 5. 42% of EC fracture patients were discharged to their usual residence compared to 47% of IC fracture patients (P=0.019). 8% of EC fracture patients were discharged to nursing homes compared to 7% of IC fracture (P=0.083). The mean length of hospital stay was 15 days for EC fracture and 14 days for IC fracture (P=0.001). In hospital mortality rates were 9% and 10% respectively (P=0.486).

Conclusions: Patients with extra capsular hip fracture compared to those with intracapsular fracture are older, less likely to go outdoor because of poor mobility, stay in the hospital longer and are less likely to be discharged to their usual residence. There is no significant difference in hospital mortality.
co-morbidities and ESRF-related symptoms were associated with reduced QoL. Increasing age was found to be associated with mortality, however there was no correlation between age and QoL on dialysis. Contrary to previous studies on other diseases, we have shown no significant differences in mortality or QoL in ESRF between the various ethnicities in NZ. Interestingly, socioeconomic factors including living with others, family involvement and sense of community contribute significantly to QoL in our patients, and lack of family involvement was also significantly related to mortality.

Conclusions: Our findings are consistent with the growing body of evidence around dialysis outcomes in the elderly, highlighting several key variables contributing to survival and QoL on dialysis living with others, family involvement and sense of community.

A222
Geriatric evaluation in oncologic setting and predictors of the emergency department visit
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Background: Great part of cancer patients are elderly. There are plenty of evidence showing that Geriatric Oncology Team using Comprehensive Geriatric Evaluation (CGA) can identify the aged in risk of receiving treatment. One of the most important place to find aged that had serious events during treatment is the emergency department (ED). Our purpose is to determine geriatric variables associated to ED to develop future strategies to improve quality of care in this population.

Methods: Prospective cohort study with elderly cancer outpatients evaluated through a structured questionnaire during the first consultation. Six months after the initial approach, data about emergency department use were collected through telephone contact and electronic medical record review. Results: 392 patients were evaluated, 64% were men with mean age of 69.96 years (± 6.57). The majority was independent for basic activities (83.2%) and instrumental activities (65.3%), 24.9% frail by SOF criteria and 87.5% had ECOG of 0 to 2. The most prevalent malignancy was prostate (24.7%), followed by colon/rectum (13%) and breast (12%); 24.7% patients had metastatic disease and 37% received chemotherapy and/or radiotherapy. The incidence of emergency department use was 36.7%, with 47.6% for cancer-related causes (mainly cancer pain and complications related to chemotherapy and/or radiotherapy. therapy for QT/RT). After logistic regression, metastatic tumor was predictor of emergency department use (OR, 1.76 [1.08-2.89]; p = 0.03) negative factors associated with looking for it while physical activity (OR, 0.54 [0.29-0.98]; p = 0.04) and ECOG 0 to 1 (OR, 0.59 [0.38-0.91]; p = 0.02) were negatively associated with the outcome. Conclusion: ED is a good place to find deleterious effects of oncologic treatment in the setting of aged in oncologic care. There was high incidence of emergency department use in this population, emphasizing the need, and the need to develop specific and appropriate strategies to prevent and manage this demand.

A223
Audit of Otolaryngological Presentations in the Elderly at National Hospital Abuja
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Abstract

Background: More Nigerians are achieving longevity. ENT conditions impact on quality of life in the elderly. There is scarce information on the pattern of ORL diseases the elderly present with in our environment.

Study Aim: To audit the profile of elderly patients who presented to our ENT outpatient clinic between January 2010 and January 2017

Methodology: A retrospective analysis of individuals aged 60 years and above who were attended to at National Hospital Abuja ENT outpatient clinics during the study period. Information retrieved from case notes include age, gender, mobility, referral source, reason for referral, presenting complaints, presence of pre-morbid conditions, ORL findings, diagnosis, investigations carried out, number of visits, surgical procedures if any, offered. Simple statistical analysis used in analyzing collated data.

Results: 134 case notes were retrieved out of 223 cases recorded in the clinic register during the study period. The age range was 61 to 98 years. There are more males in age group 60-65 and 66-70 years, but more females above age 70 years. Majority were ambulatory

Results

A total of 504 subjects were included [mean age: 76.0±6.3 (65 to 99) female: 67.3%]. The number of patients with osteoporosis was 193, and this group had significantly more women compared to those with no osteoporosis. Mean ABI value similar in the two groups (p=0.525). PAD was detected in 15.7% of the total sample. The incidence of PAD among subjects with and without osteoporosis was 15.0% and 16.1%, respectively (p=0.752). Prevalence of a borderline ABI (0.9 to 1.0) was also similar in the two groups. Female participants with osteoporosis had a similar rate of PAD with males (16.2% vs. 11.1%, p=0.460). Among patients with osteoporosis, bone density at spine, femoral total and femoral neck was not different between subjects with and without PAD [760.3±98.5 vs. 750.3±115.7, F(1,188): 0.02, p=0.893; 738.2±102.6 vs. 738.6±111.4, F(1,188): 0.04, p=0.535] after controlling for age and gender. This was also similar in the whole group.

Conclusions

In this sample, frequency of PAD was similar in older women and men with and without osteoporosis diagnosed according to DEXA scores. Among osteoporotic patients, bone density at either of three sites also did not differ in the presence of PAD. These first results from a Turkish population do not support some of the previous studies that found some associations between PAD and osteoporosis in different populations.
(110/134) and the rest were wheelchair bound. There is predominance of ORL symptoms in age groups 60-65, 66-70 and 76-80 years and these are predominantly otological (72/134). Common reasons for referral include hearing loss (72/134), tinnitus (56/134), and vertigo (45/134). 31/72 cases with hearing loss had no otologic findings, 15/72 had impacted cerumen, and 26/72 had other external auditory canal findings. Commonest diagnosis were Presbycusis 18/134, Wax impaction 16/134, Peripheral vestibular diseases (8/134), Head and Neck cancers (5/134) amongst others. Commonest investigations ordered were Pure tone audiometry (24/134) and CT Scan (10/134). Commonest co-morbid conditions include Hypertension (22/134), Diabetes mellitus (15/134) and bronchial asthma (4/134).13/134 (9.7%) qualified for multi-morbidity. Of the Presbycusis cases, 3/18 had multimorbidity.

Conclusion: Majority of ORL presentations seen in our center are otological with Presbycusis being the commonest diagnosis. A significant percentage of the patients had multimorbidity. Study cohort seemed to suggest increased longevity in women. The elderly should routinely have otological assessment for early diagnosis and prompt treatment. ORL services should be made affordable and accessible for the elderly.

A224
Prevalence of Sarcopenia and Prescription of Anticoagulation in Older Adults with Atrial Fibrillation

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Background: Atrial fibrillation (AF) is common in older adults and are at increased risk for strokes. In addition to increased comorbidities and polypharmacy, they are also at increased risk of sarcopenia and falls, and the decision to be on anticoagulation is not straightforward. We sought to determine the prevalence of sarcopenia in elderly with AF and prescription of anticoagulation and its association with healthcare outcomes.

Methods: A cross-sectional study of older adults ≥65 years with atrial fibrillation from Dec 2016 to October 2017. Sarcopenia was screened using the SARC-F tool. Other clinically relevant data including basic demographics, caregiver, follow-ups, medications and hospital readmissions in the past 1 year, Charlson’s comorbidity index and their Modified Barthel’s Index were collected. We looked at whether patients were on anticoagulation or not, reasons for not being anticoagulated, type of anticoagulation and CHADS2VASC scores.

Results: 130 older adults were screened. 69 (53.1%) were female. 82 (63.1%) were on anticoagulation. Of these 60 (73.2%) were on warfarin, 15 (18.3%) on apixaban and 7 (8.5%) on rivaroxaban. 76 (58.5%) of elderly with AF were sarcopenic. Amongst those who were sarcopenic, 42 (55%) were on anticoagulation vs 74% in non-sarcopenic elderly. Those on anticoagulation had significantly lower SARC-F scores of 3.9 ± 3.0 vs. 5.1 ± 2.9 (p = 0.021) not anticoagulated. 52.6% (40) of sarcopenic patients had fallen, of which 15% (6) had 4 or more falls [RM1] compared with 24.1% (13) of non-sarcopenic patients (40) of sarcopenic patients had fallen, of which 15% (6) had 4 or more falls. There was no significant difference in modified Barthel’s Index 82.8 ± 25.1 on anticoagulation vs. 75.2 ± 28.3 (p = 0.128). Those not on anticoagulation were older 81.4 ± 7.3 vs 78.5 ± 7.0 (p=0.026) but there was no difference in gender, race, educational status, body mass index (BMI), Charlson comorbidity index or presence of caregiver.

Conclusion: A large proportion of elderly with AF are sarcopenic and sarcopenic patients had a higher incidence of falls. Screening for sarcopenia could be worthwhile in elderly with AF as they are predisposed to falls and early intervention could be instituted to alleviate sarcopenia and reduce falls.

A225
Characteristics of Bone Density Loss Among Subjects with Dementia in Comparison With Non-demented Subjects

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Background
There is some evidence, albeit weak, that women with osteoporosis are under increased risk of developing dementia. In this study, we investigated whether demented older adults had different bone density measures and osteoporosis compared to non-demented ones.

Materials and Methods
Older persons with and without dementia were enrolled prospectively. Dementia work-up included both the neuropsychological testing and clinical assessment. Dementia types included were Alzheimer’s disease, vascular dementia or the mixed type. Bone density was determined by DEXA at spine, femur total or femur neck region.

Results
Out of 363 participants, 93 subjects had dementia and 270 were non-demented (Mean age: 78.7±6.0 vs. 78.3±5.1, p<0.05; female: 62.4% vs. 62.4%, p<0.05). Controlled for age and gender, demented patients had similar bone density at spine with that of non-demented individuals [F (1,358)=0.83, p=0.363]; but, femur total bone density [F (1,359)=0.26, p=0.001] and femur neck bone density [F (1,359)=15.21, p<0.001] were lower. Based on a T score≤-2.5 at either site, prevalence of osteoporosis in demented group was higher but the difference was not significant (40.9% vs. 31.1%, p=0.086). However, when only a femur neck T score≤-2.5 was taken as diagnostic, prevalence of osteoporosis in the demented group was significantly higher (25.8% vs. 15.9%, p=0.034). Low bone mass (LBM) (T score≤-1.0 at either region) was found significantly more frequent in the demented group (95.7% vs. 84.8%, p=0.006). The strongest difference in LBM was observed between T-scores obtained at femur neck. The distribution of T-scores across “normal”, “osteopenia” and “osteoporosis” stages was significantly different between demented and non-demented subjects (4.3% vs. 15.2%, 54.8% vs. 53.7%, and 40.9% vs. 31.1%, p=0.014).

Conclusions
Our study showed evidence of lower bone mass in patients with dementia, and this was prominent in femur region. According to T-score based definitions, demented individuals had increased diagnosis of osteoporosis only at femur neck. Dementia patients with osteoporosis may be under increased risk of developing hip fractures due to worse femur bone density.

A226
Identifying Specific Drugs Classes That Result in Adverse Drug Reactions Between Frail and Non-Frail Hospitalized Older Adults.

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Background: Frailty is characterized by a decline in physiological reserves that increases an individual’s vulnerability to adverse health outcomes. Our earlier study reported that the prevalence of adverse drug reactions (ADRs) in hospitalized older adults was high (70.0%), with constipation being the commonest ADR (41.3%). Non-frail older adults experienced more cardiovascular-related ADRs whilst frail older adults had more drug-induced delirium. Thus, we aimed to explore the differences in drug classes that caused ADRs between frail and non-frail hospitalized older adults.
**Methods:** We conducted a retrospective, observational study on 150 older adults (mean age 89.7±4.0 years, 83.3% frail as defined by Clinical Frailty Scale) admitted in September 2016 to Geriatric Medicine in a tertiary hospital in Singapore. Baseline demographics, comorbidities, and medication use prior to and during hospitalization were gathered. We also recorded the types and severity of ADRs experienced.

**Results:** Regardless of frailty status, constipation was the commonest ADR (frail vs non-frail: 40.8% vs 44.0%, p=0.25) in our cohort. We observed that fewer frail patients were on calcium supplements (non-frail 40.0%, mildly frail 45.5%, moderately frail 29.0%, severely frail 15.3%, p=0.01). There was greater use of anti-hypertensives (non-frail 40.0% vs 42.0%, p=0.61) and anti-psychotics (20.8% vs 4.0%, p=0.04) and anti-depressants (36.0% vs 12.0%, p=0.03). The commonest drugs that caused cardiovascular-related ADRs were beta-blockers (59.1%), angiotensin-converting enzyme inhibitors/angiotensin receptor blockers (18.1%), and calcium channel blockers (13.6%). Drug-induced delirium was commonly caused by anti-depressants (27.6%), sedatives (13.8%), and anti-psychotics (10.3%).

**Conclusions:** ADRs in frail individuals were associated with higher use of anti-psychotics and anti-depressants, with a lower use of calcium supplements and anti-hypertensives when compared to their non-frail counterparts. Older adults, even robust, are susceptible to ADRs induced by anti-hypertensives. Our study highlights the importance of medication reconciliation along with careful prescribing among hospitalized older adults, regardless of frailty status.

**A227 Predictors of undernutrition among non-demented older adults with diabetes mellitus**

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**Background**

Undernutrition in older age is as common as most chronic diseases. Although management of type 2 diabetes mellitus (T2DM) includes modified diet patterns as part of lifestyle interventions, undernutrition in patients with T2DM may not be a marginal issue due to coexisting morbidities in the elderly. The present study sought the frequency and associates of undernutrition and in older adults with T2DM.

**Methods**

Community dwelling older adults (≥65 years) with and without T2DM were prospectively enrolled. Mini mental state examination (MMSE), Barthel Index (BI), Lawton-Brody Instrumental Activities of Daily Living Scale (IADLs), and Geriatric Depression Scale (GDS) were applied at enrolment. Nutritional status was assessed by the Mini Nutritional Assessment (MNA). Dementia was excluded by neuropsychological testing and clinical evaluation.

**Results**

Among the whole participants (n=546, mean age:74.9±6.3, female: 71.1%), the frequency of undernutrition (UN) (at risk of malnutrition (n=153) or malnourished (n=17)) was 31.1%. Subjects with T2DM (n=215) had more frequent UN compared to those without T2DM (n=331) (36.7% vs. 27.5%, p=0.05). Diabetic participants with and without UN were similar for age, duration of diabetes, body mass index, waist-to-hip ratio, decreased glomerular filtration rate (<60 ml/min), drug count and polypharmacy. Scores of BI, IADLs, and MMSE were lower, while number of comorbidities, fasting plasma glucose, Hba1c level, and frequencies of female gender, lower education (<8 years), multimorbidity (≥3), increased waist circumference, Hba1c above target (>8.5%), depression, cardiovascular disease and peripheral arterial disease were higher in T2DM subjects with UN compared to those without. The multiple logistic regression analysis demonstrated that, after adjustment for covariates, BI score (OR:0.94, 95%CI: 0.89-0.99, p=0.020), Hba1c above target (OR:2.55, 95%CI: 1.03-6.26, p=0.042), and depression (OR:2.95, 95%CI: 1.29-6.70, p=0.010) as independent predictors of UN among T2DM patients.

**Conclusions**

The present study showed that one third of older outpatients with T2DM was at least at the risk of UN, with a significantly higher prevalence compared to subjects without T2DM. Along with depression and worse functional performance, uncontrolled glycemia as a predictor of UN among older adults deserves further consideration.

**A228 Comparison of the Assessment of Orthostatic Hypotension using Peripheral and Central Blood Pressure Measurements**

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**Background:** Orthostatic hypotension (OH) is a condition in which blood pressure drops abnormally upon standing and is associated with adverse outcomes including falls and cardiovascular disease. There is growing evidence that central blood pressure (CBP) is better than peripheral blood pressure (PBP) in predicting the complications of hypotension. This study used a non-invasive technology called SphygmoCor to assess changes in central blood pressure between lying, 1, 3 and 6 minutes of standing.

**Methods:** The objectives of this study were to assess the prevalence of OH identified using PBP and CBP and the levels of agreement between these two methods and the respective associations between OH and falls and cardiovascular outcomes, by PBP and CBP. A cross-sectional study in subject’s ≥ 50 years of age was conducted at the University of Alberta Hospital inpatient wards and outpatient clinics. Dementia, uncontrolled psychiatric disease, and requirement for isolation precautions were exclusion criteria. Both PBP and CBP were measured with arm cuffs in lying and standing positions. Using the consensus statement on the definition of OH, OH was identified at 1, 3 or 6 minutes of standing. Augmentation Pressure (AP) and Augmentation Index (AI) were also measured as markers of arterial wall stiffness.

**Results:** Of the 71 participants recruited, mean age was 72.3±10.3 years, 52% were males, 32% with a history of falls and 72% had hypertension. 9 out of 71 subjects (8%) were symptomatic during the assessment. Anytime OH (OH at 1, 3, or 6 minutes) is seen in 31% by PBP and 27% by CBP (kappa=0.56), and persistent OH (across all durations at 1, 3 and 6 minutes) is seen in 16% by both PBP and CBP (kappa=0.68). A significant relationship was observed between anytime OH at 1, 3, or 6 minutes as measured by CBP and having hypertension (p=0.05) and dyslipidemia (p=0.02), but this was not significant with other CV risk factors. No significant association was seen with AP and AI except central persistent OH was significantly associated with AP (p=0.02).

**Conclusion:** In this study, central BP was not a better marker of OH than PBP, and PBP measurements can be used in the diagnosis and management of OH.

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A229
Potentially Inappropriate Medications in aged hospitalized in a cancer hospital
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Background: Age is an independent risk factor for the development of neoplasia and progressive increase cancer incidence in the elderly is seen. This population generally receive several medications, mainly to control comorbidities and symptoms. Research into polypharmacy and Potentially Inappropriate Medicines (PIMs) can reduce the risks of adverse drug events, improving quality of life, reducing costs related to health care and may be incorporated in physicians daily’s practice. Our objective was to evaluate the prevalence of polypharmacy and PIMs and if there was an increase in the number of PIMs during hospitalization cancer hospital and to evaluate the association of PIMs with other risk factors such as gender, age, polypharmacy, cancer type, comorbidities, hospitalization time, clinic responsible for hospitalization and reason for hospitalization

Methods: Retrospective study in 70 years and older, hospitalized in an oncology hospital from January to March, 2016 in a Cancer Hospital in São Paulo, Brazil. Data were collected from electronic medical records. MPIs were defined using the Beers criteria updated in 2015. Results: 779 prescriptions were included, the mean age was 76.5 ± 5.3, 56.5% were men. 49.2% admitted to elective procedures / surgeries and 85% had solid tumors. At admission, 80.2% had polypharmacy and 90.6% of PIMs, while at discharge, 94.4% and 95.8%, respectively. There was a significant increase in the number of MPI during hospitalization (p <0.001). In the logistic regression, the increase was correlated with days of hospitalization, polypharmacy on discharge, clinic of origin, reason for hospitalization, oncological diagnosis and dementia. The mean length of hospital stay was 7.6 days and each day of hospitalization represented a 5% increase in the chance of increased MPI (OR 1.05, 95% CI 1.03-1.07). Conclusion: Prescription in elderly can be potentially very damaging. In this sample, more than 80% of the prescriptions of the hospitalized elderly patients had polypharmacy and PIM and, to be longer hospitalized, worsened this condition. More studies and strategies should be adopted to prevent injuries to health of this population.

A230
Post-Hospital Syndrome, an entity that increases readmission rates in acute care hospitals.
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Introduction: The post-hospital syndrome (PHS) is a proposed construct characterized as an acquired, transient period of vulnerability. This construct suggests that the high vulnerability during the 30-day period after discharge might derive as much from the physiological stress that patients experience in the hospital as they do from the lingering effects of the original acute illness. One fifth of Medicare patients discharged from a hospital have an acute medical problem with the subsequent 30 days that requires a new hospitalization.

Objectives: To determine the prevalence of PHS in frail elderly in a HMO setting.

Material and Methods: Cohort study including older adults aged 75 years or older that were discharged from one internal medicine ward between 2015 and 2016 in a tertiary care teaching hospital.

Results: 531 patients were included for the study. 72% (384) were female, with a median age of 87 years (interquartile range (ICR) 7). The most frequent causes of hospitalization were 21.1% (112) respiratory disease; 17% (90) genitourinary disease; 13.6% (72) circulatory disease; 12.2% (65) trauma; 10.7% (57) symptoms and clinical signs of laboratories altered and 6.8% (36) digestive disease. The median length of hospital stay was 7 days (ICR 7). The incidence of readmissions at 30 days was 6.2% (33, 95% CI 4.3 - 8.6). From the patients readmitted within 30 days, PHS was detected in 69.7% (23, 95% CI 51.3-84.4) of them. The most frequent causes of readmission were 46.7% (14) respiratory disease; 16.7% (5) genitourinary disease; 10% (3) other infectious diseases; 10% (3) digestive disease and 6.7% (2) neurocognitive disorders

Conclusions: PHS was detected in almost 2/3 of the patients readmitted. This population may represent a potential target for intervention to reduce readmission. Further characterizations of this phenomenon will help to prevent readmissions in acute care hospitals.

A231
Prognostic effect of enteral nutrition in hospitalized older adults with delirium
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Background: Although older adults with impaired arousal may need enteral nutrition support, several complications may result from tube feeding. However, there is limited data available to help clinicians weigh harms and benefits of such intervention. Our aim in this study was to investigate the association between enteral tube feeding (ETF) and 30-day mortality in hospitalized older adults with delirium.

Methods: Retrospective cohort study in a geriatrics ward of a tertiary university hospital in Sao Paulo, Brazil. We included hospitalizations of acutely ill patients aged >60 years, who were diagnosed with delirium, from 2009 to 2017. Comprehensive geriatric assessments were routinely performed and information were stored using REDCap electronic data capture tools. Our variables were collected from this database, complemented with the review of medical records when necessary. Delirium was detected using Short Confusion Assessment Method criteria; our main variable of interest was the introduction of ETF during hospital stay; and our primary outcome was time to death in 30 days. Multivariate analysis was performed using a Cox proportional hazards model adjusted for possible confounders.

Results: We included 677 admissions, with a mean age of 83 years. Overall, 62% were women and 49% had moderate/severe dementia. ETF was introduced in 323 (48%) cases. General mortality at 30 days reached 24%; it was 20% in the no-ETF group, and 27% in the ETF group (p=0.043). After multivariate analysis, in a model adjusted for age, sex, comorbidities, cognition, functional dependency, and nutritional status, we found that ETF was associated with a lower risk of death in 30 days, with a hazards ratio of 0.59 (95%CI=0.41-0.85; p=0.005). Older age, moderate/severe dementia, decreased level of consciousness, exacerbated COPD, and low albumin levels were independently associated with higher mortality.

Conclusions: One in two older adults with delirium received ETF while hospitalized. ETF was independently associated with lower risk of 30-day mortality in this population. These results suggest nutritional interventions as potential candidates for new studies on delirium management strategies.
A232
Do Adverse Drug Reactions Vary Between Frail and Non-Frail Hospitalized Older Adults?
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Background: The complex interaction between altered pharmacokinetics and pharmacodynamics along with high levels of multi-morbidity and polypharmacy, increases the risk of adverse drug reaction (ADR) in older adults. Frailty is associated with aging and is linked to vulnerability to adverse outcomes. Yet, there is paucity of data on the impact of frailty on ADR. We aimed to determine how frailty influences prevalence, presentation, and severity of ADR in hospitalized older adults.

Methods: This was a retrospective, observational study on 150 older adults (mean age 89.7 ± 4.0 years, 83.3% frail as defined by Clinical Frailty Scale) admitted in September 2016 to Geriatric Medicine in a tertiary hospital in Singapore. Baseline demographics, comorbidities, and medication use prior to and during hospitalization were gathered. We recorded the types of ADR, and determined the probability and severity using Naranjo and Hartwig scales respectively.

Results: A total of 304 ADRs were captured; 104 participants (70.0%) experienced at least 1 ADR. Contrary to belief, frailty was associated with lower prevalence of ADRs compared to the non-frail group (65.6% vs 88.0%, p=0.03). Severity of ADR was also greater in the non-frail group (severe ADR: 36.4% vs 13.3%, p=0.025) with no differences in probability of ADR. The 5 most common ADRs were constipation (41.3%), acute kidney injury (20.7%), delirium (14.0%), bradycardia (14.0%), and postural hypotension (11.3%). Drugs commonly associated with ADRs were calcium supplements (12.8%), angiotensin-converting enzyme inhibitors/angiotensin receptor blockers (11.2%), diuretics (8.2%), anti-platelets (6.9%), and opioids (6.9%). Non-frail participants experienced more cardiovascular-related ADRs (48.0% vs 24.0%, p=0.03), whilst frail participants had more drug-induced delirium (18.4% vs 0.0%, p=0.02).

Conclusions: The prevalence of ADRs in hospitalized older adults was high, with constipation being the commonest ADR. The higher prevalence and severity of ADRs in non-frail older adults may be due to clinicians taking active measures to control cardiovascular risk factors. In contrast, conservative approach with rationalizing of medications may be taken by clinicians when managing frail patients. Further studies are needed to understand this unique observation between frailty and ADR.

A233
Bone health among older adults in Taiwan
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Background: The complex interaction between altered pharmacokinetics and pharmacodynamics along with high levels of multi-morbidity and polypharmacy, increases the risk of adverse drug reaction (ADR) in older adults. Frailty is associated with aging and is linked to vulnerability to adverse outcomes. Yet, there is paucity of data on the impact of frailty on ADR. We aimed to determine how frailty influences prevalence, presentation, and severity of ADR in hospitalized older adults.

Methods: This was a retrospective, observational study on 150 older adults (mean age 89.7 ± 4.0 years, 83.3% frail as defined by Clinical Frailty Scale) admitted in September 2016 to Geriatric Medicine in a tertiary hospital in Singapore. Baseline demographics, comorbidities, and medication use prior to and during hospitalization were gathered. We recorded the types of ADR, and determined the probability and severity using Naranjo and Hartwig scales respectively.

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Conclusions: The prevalence of ADRs in hospitalized older adults was high, with constipation being the commonest ADR. The higher prevalence and severity of ADRs in non-frail older adults may be due to clinicians taking active measures to control cardiovascular risk factors. In contrast, conservative approach with rationalizing of medications may be taken by clinicians when managing frail patients. Further studies are needed to understand this unique observation between frailty and ADR.

A234
Association between frailty and non-alcoholic fatty liver disease among the US elderly
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Background: The association between frailty according to the Fried frailty criteria and non-alcoholic fatty liver disease (NAFLD) is currently unknown. This study investigated whether frailty is associated with NAFLD in elderly patients.

Methods: This study examined the relationship between frailty and hepatic steatosis in 2,412 participating in a cross-sectional analysis of the Third National Health and Nutrition Examination Survey (NHANES III). NAFLD was defined as hepatic steatosis presented on ultrasound examinations in the absence of other known liver diseases. Our definition adheres to the 5 frailty domains established by the Fried frailty criteria, but customizes the criteria for application to NHANES III data. Persons with available data describing 3 or more frailty domains below were defined as frail. A multivariable logistic regression was conducted to estimate the relationship between frailty and NAFLD in the elderly.

Results: Participants were excluded if they were characterized by missing data in one of domain of frailty. Finally, 76 (3.15%) participants were classified as frailty, for a final group of 2,412 participants. The unadjusted odds ratio (95% CI) for frailty for comparing participants with mild, moderate, and severe hepatic steatosis to those with normal hepatic steatosis were 1.49(1.06-2.01), 1.95(1.23-3.39) and 1.32(0.60-2.88), respectively. A similar pattern was observed after multivariable adjustment, and only moderate hepatic steatosis was statistically significant in the adjusted model.

Conclusions: NAFLD is associated with a higher risk of frailty. These findings demonstrate that frailty is also an extrahepatic complication of NAFLD.
A235
Community Integrated Care System in Japan as a model of reference for long term care development in Taiwan
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Background: A new national long term care project “Long term Care 2.0” started in Taiwan since 2017, with a main goal to build up community integrated care systems (ref). Japan has been developing community integrated care system since 2000, and the model of development can be a reference for Taiwan.

Methods: We collected official data from The Ministry of Health, Labour and Welfare of Japan and The Ministry of Health and Welfare of Taiwan. The study period was from year 2000 to 2016. The collected data included four domains: population, finance, institutes and workforce. The population included total, elder, and dependent population. The finance included national health, care and insurance expenditure. The institutes and workforce included all kinds of long term care institutes with the staffs who work there. After data was collected, we further divided care institutes into 3 categories as visiting, office and institutional type according to their service delivery. We then set up regression models to analyze the association between variables of each domain.

Results: During study period, elder population increased (in average) by 3.49% and 3.47% per year in Japan and Taiwan accordingly. The dependent population in Japan increased by 8.5% per year. Every 1% increase in dependent population was correlated with 1.11% increase in care expenditure ($^2=0.986$). The individual care expenditure didn’t showed significant change. In terms of institutes and workforce, every 1% increase of dependent population was correlated with 1.33%, 2.89%, 0.10% increase in visiting, office, institutional care institutes, and 1.54%, 8.74%, 0.31% increase in the workforce accordingly. All above correlations meet statistically significance.

Conclusions: The need of care workforce and institutes, especially office type but not institutional type, will increase markedly according to the model in Japan. If Taiwan wants to build up similar community integrated care systems with that in Japan, the government should consider policies to enhance faculty development to prepare for the near future.

Ref: http://topics.mohw.gov.tw/LTC/cp-91-107-201.html

A236
Identification of patients at risk older in the ED using administrative data: concurrent validity of the Dynamic Silver Code in the AIDEA study
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Background: Prompt identification of at risk subjects among older persons accessing the Emergency Department (ED) optimizes clinical management. The AIDEA study assessed predictive validity of the Dynamic Silver Code (Dyn-SC), a prognostic tool based on administrative data, independently predicted for hospitalizations in Classes II, III, and IV vs. Class I.

Methods: We collected official data from The Ministry of Health, Labour and Welfare of Japan and The Ministry of Health and Welfare of Taiwan. The study period was from year 2000 to 2016. The collected data included four domains: population, finance, institutes and pharmacy claims archives. The population included total, elder, and dependent population. The finance included national health, care and insurance expenditure. The institutes and workforce included all kinds of long term care institutes with the staffs who work there. After data was collected, we further divided care institutes into 3 categories as visiting, office and institutional type according to their service delivery. We then set up regression models to analyze the association between variables of each domain.

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Conclusions: The need of care workforce and institutes, especially office type but not institutional type, will increase markedly according to the model in Japan. If Taiwan wants to build up similar community integrated care systems with that in Japan, the government should consider policies to enhance faculty development to prepare for the near future.

Ref: http://topics.mohw.gov.tw/LTC/cp-91-107-201.html

A237
Identification of older patients at risk in the ED using administrative data: predictive validity of the Dynamic Silver Code in the AIDEA study
D. Balzi,1 F. Tonarelli,1 E. Barghini,1 I. Fiordelli,1 I. Giannini,1 T. Guerrera,1 E. Latini,1 C. Lorenzi,1 E. Benvenuti,2 L. Gabrielli,3 G. Ruggiano,4 A. Ungar,1 M. Di Bari.1 1. Clinical and Experimental Medicine, University of Florence, Florence, Italy; 2. Unit of Geriatrics, SM Annunziata Hospital, Bagno a Ripoli (FI), Italy; 3. Unit of Geriatrics, AOU Careggi, Florence, Italy; 4. Emergency Department, SM Annunziata Hospital, Bagno a Ripoli (FI), Italy; 5. Epidemiology Unit, Central Tuscany Local Healthcare Unit, Florence, Italy.

Background: Prompt identification of at risk subjects among older persons accessing the Emergency Department (ED) optimizes clinical management. The AIDEA study assessed predictive validity of the Dynamic Silver Code (Dyn-SC), a prognostic tool based on administrative data, by evaluating its association with short- and long-term endpoints after ED visit. Variables in the score (age, gender, marital status, previous hospitalization with corresponding discharge diagnosis, time from previous hospitalization, and number of drugs) are obtained from linkage of demographics, hospital discharge data, and pharmacy claims archives.

Methods: The EDs of two hospitals in Florence, Italy were monitored for 22 weeks, to record accesses of patients aged 75+ years, in whom the Dyn-SC score was automatically calculated in real time. In patients who signed informed consent, data on functional and cognitive status were obtained from face-to-face interview, which included the Identification of Seniors At Risk (ISAR) and the 4AT tool to detect delirium. Concurrent validity was evaluated comparing interview data across 4 classes of increasing Dyn-SC score in consenting participants.

Results: Of 5240 patients (mean age±SEM: 83±0.1 years, women 55.5%), 3722 (71%) consented to the interview. The sample was evenly distributed in the four classes of Dyn-SC (26.4%, 25.2%, 26.7%, and 21.7% from Class I through IV). The proportion of participants with pre-admission functional deficits (e.g. inability to walk or ISAR 2+), loss of memory, or abnormal 4AT score increased stepwise across Dyn-SC classes (p<0.001).

Conclusions: In this large sample of older patients accessing the ED, the Dyn-SC, based on administrative data, was associated with functional, and cognitive status, obtained from face-to-face interview. These data support concurrent validity of the Dyn-SC in identify at risk subjects.

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A238 Encore Presentation
Prediction of prognosis for mild cognitive impairment by 18F-THK5351 PET
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Background: The neuropathological hallmarks of Alzheimer’s disease (AD) are the accumulation of amyloid β and tau protein in the brain. In order to visualize these proteins, several positron emission tomography (PET) tracers have developed and tested in human. 18F-THK5351 is one of PET tracers which was originally developed as tau PET tracer for AD. However, recent studies have demonstrated the high binding affinity of this tracer to monoamine oxidase-B (MAO-B) that is highly expressed in reactive astrocytes. Previous studies demonstrated that the spatial distribution of 18F-THK5351 correlated well with disease severity and clinical phenotype in AD. Our objective is to evaluate the clinical utility of 18F-THK5351 PET to predict the prognosis for mild cognitive impairment (MCI) due to AD.

Methods: 18F-THK5351 and 15O-PiB PET scans were performed in patients with MCI. Ten PiB-positive MCI patients (mean age 76.8±5.1, mean MMSE 25.9±1.8) were clinically followed for 2 years to confirm whether they converted to AD dementia or not.

Results: After 2 year follow-up, 3 MCI patients was converted to AD dementia. Compared to non-converter, MCI converters to AD showed greater 18F-THK5351 accumulation in the parietal cortex as well as superior temporal cortex.

Conclusions: This results indicate that neocortical 18F-THK5351 retention, especially in the parietal cortex, could be a reliable prognostic marker for Aβ or tau accumulation.

A239
The impact of depression on the morbidity and mortality of ≥85s in New Zealand
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Background: New Zealand (NZ) has an ageing population, with the population of ≥85s projected to quadruple in size by 2068. Over 20% of older adults suffer from a neuropsychiatric disorder, of which depression is the most common. Later-life depression is independently associated with a 41% increased risk of all-cause mortality, and it is the leading cause of disability worldwide. With such an impact on physical health, it is unsurprising that depression doubles hospitalization rates and length of stay in the elderly.

Methods: Data was collected in the Life and Living in Advanced Age Cohort Study (LiLACS), for which a detailed study protocol has already been published.

Aims: Determine the prevalence of depression in 2 cohorts of Maori and non-Maori people aged ≥85. Establish the impact of depression on mortality and morbidity (hospitalisation and length of stay). Compare these outcomes with those of cardiovascular diseases (CVD), and establish the impact of co-morbid depression in CVD.

Results: The overall prevalence of depression across both cohorts at baseline was 34%, which did not differ significantly with ethnicity or gender. The overall prevalence of CVD was 67%, of which 40% had comorbid depression. Participants with neither CVD or depression had the best 5-year survival rates, and those with CVD and comorbid depression had the worst. Remarkably, the mortality risk associated with depression was higher than for CVD (35% vs 38%), however when CVD and depression were compounded the mortality risk more than doubled. Hospitalization rates were consistently higher in participants with depression than those without depression across all waves of the study, and they stayed an average of 2.3 extra nights in hospital.

Comorbid depression in participants with CVD was a significant predictor of hospitalization and length of stay.

Conclusions: The prevalence of depression in our study was much higher than existing data in NZ, but consistent with estimates of the prevalence of sub-threshold depression in the elderly. This work joins the growing body of evidence that depression has a major adverse impact on the physical health of elderly people. Therefore, identification and management of depression in the elderly could have a massive positive impact on patient’s psychological and physical wellbeing, thus reducing morbidity, mortality and healthcare costs.

A240 Encore Presentation
Atrophy of the entorhinal cortex is associated with increased dual-task gait cost among MCI older adults
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Background: Lower dual-task gait performance (the slowing of gait speed while performing a cognitive demanding task) is associated with lower cognitive performance, particularly in MCI older adults. However, the neural mechanism of increased dual-task cost is still unclear. This study aimed to examine the relationship between dual-task cost and regional brain volume, focusing on prefrontal cortex, hippocampus, and entorhinal cortex, and whether these variables were associated with future onset of dementia among MCI older adults.

Methods: Forty-one older adults (mean age 74±6 years, 44% women) with MCI from the “Gait and Brain Study” were followed up for up to five years with biannual visits including cognitive, gait, and medical assessment. Gait velocity and stride time variability were recorded under single and three separate dual-task gait conditions using an electronic walkway. Regional brain volumes were derived from automated segmentation using 3T-MRI scanning.

Results: Adjusted regression analyses showed that higher dual-task costs were associated with smaller volume in the entorhinal cortex but not with the prefrontal and hippocampal volumes. During the follow-up period (mean, 30 months), six participants converted to dementia. A logistic regression analysis showed that future onset of dementia was associated with smaller volume in the entorhinal cortex alone (OR = 1.005, p = 0.034).

Conclusions: Our results suggest that lower dual-task gait performance is a motor manifestation of entorhinal cortical atrophy which leads to progression to dementia. Our result provides an anatomical substrate to the concept that dual-task gait can be an early motor marker of progression to dementia.

A241
Frailty Phenotype and Cognitive Status in Chilean Community – Dwelling Older Adults without Dementia
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Background: Frailty is common in older persons and associated with adverse health outcomes.

Over the past years there has been increasing evidence associating frailty with cognitive impairment. The aim of our study is to assess the association between frailty and cognitive status in elderly without dementia.

Methods: The database of the ANDES cohort (Chile) was used for this Study. This includes community-dwelling older adults, functionally independent, without dementia, (MMSE>24). Patients were evaluated with Comprehensive Geriatric assessment, complete
Comparing the change detection and free recall modalities in the short-term memory binding test

M. S. Yassuda,1 M. Cecchini,1 M. Foss,2 L. Cruz de Souza,3 R. Nitrini,2 S. Della Sala,4 M. Parra,5

influenced by the paradigm used to assess it.

AD = bvFTD) in the binding condition (Table 1).

in the CD task, both AD and bvFTD showed deficits (Controls >

performance than the other groups (Controls > bvFTD > AD), while

total score. In the FR task, AD patients showed significantly lower

p=0.405). AD and bvFTD showed similar performance on MMSE

demographic data and STMB scores for clinical groups (mean

and standard deviation) in the binding condition N=81.

<table>
<thead>
<tr>
<th></th>
<th>HC (n=28)</th>
<th>AD (N=34)</th>
<th>bvFTD (n=19)</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>67.6±15.75</td>
<td>71.8±15.75</td>
<td>69.7±16.45</td>
<td>0.113</td>
</tr>
<tr>
<td>Schooling</td>
<td>13.6±4.10</td>
<td>10.1±3.09</td>
<td>11.0±5.54</td>
<td>0.074</td>
</tr>
<tr>
<td>MMSE</td>
<td>28.1±1.63</td>
<td>23.5±1.66</td>
<td>23.5±2.04</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Change Detection</td>
<td>92.5±10.11</td>
<td>75.5±10.65</td>
<td>71.7±12.11</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Free Recall</td>
<td>27.7±9.02</td>
<td>23.2±9.08</td>
<td>20.9±9.86</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

Note. HC = Healthy Controls; AD = Alzheimer’s Disease; bvFTD = behavioral variant frontotemporal dementia; p value = ANOVA test; a = differ from controls; b = differ from AD; c = differ from bvFTD.

A243
Motoric Cognitive Risk Syndrome (MCR): Prevalence and associated factors in older adults

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BACKGROUND: MCR is an emerging concept of pre-dementia stage that is characterized by slow gait speed and subjective memory complaints.

METHODS: Cross sectional study involving 147 community dwelling adults in Singapore, aged 65 years or older. Mean age 72. 62.6% (n=92) of participants were female. Slow gait speed was defined as one Standard Deviation below gendered mean on a ten meter walk test. Other study tools included Mini-mental state examination (MMSE), Even Briefer Assessment Scale for Depression (EBAS-DEP), FRAIL scale, demographics including falls and comorbidities.

RESULTS: Of the 147 participants, 12 met the criteria for MCR (prevalence 8.2%). A higher prevalence of MCR was seen with advancing age (p=0.007) but not associated with gender. MCR was significantly associated with frailty (p=0.03), having 1 or more fall (p=0.005), probable depression (p=0.002) and sarcopenia (p <0.001).

Logistic regression showed depression was a potential predictor of MCR and falls (p=0.016).

Conclusion: Despite the limited sample size, the prevalence and associations of MCR is comparable to existing worldwide data. Depression is significantly associated with MCR and falls (OR 14.05, 95% CI = 1.65-119.7). Our study highlights the need for screening elderly with depression for MCR and conversely those with MCR for underlying depression, with longitudinal follow up for incident dementia and disability hence providing opportunity for early intervention. Further studies are needed to explore vascular risk factors for both MCR and depression.

A242
Comparing the change detection and free recall modalities in the short-term memory binding test

M. S. Yassuda,1 M. Cecchini,1 M. Foss,2 L. Cruz de Souza,3 R. Nitrini,2 S. Della Sala,4 M. Parra,5

BACKGROUND: The short-term memory binding (STMB) test assesses the ability to hold temporarily integrations of colors and shapes into unified representations. STMB tests seem to capture a specific deficit in AD patients when compared with other dementias. There are different paradigms to assess STMB. In the change detection (CD) task, participants are asked to recognize changes in colors or shapes (unbound condition) or their combination (bound condition) across two consecutive screens. In the free recall (FR) task, participants are required to verbally recall objects and colors individually (unbound) or their integration object-color (bound). The objective of this study was to investigate whether these different tasks can capture the specific deficit in AD patients when compared with behavioral variant frontotemporal dementia (bvFTD) and controls.

METHODS: The sample was: 28 controls, 34 patients with probable AD and 19 with probable bvFTD, according to international criteria. Participants completed the Mini-Mental State Exam (MMSE), STMB tests.

RESULTS: Participants were similar in age, education and dementia groups were in similar disease stage (CDR 0.5 or 1 only, p=0.405). AD and bvFTD showed similar performance on MMSE total score. In the FR task, AD patients showed significantly lower performance than the other groups (Controls = bvFTD > AD), while in the CD task, both AD and bvFTD showed deficits (Controls > AD = bvFTD) in the binding condition (Table 1).

CONCLUSIONS: The specificity of the STMB for AD seems to be influenced by the paradigm used to assess it.
INTRODUCTION: Epididymo-orchitis (EO) refers to concurrent inflammation of the epididymis and testicles. Generally, in patients older than 35 years, the cause of epididymitis is either coliform or uropathogenic organisms, whereas younger individuals are prone to sexually transmitted disease (STD). Although N. gonorrhoeae is highly prevalent in young men, it is the least common cause of EO in the elderly. We present a case of gonococcal epididymo-orchitis in an elderly patient with ipsilateral prostate cancer.

CASE PRESENTATION: An 81-year-old male with a prior history of prostatectomy and placement of an inflatable artificial urethral sphincter, presented to the ED in septic shock. He complained of chills and perineal pain, radiating towards his lower back for five days. He denied dysuria, urinary urgency, urethral discharge or scrotal swelling. Physical exam revealed an erythematous scrotum and right-sided perineal tenderness without fluctuance. Digital rectal exam was unremarkable. Urine analysis was positive for leukocyte esterase, and labs revealed leukocytosis and an elevated CRP. He was hydrated and started on IV Piperacillin-tazobactam. Scrotal ultrasound initially showed no findings, however as his pain continued to persist, ultrasound was repeated and revealed bilateral EO, complex hydroceles, and perineal edema. Polymerase chain reaction was positive for N. gonorrhoeae. The antibiotic was changed to IV Ceftriaxone and Levofloxacin. The patient showed significant improvements and was discharged on Doxycycline.

DISCUSSION: Acute EO secondary to Gonorrhea is a rare occurrence in the geriatric population. The presence of scrotal pain, tenderness, and edema is suggestive of the diagnosis. Urologic emergencies, such as testicular torsion, must be ruled out.

CONCLUSION: Based on our experience, we suggest that in cases of acute EO testing for STDs should be considered irrespective of the patient’s age. Positive testing for Chlamydia and Gonorrhea not only allows for appropriate treatment but also prevents potential complications such as infertility, abscess and rapid deterioration.

Subcortical Dementia from Bilateral Striopallidodentate Calcinosis Secondary to Hypoparathyroidism

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Case: 68-year-old man with PMH of idiopathic hypoparathyroidism (IH) since his youth and hypertension presented with short term memory decline for the past 25 years. Basic activities of daily living are preserved, but he recently started having difficulty remembering to take his medications. He became concerned when he started paying bills late in recent months. His vision continues to deteriorate, reporting blurred vision, which affected his driving abilities. His energy level is reduced but sleep appears to be intact. He reported tetany in the past and denied any history of strokes or seizures. His CT (See figure) was notable for extensive symmetrical calcifications or hemosiderin deposits of the bilateral caudate, basal ganglia, thalamus and dentate nuclei of the cerebellum. These calcifications were also seen within a bilateral frontal subcortical distribution as well. Neuropsychological testing was consistent with deficits in frontal-subcortical domains. These findings taken together suggested a dysfunction in the basal ganglia and frontal lobe circuits which are consistent with striopallidodentate calcinosis (Fahr’s syndrome).

Discussion:
Secondary phospho-calcium disturbances causing calcifications of the basal ganglia structure and dentate nuclei is a complication and consequence of poorly controlled IH. Such calcifications can lead to neurodegenerative dementia. With the increasing incidence of dementia as individuals age, the contribution of newly emerging cognitive symptoms on known comorbidities should be investigated.

B2 Resident Presentation
A Rare Presentation of Gonococcal Epididymo-orchitis in an Elderly Male with an Artificial Inflatable Sphincter
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B1 Student Presentation
TRANSPORT ONOMAL NODULARITY AND CECA THICKENING IN SETTING OF ACUTE DIARRHEA, ABDOMINAL PAIN, AND ANEMIA
A. M. Rotkiewicz, E. M. Davied. Geriatrics, UTMB, Galveston, TX.

Background: Omental nodules occur in many conditions with non-specific presentations. Causes include peritoneal carcinomatosis, primary GI stromal or peritoneal malignancy, granulomatous peritonitis (like TB), lymphomatosis, omental infarction, omental venous stasis, and colitis. Some cases are idiopathic and can lead to extensive work-up.

Case Presentation: A 77-year-old woman had 2 weeks hx of worsening generalized weakness, one day of diarrhea, vomiting, and diffuse abdominal pain. PMH of GI bleed due to duodenitis and positive PPD test.

Review of Systems: negative for melena, hematochezia, and hematemeses

Examination: Obese woman. Abdomen soft, nontender to palpation. No masses palpated.

Diagnostic Data: Initial labs: LA 3.3, WBC 17.9 (neut 81%) and Hgb 7.8, MCV 76, ferritin 5, schistocytes. CT abd/pelvis showed trace ascites, omental nodularity in the right upper quadrant, and cecal thickening, possible mass with peritoneal carcinomatosis. Colonoscopy: cecal polyp with tubular adenoma. EGD: non-bleeding Cameron’s erosion in a large hiatal hernia. Paracentesis: no malignant cells. CT-guided biopsy procedure was later canceled because CT: no nodularity and no ascites a week post-admission. QFT-gold was negative.

Diagnosis and Treatment: Enterocolitis (infectious), colonic polyps, Hiatal hernia with Cameron’s erosion and anemia. Patient received Levaquin IV for the colitis, and 2 units of blood and IV iron. Her diarrhea and abdominal pain resolved as well as the omental nodularity.

Discussion: The resolution of the omental nodules after one week was unexpected. The greater omentum contains gastroepiploic vessels, lymphatics, and accumulations of immune cells.
The transient omental nodularity seen in this case can be caused by transient inflammatory processes such as enterocolitis and upregulated inflammatory response. Extrahepatic portal hypertension is frequently asymptomatic and therefore not recognized. Small ascites may be caused by increased splenic pressure (from bacterial translocation, endotoxemia, microthrombosis of PV branches), omental venous stasis/infarction, or lymphatic fluid accumulation. The case underscores consideration of infective colitis as part of differentials of omental nodularity; this can prevent unneeded invasive testing and procedure.

B4
Finally Home despite the Odds! A case of a long and complicated SNF stay navigated with cultural sensitivity Ayesha S Ahmad MD, FACP, AGSF, Tara Keener CRNP & Kelly Thrush CRNP A. S. Ahmad, Internal Medicine and Geriatrics, Penn State Health, Hummelstown, PA.

Back ground:
A typical stay in a rehab facility is less than 3 months. Longer stays are associated with medically complex or cognitively impaired patients or poor social networks. Our case illustrates that sometimes even the most medically complex patients who exhibit acuity more than a year after their index illness can still walk out of a SNF (Skilled Nursing facility)

Case:
Mrs. TN is a 62 year old Vietnamese American female who was in good health till Oct 2015 when she presented to the hospital with acute biliary necrotizing pancreatitis, multi system failure and needed vent support. She had a long stay requiring a cyst-gastrostomy and a pancreatic necrosectomy. She arrived to our facility in Nov 2015 on TPN and with a cyst-gastrostomy. She quickly decompensated with high fever and leukocytosis and returned to the hospital. All of 2016 was punctuated with a 6 lengthy hospitalizations for fungal and bacterial peritonitis, electrolyte issues and line infections. She remained on TPN as the scarring left her with an extrinsic gastric outlet obstruction which required a distally placed J tube that she kept declining. Many family meetings were held and the goal remained to eventually go home and not to de-escalate care. There was constant communication with consultants and hospital teams.

Cultural sensitivity:
Goals of care were reassessed through countless meetings. She consistently declined psych consults and anti-depressants despite apathy. Our post-acute care team supported the patient’s decisions to decline J-tube (reason-fed up) hot and cold concepts of food and nutrition, endotoxemia, microthrombosis of PV branches), omental venous stasis/infarction, or lymphatic fluid accumulation. The case underscores consideration of infective colitis as part of differentials of omental nodularity; this can prevent unneeded invasive testing and procedure.

B5
Serotonin Syndrome from Polypharmacy
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Serotonin syndrome is a condition with increased serotonergic activity resulting in increased autonomic activity, mental status changes and neuromuscular hyperactivity. It is most always the result of polypharmacy. Diagnosis can be difficult as symptoms mimic other conditions and there is no single diagnostic test.

A 67 year-old male with ischemic cardiomyopathy status post left ventricular assist device, COPD, anxiety and depression presented with hip fracture. Operative intervention was initially delayed due to presenting volume overload requiring diuresis, acute kidney injury, fever (treated with a single dose of vancomycin), and an elevated INR due to warfarin. On hospital day three, he underwent hip repair during which he received Fentanyl. Due to mental status changes (confusion and somnolence), the patient’s pain regimen was switched from oxycodone to tramadol, and his home clonazepam was decreased. He remained on his home doses of citalopram, bupropion and ondansetron. The next day, he developed recurrent fever for which he was started on antibiotics and tylenol, and glucose compartment syndrome, necessitating emergent surgery requiring additional Fentanyl. His fevers persisted and his mental status continued to deteriorate. His exam showed diaphoresis, clonus and myoclonic jerking in all extremities. Urine and blood cultures, cerebrospinal fluid analysis, rapid flu, HIV, herpes simplex 1 and 2 PCRs, serum cryptococcal antigen, chest x-ray, head CT, upper and lower extremity venous doppler studies and electroencephalogram were unrevealing. Given his history of serotonergic agents use and exam consistent with serotonin syndrome, all potentially offending agents were stopped and cyproheptadine was initiated. Within 24 hours, the patient’s fevers, delirium and clonus ceased. He remained symptom free until discharge.

This case illustrates the potential risks of prescribing multiple serotonergic agents for older patients. Before starting new medications, clinicians must consider drugs’ serotonergic properties and the patients’ concomitant medications. Older patients often have slower clearance, thus guidelines suggest lower doses for many medications. The standard dose of citalopram, prescribed in this case, is twice the recommended geriatric dose. Serotonin syndrome can mimic many other processes. Thus, consideration and recognition is crucial as not to delay treatment or expose patients to extensive work-ups.

B6
Dig You Know?: A Case of Red Herrings for Digoxin Toxicity

Background
Digoxin toxicity can present with multiple non-specific symptoms. Even at reduced doses, it can lead to toxicity, especially in elderly patients. Diagnosis can be challenging when other illnesses overlap in symptoms.

Case Presentation
77 year old female with a history of heart failure, atrial fibrillation, coronary artery disease, diabetes, mitral valve repair, CKD Stage 3B, and chronic gait imbalance due to diabetic neuropathy was admitted due to poorly controlled atrial fibrillation. After a failed cardioversion, she was started on digoxin in addition to a beta blocker. She had been on digoxin the year prior but was stopped due to digoxin toxicity. So at this time, she was restarted at a lower dose. Two months later, she was admitted with lightheadedness, generalized weakness, and bradycardia with AV dissociation. She was diagnosed with sick sinus syndrome and had a pacemaker placed. Symptoms of lightheadedness didn’t improve, resulting in readmission the following week and findings of an indeterminate lacunar infarct in the basal ganglia on head CT, AKI, and elevated digoxin level to 3.0. During the admission, she was noted to have unexplained episodes of intermittent tachycardia and started on amiodarone. Her symptoms were attributed to a stroke plus dehydration and she was discharged to rehab. She had some improvement with therapy but her symptoms soon returned. She presented again two months later with persistent and worsening lethargy, confusion, and weakness. The digoxin level on presentation was 4.8. Her digoxin was stopped at this time with complete resolution.
of her symptoms as her digoxin level normalized. During the multiple past admissions, labs had shown subclinical hyperthyroidism and at the latest admission had progressed to overt hyperthyroidism warranting treatment.

**Conclusion:**
This case highlights how digoxin toxicity has a variable presentation and can be easily overlooked. Symptoms include arrhythmias, confusion, weakness, and dizziness, which can be mistaken for other etiologies in patients with cardiovascular and cerebrovascular disease. She was at increased risk due her kidney disease, advanced age and drug interactions such as amiodarone. Hyperthyroidism is also known to increase the volume of distribution and receptor affinity for digoxin but is unclear the extent to which this could have played a role in her clinical course.

**B7**
**When Gluten-Free Fails A Case of Malabsorption Induced Frailty**
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**Background:** The mainstay of treatment of celiac disease is gluten abstinence but approximately 5% of patients do not respond to gluten-free diet. Refractory celiac disease refers to non-responders in whom adherence to gluten-free diet is confirmed. The cause of refractory disease is unknown and it remains a rare complication. Many cases are severe and associated with progressive malabsorption reaching a mortality of 55% if left untreated. Management has focused on immunosuppression mainly utilizing systemic glucocorticoids and immunosuppressive drugs. No current guidelines exist to manage patients with refractory celiac disease.

**Case Presentation:** This is a 73 year old male previously independent who was diagnosed with celiac disease at age 69. He underwent remission after institution of a gluten-free diet for two years. His symptoms recurred three years after diagnosis experiencing a 40 pound weight loss. He developed severe malnutrition leading to a non-traumatic right femoral neck fracture. Symptoms progressed despite continuation of strict gluten free diet and implementation of aggressive parenteral nutrition supplementation. His clinical decline was severe enough that he was found hospice eligible and discharged to a skilled nursing facility. Oral Budesonide for empiric treatment of refractory celiac disease was started. After a few weeks of treatment his symptoms subsided. Approximately two months after starting treatment he was able to return home. He continues to improve with current weight back to his baseline.

**Discussion:** The long term use of systemic steroids and immuno-modulatory drugs becomes a challenge when treating critically ill patients. Older adults are in significantly increased risk due to malabsorption induced frailty. The use of systemic steroids in this clinical scenario becomes even more problematic. The local steroid effect of Budesonide presents as an attractive alternative therapeutic option. Budesonide is a synthetic steroid with minimal systemic absorption due to its first pass metabolism. Therefore, the use of oral Budesonide can minimize the toxicity of long term systemic steroids and still have a meaningful clinical response. All available evidence consists on case reports and further prospective controlled trials would be needed in the future.

**Conclusion:** Oral Budesonide is an effective therapeutic option for refractory celiac disease and its use should be considered in the older frail population.

**B8**
**Cognitive Impairment as the Presenting Complaint of Polycythemia Vera**
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**Background:** Polycythemia Vera (PV) is a rare hematological malignancy with a peak incidence at age 50-70. It confers an increased risk of arterial thrombotic events, including stroke which in the elderly may result in cognitive impairment. Studies have indicated that most of these thrombotic events occur at the time of diagnosis of PV or even up to 2 years prior.

**Case:** A 90-year-old woman with a PMH of hyperlipidemia was brought to the Mount Sinai Doctors Senior Health by her son with concerns about cognitive impairment. He stated that the patient had fallen and sustained a head laceration about 8 months prior. She was seen in an ED and CT head at that time revealed moderate chronic microvascular ischemic disease but no acute intracranial pathology. No labs were performed at that time. The patient’s son reported she was totally functionally independent prior to this and after the fall he observed that the patient had become forgetful, got lost and confused frequently and was disorganized at home. Neurological examination was significant for mild impairment and abnormal clock drawing on Mini-Cog but no other focal deficits. The subacute evolution of the patient’s symptoms and history of fall prompted further work up. MRI brain was performed which showed late subacute infarcts in the left parieto-occipital lobe and medial right occipital lobe. Punctate infarcts in the left thalamus and high right frontal lobe were also seen. Labs were remarkable for CBC revealing RBC: 6.13, HGB: 17.1 and HCT: 54.8 LDL 179 mg/dl, all other initial labs were within normal limits. Further workup for suspicion of PV revealed erythropoietin: 1.3(low) and positive JAK2V617F. The patient was subsequently evaluated by neurology and hematology and was started on atorvastatin, aspirin, and hydroxyurea, with a plan for future therapeutic phlebotomy.

**Discussion:** Workup of this patient’s cognitive impairment revealed not only the critical finding of late subacute infarcts but also led to the diagnosis of Polycythemia Vera in a patient of advanced age. The case supports the important role of detailed history and brain imaging in the assessment of cognitive impairment in the elderly. Treatment of this patient’s PV has the potential to impact prognosis and treatment.

**B9**
**Dysphonia an Unusual Presentation of Internal Carotid Artery Dissection in an Elderly Man**
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**Introduction:**
Internal carotid artery (ICA) aneurysm are uncommon, accounts for less than 1 percent of all arterial aneurysms. Symptoms from extracranial carotid artery dissection can be due to local mass effect or embolism. The most common etiology of vocal cord palsy (VCP) is external compression by extra laryngeal masses/tumors(such ICA dissection). This case describes an unusual presentation of ICA dissection in an 81 years-old patient

**Case presentation:**
An 81 year-old man presented to Emergency Room complaining of one episode of dizziness. He had a past medical history of Hypertension and smoking. Examination was relevant for a non-pulsatile 1cm mass on left anterior neck triangle. Laboratory work-up revealed mild anemia, creatinine 1.3 mg/dL. Electrocardiogram did
B10 Encore Presentation
When Religion Clashes with Personal Values: Reconciling Religious and Medical Perspectives at End of Life

Background: Many strongly religious patients and families struggle with decisions to withdraw artificial life sustaining treatments (LST) from patients who are no longer able to breathe on their own or feed themselves, when such withdrawal may lead to death. They look for religious guidance which may favor maintaining and preserving life at all costs, but recognize that there are circumstances in which it may be morally justifiable to refuse, withhold, or withdraw LST.

Case Description: An 88 year-old Orthodox Jewish F suffered a sudden cardiac arrest at home. She responded to 20 minutes of ACLS in the field, during which she was intubated. She was admitted to the CCU, was found to have severe anoxic brain injury. Family meeting held with son, who stated that patient would not have wanted to be in pain, in vegetative state, and that she wished to abide by Jewish laws to follow Jewish Law. Active discussion, the family Rabbi clarified that it would be acceptable to extubate her if there was a “reasonable” expectation that she would breathe on her own for a “reasonable” amount of time. Active discussion amongst Cardiology, Palliative team, family Rabbi, and hospital Rabbi, defined the “reasonable” expectation to mean that she could breathe on her own with normal life support. Pulmonologist concluded that she would likely be able to breathe for hours after extubation. After 12 hours post-extubation, patient died comfortably surrounded by her family.

Conclusion: A multi-specialty and interdisciplinary approach, including pastoral care services, and use of good facilitated communication, can help meet patient goals while respecting the interpretation and application of Jewish Law.

B11 Determination of Capacity in a Critically Ill Patient with Long Standing Mental Illness
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This case highlights the many challenges often encountered in the acute care setting where a patient’s decision making capacity can fluctuate drastically in the setting of severe illness. This can be further compounded by baseline mental illness and/or other neurocognitive problems.

77 y/o male with PMH of probable metastatic prostate cancer and paranoid schizophrenia who presented for evaluation of abdominal pain. He had driven over 230 miles to our facility for a second opinion; having recently been hospitalized for abdominal pain and urinary retention but left against medical advice several days prior. His labs were notable for BUN of 246, creatinine of 38. Review of a recent CT showed a large prostate with bilateral hydronephrosis, lymphadenopathy, as well as concerns for metastases in his liver and lung. Patient refused any further care including dialysis. He was evaluated by the mental health team who determined that he had capacity to make these decisions. A urinary catheter was placed and he was transferred to the palliative care unit where he became delusional and paranoid. He refused all medications and further blood draws because he believed it would weaken him. He was reevaluated by a second mental health provider who concluded he now lacked capacity. He produced adequate urine and remained medically stable. He was transferred to the general medicine floor for further evaluation of his paranoid schizophrenia. With appropriate treatment for his delusional behavior, he became clearer and more rational in his thinking. It was determined by a third mental health provider, as well as the ethics committee, that he was able to express clear and consistent goals, provide rationale for his decisions, as well as express the consequences for foregoing any other treatment and therefore had the capacity to make medical decisions. He requested his urinary catheter be removed and he be discharged. Unfortunately, a few days after discharge he was found deceased outside of a local police station.

This extreme case highlights the difficulties of determining a patient’s capacity in the presence of chronic mental illness and acute medical conditions, particularly when a patient is assessed by different providers over time. Standardization in assessing capacity may help when a patient’s mental status fluctuates and there are multiple providers involved.

B12 Poppy seed test as a practical and inexpensive diagnostic test for a colovesical fistula
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Introduction:
We describe a case of colovesical fistula (CVF) with insidious presentation, recurrent symptoms and extensive workup that was finally diagnosed by a relatively inexpensive and practical test called the poppy seed test. CVFs are most commonly seen in patients in their 70s or 80s and, given the atypical CVF presentation, they often undergo prolonged and expensive workup before a diagnosis is made. We present this case to shed light into a practical, safe and low cost test that is not commonly used.

Case:
An 83-year-old female, with history of hypertension, diverticulosis, and complete vaginal hysterectomy, initially presented with complaints of ‘vaginal bleeding’. Over the course of three years the patient frequently presented with symptoms of dysuria, suprapubic
B13 Digital Companions Improve Psychosocial and Behavioral Health Support for Older Adults

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Background: Technology has the potential to transform health care for many individuals by making care more accessible, affordable and trying to bridge gaps. A service used in the PACE (Program of All-inclusive Care for the Elderly) model is a digital companion, providing 24X7 care, that can be given to older adults to ease the burden on caregivers while managing chronic conditions.

Case Study: We present the case of a 65-year-old female PACE participant who attended the PACE day program sporadically, was undergoing treatment for depression, anxiety and insomnia, complaining that she did not feel safe at home and felt unsupported. She suffered the loss of two family members recently which aggravates her anxiety and depression, led to anxiety and panic attacks, and impacted both her social and physical health. Provided by care.coach, she was set up with a digital companion in her home for companionship, support for medication, self-management of her chronic conditions as well as mitigation of grief, loss, and anxiety including personalized activities. A social worker helped to set up the companion and checked in weekly. She was enrolled in 15 out of the 21 available protocols including depression screening and tracking of the patient, and in the first five months of utilizing the companion, there have been 13 logged avatar interventions. Afterward, she started to attend her PACE sessions daily (Monday to Friday) and her mood improved. She started to embrace the digital companion as a loyal friend and support system, stating “1 love my avatar and would recommend it to anyone! […] It also reminds me to take my medications and use my walker.”

Discussion: Beyond the provided social benefits, this also provides a patient monitoring service where trained professionals can observe what is happening to the patient in his/her environment. Digital companions are easy to implement and can engage patients with significant functional or cognitive impairments, and is supported by a specially trained health advocate team. This example of technology not only provides a patient monitoring capability, but also provides high need, complex patients with a level of psychosocial support and consequent quality of life that the standard of care cannot.

B14 Percutaneous Endoscopic Gastrostomy Tube Placement in Patients with Dementia: A Case Study of Weighing Risks and Benefits

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Background: Placing a percutaneous endoscopic gastrostomy (PEG) tube in patients with dementia who have developed feeding problems is complex and involves weighing the patient’s goals of care as well as the benefits and harms of the procedure. Patients with dementia who start to fail in adequate maintenance of oral intake can be challenging and stressful. However, studies have shown that PEG tube insertion may not decrease risk of aspiration or increase survival, yet may increase risk of hospitalization for tube complications. We explore the decision-making process in a case for a patient with dementia being considered for a PEG tube.

Case Study: A 72-year-old male nursing home resident who had suffered a cerebrovascular accident (CVA) 4 years earlier, with residual right hemiparesis and profound expressive aphasia, was admitted to a hospital for aspiration pneumonia. He had ongoing dysphagia, likely multifactorial due to residual effect from his CVA, laryngeal edema, vocal cord dysfunction and progression of his dementia, thought to be a mixed Alzheimer’s and vascular dementia to FAST Stage 7C, where he was non-ambulatory and nearly nonverbal. Goals of care discussion with his wife, his health proxy, confirmed that PEG tube placement would be in line with previously expressed wishes. The patient’s functional status was notable for dependence in his ADLs and iADLs with an ECOG performance scale of 4, raising concerns about his ability to tolerate the procedure. His Clinical Frailty Score, a scale that takes into account comorbidity, cognitive impairment and disability, was “very severely frail.” Finally, the evidence-based Choosing Wisely Campaign guidelines recommend that feeding tubes are not helpful for patients with Alzheimer’s Disease. After weighing the risks and benefits, his health care proxy ultimately decided not to proceed with PEG placement and instead pursue careful hand feeding.

Discussion: Taking into account patients’ functional status and frailty may aid in decision making for PEG tube placements in patients with dementia. We illustrate the importance of weighing risks and benefits, and incorporating overall prognosis and goals of care to inform an individualized decision regarding PEG tube placement.

B15 Cerebral Amyloid Angiopathy: A Diagnostic and Treatment Dilemma

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Background: Cerebral amyloid angiopathy (CAA) is increasingly recognized in the elderly, affecting up to 12% of people over age 85. Presentation can vary from incidental recognition on MRI to intra-cerebral hemorrhage with transient neurological episodes and cognitive decline. Treatment is currently geared at modifying risk of future hemorrhage. We present a case series highlighting the diagnostic and treatment related dilemmas associated with CAA.

Case Description: A series of 6 patients were identified as potential CAA based on clinical and imaging characteristics. All were female, aged 73-99 years. Five presented with cognitive changes of varying severity and acuity. Three had transient neurological changes suggesting seizure versus transient ischemic attack (TIA), with confirmed epileptiform activity in one. Other symptoms included mood changes, “fuzzy thinking” and parasthesias. Traditional delirium workup failed to explain these neurological symptoms. MRI brain for all was suggestive of CAA with findings ranging from intracerebral
hemorrhage to diffuse microhemorrhage to hemosiderosis. All patients met Classic Boston Criteria for probable CAA.

Case Outcomes: Three of the 6 patients had been on aspirin prior to presentation. This was eventually discontinued in all. None of the patients required other antplatelet or anticoagulant therapy for comorbid illness. Anti-seizure agents were started on the 3 patients with seizure-like activity. Two patients continue to receive statin therapy for hyperlipidemia. Unfortunately one expired. The other 5 patients remain in clinical follow up, three of which have ongoing cognitive decline and two are without current focal neurological or cognitive change.

Discussion: CAA is a major cause of lobar intracerebral hemorrhage (ICH) and cognitive impairment in the elderly. It is caused by cerebrovascular deposition of β-amyloid protein. Based on the evidence, anticoagulation appears generally unsafe following CAA-related ICH. Treatment dilemmas may arise for conditions in which anticoagulation or antiplatelet therapy may be otherwise indicated. Significant reductions in total and LDL cholesterol via statin therapy has also been inversely related to risk for intracerebral hemorrhage. Continuation of statin therapy requires careful consideration in these patients. Large clinical studies are needed to settle remaining diagnostic and therapeutic dilemmas for this important disease.

B16 
Improving communication with family members using video conferencing during outpatient visits: a case series.
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Background: Communication with family members who are unable to attend outpatient visits may provoke anxiety for patients/family and is time consuming for providers. We piloted a quality improvement project in a geriatric clinic offering family participation using video conferencing technology with the aims of improving communication, satisfaction, and efficiency.

Methods: Secure web-based video visits were offered by providers to select patients with involved family members who are unable to attend appointments in person. A family member participated through a weblink and their own device. Appointments were coordinated by schedulers, medical assistants, patient and family to be integrated into the routine clinical visit. Providers conducted visit with a family member via video. Follow up interviews with participants were conducted after each visit and exemplar quotes were identified.

Results: 5 visits were completed with 6 patients (mean age 82, 83% female) and 4 providers. 33% of patients had dementia and participating family members were their health care agent. Topics discussed during visits included peri-operative planning, transitions of care, and advance directives. All patients reported high levels of satisfaction and recommended this video-assisted visit to other patients. 4 of 13 providers completed a video visit over 3 months during the pilot, a 31% adoption rate. Some local family members who were offered video visits preferred to come in person, even during their work day. The table shows common themes related to patient, family, or provider experience, feasibility and feedback for improvement, especially in the context of staff turnover and need for on-going training.

Conclusions: Patients and family members strongly supported the feasibility of this video conferencing pilot project. The addition of audiovisual technology and realtime communication allowed family members to participate more directly in patients’ care. Using video conferencing involved team-based implementation and requires on-going training for optimal use. Next steps include expansion and systematic evaluation of types of geriatric syndromes or issues that may benefit from patient-family member video visits.

B17 
Walking with modafinil: A case report on an individual with moderate Alzheimer’s disease
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Introduction:
Modafinil is a cognitive enhancer which is commonly used for narcolepsy, shift work sleep disorder and obstructive sleep apnea; however, the effects on the cognitive deficits appeared to be inconsistent. The effects on functional improvement has not been demonstrated with modafinil use in patients with dementia. This case showed significant improvement with modafinil use.

Case Description:
A 70 year old female with past medical history of Alzheimer’s dementia, schizophrenia, major depressive disorder, hypertension and gait impairment was admitted to a skilled nursing facility for post acute care after prolonged hospitalization for the treatment of encephalopathy. The patient had been recently treated with leflunomide for schizophrenia, but was weaned off as she developed an adverse reaction with parkinsonian symptoms. During hospitalization, extensive work up was done, including EEG, which revealed occasional left temporal spikes/sharp waves without epileptiform activity, and an MRI showing asymmetric volume losses on the left insular regions. Upon admission to skilled nursing facility, MMSE was performed on three different occasions. Prior to start of modafinil trial, patient required moderate to maximum assistance with ADLs and had not improved beyond ambulating 50 feet for 2 weeks. After one month of modafinil use, the patient had increased wakefulness and function as evidenced by her receptivity to verbal cues with therapy. She was able to self-feed, groom and transfer herself from bed to chair, required minimal assistance with toileting and dressing, and moderate assistance with bathing. The patient was able to ambulate up to 150 feet with minimal assistance.

Patient scored 13/30 on MMSE prior to administration of modafinil then improved to 17/30; however, she scored 13/30 after 1 month of treatment. Neuropsychiatrist was consulted; however, she exhibited significant impairment on psychometric testing assessing expressive and receptive language skills on both prior and during the treatment of modafinil. Patient also had improved sleep wake cycle.

Discussion:
A retrospective review studies showed improvement on gait on pediatric patients with cerebral palsy with modafinil use; however, there is a lack of literature on gait improvement for patients with dementia. In this case, the patient demonstrated improved ADLs and gait distance; however, it did not improve her cognition with Alzheimer’s dementia.

B18 
Corticosteroids Causing Dementia-like Cognitive Changes
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Background: There are known and established cognitive and psychotropic effects of corticosteroid use. Most clinicians are familiar with steroid-induced delirium, psychosis, and insomnia. Steroid dementia syndrome (SDS), however, is less commonly recognized or diagnosed. It was first described in psychiatry literature in 1984 and...
subsequently through case reports. The condition presents in patients taking steroids who develop deficits mimicking symptoms of dementia and is frequently reversible after steroid discontinuation.

**Case Description:** An 87-year-old man with a past medical history of hypertension, macular degeneration, depression, and recently diagnosed polymyalgia rheumatica (PMR) was referred to geriatrics clinic by his primary physician for memory concerns. The patient was previously independent of all activities of daily living and instrumental activities of daily living, but over the past four months, his wife has had to take over his medication management and finances, as the patient made a number of mistakes. The patient also reported poor sleep, trouble remembering friends’ names, and recent conversations. He had been diagnosed with PMR and started on a prednisone taper one month prior to his decline. Otherwise, there were no new medications. Physical exam, labs, and head imaging were unrevealing. A depression screen was negative. He scored a 16/30 on the St. Louis University Mental Status (SLUMS) Exam. He was diagnosed with likely moderate dementia, either Alzheimer’s or vascular. In follow up three months later, the patient had been completely tapered off steroids by his rheumatologist for four weeks. Both the patient and his wife reported significant improvement in sleep, memory, and function; the patient had recently begun managing his own medications again. On repeat SLUMS testing, he scored a 24/30, with most notable differences in clock draw (0/4 points to 4/4 points) and story recall (2/8 points to 8/8 points). In light of his significant cognitive recovery after steroid discontinuation, a dementia diagnosis was deemed unlikely. Rather, the patient was thought to be more likely experiencing a reversible steroid related cognitive impairment consistent with SDS.

**Conclusion:** SDS is an under-recognized reversible cause of cognitive changes and an important consideration for any patient taking steroids who presents with features of dementia.

**B19**

**Bullous Presentation of Scabies**

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**Background:** Scabies is a common cutaneous infestation with the mite Sarcoptes scabiei. Particularly in the elderly and immunocompromised, it can present atypically. Misdiagnosis or delayed diagnosis can result in further spread of this arthropod infestation, especially in institutional settings. We present a case of scabies in a long-term care facility (LTCF) with bullous presentation that resulted in delayed diagnosis and treatment.

**Description:** We present a 69-year-old woman with past medical history of Alzheimer’s dementia and bipolar disorder who is a resident of a LTCF. She is dependent in all of her instrumental activities of daily living and requires assistance with grooming. She ambulates easily without assistive devices. In July 2017, she presented with diffuse, pruritic rash. She had no improvement with topical anti-itch treatments. She was seen by providers at the LTCF who made note of erythematous papules with crusting diffusely over the trunk and extremities including palms and soles, as well as violaceous, tense bullae on bilateral plantar feet. She had recently completed a course of cephalexin but no other new medications or exposures. Given her atypical presentation with bullae, she was referred to Dermatology. She was seen the next day by the consultants, who were concerned for bullous pemphigoid versus linear IgA versus epidermolysis bullosa acquisita and performed a punch biopsy of a lesion on the right thigh. She was started on a prednisone taper. In the meantime, two other patients on the floor developed pruritic rashes. Biopsy results demonstrated spongiotic dermatitis with perivascular lymphocytic infiltrates and eosinophils, suggestive of arthropod bite reaction. The diagnosis of scabies was made, and she was subsequently treated with permethrin twice and prednisone was discontinued. The patient’s pruritus and rash resolved gradually after treatment. Subsequently, the entire floor of the LTCF was treated due to concerns for spread of the infestation.

**Conclusion:** We describe a case of scabies with hemorrhagic bullae, which can result from excoriation. Scabies should be considered in all patients residing in LTCF who present with a pruritic rash, no matter the appearance of rash. Early consideration and treatment of scabies can control spread of this transmissible infestation in the LTC setting.

**B20**

**Remembering Reversible Causes of Dementia**

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**Case**

Patient is a 76 year old optometrist with a history of end stage renal disease secondary to diabetes and hypertension with subsequent renal transplant who initially presented to neurology clinic with fatigue, gait changes, and resting tremor. He was diagnosed with Parkinson’s Disease, which improved with carbidopa-levodopa. He then had progressive cognitive decline, for which he was started on donepezil. He underwent neuropsychological testing, which showed mild generalized cerebral dysfunction, with greater involvement of frontal subcortical and temporal lobe systems. The results suggested mild cognitive impairment associated with his Parkinson’s disease. He retired from working and stopped driving. His cognitive function continued to decline over the next two years, with a Montreal Cognitive Assessment (MOCA) score of 13/30. He was then admitted due to concerns for a urinary tract infection causing worsening Parkinson’s symptoms. Despite appropriate antibiotics, he had worsening delirium. He underwent a lumbar puncture and was found to have chronic lymphocytic leukemia (CLL) with central nervous system (CNS) involvement. He underwent intrathecal chemotherapy, with rapid improvement in his cognitive function and ability to perform activities of daily living. His MOCA one year later was 26/30 and he reported feeling back to his normal self.

**Discussion**

Major neurocognitive disorder is characterized by a decline in cognition involving one or more cognitive domains. While Alzheimer’s is the most common etiology of major neurocognitive disorder, there are other causes including, but not limited to, vascular dementia, Parkinson’s dementia, Lewy Body Dementia, and Frontotemporal dementia. However, there are also some reversible conditions that can cause symptoms of dementia, including thyroid disease and vitamin deficiencies. The American Academy of Neurology recommends screening for B12 deficiency and hypothyroidism in patients with dementia. However, in certain situations, such with a patient with an atypical syndrome or a patient with rapidly progressive dementia, it is reasonable to pursue a more extensive evaluation that may include lumbar puncture. The rapid decline in our patient prompted such a work-up and thus found the diagnosis of CNS CLL.

**Conclusion**

In unusual cases of dementia, such as younger patients or those with rapidly progressive dementia, a more extensive evaluation may be warranted.

**B21**

**Student Presentation**

**Subglottic Stenosis: An Evaluation of an Elderly Treatment-Seeking Population**

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**Objective/Hypothesis:** To evaluate the demographics, etiology, intraoperative findings and treatment outcomes of patients with subglottic stenosis, comparing those patients age less than 65 to an elderly population (age >65).
Study Design: Retrospective review.
Methods: Eight-year retrospective review of patients with subglottic stenosis comparing patients less than 65 years of age to an elderly population (age >65).

Results: Forty-three adults presented for evaluation and treatment of subglottic stenosis between 2008 and 2017. At the time of presentation, 35 were younger than age 65 (27 female, 8 male) and 8 (6 female and 2 male) were older than age 65. Comparing age younger than 65 to older than 65, the etiology was idiopathic in 32% vs 50% (n=11 vs n=4), intubation in 35% vs 37.5% (n=12 vs n=3) and GPA (granulomatosis with polyangiitis) in 33% vs 12.5% (n=11 vs n=1). No statistically significant difference was noted in the two groups when comparing the demographics, etiology and intraoperative findings. 

Conclusion: Patients with subglottic stenosis treated after age 65 have a shorter interval between surgical interventions.

B22
The Challenges of Cognitive Impairment Screening in Patients With Aphasia
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Screening for cognitive impairment is an essential part of the geriatrics evaluation. This screening should be tailored to the capabilities of the patient. Patient specific factors such as education level, spoken language or neurologic deficits, such as aphasia, should be considered and evaluation should be tailored to the patient.

Mrs. T is a 74 year old female who presented to geriatrics clinic as a referral from her neurologist for comprehensive geriatrics evaluation. The patient had a left frontal intracerebral hemorrhagic cerebrovascular accident (CVA) in 2015 with resulting right sided weakness and an expressive aphasia. She presented to the geriatrics clinic with her daughter with complaints of intermittent memory loss and confusion. Per patient’s daughter both the memory symptoms had progressively worsened since her CVA in 2015. Given patient’s aphasia, it was unclear if patient could participate in traditional office based cognitive impairment screening such as the Mini Mental Status Examination (MMSE) or Montreal Cognitive Assessment (MoCA) and patient was referred for neuropsychological testing. As part of this evaluation, patient underwent the MMSE, Geriatric Depression Scale, Dementia Rating Scale and Clock Drawing Test and was diagnosed with probable vascular neurocognitive disorder with behavioral disturbance.

This case highlights the challenges of traditional office based cognitive impairment screening tools for patients with aphasia. Given the need for verbal responses with most widely used cognitive impairment screening tools these tools may not accurately assess cognitive impairment in patients with aphasia. A group of French researchers developed the Cognitive Assessment for Stroke Patients (CASP) in 2012. CASP evaluates six cognitive functions: language, praxis, short term memory, time orientation, spatial neglect/visual construction and executive function. In small studies, CASP scores have been found to correlate highly to MMSE and MoCA scores. Although it has been a promising research tool, CASP has not been validated and is not widely used in clinical practice. As advances in medical technologies improve survival after neurologic events like CVAs, clinical tools such as cognitive impairment screening tools need to be developed and implemented to help care for patients living with sequelae of these events.

B23
Bitten and Bedbound: Human Granulocytic Anaplasmosis in a Patient with Frontotemporal Dementia
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Human Granulocytic Anaplasmosis (HGA) is a tick-borne illness which presents with nonspecific symptoms 1-2 w after exposure to an infected tick, and may lead to a variety of complications including opportunistic infections, sepsis, and multi-organ failure1. A 65 year old community-dwelling man with a history of frontotemporal dementia presented to the ED with his wife and caretaker for fevers, worsening aggression, new incontinence of bowel and bladder, weakness, inability to ambulate, and myoclonus 4 h after an episode of emesis. Two weeks prior, the patient’s wife recalled removing several ticks from him. On exam, temp was 102.7°F, HR 107 bpm, BP 83/54 mmHg, and O2 sat 99% on RA. Patient was lethargic, confused, and unable to follow commands. Abdomen was notable for a scabbled bite surrounded by erythema. CBC showed a WBC of 3.9K/uL, platelet count of 61K/uL, Hb 15.3gm/dL and Hct of 43%. CMP showed Na of 133mmol/L, BUN of 23mg/dL, creatinine of 1.83mg/dL, AST of 65u/L, but otherwise unremarkable. Urinalysis and CXR were negative. IV ceftriaxone 1gm QD and IV piperacillin/tazobactum 3.375mg Q8h were initiated for sepsis of unclear etiology. A tick-borne DNA panel drawn on admission was positive for Anaplasma phagocytophilum by PCR 4 d later. The patient’s condition improved and was discharged home 5 d after initial presentation on oral doxycycline 100mg bid. At 2 w follow-up, cognition and function had returned to baseline.

We present a case of delirium superimposed on dementia secondary to HGA. This patient exhibited a classic presentation of HGA with fever, leukopenia, thrombocytopenia, acute kidney injury, and transaminitis2. HGA is most prevalent between late spring and early fall, and most cases in North America occur in the upper Midwest and northeastern regions3. The severity of complications in HGA make diagnosis and timely treatment essential, but the range of nonspecific presenting symptoms poses a clinical challenge. This is especially true in patients with dementia who are potentially unable to communicate symptoms or relevant history of insect exposure.


B24
Bradycardia and Hypothermia in a Patient with Lewy Body Dementia
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Case: A 92-year-old female with Lewy Body Dementia and hypothryoidism presented to the ER with increased agitation and hallucinations. She was diagnosed with a UTI, and her agitation improved with treatment, but she continued to have fluctuations in cognition. On hospital day 3 she developed new bradycardia, hypothermia, and somnolence. Her family reported similar episodes in the past year that resolved spontaneously. Given concern for sepsis, a repeat infectious workup was done, but results were unrevealing, and her symptoms resolved without further intervention. She was discharged to SNF, but several days later, was readmitted for another episode of bradycardia, hypothermia, and somnolence. At that time, it was discovered that levothyroxine was recently discontinued to reduce pill burden. TSH upon readmission was 22.6 mcU/mL, with free T4 of 0.7 ng/dL. IV levothyroxine therapy was started, and endocrinology was consulted.
for possible myxedema coma, but they concluded that the TSH was not high enough to be consistent with the diagnosis. The patient was eventually diagnosed with autonomic dysfunction secondary to Lewy Body Dementia, exacerbated by hypothyroidism.

Discussion: Lewy Body Dementia is one of the most common types of degenerative dementia and is characterized by a progressive decline in cognitive function, hallucinations, parkinsonism, fluctuations in cognition, sleep disorders and autonomic dysfunction. Proper diagnosis is key as there are unique strategies in management; for instance, these patients often respond well to cholinesterase inhibitors (Stinton 2015), but are more sensitive to the side effects of neuroleptic medications (McKeith 1992). Furthermore, the clinical presentation can often masquerade as other medical conditions, such as sepsis in this particular case.

Another common challenge in geriatrics is polypharmacy. While minimizing the number of medications is important, there are times when risks of discontinuation outweigh benefits. For this patient, eliminating levothyroxine caused worsening of her symptoms and triggered multiple admissions to the hospital.

This case highlights the importance of recognizing the various manifestations of Lewy Body Dementia, as it can help us better care for these patients and avoid unnecessary tests, interventions, and hospitalizations.

References:

B25 Resident Presentation
Incidence of hemorrhage in nonagenarians following tPA/endovascular treatment for acute stroke
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Background: Use of IV tPA and endovascular thrombectomies are now well established treatment modalities for acute stroke. However, research studies that preceded FDA approval of these treatment modalities had either excluded or underrepresented nonagenarians i.e. patients over 90 years. There remains concern amongst clinicians in using tPA or endovascular thrombectomy in this age group due to fear of hemorrhage. To review the safety of acute stroke therapies in this age group we elected to review our database of stroke patients.

Methods: We retrospectively evaluated our stroke data from May 2014 to January 2017 and studied the rate of hemorrhage in our patients over 90 years receiving IV tPA, endovascular thrombectomy or both.

Results: We had total of 42 patients over 90 years of age (with oldest being 98 years) who underwent acute stroke therapy. 32 had IV tPA alone, 4 had endovascular intervention alone, and 6 had both IV tPA followed by endovascular thrombectomy. All patients received tPA in accordance with FDA guide lines and endovascular intervention was done within 6 hours of stroke onset. In the study, 81% were females, 90% had hypertension and 55% had atrial fibrillation. All patients were highly functional at baseline. Mean NIHSS at presentation was 16.95. 28 patients received tPA within 3 hours and all received it with 4.5hour window. Of the treated patients, 2 patients (5%) developed intracranial bleed after acute stroke therapy. At discharge 2 patients went home, 8 went to IPR, 12 to SNF and 20 went into hospice. At final disposition 9 patients (21%) had modified Rankin score of 3 or less i.e. mild to moderate disability. Others had moderate to severe disability.

Conclusion: In our retrospective study of 42 nonagenarians receiving acute stroke treatment with either IV tPA, endovascular thrombectomy or both, the rate of post treatment hemorrhage was modest and comparable to other age groups. Despite treatment, understandably the overall outcome was unfavorable with 48% being transferred to hospice. However, there were a few who made excellent to good recovery. Our data suggests that the risk of hemorrhage should not deter clinicians in recommending acute stroke therapy in nonagenarians who otherwise meet the treatment criteria.

B26
Unsettled in Court: A Case of End of Life Gone Wrong in a Conserved Older Patient
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Background: Older patients who lack decision making capacity and have not previously executed advanced directives or legally designated surrogate decision makers are an extremely vulnerable population in medicine. Ideally, conservators help preserve the dignity and quality of life of incapacitated patients. However, conservatorship is not without limitations, and can at times create additional pressures for patients, caregivers, and providers at the end of life.

Patient presentation: The patient is a 79-year-old woman with longstanding psychiatric illness who was hospitalized secondary to an unwitnessed fall; at which time she was incidentally diagnosed with stage 4 metastatic vulvar squamous cell carcinoma. During her hospitalization, she was deemed to lack capacity and legal conservatorship was pursued given her lack of prior advanced directives. She was transferred to subacute rehab secondary to generalized deconditioning. Initially, oncologic treatment was attempted but due to her declining health and poor prognosis, her conservator decided to pursue comfort measures. Accordingly, the probate court was petitioned to change her code status to DNR. The patient received care focused on palliation of symptoms while awaiting the court’s decision but the question of what to do if she had a cardiac arrest remained. Several team meetings were held to discuss the best methods to provide compassionate care while avoiding unnecessary suffering. The facility’s legal department clearly stated that resuscitation should be attempted until the court made a ruling otherwise. As the legal and ethical conundrum remained a daily occurrence, multiple team members who provided care faced added stress and anxiety as they struggled with the concept of aggressive resuscitative measures for a frail terminally ill patient. Unfortunately, the patient had a cardiac arrest before the court made a decision and she received CPR prior to death. A debrief of the emotions of the case and future preventive strategies occurred.

Lessons Learned: This case illustrates potential limits of the conservator process at the end of life as well as the significance of early goals of care and advanced care planning. It also emphasizes the importance of providing support for health care team members during ethically stressful situations as providers are not invulnerable to emotional distress.

B27
Rapid Progression of Mild Aortic Stenosis: A Case Study
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Background: Calcific Aortic stenosis (AS) is the most common valvular heart disease in elderly people. It ranges in severity from aortic sclerosis to a severe AS (mean gradient >40 mmHg and aortic valve area (AVA) <1 cm²). Failure to relieve the left ventricular outflow obstruction results in 25% and 50% mortality at 1 and 2 years respectively. Patients with mild AS (mean gradient <20 mmHg and AVA >1.5 cm²) are unlikely to develop symptoms over the ensuing five years. It is estimated that AVA decreases at a rate of 0.1 cm² per year. However, some patients have little or no progression while others progress to severe AS more quickly with unclear etiology. We here report a case
of asymptomatic mild AS that progressed to symptomatic severe AS in less than a year.

**Case:**
83-year-old man with hypertension, CKD 3, and asymptomatic mild AS (diagnosed in September 2016; AVA 1.55 cm² and mean gradient 20.9 mmHg) presented to the emergency department (ED) in July 2017 with exertional dyspnea and bilateral leg swelling. He denied chest pain or dizziness. He has no history of rheumatic or bicuspid aortic valve, or coronary artery disease. ECG was unremarkable. CXR showed diffuse pulmonary interstitial pattern suggestive of CHF or fluid overload. He was diagnosed with worsening CKD and fluid retention, although serum creatinine was 2.41 mg/dL (baseline 2.4-2.7 mg/dL). He was discharged home with increasing Lasix dose to 40 mg daily. One week later, he was seen in the PCP’s office for persistent exertional dyspnea. On physical exam, he had a systolic ejection murmur and pitting edema in the lower extremities. Repeat echocardiography, done 4 days later, showed severe AS with AVA 0.89 cm² and mean gradient 51.0 mmHg. The cardiologist recommended transcatheter aortic valve replacement (TAVR). As a routine workup, the patient underwent coronary catheterization that showed significant left main and LAD obstructive disease. Two days later, the patient presented to the ED with chest pain and dyspnea. He had elevated troponin and ischemic EKG changes consistent with STEMI. Subsequently, he developed cardiogenic shock and he expired despite resuscitative efforts.

**Conclusion:**
The progression of asymptomatic mild AS to symptomatic severe AS is highly variable. Therefore, it is crucial to monitor patients with AS for symptoms suggestive of worsening AS and evaluate them further with 2-D echocardiograms to determine if further interventions are necessary.

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**B28**
Catatonie delirium in a 94 year-old female
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**Background:** Catatonia is a syndrome characterized by psychomotor, autonomic and behavioral disturbances. Delirium is a reversible condition presenting with altered level of consciousness with a fluctuating course. Catatonia and delirium can have overlapping features which complicates diagnosis. Catatonia is assessed most frequently with the Bush-Francis Catatonia Rating Scale (BFCRS). Two or more features on the BFCRS meet criteria for catatonia. The confusion assessment method (CAM) is used to screen for delirium in acute care settings.

**Case:** A 94 year-old year-old female with history of depression was admitted to the inpatient service with altered mental status. Admission vitals included: BP 195/90, HR 70, and T 36.8. Laboratory work-up was remarkable for a urinalysis with trace blood, leukocytes, and nitrites, and too numerous to count WBC. Ceftriaxone 1 gm was administered. Initial physical exam was remarkable for disorientation to time. Antibiotics were continued during hospitalization. Hospital course was complicated by delirium. On hospital day three, she acutely developed new posturing, staring, waxy flexibility, and mutism. Emergent CT head was negative for acute stroke. She was evaluated by psychiatry and given 1 mg IV Ativan with immediate response. Her BFCRS score prior to Ativan was 21. Patient continued to require benzodiazepines to manage symptoms. She was discharged to a skilled-nursing facility with an Ativan weaning protocol.

**Discussion:** Delirium is highly prevalent in the geriatric population. A recent study by Cuevas-Esteban, et al. (2017) identified delirium (66.7%) to be most frequently associated with catatonia followed by depression (48.6%). However, current DSMV criteria does not define delirium with catatonic features as an individual sub-type. This case demonstrates the importance of appropriate recognition of delirium with catatonic features. Delirium management in the hospital often involves use of high-potency antipsychotics, which can worsen catatonia and even precipitate malignant catatonia. Catatonia is managed with benzodiazepines and severe cases with ECT. Judicious use of benzodiazepines in cases of catatonia can reduce hospital stay and complications.


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**B29**
Using point-of-care ultrasonography (POCUS) to differentiate the cause of hyponatremia in an older adult – a case report
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**Background:** Hyponatremia in the older adult can stem from a variety of causes. Renal, hepatic, hormonal, and cardiac function may decline, effecting the sodium level, just as medications and impaired thirst can do so. In this context, it is often hard to delineate the exact cause of hyponatremia and the role of POCUS remains unclear.

**Methods:** Case report.

**Results:** The patient is a 90-year-old male with a past medical history of hypertension, hyperlipidemia, mild dementia of the Alzheimer type and without any cardiac history who presented for confusion. He was on no medications and appeared euvoletic on exam. Head imaging, EKG and laboratory work-up were unremarkable except for hyponatremia at 12.7 mEq/L. Further work-up including a chest X-ray, TSH, CRP, cortisol, BNP, EKG and troponin were unremarkable. Urine studies showed an inappropriately elevated urine sodium of 152 mEq/L and urine osmolality of 542 mOsm/kg. The 2D Echo showed normal EF. POCUS was performed and the inferior vena cava was enlarged (3.5 cm) with only minimal respiratory variability, a sign of hypervolemia. On this basis, a diagnosis of acute heart failure with preserved ejection fraction (HFpEF) was made, and with diuresis a net output of 5120 ml was achieved over 72 hours, with the sodium level and cognition returning to the prior baseline.

**Conclusion:** It can be challenging to discover the cause of hyponatremia, especially in the older adult. Point-of-care ultrasonography can add important information to the clinical investigation and deserves further evaluation for appropriate clinical applications.

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**B30**
The Silent Scream: Oromandibular Dystonia (OMD)

**Introduction:** Movement disorders (MD) are common in the elderly and have been reported in Parkinson’s Disease, brain and spinal cord injuries, infection, AVMs and medications. Dystonia, a type of MD, has been associated with psychiatric conditions and psychological stressors. OMD, a focal dystonia, is characterized by tonic contractions with involuntary, repetitive, or patterned movements of masticatory, facial, and tongue muscles. The incidence is 68.9/million persons; although rare, it can be distressing, especially for family members. The exact etiology is unknown; metabolic disorders, meds, trauma and psychogenic factors have been named as causative factors.

**Clinical Scenario:** An 89 year old woman in memory care, with a history of depression and essential tremor, developed intermittent episodes when her jaw would remain open. During these episodes she did not appear distressed, had no problem with secretions, was able to take oral meds, but was nonverbal. Staff was unable to passively close her jaw. Initially infrequent, lasting minutes, they
became more frequent, and over several weeks progressed to near daily occurrences with one episode lasting for five hours. OMD was suspected. Depression had been treated for years with Paxil; 3 months earlier she was switched to a more geriatric-friendly SSRI, Lexapro. We considered psychogenic, neurologic and drug effects as potential causes. During the period of worsening symptoms, she had a dental cleaning; dental procedures have been implicated in worsening OMD. With Ativan 0.5 mg prn, both the number and duration of episodes decreased but did not completely remit. She was transitioned from Ativan to scheduled Klonopin 0.25 mg bid and Lexapro was switched back to Paxil. She significantly improved after these changes.

Discussion: This case highlights the importance of prompt recognition of MDs in order to institute appropriate therapy. Of note is that the incidence of drug-induced OMD increases with age and greater exposure to certain medications (TCAs, SSRIs, atypical antipsychotics, and anti-histamines). Paxil, with its higher anticholinergic burden, is typically not recommended for use in geriatrics. As geriatricians, we strive to minimize medication side effects and improve QOL for our patients. However, there are times when no clear harm seems to be done to the patient and the best solution is close observation.

B31 Acute Generalized Exanthematous Pustulosis, a Rare Drug Reaction

Adverse drug reactions (ADR’S) can occur at any age but the elderly are at increased risk of these events because of polypharmacy, co-morbidities, as well as age related changes in pharmacodynamics and pharmacokinetics. ADR’S are broadly divided into types A and B. Type A reactions result from the known pharmacologic property of a drug while Type B reactions cannot be predicted. Type B hypersensitivity reactions are divided into four categories. AGEP is a type IV D drug reaction in which IL–B, GM-CSF (T cells) and neutrophils are involved. We describe a patient with AGEP with shock and multi-organ involvement due to Clindamycin. He had a previous less severe AGEP reaction to Zosyn confirmed by biopsy.

A 71 yo NH resident with A-fib, NIDDM, CKD, and bilateral BKA was diagnosed with cellulitis of his left 3rd digit treated with Clindamycin. After 48 hours he developed an intense morbilliform rash on his body. Clindamycin was the presumed offending drug and discontinued. On the 3rd day he developed fevers, diarrhea, dyspnea, hypotension and rash with pustules. He was transferred to the ER and admitted to the MICU with a diagnosis of septic shock. He had a leukocytosis with WBC of 23.9 K/cu mm. An infectious workup was negative. Chest, abdominal, and pelvic CT revealed reactive lymphadenopathy without other abnormalities. His hospital course was complicated by respiratory failure requiring intubation, AKI resulting in CRRT, GI bleeding due to multiple GI ulcers requiring several transfusions. He was diagnosed with shock due to AGEP and started on triamcinolone ointment and solumedrol with normalization of labs and improvement in clinical status over a 3week period.

AGEP is a rare skin eruption characterized by non-follicular subcorneal sterile pustule formation. It is caused by drugs in approximately 90 percent of cases. It has to be differentiated from Diffuse Reaction with Eosinophilia and Systemic Symptoms (DRESS), Generalized Acute Pustular Psoriasis, S-J syndrome/TEN and Bullous Impetigo. The eruption develops within hours or days of drug exposure and resolves spontaneously in 1-2 weeks after drug discontinuation. During the acute phase, fever, leukocytosis with a neutrophilia are often present. Organ involvement is rare in AGEP, but has been reported in 17% of cases.

B32 Resident Presentation
When the Solution Becomes the Problem: The Dangers of a Prescribing Cascade
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Introduction: Polypharmacy in older adults confers a risk of drug-drug interactions, many of which mimic the organic conditions of aging, leading to a prescribing cascade in which additional drugs are used to treat the adverse effects of existing medications. We present a case of polypharmacy-induced akathisia.

Case Report: Mrs. C, a 69-year-old female nursing home resident, was admitted for hypoxic respiratory failure due to CHF. Medical history included hypertension, hyperlipidemia, COPD, anxiety, and Alzheimer’s dementia. Geriatrics was consulted for delirium. At the time of evaluation, the patient was agitated, repeatedly asking to be repositioned with pleas of “help me, help me.” She was aware of her internal restlessness and felt the need to be in constant motion, yet was attentive and able to be redirected. Collateral history confirmed that this behavior was chronic and had been difficult to treat, resulting in a complex regimen of lorazepam, trazodone, escitalopram, mirtazapine, gabapentin, and olanzapine. Concern arose that her akathisia was related to serotonin excess or mild serotonin syndrome as opposed to an underlying psychiatric illness or hyperactive delirium. Therefore, mirtazapine was weaned off and escitalopram, trazodone, and olanzapine were decreased. Low dose lorazepam was continued to prevent withdrawal. Her akathisia subsequently improved, and the medication changes were communicated to her psychiatrist.

Discussion: Age-related pharmacokinetic and pharmacodynamic changes increase the risk of adverse medication effects in older adults. Akathisia can be an adverse drug effect associated with serotonergic agents, including antipsychotics and antidepressants. It can be mistaken for psychomotor agitation related to delirium or underlying psychiatric illness. Mrs. C was on high doses of four serotonergic agents. Despite all of her medications having the best safety profiles of their class, the combination likely precipitated a mild serotonin syndrome with akathisia as the primary manifestation.

Conclusion: Older patients with comorbidities, psychiatric diagnoses, and multiple prescribing providers are at high risk of polypharmacy and related adverse drug events. Our case highlights the importance of collateral history, medication reconciliation and deprescribing in frail older adults.

B33 Altered Mental Status - A Conundrum in UTI Diagnosis
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The aging population is growing extensively. Our LTC facilities are vital to this growing population. Therefore, more research is being done to achieve the best care for this population. UTI’s are one of the most diagnosed infections in this population, with no clear gold standard to diagnose. In addition, many geriatric patients have dementia, which complicates diagnosis further. Mental status changes are commonly used to diagnose symptomatic UTI’s.

A 103 year old female LTC resident with PMH of a fib on apixaban and prior stroke had made it clear she did not want to return to the hospital or have further diagnostic testing pending future illness. On my arrival at the dining hall to visit her, she was slumped forward in the chair, snoring loudly and unresponsive. She was taken to her bed where she had a SBP of 70 mmHg, had pinpoint, minimally reactive pupils, no obvious focal deficits, and would only withdraw fully to pain.

Consistent with her wishes, she was not sent to the hospital for any further workup. Apixaban was stopped for possibility of a
hemorrhagic stroke. Over a few hours, she slowly regained consciousness, and had severe expressive aphasia and a left facial droop. A few days later, she improved dramatically and was nearly back to baseline. A second physician saw the patient a few days after the incident and checked a UA given the episode of unresponsiveness. No other urinary symptoms were identified. Her urine culture was positive with E.Coli, >100,000 CFU/mL and she was treated with Keflex for ten days.

In the nursing home setting, geriatric patients are inappropriately treated for UTI’s, many of which are asymptomatic. The revised 2012 McGeer’s criteria are an attempt to standardize UTI diagnosis in nursing homes and limit inappropriate use of antibiotics. Mental status changes are a common reason used to treat suspected UTI’s but are not part of the revised McGeer’s criteria. Our patient was treated for likely colonization. Asymptomatic bacteriuria is over treated, and can lead to antibiotic resistance, medication interactions, medication side effects, and increased costs. Using a standardized tool such as McGeer’s criteria is one way to combat this ever-prevalent problem.

**B34**

**OPIOIDS IN THE ELDERLY: HOW MUCH IS TOO MUCH?**

S. Reddy,1 N. Murdock,2,3 J. Ceimo,1 W. J. Nieri.1

Opioids in the elderly: how much is too much? Reconsidering the McGeer's criteria. Asymptomatic bacteriuria is over treated, and can lead to antibiotic resistance, medication interactions, medication side effects, and increased costs. Using a standardized tool such as McGeer’s criteria is one way to combat this ever-prevalent problem.

**Methods:** The study included all opioid prescriptions at discharge from October 1-21, 2016. Department/physician and age were stratified. The opioid dose was calculated, and risk assessment was performed using the Revised Opioid Risk Stratification (ROSORS) score.

**Results:** Of 945 opioid prescriptions written in the investigational period (mean: 45/day) accounted for 24,322 tablets (mean: 1.15/day). Highest prescribers were the emergency department (ED) (371; 39% of scripts). ED also had the lowest tabs/script (17) vs. other departments (32). Subgroup analysis performed on 27 patients (17 with COPD, 10 without) revealed ROSORS scores of 39.3 (37% risk) for those with COPD, 28.3 (14% risk) for those without. New prescriptions (no opioid prescriptions within 30 days prior) were given to 59% of patients with COPD, 40% without (mean MEDs of 52.3mg/day and 70mg/day respectively). Both groups (older age, multiple meds) had high fall risks.

**Conclusions:** In our review, COPD more than doubles respiratory depression or overdose risk. Literature suggests new opioid use in COPD patients may correlate with increased mortality. At our facility, COPD patients have a higher new opioid prescription rate and lower MEDs than non-COPD patients. Reviewers cited limitations calculating ROSORS scores: outpatient visits or reasons for prior hospitalizations not always available in our EMR and MED scores were not visible. To more readily assess opioid risk, EMR-based risk stratification scores with easily accessible, discrete variables is recommended.

**B35**

**Thyroid Storm in the Setting of Newly Diagnosed Graves’ Disease in a Geriatric Patient**

W. C. Nix. Geriatrics, UPMC St. Margaret, Pittsburgh, PA.

**Background:** Thyroid storm is a rare, life-threatening condition that develops in patients with longstanding, untreated hyperthyroidism and it is often precipitated by an acute event. The diagnosis of thyroid storm is based on the presence of severe symptoms in a patient with biochemical evidence of hyperthyroidism.

**Case:** A 78-year-old female with a history of hypertension, CAD and diabetes presented with worsening fatigue, anterior neck pain and palpitations. She also had nausea and weight loss over the last few months. She had abnormal thyroid labs as an outpatient and was awaiting an endocrinology consult. Upon presentation to the ED, patient was found to have a fever of 39.2. She was hypertensive and in atrial flutter with a rate of 148. Physical examination was largely benign though she did have some mild tenderness of her anterior neck. A CMP, CBC and troponin were unremarkable. Her TSH was <0.01. Levels of free T4 and T3 were elevated at 14.4 and 6.7, respectively. Upon admission, patient met criteria for thyroid storm. Initial management included propylthiouracil and hydrocortisone. Metoprolol was also initiated for rate control and she quickly reverted to sinus rhythm. Upon discharge on day 5, propylthiouracil was switched to methimazole. Following discharge, her thyroid peroxidase antibodies and thyroid stimulating immunoglobulins (TSI) were both elevated. Her hyperthyroidism was felt to be secondary to Graves’ disease.

**Discussion:** There are no universally accepted criteria for diagnosing thyroid storm. Although Burch and Wartofsky developed a scoring system in 1993 that is widely used, Parameters include thermoregulatory dysfunction, central nervous system effects, gastrointestinal-hyperacitic dysfunction, cardiovascular dysfunction, heart failure and precipitant history. Generally, for patients with clinical features of thyroid storm, treatment begins with a beta blocker, a thionamide and glucocorticoids. A beta blocker controls the signs and symptoms induced by increased adrenergic tone. Thionamides block new hormone synthesis. Glucocorticoids reduce T4-to-T3 conversion and possibly treat an associated adrenal insufficiency. After symptoms improve, long-term therapy is needed to prevent recurrence. Propylthiouracil is generally switched to methimazole upon discharge because of methimazole’s better safety profile and compliance rates.

**B36**

**Myxedema Coma Secondary to Levothyroxine Noncompliance in a Geriatric Patient**

W. C. Nix. Geriatrics, UPMC St. Margaret, Pittsburgh, PA.

**Background:** Myxedema coma is a rare manifestation of severe hypothyroidism and generally presents with decreased mental status, hypothermia and hypoactivity of multiple organ systems. Older women are most often affected. It is a medical emergency with a high mortality rate, reportedly 30-50%.

**Case:** A 70-year-old female with a history of CAD, hypertension, COPD and hypothyroidism presented with acute onset of shortness of breath earlier in the day. In the ED, patient was afebrile, her heart rate was within normal limits and blood pressure was elevated to 200/80. She was placed on 5L of oxygen for hypoxia. She was noted to have edema of the lower extremities. Chest x-ray and chest CTA both demonstrated bilateral pleural effusions. BNP was elevated at 191. Patient was admitted with concern for CHF vs COPD exacerbation. Her family suspected that she hadn’t take any of her medications in the week prior to admission, including her levothyroxine. She progressively became more somnolent, hypoxic and was hypothermic to 35.2. Her TSH was subsequently found to be elevated to 109, free T4 low at 0.2 and free T3 low at 0.6. She was transferred to the ICU where she eventually required intubation. Echo revealed a preserved ejection fraction though also noted a moderate pericardial effusion. With
Concern for myxedema, IV levothyroxine, liothyronine (Cytomel) and hydrocortisone were initiated. A dopamine infusion was also initiated after she developed intermittent hypotension and bradycardia. Her hemodynamics gradually improved and she was able to be extubated after three days. Hydrocortisone and liothyronine were discontinued and she was transitioned back to her oral levothyroxine dose.

Discussion: Clinical presentation of myxedema coma generally includes neurologic manifestations, hypotenatremia, hypothermia, hypoventilation, hypoglycemia and cardiovascular abnormalities. Treatment consists of thyroid hormone, glucocorticoids and supportive measures. While controversial, a combination of T4 (levothyroxine) and T3 (liothyronine) is typically used rather than T4 alone. Optimal dosing is uncertain. Serum levels of T4 and T3 should be measured every one to two days. Potential risks of rapidly increasing serum thyroid hormone concentrations include myocardial infarction and arrhythmias. With improvement, the patient can be transitioned to oral T4 alone. Glucocorticoids are continued until the possibility of coexisting adrenal insufficiency has been excluded.

B37

Don’t be fooled by the radiating pain! A case of bias in avascular necrosis of the hip.


Background: Although there are at least 10,000 new cases of avascular necrosis (AVN) of the femoral head annually in the United States, many are misdiagnosed. We present a case of an older adult whose radiating right groin and leg pain occurred in the setting of chronic low back pain (CLBP) that was treated for 2 years as radiculopathy. Further exam and imaging were consistent with AVN of his right femoral head. Diagnosis and treatment were delayed by diagnostic biases.

Case: A 71-year-old male with CLBP status post L5-S1 fusion in 2006 and significant alcohol history was referred to the pain clinic with a 2 year history of progressive radiating pain from the right gluteus to the right knee. The pain started suddenly 2 years prior and was initially diagnosed as radiculopathy with spinal imaging showing L5-S1 foraminal stenosis. The patient’s pain continued despite spinal blocks, aquatherapy, and opioids. On exam, pain was elicited on right lower extremity log roll and passive internal rotation of the hip, though not on straight leg raise. A right hip x-ray showed chronic subchondral sclerosis and right femoral head collapse, consistent with avascular necrosis. The patient was referred to orthopedics. He was pain-free for 3 days following an intra-articular right hip injection, and is now being evaluated for a total right hip arthroplasty (TRHA).

Discussion: This case shows two diagnostic biases that delayed the diagnosis of AVN. The first is anchoring, using an initial finding to make subsequent judgments, as the patient was treated based on early spinal imaging. The second is premature closure, failure to consider an alternative after the initial diagnosis, as the patient did not undergo further evaluation for other sources of pain until he was referred to pain clinic. In the setting of groin, leg, and/or gluteal pain, hip disease should be part of the differential. In our patient, AVN was the cause of hip disease, likely related to alcohol use. He was beyond joint preservation surgery aimed at prevention of femoral head collapse given the severity of his x-ray findings, so he is being evaluated for a TRHA. Hip pathology should be considered in the older adult with CLBP and lower extremity pain, especially when it is refractory to spinal pathology-focused treatments.

B38 Resident Presentation, Encore Presentation

Lithium-Induced Neurotoxicity at Therapeutic Range: An Illustrative Case and Literature Review

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Background: Lithium has been successfully used as a mood stabilizer for treatment and prophylaxis of Bipolar disorders. Lithium is known to be neurotoxic at serum levels higher than a certain threshold because of its narrow therapeutic index. However, cases were reported that patients develop neurological symptoms of intoxication even when lithium levels are within therapeutic range, particularly in the geriatric population.

Case presentation: Here we present a case of neurotoxicity induced by Lithium at normal therapeutic range in an elderly patient. A 76 year old patient with Bipolar I disorder on Lithium 300 mg BID, who has been inpatient at a psychiatric hospital for years. He presented with altered mental status and postural instability of unknown etiology. Extensive medical workup at a general medical hospital was inconclusive. Lithium level was 0.71 within “normal range” so his dose remained unchanged. Interestingly, he has been on the same dose for several years. Delirium workup was inconclusive. However, Lithium toxicity was suspected by Neurology consult service, and patient started to improve after withholding medication.

Discussion: Literature review of cases reported with Lithium-induced neurotoxicity in elderly at therapeutic range will be discussed, as well as possible pathophysiology and pathways involved in neurotoxicity. Studies have shown that serum Lithium level does not correlate with brain Lithium level in older adults. Other possible factors associated with lithium induced neurotoxicity include its effects on the antidiuretic hormone, thyroid stimulating hormone, and brain hydration. Previous reports showed a role for Lithium interfering with signal transduction pathways, such as N-methyl-D-aspartate receptor (NMDAR)/nitric oxide (NO) signaling. In addition, the syndrome of irreversible Lithium-effectuated neurotoxicity (SILENT) will be discussed.

Conclusion: The illustrated cases and the literature review highlight the importance of suspecting Lithium neurotoxicity by health care professionals particularly in elderly individuals taking Lithium who develop clinical symptoms, regardless of their blood levels. Discontinuation of Lithium should be considered based on clinical assessment for neurotoxicity, and not on serum level.

B39

Giant Rocks and Marching Music

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Auditory and visual impairment in elders can be associated with greater disability and limitations in physical and cognitive functioning and social interaction. We report a patient who was admitted for delirium after being evicted for paranoid ideation and agitation due to impaired audio-visual abilities.

A 92 year-old WWII veteran with a history of obstructive BPH managed by long-term catheter, coronary artery disease, hypertension, compliant with furosemide and multivitamins, able to walk five to seven miles per day and independent in routine and instrumental activities of daily living, presented to emergency room with agitation and auditory-visual hallucinations after being evicted by his landlord. He complained of hearing marching music and seeing giant rocks instead of people. He was found to be profoundly hard of hearing with non-working hearing aids and had lost his glasses. Head CT scan, blood counts and metabolic panel were normal. He was admitted for delirium secondary to urinary infection, and was treated with
intravenous ceftriaxone. Further work-up for other causes of delirium during two weeks of hospitalization was negative. Following a neurocognitive assessment it was concluded that he did not have decision-making capacity. He was transferred to the Skilled Nursing Facility while awaiting guardianship and placement. After audiological evaluation, he was provided a pocket-talker, which improved communication but required that we write things out that he could not read without glasses. Replacement of his hearing aids and glasses and a great deal of patience with communication resulted in resolution of his symptoms. He was discharged without need of a guardian or facility placement.

Neurosensory impairment in the elderly can cause hallucinations and agitation suggesting geriatric delirium syndrome. Auditory and visual deprivation in our patient resulted in eviction and homelessness, an exhaustive work-up, administration of empiric intravenous antibiotics, hospitalization in an acute facility for two weeks, and being deemed to not have decision-making capacity. Clinicians should be aware of the possibility of neurosensory impairment as a potential differential while evaluating geriatric patients for delirium.

B40
Diagnostic Dilemma of FAST in a Geriatric Trauma Patient

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Background
Focused Assessment with Sonography for Trauma (FAST) is a valuable tool in rapid triage of patients with blunt abdominal trauma (BAT). In hemodynamically unstable patients, it has been used to identify hemoperitoneum and the need for emergent laparotomy. However, the benefit of the diagnostic algorithm using FAST in stable elderly patients is unclear.

Case Description
An 88-year-old man with dementia and stage 4 CKD was brought to the ED after falling from a wheelchair. He was confused and unable to provide history. Physical exam showed bruises over the abdomen which was tender to palpation but no rebound or guarding. FAST was positive for fluid in RUQ. Labs were notable for Cr 3.5mg/dL (baseline 2.1mg/dL). Vital signs remained stable. Per trauma protocol, he underwent CT with contrast, which was negative. He was admitted for further evaluation. During hospitalization, he became anuric with Cr 9.33mg/dL and developed uremic encephalopathy. Following goals of care discussion, hemodialysis was started. Renal function and mental status later improved and he was discharged after 18 days of hospitalization.

Discussion
Trauma protocols using FAST were designed to evaluate high-impact BAT. In contrast, common geriatric traumas are low-impact from ground-level falls which infrequently result in visceral injury. In other words, the prevalence of internal organ injury in the elderly population is lower than younger adults. In addition, geriatric comorbidities may result in false positive FAST. For example, ascites from liver disease, malnutrition, and CHF may be misinterpreted as hemoperitoneum.

In stable patients, CT is often the next step regardless of the FAST result. In the geriatric population with a high prevalence of CKD, this may cause more harm, such as contrast induced nephropathy. Comorbidities should be considered when applying trauma protocols in geriatric patients. Alternative diagnostic routes may be considered with less complications: serial FAST, contrast-enhanced ultrasound, abbreviated MR protocol or close monitoring. Nonetheless, these modalities need further validation.

This case brought up several issues that call for further studies and modifications of current trauma protocols with FAST in the geriatric population. Geriatricians should take the initiative to advocate for and actively participate in comprehensive assessment of elderly trauma patients.

B41
Willie Nelson to the Rescue: The Use of Music with a Dementia Patient in the Outpatient and Emergency Department Settings

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A 61 yo early onset Alzheimer’s disease patient (FAST: 6c) presented to clinic with increased confusion, paranoia, and physical aggression for 2 months. He had refused to come to the clinic and was brought by his wife. He appeared agitated, did not make eye contact, paced and tried to exit the exam room. In an effort to prevent his behavior from escalating, a nurse began to play Willie Nelson songs (patient preference) on her smart phone. Almost immediately, he began to smile, sing along, and dance as he held the phone to his ear. Due to the history of severe physical aggression towards his wife, he was moved to the emergency department (ED) in order to be transferred to an inpatient psychiatric facility. The ED continued to play music for the patient. He remained calm as bloodwork was drawn. Electrolytes, Vitamin B12, and TSH were all normal. UA, UDS, RPR, and HIV were negative. Recent neuroimaging showed no acute insult.

Dementia causes a reduced ability to interpret the environment resulting in anxiety and agitation which often leads to outward anger and aggression. Up to 90% of those suffering dementia will manifest significant behavioral and psychological symptoms (BPSD) over the course of their illness. Several studies have demonstrated that music listening can improve agitation levels in the elderly suffering dementia, especially when individualized to patient preference. However, many of these interventions were in the nursing home and were led by a trained therapist or caregiver; very few were in the hospital and none were in the outpatient or ED setting. The utility of a music playlist provided by minimally trained or untrained personnel or caregivers in the outpatient and ED settings warrants further research. This case illustrates the benefits of music as a successful, non-pharmacologic method for redirection in the outpatient and ED settings. Music represents a relatively convenient, low cost and readily available intervention for BPSD.


B42
Improving nutritional intake and care for older inpatients: a ten-year journey of quality improvement and research in practice

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Background: Malnutrition and poor dietary intake remains a significant problem for older hospital patients. This study monitored dietary intake of older inpatients (65+ years) over a ten-year period as foodservice and mealtime interventions were progressively implemented into routine practice.

Methods: Data were collected on 386 medical inpatients admitted to a large metropolitan Australian hospital in 2007-08 (n=129, 80±8y, 49% male), 2009 (n=139, 80±8y, 45% male), 2013-14 (n=52, 82±8y, 44% male) and 2017 (n=66, 82±8y, 50% male). Interventions focused on ‘assisted mealtimes’, same-day menu, fortified meals and mid-meals, and oral nutritional supplements were progressively implemented from 2009. Energy and protein intake were calculated from visual plate waste of all meals and mid-meals on Day 4-7 of admission. Nutrition care practices were observed and/or recorded.
B43 Geriatric Care Model
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Background: Medicare patients account for over 50% of hospital days at a cost of over $1 trillion per year. Yet, hospitalization of older adults often results in poor outcomes. Our objective was to create an age-friendly care model by integrating geriatric-focused practices into a standard medicine unit at a large tertiary hospital.

Methods: A 40-bed medicine (non-telemetry) unit was designated as the Geriatric Care Model starting June 2017. Initial steps included identification (from the ED by the hospitalist in charge) and cohorting of the target population, which included patients 75 years and older that had a history of or presented with a geriatric syndrome (fall, frailty, pressure ulcer, failure to thrive, dementia and delirium). The Geriatric Care Model consisted of a multidisciplinary team approach and a focus on geriatric best practices. The unit was staffed by non-geriatric trained personnel and did not utilize any additional resources. An ACGME certified Geriatrician-Hospitalist was assigned as the physician lead for the unit but directly cared for up to a quarter of the census. Each day the team (nurse manager, nurses, case managers, social worker, pharmacist, nurse practitioners), led by the geriatrician-hospitalist conducted bedside daily multidisciplinary rounds on all patients on the unit. Daily rounds included a checklist of geriatric-focused best practices including early mobilization, cognitive status, VTE prophylaxis, pain management, history of bowel movement, and a medication review. In addition, brief “tuck-in rounds” were conducted in the afternoon on all patients on the unit to ensure engagement with patients and caregivers.

Results: Preliminary data comparing four months prior to and after initiation of the Geriatric Care Model found: an increase in the percentage of patients over 65 (65% vs. 68%) and 75 (46% vs. 52%) years of age; a decrease in average number of bedrest orders (27.0 vs. 24.5) and time to physical therapy (4.73 vs. 4.22 days); a decrease in the use of benzodiazepines (48.75 vs. 39.25 average per month); and increased physician documentation of delirium (1.0 vs. 9.5 patients/month). While the population on the unit was older, risk adjusted readmission rates remained the same (1.05 vs. 1.02) and mortality decreased (0.38 vs. 0.28).

Conclusion: The Geriatric Care Model highlights an innovative approach to “Geriatricize” a medicine care model without increased resource utilization.
with the CDC design were applied over all publically-available hand sanitizer dispensers. Three observers measured visitor hand hygiene compliance via direct observation in two-hour intervals at high visitor traffic times of day; we defined hand hygiene compliance as use of alcohol-based hand sanitizer or soap and water before entering patient rooms. Microsoft Excel and RStudio were used for all analyses.

Results: 4.4% (n=10) of visitors observed in the pre-intervention period (n=225) used hand sanitizer before entering patient rooms versus 22.1% (n=40) visitors observed during the intervention period (n=181), a statistically significant improvement ($\chi^2=27.3$, $P<0.01$).

Conclusion: A targeted initiative aimed at increasing use of hand sanitizer by visitors improved compliance from 4.4% to 22.1%, a significant but lower than desirable increase. There is a need for further development of effective interventions to increase visitor hand hygiene and reduce the risk of spreading dangerous infections in both hospitals and the community.

B46 Using a Mobile-Technology Tool to Assist Drivers in Conducting Home Wellness Checks


Background: Social determinants (e.g. nutrition, transportation, and housing) have a significant impact on health and wellness. There is an opportunity to leverage meal delivery programs, such as Meals on Wheels (MOW), to proactively identify and address unmet social needs and create partnerships with providers and payers to better support clients. We conducted a pilot study to evaluate the use of a mobile technology tool to assist drivers with client wellness checks during routine meal delivery.

Methods: A process evaluation was conducted over a 6 month period at MOW San Diego County, CA. Drivers were trained to use a mobile application that enables them to submit wellness alerts to gauge drivers’ satisfaction with the tool.

Results: Ninety-one alerts were submitted for 30 clients across wellness categories, with 18 clients experiencing multiple alerts. Alerts were triggered for health (n=31) self-care (n=18), environment (n=14), mobility (n=11), social engagement (n=9), and nutrition (n=7). Upon follow-up, the CN deemed that no referral was needed for 8 clients. Two more clients declined further assistance. A majority of response outcomes included assistance with additional self-care or care management (10), transportation (5), or nutritional needs (2) being addressed. Three alerts resulted in referrals related to elder abuse and one resulted in emergent medical follow up. Focus groups revealed that drivers found the application easy to use. They valued the safety checks as an “important contribution to their meal delivery.”

Conclusion: This project demonstrates the viability of a scalable application that enables drivers to make electronic wellness checks during routine meal delivery. Expansion of this project to a second site in Ohio has begun and client alert data is being collected.

B47 Optimizing Virtual Care to Improve Access and Quality of Care

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Background: Current geriatric care is often delivered in systems that are not optimized to provide specialized care for older adults. Many older patients don’t have access to quality geriatric care services and support. Further, providers have difficulty making a case for their care in systems that reward efficiency in traditional fee for service models. The Centers for Medicare & Medicaid Services (CMS) recognizes Chronic Care Management (CCM) as a critical component of primary care. In 2015, Medicare began paying separately under the Medicare Physician Fee Schedule for CCM services furnished to Medicare patients with multiple chronic conditions. This project discusses how a primary care practice optimizes CCM set up, implementation and optimization.

Methods: Technology and team coming together for optimization of workflow. Integrating technology and finding ways to integrate workflows in the electronic medical record (EMR). Training and implementing processes with staff and clinicians. Identifying and enrolling patients qualified patients. Best practice alerts in the EMR and capturing time for virtual care. Billing and coding from the back end. Reviewing process monthly. Time for reflection to iterate and improvise the process.

Results: CCM processes helped reduce unnecessary face-to-face visits, improved access, increased revenue for virtual care resources and improved time spent on phone calls, refill encounters and secure messaging. It has also impacted patient feedback, virtual care encounters billed and revenue generated. With improving virtual care, our access has improved for new patients from 6 weeks to 1 week and for follow up patients from 30 days to one week. Our same day access has increased for patients with acute changes in condition and new patients who need acute access. Total number of encounters we billed since implementation of CMM and trends over period of time will be shown. Each clinic could hire an additional staff based on the revenue generated from CCM.

Conclusions: Virtual care increased care coordination, satisfied people – patients, caregivers, clinical team and collaborators and revenue from virtual care while decreasing emergency room visits and improving access. It also prevents face to face encounters for non-acute events and management of chronic conditions. Virtual care promotes patient engagement and satisfaction.

B48 Human Flourishing as an Outcome of Integrated Primary Care and Community Based Models of Care


BACKGROUND:

Integrated primary care (PC) and community-based models of care have potential to improve outcomes in frail older adults. Traditional outcome measures focusing on reducing hospitalizations and ER visits, and improving disease management, diminish models that focus on the determinants of health promoted by the CDC: biological, individual health behaviors, environmental, health services, psychological, and social. We evaluated the impact of the Flourish Model (FM), using a Flourish Index to measure improvement in optimal life functioning of rural community-dwelling frail older adults.

METHODS:

A repeated measures design was used to evaluate FM in 6 rural counties, serving 5 PC practices, and using community health navigators (CHNs) and community organizers to connect health care plans with community care plans. The intervention consisted of a geriatric
and environmental assessment completed in the home of the patient, followed by an interdisciplinary case conceptualization meeting where the care plan was designed. The CHN supported the patient in the implementation of the plan and connected them to community resources. The primary outcome was improvement on the Flourish Index that investigated 33 indicators of optimal life functioning, within the limitations of frailty, and framed within the 6 determinants of health.

RESULTS:
The 25 patients had a mean age of 76 and were mostly White females. The majority earned <$1,500 monthly. Nearly half of the patients didn’t have a HS diploma. The most prominent chronic conditions were diabetes, high blood pressure, heart disease, arthritis, dementia, and depression. A repeated measures MANOVA showed significant main effects for time (baseline vs. six months) on improvement in Flourish indicators (F(6,19)=46.9, p=0.001, η²=0.85), specifically biological (F(1)=139.6, p=0.001, η²=0.97), environmental (F(1)=12.1, p=0.002, η²=0.34), health services (F(1)=45.8, p=0.001, η²=0.66), and social (F(1)=102.5, p=0.001, η²=0.81). Individual health behaviors showed a trend (F(1)=3.5, p=0.07, η²=0.13). Psychological determinants did not show a significant change.

CONCLUSION:
The FM showed promising results for frail older adults living in rural areas. The study challenges the limited perspective of traditional health outcome measures and strengthens the need for a holistic approach to integrated care and outcome measurement where all determinants of health are addressed.

B49 Resident Presentation
Increasing Advance Care Planning through a Surgical Optimization Program for Older Adults

Background: Despite best practice guidelines by the American College of Surgeons and the American Geriatric Society that recommend preoperative advance care planning (ACP), this does not often occur. One emerging opportunity to address ACP is through preoperative advance care planning (ACP), this does not often occur. One emerging opportunity to address ACP is through preoperative advance care planning (ACP).

Methods: Patients are referred to the SWP if scheduled for elective surgery and are ≥80 years of age or ≥60 with a geriatric syndrome (e.g., cognitive impairment, weight loss). During the clinic visit, a geriatrician engages patients in ACP discussions and encourages them to designate a surrogate and/or complete or update their advance directive (AD). Following this visit, the SWP utilizes trained medical/nurse practitioner students as health coaches to follow-up on SWP care plans. Using a standardized script, coaches assess and document ACP and address barriers to engagement. ACP engagement was defined by presence of an AD in the medical record, or patient self-report of surrogate designation or AD completion as documented by the geriatrician and health coaches. Descriptive statistics were used to compare ACP engagement before and after completion of the program.

Results: A total of 131 SWP patients were studied from February 2015 to August 2017. Mean age was 75 ± 8.8 years, 56% were female, 70% were white, 33% and 60% had deficits in at least 1 ADL and 1 IADL, respectively. Median time from starting the SWP to surgery was 27 days (IQR 20-48) and median health coach calls per patient was 4 (IQR 2-7). After completion of the program, the number of patients with a designated surrogate increased from 67% to 78% (p=0.007), completed ADs from 51% to 72% (p=0.006), and ADs scanned into the medical record from 14% to 60% (p=0.001).

Conclusion: A local preoperative optimization program for older adults that leveraged patient-provider interactions with a geriatrician and health coaches showed a profound effect on ACP engagement and documented ACP wishes. Preoperative optimization programs may provide a unique opportunity to engage older adults in advance care planning.

B50 Academic Detailing to Reduce Sedative-hypnotic Prescribing to Older Veterans
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Background: Sedative-hypnotics, including benzodiazepines and benzodiazepine receptor agonists, have been identified as potentially inappropriate medications (PIMs) in older adults by the American Geriatric Society 2015 Beers Criteria based on their potential to impair cognitive function and increase the risk of falls and complications in this population. Academic detailing (AD), a face to face educational outreach by trained professionals to other clinicians to encourage evidence based clinical care, has proven to positively impact patient care through deprescribing and/or avoiding PMs.

Methods: An interrupted time series analysis was performed to investigate the impact of individualized AD conducted by trained clinical pharmacy specialists on sedative-hypnotic prescribing by primary care providers (PCPs) to Veterans aged 75 years and older seen in Veterans Integrated Healthcare System (VISN) 7 between February 2016 and October 2017. The number of patients with a new, continual, or discontinued prescription each month for drugs classified of interest was calculated per 1000 patients aged 75 and older prescribed any medication that month by the included PCPs. Prescribing trends were calculated for 18 months before and up to 12 months after the PCP initial AD session. Rates of prescribing of evidence based alternatives for sleep were calculated over the same period.

Results: 131 PCPs in VISN 7 were followed for up to 31 months for their prescribing practice. In the 18 months before AD, the period prevalence of older Veterans with a prescription for any sedative–hypnotic was 84.8 per 1000 population and in the 12 months after AD, this had declined to 67.9 per 1000 (p<0.001). This trend held for benzodiazepines (66.3 versus 53.5 per 1000 population; p<0.001) and benzodiazepine receptor agonists (17.3 versus 15.5 per 1000 population; p<0.001). New starts on sedative-hypnotics declined from a period prevalence of 2.9 to 1.4 per 1000 population (p<0.001) after AD. New starts of safer, alternative medications increased from a prevalence of 3.3 to 4.5 per 1000 population (p=0.002).

Conclusions: AD showed efficacy in reducing the prevalence of sedative-hypnotic prescribing to older Veterans in the primary care setting, and increased use of safer alternative medications for sleep in this population.

B51 Student Presentation
The Impact of Social Vulnerability on Readmission of Hospitalized Older Adults
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Background: Personal relationships, support systems, social engagement, and socioeconomic status can influence overall health. Social vulnerability (SV) describes the impact of these factors on an individual’s susceptibility to adverse health outcomes. Operationalized as a social vulnerability index (SVI), SV has been linked to frailty, cognitive decline, disability, and mortality and thus requires attention in the care of older adults. Previous studies have used various amounts and types of SVI variables, mainly drawing from population-based...
surveys. The goals of this study, however, were to build a clinically operational SVI from clinically derived variables, to test agreement with a proposed conceptual model of SV, and to study the relationship between SV and hospital readmission.

**Methods:** This retrospective cohort study included 214 adult patients (mean [SD] age, 81 [8] years) of inpatient geriatric co-management services. Mean follow-up was 251 days between June 2016 and August 2017. Variables from a standard comprehensive geriatric assessment populated a 7-item clinical SVI (cSVI). Scores range from 0 (no vulnerability) to 1 (highest vulnerability). Principal component analysis (PCA) assessed cSVI agreement with the social ecological model of SV. Kaplan-Meier and Cox proportional hazards models tested the composite outcome of readmission or death.

**Results:** PCA revealed four domains similar to those of the social ecological model of SV, explaining 80% of sample variance. Adjusting for age, gender, frailty, previous admissions, and hospital service, middle quartiles of SV, measured by cSVI, had increased risk of readmission or death (HR =2.02, 95% CI: 1.09-3.73, p=0.0257). The top quartile of cSVI had the lowest risk of readmission or death, while no significant association was observed for the bottom quartile.

**Conclusions:** These results suggest that patients with high SV receive appropriate support post-hospitalization, as opposed to patients with mid-range SV who may require additional attention in discharge planning. The cSVI has potential as a clinical tool for estimating risk of readmission or death in hospitalized older adults. As such, incorporation of cSVI in clinical workflows may help identify vulnerable patients and promote the use of social interventions in geriatric care.

**B52**

**Machine Learning Detection of Cognitive Impairment in Primary Care**

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**Background:** Most older adults receive their health care in primary care settings, and many of those with cognitive impairment go undetected. Improving the capability of primary care to screen for neurocognitive disorders will likely enhance the effects of early interventions on prognosis. For this purpose, we have developed a screening procedure that is highly sensitive to mild cognitive impairment and compatible with the flow of a primary care office visit.

**Method:** We compared the performance of 119 older adults (mean age = 68.5, SD = 13.2), recruited from primary care clinics and the community, on two cognitive screening tests: 1) a very brief (<5min.), self-administered, computerized test of numeric sequencing and 2) the widely used, clinician-administered, Montreal Cognitive Assessment (MoCA).

**Results:** Using 25 computer-recorded features of the sequencing task, we trained a gradient boosted regression trees model to predict MoCA scores. We observed a maximum error of 3.9, a RMSE of 1.3, and a MAPE of 3.7. Our model accounted for approximately 94% of the variance in MoCA scores, based on a leave-one-out validation method. The 90% confidence intervals for single predicted MoCA scores varied between 3 and 4 points (across 42% and 58% of cases, respectively), suggesting a highly informative range for clinical interpretation. Finally, a classification analysis (i.e., across predicted and actual MoCA scores, denoting impairment by a clinical MoCA cutoff score ≤ 26) yielded accuracy, sensitivity and specificity estimates of 0.90, 0.92, and 0.87, respectively.

**Conclusion:** This study demonstrated achievement of strong psychometric properties for cognitive screening with an exceptionally brief task associated with minimal labor and cost. This technology can facilitate community-wide screenings within the challenging constraints of primary care practice, thereby enhancing the potential for preventive gains associated with early detection and intervention.

**B53**

**On Demand Video Content for Rural Caregivers of Veterans with Dementia**

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**Background:** Caregivers of persons with dementia manage multiple complex and challenging issues that can lead to stress, burnout, and poor health outcomes. Caregiver support interventions have been shown to reduce stress and increase caregivers’ ability to provide care at home. For rural caregivers, however, timely access to such information and support can be limited as most caregiver support programs are centralized in urban areas. On-demand educational videos can help meet the need of specialized information.

**Method:** The Veterans Health Administration (VHA) is committed to empower Veterans to meet the challenges of aging, disability, or serious illness through Veteran-centric support. The VHA’s Office of Rural Health (ORH) has developed a Rural Veterans with Dementia Caregiver Video Series to enhance rural caregivers’ skills in managing dementia care. The 30+ video vignettes cover caregiver topics to address challenges of taking care of someone with dementia. The videos provide basic education about a variety of issues including dementia progression, managing difficult behaviors, safety, stress management, and communication skills.

**To improve learning, each video provides a brief dramatization of a common caregiving issue with commentary to reinforce key points. Skills-based videos include dramatizations that demonstrate positive and negative strategies to illustrate effective methods of caregiving. The videos are available for free on ORH’s public website.**

**Results and Conclusions:** Since 2013, the Caregiver Video Series website has had over 34,000 page views. In a 2017 survey of viewers who requested hard copies of the video, 100% of respondents reported that they were very likely (84%) or somewhat likely (16%) to use the skills demonstrated in the videos. These videos are a resource for geriatric providers who work with dementia caregivers, especially those who are living in rural communities.

**B54 Student Presentation**

**PROMIS Physical Function for Older Adults in an ED Setting**


**Background:** Functional status in older adults is a predictor of hospital use and mortality, and offers insight into older adults’ independence and quality of life. The NIH developed the PROMIS Physical Function Question bank to improve and standardize patient-reported outcomes measurements. The PROMIS Physical Function 10-Item Short Form (PROMIS) has yet to be validated for older adults. By comparing PROMIS with the Katz Index of Activities of Daily Living (Katz), we evaluated the validity of PROMIS for measurement of function in an older adult population seen in the ED.

**Methods:** A prospective convenience sample of patients 65 years and older (from 1/1/15 - 6/30/15) completed both the Katz and PROMIS measures while in the ED. To analyze the convergence of the two measurement tools we examined Spearman correlations between PROMIS and Katz; evaluated PROMIS equivalents of conventional thresholds and ranges of physical function on Katz (e.g. minimal, moderate, severe); and used item-response frequency analysis to examine discrepancies between the measures.

**Results:** Overall 357 patients completed baseline surveys. The sample was 50% White, 29% Black, and 17% Hispanic. Mean age...
was 76 years (SD=8); women comprised 57%; and 46% lived alone. PROMIS and Katz have a modest positive correlation (r=0.50, p<0.01). Mean PROMIS scores within Katz scoring ranges for minimal (43, SD=10), moderate (32, SD=7), and severe (24, SD=7) impairment fell within their respective PROMIS scoring ranges (severe=14.1-29, moderate=30-39, mild=40-45), which reflects convergence of PROMIS and Katz scoring thresholds. PROMIS identified impairment in three times as many patients as did the Katz. Discrepancies lay in the inclusion of items concerning vigorous physical function (e.g., running, heavy lifting, walking a mile), which are assessed in PROMIS but not by Katz ADLs. PROMIS identified 95% of patients impaired by with these items but absent in the Katz.

Conclusions: There is modest correlation between the PROMIS and Katz. PROMIS is focused on physical function assessment and may better capture those aspects than Katz. Further research should be conducted for full validation of the PROMIS for use in older adults.

B55 Derivation and Validation of a Hospital-Wide Elective Surgery Delirium Risk Tool (AWOL-S)
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Background: As part of a hospital-wide delirium reduction quality improvement measure, all inpatients at our two affiliated hospitals are screened using the AWOL delirium risk stratification tool. We adapted the AWOL tool for the perioperative setting (AWOL-S), and describe its performance in a broad population of elective surgical inpatients.

Methods: Beginning 12/7/2016, all elective surgical patients underwent two components of the AWOL screen (orientation and spelling “world” backward) in the preoperative holding. Using data collected between 12/7/2016 and 6/15/2017, we derived a logistic regression model predicting postoperative delirium (determined by inpatient nurses using the Nu-DESC or CAM-ICU screen) using five a priori predictors: orientation and “world,” patient age, anesthesiologist-determined illness severity on the American Society of Anesthesiologists physical status scale, and a surgical risk category derived from institutional and NSQIP data. We assessed model performance in a validation cohort of patients from 6/16/2017 – 9/4/2017.

Results: There were 2,503 elective surgical patients admitted overnight in the derivation cohort, with an overall rate of delirium of 4.8%. The logistic model derived in this cohort had an area under the receiver operator characteristic curve (AUC-ROC) of 0.73, indicating moderate discrimination (Fig. 1A). A cutoff of 5% predicted probability of delirium or higher identified patients who later became delirious with sensitivity and specificity of 74.0% and 62.1%, respectively (Fig. 1B). In the derivation cohort of 1,087 patients (5.1% delirious), the AUC-ROC was 0.71, and sensitivity and specificity of the 5% cutoff were 67.3% and 62.2% (Fig. 1A & B). Model performance did not differ between the derivation and validation cohorts.

Conclusions: A 5-component AWOL-S model predicting postoperative delirium was moderately accurate in both the derivation and validation cohorts, and could be applied across a broad range of elective surgical cases.

B56 An initiative to improve early mobilization using medical student education on a geriatrics inpatient service
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Background: Hospitalized geriatric patients are at risk for physical deconditioning and functional decline due to prolonged bed rest. Hospitalized older adults can benefit both physically and psychologically from early mobilization. Our goal was to improve ambulation of hospitalized older adults through a new medical student quality improvement project.

Methods: Fourth year medical students on their 4-week required geriatrics rotation were trained in safe patient ambulation with a 7 minute video made by the Boston Medical Center physical therapy service. Each student was assigned to educate and walk a single patient for 15 minutes. Patients >65 years of age on the inpatient geriatric service at BMC who were able to ambulate at baseline were eligible. Walks were documented in the electronic medical record using a pre-written template including fields for ambulation time, patient report of previous ambulation during his/her hospital stay, and total encounter time. Students also completed a survey to rate their educational experience using a 5 point Likert scale with responses ranging from strongly agree to strongly disagree.

Results: During the first Plan-Do-Study-Act (PDSA) cycle (2 rotations) there were 16 ambulation encounters out of 30 students for a participation rate of 53%. Average ambulation time was 10.9 minutes (average 36 minutes for the total encounter). 43% of patients used an assistive device and 38% required a foreign language interpreter. Education on the benefits of regular ambulation was provided by the students 100% of the time. Only 65% of patients reported previously ambulating during this hospitalization. After the encounter, 85% of patients felt they could ambulate again. There were no falls during student encounters. Students felt confident ambulating geriatric patients independently (4/5), that this was a positive learning experience (4/5), and that the educational material sufficiently prepared them (4.6/5).

Conclusions: This educational program has been well received and showed student confidence in ambulating hospitalized older adults. Next steps include changes in student scheduling to increase student participation rates and number of patient walks and tracking impact on relevant geriatric patient outcomes such as length of stay and rate of discharge to skilled nursing facilities.

B57 Acute Care for the Elderly (ACE): The Impact of Scaling on System and Clinical Outcomes
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Background
ACE units improve outcomes for hospitalized elders by reducing delirium, falls and functional decline, thereby decreasing hospital length of stay (LOS), cost, readmissions and institutional discharges. However, resource limitations and institutional variation can create challenges in the development of full ACE units.

Methods
The Baystate ACE Pilot began in September 2014 on a subset of medical inpatients ≥70 and over with protocols for ambulation, nutrition, and sleep, assessment for delirium and multidisciplinary team (MDT) rounding by a Geriatrics PA, pharmacist, nurses, chaplains and volunteers. The pilot expanded in December 2016 to a 39 bed medical telemetry unit, doubling the number of ACE patients assessed daily. ACE protocols and MDT rounding continued on this larger subset of patients with the same level of resources. To date, 1,679 patients...
have been assessed through the pilot. System outcomes include LOS, readmissions, cost and new skilled nursing facility (SNF) transfers. Clinical outcomes include rates of delirium, falls, restraint and anti-psychotic use.

Results

Initial pilot results (n=357) showed decreased delirium prevalence (20.8% to 15.1%), a 50% reduction in falls (ACE 1.45 falls/1000 patient-days; non-ACE 2.74), 50 fold less restraint use and decreased anti-psychotic use. These clinical successes conferred a decreased LOS (ACE 4.6 days; non-ACE 5.4); reduced readmissions (ACE 13.9%; non-ACE 14.8%); fewer new SNF transfers (ACE 23%) and cost reduction of 23%. Some outcome measures continued to show benefit versus control while others were adversely impacted by the expansion. In Fiscal Year 2017, the pilot (n=842) maintained decreased LOS (ACE 4.5 days; non-ACE 5) and cost reduction of 14%; readmission rates increased (ACE 15.9%; non-ACE 13.3%) as did new transfers to SNF (ACE 26.9%). Delirium incidence rates are likely higher than reported (ACE 13.9%) as assessments for delirium decreased. Falls remained even, and new anti-psychotic use remained less than control (ACE 3.2%; non-ACE 6.2%).

Conclusions

Scaling an ACE pilot, with maintenance of system and clinical benefits, is feasible. Some factors to consider when scaling include: patient census, complexity and triage; staffing constraints, ratios, perceived care burden and morale; physical size of unit and impact on workflow; maintenance of clinical assessment measures, resource allocation and level of institutional support.

B58

A Physician Assistant Led Goals of Care Initiative in an Acute Care for Elders (ACE) Program: Triggered Goals of Care Conversations Clarify Choices and Decrease Costs


Background: Goals of care conversations (GC) enhance patient-centered care, improve QOL, decrease readmissions and lower costs. At Baystate Medical Center (BMC) a review of readmissions from an ACE program revealed at least 30% of patients readmitted within 30 days had unmet palliative care needs; 40% lacked HCPs. A QI initiative was launched to improve advanced care planning.

Methods: The interprofessional ACE team posed the Surprise Question to each patient’s nurse. (“Would you be surprised if this patient died within the next year?”) As staffing and logistics allowed GC were held with patients/families who “screened in.” The Serious Illness Conversation Guide (SICG) was the format used. A geriatrics PA facilitated the GC, documented and communicated results. HCP & MOLST forms were completed and scanned into the EHR. Acute care costs (ACC) for ED, observation and inpatient visits, were supplied by the hospital cost accounting system.

Results: In 16 months 874 ACE patients were evaluated; 508(58%) screened in; 93 (18%) had GC meetings documented and communicated to clinical teams. No patients needed PC consults. ACC in the 3 months post GC admission were on average $957 less than ACC for the 3 months prior to GC (analysis over 12 months and included only those patients living beyond 3 months). Feedback from patients, families, nurses, and physicians was uniformly positive; only 3 patients declined to participate in GC meetings.

Before GC(n=93) After GC (n=93)
HCP in EHR 70(75%) 78 (84%)
MOLST in EHR 19 (20%) 54 (58%)*
Code status change- 25 (27%)
Significant change in treatment plan 36 (39%)

Enrolled in hospice 4 (4%)
Average 3mo ACC (n=39) $9,921 $8,964 ($957 cost savings)*
34/35 new MOLST = DNR/DNI

Conclusions: This novel intervention was feasible, well-accepted, often led to major adjustments in care plans, and led to significant ACC savings. ACE patients, like all acute care patients, are “sicker” in recent years; ACE models must adapt to reflect changing clinical realities. There are not enough PC/geriatricians to discuss GC with all those who could benefit. ACE GC meetings can be led successfully by appropriately trained APs. Access is improved, outcomes are excellent, resources maximized and costs contained compared to formal PC consultation.

B59

The wish to die in elderly nursing home residents

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Background

In aging societies, there is a growing concern about the living conditions of very old people in nursing homes, particularly near the end of their lives. In countries with liberal end-of-life laws like Switzerland, the numbers of assisted suicides by elderly people with chronic illnesses beyond the terminal phase increases. As part of a study funded by the Swiss National Science Foundation in the context of a national program “End of Life” (NRP 67), we aimed to obtain lacking data regarding (i) the prevalence of wish to die (WTD) in elderly nursing home residents, and (ii) the determinants of WTD.

Methods

We conducted a multi-site, cross-sectional study among nursing home residents across the three linguistic regions of Switzerland (French-, Italian- and German-speaking regions). Residents were included if they were over the age of 75 years, possessed decisional capacity and had been admitted to nursing homes 3-10 months before. Participants completed validated scales and semiquantitative questionnaires concerning WTD as well as physical, psychosocial and spiritual distress.

Results

Among 769 residents screened, 336 were eligible and 280 participated in the study. Their median age was 87.5 years, 73% were female, and 61% were widowed. Depending on the assessment instrument, 4-22% of the participants expressed a WTD, with almost all being passive death wishes for death to occur naturally. In bivariate regression analysis, the main determinants of WTD were depressive symptoms, demoralization, anxiety, symptom burden, some specific domains of spiritual distress, and higher age. Residents who had higher degrees of cognitive impairment tended to have lower WTD. In multivariate regression, the remaining predictors for WTD were depressive symptoms, spiritual distress, higher age, demoralization, and antipsychotic medication.

Conclusion

A considerable minority of elderly nursing home residents have passive death wishes with a multifactorial origin. Early detection and adequate management seem to be public health priorities in nursing homes and education of all the members of the care team is crucial.
B60 Deprescribing Benzodiazepines in Hospitalized Seniors Using a Patient-Education Intervention.

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Background: The inappropriate use of benzodiazepines among seniors is common. We aimed to deprescribe or reduce the dosage of benzodiazepines among newly hospitalized seniors using a combination of medication review, patient education material, and patient counselling.

Methods: We implemented a quality improvement protocol from August to October 2017 for patients aged 65 or older and taking one or more benzodiazepines, who were newly admitted to one of 2 units at the Glenrose Rehabilitation Hospital. The intervention involved a structured medication review, provision of written educational material (the EMPOWER brochure – Cara Tannenbaum and Institute Universitaire de Gériatrie de Montréal, 2014) and at least one brief supportive counselling session by the clinical pharmacist or physician. Outcome measures included the number of people consenting to deprescribing and had benzodiazepines deprescribed. Process measures included the number of eligible participants who received the intervention. Balancing measures included the incidence of complications, new benzodiazepine prescriptions, and intervention costs.

Results: All 12 eligible patients consented to benzodiazepine deprescribing. Eleven of them initiated benzodiazepine deprescribing. Six of the 11 (55%) patients had their benzodiazepines discontinued, with the remaining patients achieving greater than 50% dosage reduction. Seven patients (58%) experienced side effects during the deprescribing process, with over half (n=4) experiencing worsening anxiety symptoms. Five of the 12 (42%) patients required benzodiazepine substitute medications.

Conclusion: We were able to deprescribe or decrease the dosage of benzodiazepines in the majority of patients. Using a combination of medication review, patient education, and brief counselling can empower patients, support appropriate benzodiazepine usage, and is well-tolerated and acceptable. Clinicians, however, need to anticipate the management of anxiety, a common side effect.

B61 Development of an Interprofessional Intervention to Improve Functional Status Measurement for Older Adults in Veterans Affairs (VA) Primary Care Clinics

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Background: Understanding the ability to perform activities of daily living (“functional status”) is critical for providing optimal care to older adults. Yet functional status is not routinely assessed in most non-geriatrics primary care settings. We identified barriers and facilitators to routine measurement of functional status in VA primary care clinics and used these findings to develop an interprofessional intervention to improve measurement and use of functional status data.

Methods: We interviewed primary care stakeholders from 7 VA medical centers, including 32 patients and caregivers, 24 primary care providers, 23 nurses, 10 social workers, 18 informatics and performance measurement experts, and 10 health systems leaders. We elicited barriers and facilitators to three aspects of routine measurement: 1) screening and assessment; 2) documentation; and 3) use of data to inform care. We analyzed transcripts using rapid qualitative analysis and used principles of implementation science to translate findings into a pilot intervention.

Results: Barriers and facilitators related to screening and assessment included time pressures, clarity of roles and responsibilities, and assessment mandates; those related to documentation included information technology infrastructure and availability and usability of templates; and those related to the use of data to inform care included the need for a clear connection between measurement and outcomes. In response to these barriers and facilitators, we developed an intervention with both standardized and adaptable components to allow dissemination across varied settings. Standardized components include: 1) annual screening and assessment for older adults’ functional status using a validated instrument; 2) templates for electronic documentation; and 3) suggested referrals within the medical record. Adaptable components include multiple methods for screening and modifiable workflows, education, and implementation strategies.

Conclusion: We developed a multi-component, adaptable, interprofessional intervention for measuring functional status, informed by barriers and facilitators to routine measurement. We will test the feasibility and preliminary effectiveness of this approach in two VA primary care clinics prior to phased national implementation.

B62 Advance Care Planning Group Visits in Primary Care

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Background: Limited awareness of advance care planning (ACP) amongst both care teams and patients, discomfort with the topic, and medical comorbidities leading to competing priorities often create an unfavorable environment for addressing ACP in primary care. In the healthcare safety net, language barriers and low health literacy further undermine efforts to accomplish ACP. We evaluated whether a group visit for ACP could improve knowledge of ACP and support advance directive (AD) completion in English and Spanish-speaking older adults in an LA County Department of Health Services adult primary care clinic.

Methods: We created a novel ACP group visit model in which the primary care provider (PCP) and palliative care-trained social worker (SW) co-facilitate a group visit embedded in the first hour of the PCP’s usual clinic session. We aimed to schedule at least 3 patients for the group visit to match usual clinic productivity. We trained PCPs on group visit facilitation skills and ACP counseling. Providers identified English- or Spanish-speaking patients deemed appropriate for the group visit. Target patients received a description of the session, invitation to bring a guest (caregiver/family), and provided informed consent. Patients and guests completed an anonymous pre- and post-survey to assess ACP knowledge, and AD completion was assessed.

Results: Six ACP group visits were held from July to October 2017, with 19 patients attending (average age=69.5 years). Nine patients and 2 guests attended 4 English sessions, and 10 patients and 3 guests attended 2 Spanish sessions. The average number of patients seen per hour in group visits was 2.71, comparable to the productivity of a standard primary care session. Five patients, 1 Spanish-speaking and 4 English-speaking, reported a clear understanding of ACP prior to the session. 90% of Spanish-speaking patients and 55% of English-speaking patients reported ACP knowledge gains from the session. Seven out of 19 patients (37% overall, 20% of Spanish-speaking and 56% of English-speaking) completed an AD during or after the session.

Conclusion: Our study demonstrates ACP group visits yield ACP knowledge gains and AD completion in vulnerable older adults while maintaining PCP productivity. The ACP group visit is a novel approach to engage primary care teams and patients in ACP and provide higher quality care for the growing population of older adults.
B63 Student Presentation
Validating the Spanish Version of the Evidence-based Stress-Busting Program for Family Caregivers™
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Background: Alzheimer’s disease and related dementias (ADRD) family caregivers experience negative financial, physical, and psychosocial consequences due to chronic stress, isolation, depression, and lack of support. The evidence-based Stress-Busting Program for Family Caregivers™ (SBP) was translated to Spanish and culturally adapted. This study aims to initiate validation of the Spanish-SBP by comparing quality of life measures (depression, perceived stress, and caregiver burden) and saliva biomarkers (flow rate, pH and buffer capacity) in Hispanic and Non-Hispanic ADRD caregivers who complete the 9-week program in the language of their choice.

Methods: Saliva samples and quality of life data (CES-D, PSS, and SCB) were obtained at week 1 and week 9 of the SBP. The program was delivered in 90-minute weekly sessions maintaining a high degree of fidelity with the English-SBP. Baseline data were obtained from 24 participants (mean age: 53.6), 16 completed the program. 58.3% self-identified as Hispanic and 95.8% were female. Post-intervention, the overall salivary pH level was found to be higher (p < 0.0013), and higher for Hispanics than non-Hispanics (p < 0.0220), while depression (CES-D) was lower (p < 0.0005). Non-Hispanics reported more depression (p < 0.0423). The overall subjective burden score (SCB) decreased (p < 0.0430). Pearson correlations showed a negative relationship between CES-D and salivary pH (r = -0.6, p < 0.0080), and expected positive correlations with perceived stress (PSS) (r = 0.34, p < 0.0356), subjective burden (r = 0.493, p < 0.0019), objective burden (r = 0.3835, p < 0.0175) and total burden (SCB) (r = 0.5, p < 0.0014).

Conclusions: Significant differences in quality of life measures and salivary pH were found between baseline and post-intervention, indicating that the Spanish-SBP has a beneficial effect on the caregivers. Continuing the intervention will make validation of the Spanish-SBP stronger for wide dissemination of the program.
B66 Daily Interprofessional Team Rounds on Hospitalist Units Reduces Length of Stay

Background: The 2001 Institute of Medicine Report Crossing the Quality Chasm noted a contributing factor to the “chasm” between evidence-based vs. delivered care is lack of care coordination, and care delivery should occur in team models of care. In fiscal year (FY) 2017, UAB Hospital developed and began implementing daily (Monday-Friday) interprofessional team (IPT) rounds on all medical-surgical units with the goal to ensure all care providers understand the “plan for the day and the plan for the stay.” Length of stay (LOS) is the designated measure of care coordination and efficiency.

Methods: IPT rounds were implemented sequentially on 5 hospitalist units from October 2016 through March 2017. Providers in the IPT rounds include hospitalists, nurses (bedside, unit leaders), and care transitions staff (coordinators, social workers); rehabilitation therapists and pharmacists attend most days. Each provider received training in team goals, member roles, rounds structure/scripting, use of estimated date of discharge for proactive planning, use of whiteboards for communicating goals and discharge date to patients, and processes for addressing barriers to care progression. We present an analysis of overall and Medicare LOS and Case-Mix Index (CMI) adjusted LOS for hospitalist patients discharged from these 5 units pre- (October 2015-September 2016) vs post- (April-October 2017) implementation of the new daily team rounds.

Results: The hospitalist service discharged 6878 inpatients pre- and 4722 inpatients post-implementation of the IPT rounds from their 5 units. Of those discharges, 2830 (41%) pre- and 1996 (42%) post-intervention were Medicare patients. Mean LOS (6.09 ± 8.5 vs 5.39 ± 5.9 days, P<.05) and CMI adjusted LOS (4.84 ± 4.8 vs 4.23 ± 3.7 days, P<.05) for all patients were significantly reduced post-IPT rounds. Medicare patients also experienced reduced LOS (6.00 ± 8.4 vs 5.38 ± 5.9, P<.05) and CMI adjusted LOS (4.20 ± 5.1 vs 4.01 ± 3.8 days, P=.15).

Conclusions: Implementing daily IPT rounds is feasible and improves care efficiency as measured by hospital LOS. UAB has now embedded IPT rounds on 25 medical-surgical services. LOS continues to improve as the IPTs mature.

B67 Student Presentation
Assisted Living Residents with Dementia who are Taking an Antipsychotic Medication: Potential Adverse Medication Effects and Medical Care
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Background: Assisted living residences (ALRs) provide care for more than 835,000 older adults, about 40% of whom have dementia. Recent estimates suggest 27% of AL residents are receiving psychotropic medications to treat behavioral and psychological symptoms of dementia, despite the fact that they are generally contraindicated due to insufficient efficacy and potential serious side effects. Therefore, there is need to examine adverse effects experienced by residents who are receiving these medications, as well as the practitioners who are prescribing the medications and the policies in place to promote optimal prescribing.

Methods: This study is collecting data from 280 ALRs across 7 states. Data derived from the first 78 ALRs across the 7 states included interviews with administrators and healthcare supervisors, chart reviews, and interviews with families of 101 residents with dementia who were taking an antipsychotic. Descriptive statistics and χ² square tests assessed for differences in prescribing and potential medication adverse effects in relation to health care oversight.

Results: On average, AL residents with dementia who were prescribed an antipsychotic had 3.6 (SD 2.3) potential adverse effects; the most common of which was somnolence (88%). Most residents were receiving medical care in the ALR (77%); also, most were receiving care from a physician (83%) rather than a different primary care provider, but few were receiving care by the same medical provider as before their move-in (29%). The majority of ALRs (80%) reported pharmacist reviews being regularly conducted (average per year 5.7, SD 4.7). Nearly 50% of the ALRs had a program/policy for gradual dose reduction.

Conclusions: Potential medication adverse effects are common among AL residents with dementia who are prescribed an antipsychotic, despite the fact that these residents are receiving on-site medical care and pharmacist reviews are being conducted; consequently, there may be cause to better monitor adverse effects. Also, few providers knew the resident before their move-in, suggesting that better continuity of care might reduce potentially inappropriate prescribing.

B68 Development of a Dementia Support Group within a Community Health Center
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Background: Latino caregivers for patients with dementia are less likely to use formal support services. This likely reflects both a lack of culturally competent services (there are no other Spanish caregiver support group in the area) as well as barriers to access presented by language and low health literacy.

Methods: We developed a culturally sensitive, Spanish language caregiver support group at Brightwood Health Center (BHC) to provide education on dementia care and coordination with existing community services.

The team consists of a community outreach worker, a volunteer retired registered nurse and a consulting geriatrician. Team training included the “Habilitation Program” with support from Baystate Health’s Geriatrics Workforce Enhancement Program (GWEP) grant. The Alzheimer’s Association provided facilitator training and ongoing coaching.

Invitation letters were sent to all patients/families with a known diagnosis of dementia within BHC. The primary care teams were notified of the initiative and encouraged to send additional referrals. Telephone calls, reminder letters and use of social media (WhatsApp) have been used for ongoing outreach.

Results: 80 families (63% of the total known patient with dementia at BHC) were contacted by phone and invited to the support group and 25 (31%) attended at least one of the meetings since January 2016. The group meets twice a month. The attendance has ranged from 3-14 caregivers, with an average of 6. 11 caregivers actively use social media to keep connected with the group.

Conclusions: Availability of culturally appropriate resources for caregivers of patients with dementia is limited, especially for non-English speaking caregivers, but even when available the participation is limited.

It takes time to cultivate relationships and develop trust with families and caregivers. This process could be facilitated by leveraging community health centers’ roles within their communities.

Community-based education and support may contribute to culture change by reducing the stigma associated with dementia to a greater extent than one on one counseling could accomplish with minority populations.
In our experience we have found of the most value the participation of high level volunteers. We also find promising the use of social media to disseminate information and keep caregivers engaged.

**B69**

**Patient Engagement Specialists (PES): New Paradigm in the Management of Hospitalized Older Patients with Dementia**

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**Background:** Hospitalization in older adults with dementia is a seminal event that often leads to intrageneric complications and exacerbation of behavioral disturbances. Our study aimed to determine whether an innovative model, using Patient Engagement Specialists (PES) improves care for hospitalized older adults with cognitive impairment who require a higher level of observation.

**Methods:** A one-year retrospective study was conducted of all patients 65 and older admitted to the medicine service requiring a higher level of observation (constant or enhanced observation) due to dementia and/or delirium at a large tertiary hospital. Patients were located either on intervention (PES) or usual care (no PES) unit. Outcome measures included: in-hospital mortality, LOS, presence and duration of constant/enhanced observation and management of behavioral disturbances.

**Results:** Of 1,270 patient admissions requiring constant observation, 712 were in the intervention and 558 on usual care units. There was no difference in patient demographics between intervention and usual care. Patients admitted to the intervention unit had lower in-hospital mortality (1.1 vs. 3.8%, p=0.03) and decreased LOS (4.9 vs. 5.9 days, p=0.002). Patients were significantly less likely to be placed under either constant observation or enhanced observation (12.1 vs. 46.4%, p=0.001 and 20.1 vs. 79.9%, p<0.001, respectively). Patients on the intervention unit were less likely to have an order for benzodiazepines (25.8 vs. 37.1%, p<0.001), NPO (29.1 vs. 39.4%, p=0.001), bedrest (16.7 vs. 25.4%, p<0.001), antipsychotics (42.0 vs. 57.0%, p<0.001), and restraints (2.9 vs. 7.9%, p<0.001), respectively.

**Conclusion:** The need to develop interventions for cost-effective, sustainable hospital “sitter” models is imperative to prevent harmful outcomes and to ensure quality care, dignity and respect for this vulnerable population and their caregivers. The PES model may offer a new paradigm in the management of hospitalized older patients with cognitive impairment and behavioral disturbance.

**B70**

**Non-Adherence to Geriatric-Focused Practices in Older ICU Survivors**


**Background** Over half of all patients admitted to the ICU are older adults. The aging population, along with advances in Critical Care Medicine, has led to a growing cohort of older adult ICU survivors. Yet, older ICU survivors often experience poor outcomes post-hospitalization and decreased quality of life. Our study aimed to investigate critical care provider practices with regard to geriatric-focused indicators in older ICU survivors.

**Methods** A one-year retrospective study was conducted of all patients 65 and older admitted to the medical ICU and subsequently transferred to the medicine service. Data was extracted from electronic medical records. Geriatric-focused practices were defined by a combination of the PAD guidelines, ABCDEF bundle, and general evidence-based geriatric indicators. Non-adherence to geriatric-focused practices (delirium screening, early mobilization and nutrition, as well as avoidance of restraints, indwelling bladder catheters, and potentially inappropriate medications, PIMs) and associated clinical outcomes (hospital acquired pressure ulcers, length of stay, LOS, discharge disposition, and 30-day readmissions) was measured.

**Results** 179 patients (average age 80.5) met inclusion criteria. Non-adherence to geriatric-focused practices including NPO (p=0.004), exposure to benzodiazepines (p=0.007), and use of restraints (p=0.001), were associated with longer ICU LOS, while NPO (p=0.002) and use of restraints (p<0.008) were significantly associated with longer hospital LOS. Bladder catheters were associated with hospital acquired pressure ulcers and discharge to rehab (OR=8.9, 95% CI: 1.2-67.9 and OR=8.9, 95% CI: 1.2-67.9, respectively). NPO orders and restraints were also associated with an increase in 30-day readmission (OR=3.2, 95% CI: 1.2-8.0 and OR=2.8, 95% CI: 1.4-5.8, respectively). Although 95% of ICU patients had at least one CAM-ICU, with overall 2,334 CAM-ICU documentations, only 3.4% had a positive CAM-ICU; 54.6% of these assessments were inaccurate.

**Conclusion** As the population continues to age at unprecedented rates, ICU providers will be tasked with caring for growing numbers of critically ill older adults. While initiatives have increased awareness to these challenges, there is still a wide gap in the implementation of geriatric-focused practices in the ICU setting.

**B71**

**A Nursing-Driven Inpatient Early Mobility Program**

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**Background:** Up to 65% of hospitalized elderly who could ambulate independently prior to admission will lose some of their mobility during their hospital stay. Functional decline occurs as early as day 2 of hospitalization. (1) Loss of mobility results in a longer hospital stay, increased morbidity and mortality, increased fall risk, and an increased likelihood of discharge to a skilled nursing facility (SNF). (2) There is a paucity of literature on successful nursing-driven inpatient early mobility programs on a medical-surgical unit. In order to promote early mobility at our hospital, nursing leadership has developed such a program.

**Methodology:** Setting: Medical-surgical telemetry unit within our 468-bed tertiary care referral hospital. Participants: Floor nurses on the unit. **Timeframe:** June 2017 to present. **Interventions:** 1) RNs are trained to do level of cognition and mobility screen on every patient at time of admission. 2) RN then recommends PT/OT consult if indicated and not ordered by provider. Conversely, RN recommends discontinuing PT/OT consult if ordered and not indicated. 3) RN develops and writes a daily mobility care plan on the patient’s whiteboard by their bed. 4) RN charts the patient’s observed activity level each shift.

**Results:** Each month RN’s consistently had a high rate of documenting patient activity level: 95-99% for June to October 2017. For all encounters during that same period, the percentage of patients on bedrest decreased (29.5 to 18.1, p<0.0001); the percentage of patients ambulating increased (22.8 to 27.7, p=0.06); the percentage of patients engaged in any activity (other than ambulation) increased (47.8 to 54.2, p=0.03). **Conclusion:** The program is successful in decreasing the number of patients undergoing bedrest during their stay, but a more aggressive mobility program is needed to move more patients from “other” activity level to “ambulating”. Further study is needed to ascertain if promoting early mobility results in desired outcomes of decreased length of hospital stay and decreased frequency of discharge to SNF’s.

“Prevalence and outcomes of low mobility in hospitalized older adults”, Journal of the American Geriatric Society, 52(8),1263-1270.

**B72**
Adaptation of the Hospital Elder Life Program and Impact on Delirium and Healthcare Costs in an Academic Community Hospital


**Background:** Delirium is the acute onset of confusion that is multifactorial and leads to increased morbidity, mortality, and healthcare costs. The Hospital Elder Life Program (HELP) is a well-validated program aimed at preventing delirium in hospitalized older adults. An adaptation of HELP, which included a formal internship program, was implemented in an academic community hospital, and its impact on delirium, length of stay (LOS), and healthcare cost-savings was evaluated.

**Methods:** Patients age 70+ on HELP units were visited multiple times daily by trained volunteers and HELP staff. A key adaptation of the HELP model was the addition of a formal internship, which increased staffing capabilities without increasing costs. Volunteer interventions were related to cognitive/social stimulation, feeding/hydration, and mobility. Delirium was assessed using the Confusion Assessment Method. Pre-intervention data were collected for 3 months prior to the initiation of HELP, and over the next 18 months HELP was implemented on 4 units. Variables were compared using a t-test, Mann-Whitney U test, chi-squared test, or Fisher’s exact test, as appropriate. Univariate and multivariate logistic regression analyses were performed to determine the effect of HELP on delirium rate.

**Results:** 1,673 patients received HELP interventions with the support of the interns (as compared to the usual staffing model, which could serve approximately 375 patients). A subset of patients meeting inclusion criteria was analyzed. Delirium rate decreased from 24.0% in the pre-intervention group (n=96) to 4.8% in the intervention group (n=377, p<0.001). Inpatient-days with delirium decreased from 15.9% in the pre-intervention group to 2.4% in the intervention group (p=0.001). LOS decreased from 4 days to 3 days with the intervention (p<0.001). Some baseline characteristics differed between groups. Reduced delirium risk due to HELP maintained statistical significance in the multivariate analysis (adjusted odds ratio=0.22, 95% confidence interval 0.10-0.48, p<0.001). An estimated $1.8 million dollars were saved as a result of HELP in year one.

**Conclusions:** HELP was successfully adapted and implemented in an academic community hospital and was associated with a reduction in delirium rate, LOS, and healthcare costs. The internship model allowed for a greater number of patients to benefit from the interventions of HELP.

**B73**
Address-Level Clinical Data Maps for Population Health Management of Homebound Older Adults

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**Background:** Population Health Management (PHM) demands new tactics for providing health care, including proactive management through risk stratification; intervention coordination; accountability for outcomes across settings; and meaningful use of clinical, claims, and public data. Homebound older adults are a high-risk sub-population who need care brought to them in a short time frame, as they often have difficulty self-advocating. This cannot be done effectively without address-level mapping. While there are many examples of zone-level maps, such as those used in public health and epidemiology, we were unable to find examples in the medical literature of address-level maps of homebound older adults for PHM. Our goal is to create exploratory address-level maps that can be layered with clinical information and public data to plan interventions for homebound older adults.

**Methods:** Our setting was a transitional house calls program serving older adults with geriatric syndromes, many with recent hospitalizations. We used mapping software to identify patients in need of intervention based on overlaid information from the electronic health record and publicly available data. We added jitter to patient addresses for confidentiality. By consensus, we selected and categorized scenarios where mapping could most inform interventions.

**Results:** In each of 6 maps, we demonstrate a scenario where geographic location and distribution inform the intervention for a subpopulation. Two map types, exposure or resource availability, can be overlaid. Exposure maps (with examples) include: The loss of structural support (power outage); a hazard area (toxic spill); and a weather-related disaster (flood). Resource maps identify deserts or facilitate intervention coordination (pharmacy availability, locations of churches for group education). We find that a layer of clinical information is critical to the map’s ability to inform interventions.

**Conclusions:** We were able to create address-level maps, layered with clinical information and public data that should improve the ability to provide PHM. A next step would be to test if address-level maps change PHM.

**B74**
You’ve Got Mail: Using Technology to Promote Advance Care Planning

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**Background**
Advance directive (AD) completion rates are 5 to 25% nationwide in the general population. Barriers to AD completion, as well as possible interventions, have been widely studied, but the optimal way to reach and motivate patients to participate in the advance care planning process (ACP) is not known. This quality improvement intervention utilized secure electronic messaging to provide “just in time” learning to patients prior to their scheduled appointment as a method of prompting participation in the ACP process.

**Methods**
The study was conducted from November 2016 through January 2017. Patients were included for randomization if they were aged 65 or older, did not have an AD on file, had access to our institution’s secure patient electronic messaging system, and had a scheduled appointment with their primary care provider during the intervention period. The intervention arm received a personalized message within 2 weeks prior to their appointment. The electronic message included a link to a workbook that provided guidance through each step of the ACP process, a motivational video, and a state-specific AD form with instructions on how to return the document once completed. The primary outcome was the completion and return of an AD within 5 months following the intervention.

**Results**
The intervention group had 112 subjects (54% female) with a mean age of 72.7 ± 6.5 years. The control group had 271 subjects (57% female) with a mean age of 73.2 ± 6.8 years. In the intervention group, 15% completed an AD vs. 4.8% (p-value 0.0006) in the control group. Eighty-six percent of subjects in the intervention group opened the secure message. There were no statistically significant differences in the baseline characteristics between the two groups.
Conclusions
This study revealed that among patients aged 65 years and older, sending a personalized electronic message with motivational prompts and electronic resources on AD prior to a scheduled appointment increased the rate of AD completion when compared to usual care. These findings suggest that this valuable communication tool allows providers to target specific at-risk populations, and it is cost-efficient and sustainable once automated.

B75
Acute Care for Elders (ACE) Program Lowers New Antipsychotic Prescription Rate

Background: Little evidence supports the use of APs in patients (pts) with dementia or delirium. They pose real risks; reducing AP use is an AGS “Choosing Wisely” recommendation. ACE units improve outcomes for hospitalized elders; they lower cost and length of stay, decrease readmissions, reduce falls and delirium and increase discharges to the community. ACE units focus on improving prescribing but the authors failed to locate data reporting their impact on the rate of new AP prescriptions and set out to address this gap in the literature.

Methods: In 2014 Baystate Med. Center began a pilot ACE program which expanded with support from the Geriatric Workforce Enhancement Program(GWEP). ACE eligibility = medical patients admitted via the Emerg. Dept., ≥70 yrs old, no advanced dementia or primarily end of life needs. Daily the ACE team recorded all pts receiving a new AP (not a continuation of home medications.) Eligible pts on other units served as controls for outcomes such as length of stay and cost. The pharmacy reported which non-ACE pts had received AP drugs. A retrospective chart review for a single non-ACE unit between Nov. 2016 and Sept. 2017 determined which APs were newly prescribed. Rates, specific AP drugs chosen and number of doses given were recorded; results for the ACE and control pts were compared.

Results: *6.2% of non-ACE pts (n=691) and 3.2% of ACE pts (n=879) received new APs *APs used were similar; quetiapine was most frequent; ACE= 50% of 166 doses; non-ACE=59.9% of 167 doses; followed by haloperidol (ACE=19.3%, non-ACE=24.8%), then risperidone and olanzapine *Median doses given=3 for ACE (range=1-38) and 2 for non-ACE (range=1-17) *14.0% of non-ACE pts received ≥2 distinct APs compared with 33.3% of ACE pts

Conclusions: The lower ACE rate of new AP use may reflect better socialization, lower delirium rates, improved prescribing, early mobilization, skilled staff or an adjusted environment. The higher ACE use of multiple AP doses and agents is concerning. The ACE team may have managed/prevented milder cases of agitation so that pts receiving APs were more distressed than their non-ACE peers. In any event, the ACE program cut the number of older pts receiving new APs in half. The authors believe this is the first report documenting an association between an ACE program and a lower rate of AP drug initiation.

B76
Incorporating End of Life (EOL) Beds Into an Acute Care for Elders (ACE) Program

Background: ACE programs improve outcomes for hospitalized elders. Older patients have become “sicker” and many are nearing the end of life but there have been few formal efforts to integrate palliative care into ACE units. We report on an initiative dedicating EOL beds on a unit with an ACE program.

Methods: Baystate Medical Center (BMC) launched an ACE program on a medical unit in late 2014. It decreased length of stay, costs, falls, inappropriate prescribing and restraints. In December 2016 the program moved to a dedicated 39-bed unit. At the time an average of 5 adult BMC patients daily were “comfort care” and expected to die in the hospital. They were scattered throughout BMC with no specific team or site of care assigned. Five beds on the new unit were set aside for EOL to meet this need and enhance the palliative care skills and knowledge of the “ACE” caregivers. Most but not all of the EOL patients were older adults.

Results: Between Jan. – Sept. 2017, 373 patients were admitted to the EOL beds; 83.4% were true “comfort” patients (311/373); 62 patients were admitted for other reasons (no other beds available, needed single rooms for isolation, etc.). In hospital mortality for the true EOL patients was high at 83.4% (235/311 patients). One patient was transferred to another unit and 76 were discharged to home or nursing homes (often with hospice). EOL bed occupancy averaged 85.3% (1164/1365 possible bed days.) At first, some unit staff found it stressful to care for so many dying patients. A working group developed protocols, a palliative NP provided ongoing education and weekly debriefing and support sessions were launched. The EOL bed program now is well accepted by hospitalists, nursing staff, the emergency department and the bed placement team.

Conclusions: The authors believe this is the first report of an ACE unit which includes EOL beds. Financial and logistic pressures make it challenging to dedicate beds in many hospitals. Fortunately, these EOL beds were used consistently by appropriate patients and provided a more peaceful and private setting at EOL. This project built palliative care experience and skills on a floor providing ACE care and represents a novel approach to combining geriatrics and palliative care. Future analyses should assess impact on cost, symptom burden and patient/ family satisfaction.

B77
Resident Presentation
Fall Prevention Program – Stopping Elderly Accidents, Deaths and Injuries (STEADI) Providence
St Vincent Medical Center Maureen Bruns MD, Lan Ban MD, Tom Chau MD
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Background
Falls cause serious injuries and rank among the most expensive medical conditions. In response, the CDC developed the Older Adult Fall Prevention Program – Stopping Elderly Accidents, Deaths and Injuries (STEADI) which screens patients with a standardized questionnaire and suggests interventions for high risk patients (STEADI score ≥ 4). Our experience implementing an adaptation of STEADI is described.

Methods
Providence St. Vincent is a community residency clinic utilizing the Epic medical record system. The STEADI questionnaire and fall risk intervention were built into the workflow for Medicare patients, age 65 or older, coming for Annual Wellness Visits (AWV). Patients were given a paper questionnaire upon arrival to their visit and medical assistants were trained to perform orthostatic vital signs and foot exams on patients scoring 4 or higher, per STEADI guidelines. Residents were taught at a noon conference to use an Epic smartphrases (falriskplan) on these high risk patients to test through modifiable interventions, e.g. high risk medications, exercise, vitamin D, etc. Patients also received a brochure via a smartphrases (t4fallbrochure) in the After Visit Summary with community resources and fall prevention tips.

The primary endpoint was frequency of intervention on high risk patients as assessed by utilization of the .falriskplan smartphrase on patients with STEADI ≥ 4. Secondary endpoints were frequency of
 provision of the fall brochure and assessment of orthostatic vitals and foot exams.  

**Results**

643 eligible patients completed AWVs over an 11-month period. 182 patients had STEADI ≥ 4 (28%) and this proportion was roughly constant from month-to-month. At baseline, 34% of these high risk patients had fallriskplan documented which improved to 64% at the end of the study period. Provision of fall brochures improved from 1% to 62%, orthostatic vitals from 1% to 74%, and foot exams from 10% to 40%.

**Conclusions**

Adapting workflows within an electronic medical record system, teamwork with medical assistants, and physician education can greatly increase screening of elderly patients for fall risk and prompt further interventions to reduce falls.

**B78 Transitions & Transitions: A Continuous QI Initiative Over Multiple Fellowship Years**


**Geriatric Medicine, University of North Carolina, Chapel Hill, NC.**

**Background:** Quality improvement (QI) to improve systems based practices for older adults is included in the Geriatric Fellowship Milestones, but it is difficult for fellows to complete QI projects in a year. To address this, the UNC Geriatrics Fellowship created a QI initiative spanning multiple academic years to prompt fellows to think beyond one project to true process improvement and sustainability.

**Methods:** In year one, fellows saw a need to improve assessment and documentation of function, cognition, and advance care planning on the inpatient unit. Interventions were admission and discharge note templates and didactics for housestaff. Fellows performed chart review to assess documentation, measured improvements, and wrote a proposal for future QI cycles for the next fellow cohort.

In year two, fellows examined improvements in performance and documentation of geriatric assessments and identified readmission rates as a target outcome. As documented geriatric assessments contain information that can reduce readmissions, they revised the discharge template to include a geriatric assessment summary and pharmacy-led medication reconciliation. Fellows perform root cause analysis on 30-day readmissions and interview post-acute care providers to seek further improvements in transitional care.

**Results:** Data in year one demonstrate improvements in documentation of geriatric assessments at discharge. Rates of at least minimum documentation in all domains (function, cognition, and advance care planning) rose from 0% to 94%. Year two data collection is ongoing. In year one interviews, fellows noted that the continuous nature of the project helped them to scale the project to a manageable scope, and to think about next steps.

**Conclusion:** Despite its inclusion as a fellowship milestone, QI can be a challenge to fellows, who have only a year to complete a project, and often are not present to ensure sustainability. Development of a continuous QI initiative lets fellows design projects that can be extended beyond one project to true process improvement and sustainability. Initiative spanning multiple academic years to prompt fellows to think about project scalability.

**B79 Sliding scale insulin (SSI) use and hypoglycemic effects in a Veterans Affairs Medical Center (VAMC) Community Living Center (CLC)**

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**Background:** While diabetes prevalence has increased, the growth has disproportionately affected older adults. As patients transition from the community to acute care and assisted living centers, diabetic medication adjustment is warranted. Research has shown adverse effects of sliding scale insulin (SSI), but it continues to be prescribed in long term care facilities. The goal of this project was to determine the use of SSI and associated hypoglycemic effects in one Veterans Affairs Medical Center (VAMC) Community Living Center (CLC).

**Methods:** This was a retrospective, observational quality improvement project evaluating the use of SSI in patients admitted to the CLC. The primary outcome was prevalence of hypoglycemic events associated with SSI. Patients were included if they were ≥65 years of age and were ordered SSI between July 1 and September 30, 2016. Prior to this evaluation, providers selected SSI from an order set which included five different dosing algorithms based on a patient’s blood glucose and the units of insulin administered. Providers could also opt to edit any of the existing algorithms. In addition to the SSI selected, demographics, order details including order origin, concomitant medications, and hypoglycemic events were collected.

**Results:** Forty-one patients were included with 45 different SSI orders evaluated. Most SSI orders (82.2%) were continued from the inpatient admission; only 8 regimens were started in the CLC. The low dose algorithm was the most prescribed regimen (33.3%) while the high dose algorithm was prescribed in 3 cases (6.7%). Provider-specific regimens were utilized in 13 cases (28.9%). Hypoglycemic events occurred in 20 cases where SSI was prescribed (44.4%). Rates of hypoglycemia were most common in the high dose algorithm (66.7%) and provider specific regimens (50%) when compared to the incidence of regimen prescribing.

**Conclusion:** Due to incidence of hypoglycemic events, the SSI order set in the CLC was limited to the less aggressive regimen. Additionally, pharmacists provided nursing continuing education which included symptoms of hypoglycemia, steps to resolve events, and appropriate documentation. Finally, pharmacists were encouraged to recommend discontinuing SSI as appropriate in this population. An evaluation comparing pre- and post-implementation of the changes is scheduled for Fall 2018.

**B80 Resident Presentation Balancing Utility and Feasibility in a Geriatric Surgery Quality Program: The Alpha Pilot**

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**Background:** The Coalition for Quality in Geriatric Surgery (CQGS), currently in development at the American College of Surgeons (ACS), aims to systematically improve the surgical care of older adults by establishing a verifiable quality improvement program with standards based on best evidence. The Alpha Pilot was designed to evaluate the utility and feasibility of a draft set of 103 standards divided into 7 content areas.

**Methods:** 20 hospitals were invited to complete a survey to determine which standards were already in place and for those that were not, how difficult it would be to implement on a 5-point Likert scale (1-very easy, 5-very difficult). Standards were designated “widely implemented” if ≥ 11 hospitals reported baseline implementation, and “difficult to implement” if ≥ 6 hospitals rated the standard as such. A debrief call was then conducted to gather qualitative information about each hospital’s survey results.

**Results:** 15 hospitals agreed to enroll (75%). Of the 103 standards, 29 (28%) were “widely implemented” at baseline, and 35 (34%) were rated “difficult to implement”. The survey results grouped by content area are shown in Table 1. During the debrief calls, hospitals
agreed that the standards would improve care, but that it would be too difficult to fulfill 103 standards across each surgical service.

**Conclusion:** About 1/3 of the standards were rated difficult to implement and may therefore put too much burden on hospitals to adopt. Others that were rated as easy to implement were not yet in place. This information will be used to define a final set of standards that will meaningfully improve care and have wide implementation across hospital systems.

### Table 1: Widely implemented and difficult to implement standards grouped by content area

<table>
<thead>
<tr>
<th>Alpha Standards Content Area</th>
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<tr>
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<tr>
<td>Patient Outcomes and Follow-Up (n=77)</td>
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### B81
**Minding the bone: Measuring the opportunity for improved osteoporosis treatment after hip fracture at an academic medical center**

M. Gilliam,1 D. Emmett.2 1. Center for Aging and Health, University of North Carolina, Chapel Hill, NC; 2. Center for Aging and Health, University of North Carolina, Chapel Hill, NC.

**BACKGROUND:** History of fragility fracture is a leading risk factor for future fracture. Although vitamin D and osteoporosis medications can reduce fracture rates in high-risk patients, rates of osteoporosis treatment following hip fracture are low. We examined the rate of osteoporosis diagnosis and treatment among patients presenting to our hospital system for hip fracture repair, in preparation for a quality improvement initiative.

**METHODS:** Using electronic health record filtering software, we identified all 355 adult patients admitted to our health care system in 2016 with a CPT code corresponding to hip fracture repair. We excluded patients with non-fragility fractures, advanced renal disease, and those discharged with hospice care. We reviewed individual charts to determine rates of diagnosis of osteoporosis and prescription of vitamin D or antiresorptive or anabolic osteoporosis medication at the time of hospital discharge and at 6 months following discharge.

**RESULTS:** 237 patients met inclusion criteria. 77 (32%) of these patients were male, 211 (89%) were above the age of 65, and 87 (37%) were above the age of 85. Of these patients, 22 (9%) had a diagnosis of osteoporosis noted on their hospital discharge summaries, 134 (57%) were prescribed vitamin D, and 12 (5%) were prescribed an osteoporosis medication. 65 patients followed up with a primary care provider at our hospital system within 6 months of hospital discharge. Of these 65 patients, at the 6-month mark, 33 (50%) had an active diagnosis of osteoporosis, 52 (80%) had a prescription for vitamin D, and 15 (20%) had a prescription for or recent infusion of an osteoporosis drug.

**CONCLUSIONS:** Rates of osteoporosis treatment in post-hip fracture patients at our health care system are low, and may represent “low-hanging fruit” for a quality improvement initiative. This initiative, a form of fracture liaison service, will attempt to improve the recognition of osteoporosis among hospital providers and patients with new fragility fractures, and support primary care providers in treating appropriate patients.

### B82
**Health Optimization Program for Elders (HOPE) – Improving Transitions from Hospital to Skilled Nursing Facility**

M. L. Krol, C. Allen, N. Setji, A. J. Graham, M. Jenkins, T. Shepherd, W. English, H. White. Duke University Hospital, Durham, NC.

**Background:** Care transitions from hospitals to skilled nursing facilities (SNFs) are hampered by inadequate patient preparation for rehabilitation and insufficient communication between providers, increasing risk for adverse outcomes and rehospitalization. HOPE is designed to optimize the transition from hospital to SNF via inpatient consultation and post-discharge SNF follow-up by an Advanced Practice Provider (APP).

**Methods:** An APP evaluated each inpatient HOPE consult to identify and treat geriatric syndromes, set patient/caregiver expectations for SNF care, assess rehabilitation potential, clarify contingency plans if rehabilitation goals are unmet, and discuss goals of care. Post-discharge follow-up was conducted by the APP via phone or a SNF visit. On follow-up, an APP reviewed and discussed high risk/new medications, rehabilitation participation, and appointments/labs/hospital recommendations with SNF clinical staff. The study compared readmission rates for Medicine/Surgery patients in Duke University Hospital with and without HOPE consultation who were 55 years or older and discharged to SNF between August 2016 – August 2017.

**Results:** A total of 1,245 non-HOPE and 193 HOPE patients were included in the evaluation. The 7, 14, and 30-day readmission rates for HOPE patients were 5.9%, 8.6%, and 12.8% respectively, compared to 5.4%, 10.9%, and 19.3% in the comparison group. There was a statistically significant 33% reduction in 30-day readmissions, despite older age and longer hospital stay in the HOPE group. A review of 158 HOPE patients showed 39% were on opioids, 11% on antipsychotics and 8% on benzodiazepines prior to hospital discharge. The HOPE APP identified errors or near misses in 7% of patients during SNF follow-up and made recommendations in 80% of the encounters.

**Conclusion:** An APP driven consultation with a SNF follow-up model is an effective means of improving care transitions in higher risk older adults. This model provides opportunities for improved communication, identification of errors during care transitions, and reduction in readmissions.

### B83
**Isolated Hip Fracture Process Improvement at a Tertiary-Care Medical Center**

M. Komeylian,1 E. Hommel,2 D. Grimm-Mapp,3 D. Nagaraja,4 J. C. Hagedorn.1 1. Geriatric Medicine, University of Texas Medical Branch, League City, TX; 2. Geriatric Medicine, University of Texas Medical Branch, Galveston, TX; 3. Trauma Services, University of Texas Medical Branch, Galveston, TX; 4. Geriatric Medicine, University of Texas Medical Branch, Galveston, TX; 5. Orthopedics Surgery, University of Texas Medical Branch, Galveston, TX.

**Introduction:** Hip fracture is one of the most serious consequences of falls in the elderly, with high rates of immediate and long-term morbidity and mortality. These complications can be reduced by minimizing delays to surgical treatment. An interdisciplinary approach in caring for patients with hip fractures has been proven to improve outcomes. Following assembly of an expert team, care bundles were implemented to accelerate surgical repair while simultaneously reducing perioperative complications and length of stay for geriatric patients with isolated hip fractures.

**Methods:** In 2014, 73% of our isolated hip fracture patients received operative fixation within the recommended 48 hours of presentation, while peer benchmark was 88%. Baseline perioperative complications as reported to the Trauma Quality Improvement Program (TQIP) measured at 12% (expected 6%). An isolated hip
fracture group consisting of trauma services, orthopedics, geriatrics, and anesthesiology was convened. Patient placement algorithms were drafted and geriatric assessment tools along with order sets were implemented. Extensive faculty and resident education was provided.

Results: Six months following implementation, the goal of 88% to OR in 48 hours was met. Positive results were sustained throughout 2016 (94% to OR before 48 hours) and again in 2017 (96% to OR before 48 hours). Length of stay was simultaneously reduced from baseline median of 6 days to current median of 5 days. In-hospital mortality improved from baseline 5% to 3.2% post-implementation.

Conclusion: This project demonstrates the effectiveness of multidisciplinary collaboration by standardization of care and focused education. We observed reduced mortality, reduced time to OR, and reduced LOS for patients with isolated hip fractures. Health system prioritization, multi-disciplinary collaboration, and implementation of evidence based practice were critical to project success. Targeted interventions are still needed to address complications, specifically, post-operative ICU care needs. This comprehensive approach can be applied to all tertiary-care medical centers.

B84 Impact Analysis of a Home Based Primary Care Program (HBPC) Next Generation ACO (NGACO) Model
N. Jamshid, C. Cawthon, C. Rubin. Medicine, UT Southwestern Medical Center, Dallas, TX.

Background: HBPC programs may reduce health care utilization and cost. We compared the effect of our HBPC program versus standard care (SC) on health system utilization for NGACO patients.

Methods: Comparison of HBPC patients in the Care of the Vulnerable Elderly (COVE) program with SC, using NGACO Medicare Fee-For-Service claims data. COVE patients (n=60) were compared to SC patients (n=1141) with Risk Score adjustment. Inclusion criteria: age 65 and over, minimum 2 chronic conditions and homebound status. Impact analysis performed at 180 days after enrollment in COVE. Sub-group analysis in patients who would be eligible for Independence at home (IAH) demonstration project which include hospitalization/SNF admission, at least two chronic conditions and impairment in minimum 2 personal care activities. Outcome Measures included health care system utilization, Medicare Costs, and Mortality.

Results: Majority of patients were female, mean age >80. During the 180 days’ post COVE enrollment, patients showed a 43.7% reduction in Emergency department (ED) visits, 4.6% reduction in hospital admission, 100% reduction in readmission and 53.8% reduction in Skilled nursing facility (SNF) spending compared to SC patients. An increase in home health (HH) spending of 7% and a 200% increase in home hospice spending was noted for COVE patients. Twenty-nine of 60 COVE patients qualified for IAH. This sub-group had an even larger reduction in utilization. IAH eligible patients showed a 76.3% reduction in ED visits, 40.1% reduction in hospital admission, 100.0% reduction in readmissions, with a 5.8% increase in HH spending compared to SC. SNF spending was reduced by 55.2% and hospice spending increased by 137.6% in IAH vs SC. No deaths were reported for the COVE patients at 180 days after enrollment, whereas the mortality rate for the non-house call patients was 6.5%. Risk adjusted cost-analysis showed an annualized estimated dollar saving of $20,937 for cases.

Conclusion: This pilot data shows that HBPC may reduce health care utilization and health care spending compared to SC provided to frail older adults enrolled in a NGACO. Data interpretation is limited due to small sample size and duration of time in program. However, if cost reductions are confirmed with larger case numbers and duration, further program analysis will be required to assess which elements and factors are responsible for reduction in cost and health care utilization.

B85 Encore Presentation
Identifying Frailty Using the Electronic Medical Record within a Medicare Accountable Care Organization
N. M. Pajewski, K. Lenoir, B. J. Wells, J. Williamson, K. E. Callahan. 1. Biostatistical Sciences, Wake Forest School of Medicine, Winston-Salem, NC; 2. CTSI, Wake Forest SoM, Winston-Salem, NC; 3. Internal Medicine, Wake Forest SoM, Winston-Salem, NC.

Background. Recent evidence suggests that frail and pre-frail older adults may benefit from targeted interventions, and that frailty itself may be reversible. Despite the existence of several validated definitions, measures of frailty have not been consistently incorporated into primary care. Based on the model of deficit accumulation, investigators in England have developed an Electronic Medical Record (EMR) frailty index (eFI) for the National Health Service. However, there is no measure of frailty, including the eFI, that has yet been adapted for routine use in the US.

Methods. We extracted encounter, diagnosis code, laboratory, and medication data from the EMR for 7,935 patients (≥59 years of age) in our Medicare Shared Savings Plan Accountable Care Organization (MSSP-ACO). We used a 2 year look-back period to estimate an adapted eFI (46 total deficits), and examined the association of the eFI with incident events over the following year.

Results. The cohort was 57.8% female, 86.3% white, with a mean age of 76.5 (SD:6.9) years. The eFI could be calculated for 6,689 (84.3%) of MSSP-ACO patients. Of these, 16.1%, 51.5%, and 32.4% were classified as fit (eFI≤0.10), pre-frail (0.10<eFI≤0.21), or frail (eFI>0.21), respectively. Accounting for age, sex, race/ethnicity and comorbidity (Charlson Score), the eFI was an independent predictor of all-cause mortality (Explained Relative Risk = 7.6%). Allowing for the competing risk of death, patients classified as frail (compared to fit patients) exhibited increased risk for emergency department visits (Relative Risk (RR)=1.85, 95% CI: 1.47 to 2.32), inpatient hospitalizations (RR=1.82, 95% CI: 1.34 to 2.47), and infectious falls (RR=1.75, 95% CI: 0.38 to 7.99).

Conclusion. Our results indicate that EMR data captured during routine primary care can identify frail and at-risk older adults. While further work is needed to refine and validate the eFI, incorporating functional data from Medicare Annual Wellness Visits, implementation of the eFI could facilitate the identification of subgroups of older patients at risk for the negative health consequences of frailty, for whom health systems may target care coordination and other resources.

B86 Vitamin D Replacement in Geriatric Fracture Pathway Patients
N. Natrajan, F. Franklin. 1. Reproductive Endocrinologists, Augusta, GA; 2. Geriatrics, Palmetto Health, Columbia, SC.

Background.
Fall related fractures are a major contributor to Geriatric morbidity and mortality. Vitamin D replacement decreases fall risk and improves fracture healing in this population. The Geriatric Fracture Pathway (GFP) at Palmetto Health is a co-management team between Geriatrics and Orthopedics created to improve outcomes. The objectives of this study are to utilize provider education and increased Geriatric Fracture Liaison (GFL) involvement in management to improve Vitamin D prescribing patterns.

Methods.
A pilot cross-sectional study was done to determine the proportion of patients admitted to the GFP with appropriate Vitamin D replacement. Retrospective chart review on 83 patients over 4 months determined baseline prescribing patterns. Badge cards, work room signs, and a lecture outlining Vitamin D guidelines were given to Orthopedic residents. Repeat chart review was completed on 39 patients over 1.5 months. The GFL began managing Vitamin D and
the PowerPlan was updated. Repeat chart review was completed on 59 patients over 2 months. All analyses are descriptive.

**Results:**
Baseline data showed 23% of all patients received appropriate Vitamin D replacement and 37% of patients who needed Vitamin D did not receive it. After Orthopedic provider education, 38% of patients received appropriate dosing and 20% were not prescribed any Vitamin D when indicated. After increased GFL involvement and updating the PowerPlan, 78% of patients were appropriately dosed and only 10% of patients did not receive Vitamin D when indicated. The GFL did not see 15% of patients, including the 10% who did not receive Vitamin D when indicated. Of the 50 patients seen by the GFL, 6% were incorrectly dosed during the first week of the intervention and all individuals were dosed appropriately after that.

**Discussion:** Initially, most GFP patients were not given appropriate doses of Vitamin D. After orthopedic provider education, only a modest improvement was seen. Geriatric management of Vitamin D replacement resulted in significant improvement in prescribing patterns with 94% of patients seen by the GFL receiving appropriate doses after the second intervention. These findings suggest that Geriatric co-management teams are an effective way to improve orthopedic patient care and meet quality measures. Additional analyses on follow-up patient adherence, recurrent fall and fracture rates, and follow-up vitamin D levels are of interest for future studies.

**B87 Student Presentation**
**The Effectiveness of a Quality Improvement Project for Advance Care Planning among Older Adults**
1. Geriatric Medicine, Johns Hopkins University School of Medicine, Baltimore, MD; 2. Johns Hopkins Bayview Medical Center, Baltimore, MD; 3. Johns Hopkins Community Physicians, Frederick, MD; 4. Johns Hopkins Community Physicians, Baltimore, MD.

**Background:** Advance Care Planning (ACP) documentation has been shown to increase compliance with patient preferences, improve quality of end-of-life care for the patient and family, and reduce costs of end-of-life care without increasing mortality. However, studies on barriers to ACP note a need to routinely incorporate ACP in the clinic, with a particular emphasis on interventions that integrate ACP into time pressured clinic workflows. The purpose of this study is to determine the ability of a Quality Improvement (QI) project focused on clinic workflow to increase rates of: (1) ACP documentation by ≥ 60% among patients 65 years or older, and (2) correct placement of the advance directive in the electronic medical record.

**Methods:** The ACP workflow improvement changes outlined by the QI project were implemented in a primary care practice over a three-month period from January to March 2016. We conducted a cross-sectional chart review with a pre-post analysis of 500 randomly selected charts, with 250 each before and after implementation of the QI project.

**Results:** Overall, any ACP documentation (including Living Will, Health Care Agent/Power of Attorney, and/or 5 Wishes) increased from 11.6% before implementation of the workflow changes to 27.2% after implementation, representing a greater than 60% increase. MOLST documentation increased from 3.6% to 44% after the workflow changes were implemented, representing one of the largest improvements. Although overall, the percentage of charts with incorrectly placed documentation or documentation without dates was small, we did not find a decrease in these factors compared to charts from the pre-implementation period.

**Conclusion:** The QI project increased rates of ACP documentation and most documents (>90%) were entered correctly as outlined by the clinic workflow, but improvement may still be made to decrease the percentage of missing or incorrectly placed documents. This data presents encouraging results supporting implementation of the clinic workflow outlined by the QI project to other primary care sites in order to address barriers to ACP documentation.

**B88 Withdrawn**

**B89 Older Adults’ Use of Medical Marijuana for Chronic Pain: A Multi-Site Community-Based Survey**

**Background:** Since 1996, 29 states have legalized the use of Medical Marijuana (MM) for a variety of conditions, including chronic pain. Our study sought to explore MM use for chronic pain in community-residing older adults.

**Methods:** We distributed a 20-question anonymous on-line survey through two MM dispensaries (New York and Minnesota) to MM-certified patients. Chi-square or Fisher’s exact, as appropriate, was used for categorical, and Kruskal-Wallis for continuous variables. Recruitment was implemented using social media and newsletter requesting participation for subjects aged 65 years or older.

**Results:** In the 138 surveys collected, median age was 61-70 years (35%) with 54% female. Most (45%) used vaporized oil, followed by pill (28%), and oil (17%) forms; 21% took MM daily, 23% twice/day, and 39% more than twice/day. MM was recommended by a doctor (46%), family/friend (24%), other health care provider (6%) or “other” (24%), often identified as patients themselves. Of interest, 91% of patients recommend MM to others. When asked how much did side effects from medications affect your daily activities?” prior to and one month after starting MM, average scores decreased from 9.0 to 5.6 respectively (range: 0-10, p<0.01). When asked “how much did side effects from medications affect your daily activities?” prior to and one month after starting MM, average scores decreased from 6.9 to 3.5 (0=not at all, 10=extremely, p<0.01). Furthermore, when asked if patients were able to “decrease other painkillers” one month after starting MM, 18% reported “moderately decreased”, 20% “extremely decreased” and 27% “discontinued completely.” The majority of respondents provided positive comments (56%), while negative comments (36%) focused on out-of-pocket costs, and insurance coverage. With regard to age, older patients recommended MM less often than younger (86% vs 100% respectively, p=0.07). They also experienced reduction in painkillers less often than younger patients (64% vs 93%, p=0.21).

**Conclusion:** The benefits of MM in the older adult include both an overall decrease in pain as well as a reduction in analgesic use. In addition, MM is well tolerated and readily accepted. Health care practitioners should consider including MM in their pain management armamentarium, particularly as this option could provide a much-needed and timely alternative for opiate-sparing therapeutic strategies.

**B90 Reducing UTI Rates in the Nursing Home with a Standardized Checklist**
Q. Chau, Geriatric Fellowship program, Florida Hospital, Winter Park, FL.

**Background:** Asymptomatic bacteriuria is common in the elderly population and is found at high rates in institutionalized individuals. A urinalysis is often requested by family or nursing staff in the nursing home for residents without symptoms suspicious for UTI. These abnormal UA results often lead to overtreatment of antibiotics putting residents at risk for developing resistant bacteria. The aim of the study was to reduce UTI facility rates from 13.0% to 6.0% by the end of 2017 by implementing a standardized UTI checklist.

**Methods:** A UTI checklist was created which asked who requested the UA and what symptoms the resident had. Suspected UTI
cases in the nursing home were first reviewed using the UTI checklist. Nurses and doctors were then educated about the need to observe and properly hydrate the resident first before obtaining orders for antibiotic treatment for patients with nonspecific symptoms. Periodic CNA education was held on basic peri care, scheduled toileting program and proper specimen collecting techniques. Rates of UTIs were compared before and after intervention.

Results: Through educating physicians, nurses and CNAs about risks of treating asymptomatic bacteriuria and implementing a standardized checklist for review of symptoms prior to ordering UTI, UTI rates decreased to 2.5% as of October 2017.

Conclusions: Over-treatment of asymptomatic bacteriuria is a common in the elderly population. Frequently a urinalysis is ordered despite the patient not having symptoms consistent with a UTI. By implementing a standardized protocol for ordering UAs, we were able to significantly reduce the rates of UAs ordered and UTIs in the nursing facility.

B91 Student Presentation
C-TraC Boston: Cost-Saving Transitional Care Program for High-Risk Veterans with CHF or COPD

Background: To address high rates of readmission for elderly veterans with COPD and CHF, we implemented Coordinated Transitions of Care (C-TraC), a nurse-driven, telephone-based, transitional care program, and used implementation theory-based techniques to adapt the program to Boston.

Methods: Veterans admitted to the medical service at VA Boston were eligible if they were ≥ 65, had a history of CHF and/or COPD, were going to be discharged directly home, and either lived alone, had cognitive impairment (CI), or a previous admission in the last year. Those < 65 with CI were also eligible. Participants received intensified, protocolized phone-based care coordination for up to 30 days post-discharge. Historical reference subjects who met eligibility criteria were matched to cases 3:1 on age, discharge diagnosis, and VA’s Care Assessment Needs (CAN) score for risk of 90 day hospital admission. Odds ratios (OR) and 95% confidence intervals for risk of readmission and outpatient acute care use were calculated using logistic regression and adjusted for multiple predictors of readmission.

Results: Between March 1, 2016 and May 1, 2017, 299 patients with a mean age of 75 were enrolled. We excluded 26 patients who did not meet entry criteria, leaving 273 for analysis. After matching, C-TraC participants had the same age and discharge diagnoses as controls, but still had higher mean CAN scores (p < 0.001), longer lengths of stay (LOS; p = 0.0001), more ICU stays (p = 0.0001), and more admissions in the prior year (p = 0.35). Despite these higher risks, C-TraC participants had fewer 30-day readmissions (15.8% vs. 21.0%) and accessed acute care less often (22.0% vs. 23.4%) than the 819 matched reference subjects. In the fully adjusted models, C-TraC participants were 54% less likely to be readmitted (OR 0.46 (0.24-0.88)) and 36% less likely to access acute care (OR 0.64 (0.34-1.21)) within 30 days. C-TraC saved 86 bed days of care over one year, resulting in $303,800 in cost avoidance, more than covering the operations costs of the program. Additional cost analyses are ongoing.

Conclusions: The C-TraC program is easily adaptable to a large urban VA medical center and is not only financially sustainable, but cost saving.

B92 Importance of Patient Reported Outcomes of Physical Function in Very Old Heart Failure Patients

Background: Advances in psychometric testing and in technology increasingly allow for real-time assessment of patient-reported outcomes (PRO). Whether increasing age leads to adaptation to limitations stemming from chronic heart failure (HF) is not known.

Objective: Our aim was to determine whether disease-specific and generic health-related quality of life (hrQOL) scores are consistent across patients of different age groups.

Methods: hrQOL was assessed using a disease-specific 12-question Kansas City Cardiomyopathy Questionnaire (KCCQ-12), the generic visual analogue scale (VAS) and the Patient-Reported Outcomes Measurement Information System (PROMIS) scale in the domains of physical function, fatigue, depression, and satisfaction with social roles and activities. We standardized scores to equate the standard deviations of each scale within the study population, and examined the scores in 4 age cohorts: 35-50, 50-65, 65-80 and >80 years. We applied linear transformations to standardize each QOL outcome so that each standardized outcome had a mean of 0 and a standard deviation of 10 within our study population.

Results: The study population consisted of 874 patients ≥35 years of age who completed the all 3 assessments. The distribution of scores in the 4 age cohorts was similar between the disease-specific KCCQ-12 instrument, VAS, and 3 out of 4 PROMIS domains. The PROMIS domain of physical function was significantly lower in the >80 years cohort (p < 0.0001).

Conclusions: Both the disease-specific and the generic PROs resulted in a similar distribution of scores across 4 age cohorts. These findings suggest that PROs provide valuable information in HF patients of different age groups, including the geriatric population. It is important to obtain specific information on physical function in very old HF patients.

B93 Establishing an Advance Care Planning Protocol at Stanford Senior Care Clinic
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Background: Advance care planning (ACP) decreases the burden of undesired medical treatments and cost of care at the end of life. Few studies have addressed the most effective way to complete ACP documentation in a clinic setting. Stanford Senior Care Clinic analyzed barriers and facilitators to documenting ACP and developed a standard workflow to conduct ACP conversations and complete Physician Orders for Life-Sustaining Treatment (POLST) or Advance Directive (AD) forms.

Methods: Clinic medical assistants (MAs), a social worker, a clinical nurse specialist, and physicians utilized an A3 model of quality improvement to identify barriers to ACP documentation and propose
countermeasures. We then developed a team-based workflow for documentation of ACP in the electronic health record (EHR). We analyzed the rates of ACP documentation over the following 8 months, defined as having ACP conversations recorded in the Problem List or a scanned AD or POLST in the EHR.

Results:
In October 2016, 44% of patients had EHR documentation of ACP. After implementation of the workflow, this rate increased to 84% in June 2017. Top barriers to ACP included not enough time for discussion if a patient had multiple medical issues to discuss, patients’ unwillingness to complete the forms due to religious or cultural beliefs, language barriers, difficult-to-understand legal terminology and strong language in the AD form, difficulty finding witnesses or having the document notarized, and insufficient utilization of the social worker in the process. Of the countermeasures that were tested, the most effective were developing a protocol that included MAs to normalize the process for all patients, reminders about ACP documentation at every visit, and a monthly EHR report identifying patients still needing ACP.

Conclusions:
Systematically addressing barriers to ACP in a clinic setting facilitates increased rates of ACP documentation in the EHR. ACP documentation continues to be a priority for our clinic, and future goals include maintaining the workflow, disseminating the practice to other outpatient clinics, and specifically increasing the rates of scanning POLST and AD forms into the EHR.

B94
Insights: Bringing Evidence-based Psychotherapy Home
S. Borson,1 A. Korpak,1 P. Carbajal-Madrid,2 D. Likar,2 R. Batra.3

Background: We successfully implemented evidence-based psychotherapy (EBT) at home by specifically trained LCSW and LMFT therapists, as a SCAN community benefit to seniors and informal caregivers of older adults. Clients are enrolled in 1 of 3 EBT models and exit the program after acute treatment or an optional maintenance phase. Here we report outcomes in the first 2 years of program operations and identify program simplifications that may foster Insights’ scalability and systematic spread.

Methods: We collected data on referrals and client characteristics, EBT assignment (CBT, IPT, or PEARLS; based on presenting needs), progress through the program, number of visits, and outcomes, including depression (PHQ9), anxiety (Geriatric Anxiety Scale, GAS), everyday function (HODAS), quality of life (Q-LES-Q), and patient activation (PAM). We interviewed staff to gauge program satisfaction and elicit potential improvements.

Results: 322 individuals (60% of those screened) were assigned to EBT and 41 dropped out before starting treatment. So far 150 have completed therapy (CBT 57%, IPT 36%, PEARLS 6%) and 61 completed both therapy and maintenance (overall mean number of sessions, 15.1 [sd 8.1]). Participants’ mean age was 68.3 (11.2), 25% were men, and 21% were caregivers; therapy was provided in English (62%), Spanish (37%), and Korean or Vietnamese (1%). Barriers to primary care were reported by 42% (7% uninsured) and to mental health services by 84% (access 69%, language 19%, insurance limits 17%). Primary mood outcomes (baseline to end of acute treatment) did not differ by race, ethnicity, language, gender, caregiver status, or EBT model; overall, PHQ-9 scores decreased from 11.3 to 5 (p<0.001) and GAS 11.9 to 6.3 (p<0.001). Q-L-Q, WHODAS (cognition, activity, and community participation domains), and PAM (n=58) also improved significantly (all p<0.001). No added improvement was observed during maintenance. Program staff identified referral engagement, measurement burden, staff roles, and dropping the maintenance phase as foci for future program refinement.

Conclusion: EBT delivered at home to diverse older adults and caregivers can overcome barriers to mental health treatment and achieve improvements in symptoms and function similar to those observed in randomized controlled trials. Simple program modifications could foster scaling and broad dissemination of the Insights model.
status, and Charlson comorbidity index were evaluated. Changes in vital signs and cardiac rhythm during the procedure, and procedure-related complications in the immediate post-procedure period were recorded. ANCOVA models were used with frailty status, ASA score, or Charlson comorbidity score as independent variables (adjusted with age, BMI, and gender), and total adverse outcomes (during, and immediately after the procedure) as the dependent variable.

Ninety-nine adults (mean age: 62.8, range: 50-87 years) were recruited, among which 49 (49%, mean age: 60.8±7.8) were non-frail and 50 (51%, mean age: 64.8±9.2) were pre-frail/frail; 50 (51%) were female. Overall, 60% of participants experienced ≥1 acute adverse events with a total of 109 (with ~85% during and ~15% following colonoscopy). The most commonly observed adverse events were hypotension (systolic <90 mmHg) in 33 patients, hypertension (systolic >180 mmHg) in 17, and tachycardia (HR>100) in 10, all during colonoscopy, with all other adverse events observed in ≤7 subjects. Only frailty status was significantly associated with total outcomes (p=0.01; mean values of 0.7±0.9 for non-frail vs 1.5±1.7 for pre-frail/frail). Comorbidity score, age, and ASA status did not predict colonoscopy outcomes (p>0.51).

Frailty status, when compared to age, ASA status, and comorbidity score, better predicts complications among older adults undergoing colonoscopy. Routine frailty status screening of older adults should be carefully considered for risk stratification, as risks of colonoscopy can exceed potential benefits.

B97 Encore Presentation: Reducing Hospital Length of Stay (LOS) through the activities of an Interdisciplinary Team

U. Ohuabunwa.1,2 J. Emory University, Atlanta, GA; 2. Grady Hospital, Atlanta, GA.

Background: Reducing hospital LOS is a major focus of healthcare organizations. Older adults are often prone to prolonged LOS due to hazards of hospitalization. Implementation of care processes to reduce LOS are critical to reducing hospital expenditure and improving patient outcomes.

Methods

Project Setting - 953 bed academically affiliated safety net hospital.

Participants- Older adults 75yrs and older or patients 65 years and older identified to have 1 or more geriatric syndromes.

Procedure - All patients who met criteria were admitted to the ACE Service run by an interdisciplinary team constituting of a Geriatrician, Nurse Practitioner, Pharmacist, Dietitian, Case Management/ Social Work, Nursing Staff, Rehab personnel including PT, OT, ST. Team members reviewed patients with recommendations for patient care with a focus on cognition, mood, functional status, nutrition, medication safety, skin care, transitions of care, A team of volunteers conducted activities to help preserve cognition and functional status. Community Health Workers provided support with patient care transitions.

Results

For the primary outcome, there was a significant reduction in hospital length of stay from 7.61 to 5.85 days, consistent for the period (7/7/16 – 2/26/17) and post-implementation (2/28/17 – 9/30/17) for patients 65 years and older admitted as an inpatient. The primary outcome was dosing agreement with the new CPOE changes. Statistical analysis was conducted using Chi-square analysis.

Results: The dosing agreement for all 14 medications combined in the post-implementation period (85.3%, 1109/1299 orders) statistically significantly improved compared to the dosing agreement in the pre-implementation period (82.5%, 1229/1489 orders); p=0.04. When analyzing change in dosing agreement for each of the individual 14 medications, there was a statistically significant improvement in dosing agreement for cyclobenzaprine in the post-implementation period (77.3%, 58/75 orders), compared to the pre-implementation period (55.2%, 53/96 orders); p=0.002. Change in dosing agreement for each of the remaining 13 medications individually did not reach statistical significance.

Conclusion: The implementation of geriatric guided prescribing CPOE changes resulted in an increase in the prescribing of recommended geriatric dosing for high-risk medications in the inpatient setting. Additional order entry changes should be implemented for other potentially inappropriate medications, and in other settings of care.

B99 Deprescribing in Hospitalized Elderly Comfort Care Patients


Background: Clinicians seldom review medications (meds) for patients (pts) at end of life (EOL), when goals of care have changed & therapeutic benefit may be minimal. Deprescribing is the process of tapering or withdrawing unnecessary meds. Providers may be reluctant to deprescribe for multiple reasons (e.g., harming the patient,
create patient/family dissatisfaction). Studies have shown the need of provider education around deprescribing. Deprescribing at EOL has many benefits: reduce pill burden for pts, reduce caregiver time spent on nonessential treatment, decrease polypharmacy/ADEs, help transition comfort care pts to hospice, & decrease costs (labor; time; materials).

Methods: Retrospective chart review (Apr-Sept 2017) in 500-bed community teaching hospital caring for diverse patient population. Subjects were pts receiving comfort care. Data was collected from start of comfort care until discharge. Outcome measures included rate of actual meds deprescribed, rate of meds that had potential for being deprescribed, & estimated cost savings. Table 1 lists meds used in the analysis. Category A are meds recommended to be deprescribed based on hospice practice standards. Category B are meds that could potentially be deprescribed based on patient’s condition & inability to take oral meds.

Results: Among the 188 comfort care pts (103 or 55% female, 85 or 45% male, average age 79.5, range 38 - 98), 164 meds were deprescribed (Category A, 78% and Category B, 10%) while 243 meds could potentially have been deprescribed (Category A 63% and Category B, 33%). Cost savings was $6200 for both deprescribed & potentially deprescribed meds; this did not include material & professional time for Nursing & Pharmacy.

Conclusions: Unlike hospice, meds review & deprescribing for hospitalized comfort care pts is not routine. We found missed opportunities for deprescribing. Our results demonstrate the need for provider education on the need for & benefits of deprescribing, & development/implementation of a protocol. This intervention will align pts’ goals of care with a medically appropriate plan.

<table>
<thead>
<tr>
<th>Category A (Recommended for Deprescribing)</th>
<th>Category B (Potential Specific)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preventive Meds (DVT prophylaxis, antipruritics, hemostatic agents, vasoressins, albumin, antihypertensives)</td>
<td>Antihypertensives</td>
</tr>
<tr>
<td>Hematology/Onco (Chemotherapy, cytotoxic agents, colony-stimulating factors)</td>
<td>Anti-inflammation</td>
</tr>
<tr>
<td>Dementia Meds</td>
<td>Parkinson’s Disease meds</td>
</tr>
<tr>
<td>Chronic Kidney Disease Meds</td>
<td>Antipruritics</td>
</tr>
<tr>
<td>Electrolyte/Vitamin Supplementation</td>
<td>Antipruritics</td>
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B100 Clinical video telehealth consults as a method for optimizing medications of Veterans Affairs dementia patients

Background: Community Based Outpatient Clinics (CBOCs) are centers that allow primary care to be delivered to veterans that are a long distance from a main Veterans Affairs (VA) campus. However, these CBOCs often do not have physicians who are trained in geriatric principles. A clinical video telehealth (CVT) dementia service based in the Pittsburgh VA offers geriatric expertise to optimize dementia patients’ medications and can help deprescribe potentially inappropriate medications (PIMs).

Methods: We analyzed Pittsburgh VA CVT data from January 1, 2016 to June 30, 2016. We looked at additions, discontinuations, and dosage modifications of all medications as well as all PIMs, listed in the 2015 Beers Criteria, as medications that should be avoided in most older adults. Each adjustment was compared between initial CVT consults and follow up visits. T-tests were used to compare the two groups.

Results: We analyzed 105 separate encounters in the 6 month period, with 68 initial CVT consults and 37 follow-up visits. We found that the initial CVT consults, compared to follow up visits, had a greater number of added medications per encounter (0.750 vs. 0.351, p=0.0115), a greater number of medication discontinuations per encounter (0.838 vs. 0.135, p=0.0007), and a greater number of total overall medications changes per encounter (1.956 vs 0.758, p=0.0002). When comparing 2015 Beers Criteria PIMs that should be avoided in most older adults, the initial CVT consults had a greater number of discontinuations per encounter than the follow up visits (0.279 vs 0.027, p=0.0068).

Conclusion: The greater medication changes, between initial CVT consults compared to follow up visits, show that initial CVT consults have a strong effect on modifying dementia patients’ medications. The fewer medication changes at follow up visits, particularly the fewer PIMs discontinued in these follow up visits, implies that our patients’ medications tend to stay optimized between visits. The CVT dementia service represents an intriguing way to provide help to CBOC VA physicians that may not be comfortable taking care of dementia patients.

B101 Encore Presentation
Older Patients (pts) With Treatment-Naive Chronic Lymphocytic Leukemia (CLL) Treated With Ibrutinib (ibr): Prolonged Improvement in Patient-Reported Outcomes (PROs) and Well-being in RESONATE-2
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Background: Comorbidities in older pts often make them less tolerant of aggressive treatment. Ibr, a once-daily inhibitor of Bruton’s tyrosine kinase, is approved in the US for treatment of CLL. We report findings from 3-year follow-up (FU) in the RESONATE-2 phase 3 study in older pts with treatment-naive CLL, with focus on quality of life and measures of well-being.

Methods: Eligible pts were ≥65 years of age and randomized 1:1 to 420 mg ibr once daily until progressive disease (PD) or chlorambucil (clb) for up to 12 months. At closure of PCYC-1115 (primary analysis), ibr pts could transfer to PCYC-1116 (extended analysis); clb pts with PD could cross over to ibr. In both PCYC-1115 and -1116, PROs of FACIT-Fatigue (F) and EQ-5D-5L were assessed.

Results: In 269 randomized pts (median age 73 years), median FU was 35.7 mo with ibr vs 34.4 mo with clb. Ibr resulted in significantly greater improvement over time in PROs of FACIT-F (P=0.0021) and EQ-5D-5L Visual Analogue Scale (P=0.0004) compared to clb. Decreased/normalized lymphadenopathy occurred within 2 mo in 87% vs 52% of ibr and clb pts, respectively, with the ibr benefit sustained through 36 mo. In pts with baseline cytopenia, a greater proportion experienced sustained hematologic improvement in clb vs ibr for hemoglobin (90% vs 45%; P<0.0001) and platelets (83% vs 46%; P=0.0032). Disease symptoms (eg, weight loss, fatigue, fever, and night sweats) improved more frequently with ibr vs clb. Median treatment duration was 34.1 mo for ibr vs 7.1 mo for clb. Most common adverse events of any grade in ibr pts were diarrhea (47%), fatigue (33%), and cough (30%).

Conclusions: In this extended FU analysis, ibr pts continued to show greater, sustained improvements in PROs and multiple other measures of well-being vs clb in these elderly pts.
B102
Randomized controlled trial of behavioral treatment for coexisting insomnia and obstructive sleep apnea: Results in middle-aged versus older veterans
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Background: Obstructive sleep apnea (OSA) is common in older adults and often presents with coexisting insomnia. Insomnia predicts worse adherence with OSA treatment by positive airway pressure (PAP). This 4-year, randomized controlled trial tested a novel treatment integrating behavioral insomnia therapy with a PAP adherence program, to improve sleep and PAP adherence in veterans with both conditions, comparing results between middle-aged (MA, 50-64.9 years) and older adults (OA, ≥65).

Methods: 125 veterans aged ≥ 50 years (mean age 63, 96% male, 42% non-Hispanic white) with OSA and chronic insomnia were randomized to 5 weekly sessions of treatment (behavioral insomnia therapy integrated with a PAP adherence program, provided by supervised nonclinicians) or control (general sleep education). Primary outcomes at 3 and 6 months included sleep (sleep onset latency [SOL-d, minutes to fall asleep], wake after sleep onset [WASO-d], and sleep efficiency [SE-d, time asleep/time in bed] by sleep diary; Pittsburgh Sleep Quality Index [PSQI], and sleep efficiency by actigraphy [SE-a]) and objective PAP adherence (mean hours use/night [PAPhrs] and number of nights used ≥ 4hrs [PAPnts]). Analyses were intent-to-treat, mixed models with random intercepts, comparing improvement in treatment versus control, in MA versus OA.

Results: In the total sample, compared to controls, intervention participants had greater improvements in sleep (SOL-d, SE-d, SE-a, PSQI) and PAP adherence (PAPhrs, PAPnts) at 3 and 6-months (all P<.05). At 6 months, compared to controls, OA vs MA improvements were similar for SOL-d (-25 vs -8 min greater improvement compared to controls, in OA vs MA, respectively, p=.16), SE-d (10.1 vs 7.3, p=.64), SE-a (1.8 vs 3.7, p=.46, PSQI (-3.1 vs -5, p=0.10), PAPhrs (79 vs 52 min, p=0.57), and PAPnts (33 vs 25 days, p=0.67).

Conclusions: This novel intervention improves sleep and PAP adherence in veterans with coexisting OSA and insomnia, with similar gains in older versus middle-aged adults. Future work is needed to determine other effects on health in older adults.

B103 Resident Presentation
Targeting Falls through frailty intervention by a Combined Nutritional Intervention and Physical Exercise Programme in Community-dwelling Older Fallers: A Pilot Randomized Clinical Trial
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Background: The economic burden imposed by elderly falls is substantial. Earlier studies suggest differential training effects mediated by frailty level which is overlooked in current fall guidelines. Thus, frailty may be a novel target for falls prevention. As exercise and nutritional intervention have yielded promising results in improving frailty, this study aims to determine whether a combined nutritional and physical frailty intervention will reduce falls rate in community-dwelling frail older fallers compared with usual care at a geriatrics falls clinic.

Methods: Randomized controlled trial comparing a 6-month frailty intervention with usual care in community-dwelling frail older fallers attending a falls clinic over 12 months of follow-up. 70 patients aged ≥/= 60 years meeting frailty criteria were recruited from the Falls and Balance Geriatrics Clinic at Tan Tock Seng Hospital, Singapore. The control group (n=35) received usual care with multi-factorial falls risk assessment/intervention. The intervention group (n=35) received nutritional intervention and physical frailty intervention involving 8 physiotherapy sessions at home over a 6 month period. Primary outcome was falls rate. Secondary outcomes of incident disability, frailty status, physical performance, healthcare utilization and health-related quality of life were measured via the Barthel index/Frenchay Activity scale, Frami questionnaire, short physical performance battery (SPPB)/6-min walk test, frequency of emergency department/hospital admissions for falls and EQ-5D. The outcomes were analyzed using SPSS V22.

Results: At 12 months follow-up, there was no significant difference in the rate of falls between the two groups, with a falls rate of 1.43 per person year in the control group and 1.88 per person year in the intervention group (p = 0.056). There was a greater degree of falls reduction in the intervention group from 3.20 falls per person year to 1.88 falls per person year (p = 0.014). In the control group, the reduction in falls rate was from 2.30 falls per person year to 1.43 falls per person year (p = 0.003).

Conclusion: Combined nutritional and physical frailty intervention may lead to greater fall rate reduction in frail elderly fallers.

B104
A Multicomponent Intervention Program to Improve Physical Function and Frailty in Vulnerable Older Adults: A Designed-Delay Intervention Study
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Background: The burden of frailty and geriatric conditions is disproportionately high in older people living in the rural area, and their socioeconomic disadvantage further increases the risk of adverse health outcomes in this population. We evaluated whether a multicomponent intervention program would improve physical performance and frailty.

Methods: This designed-delay study was conducted in 187 adults (mean age: 77 years; 75% women) who were living alone or on a low income in three rural regions of Korea. A 24-week multicomponent program that consists of group exercise, nutritional supplementation, depression management, deprescribing, and home hazard reduction was implemented in each region at a time with a planned 6-month interval over an 18-month period (August 2015 through January 2017). The following outcomes were measured at baseline, at the end of intervention (6 months), and 6 months later (12 months): the short physical performance battery (SPPB) score (primary outcome; range: 0-12; minimum clinically important difference ≥1), frailty, sarcopenia, the Mini Nutritional Assessment-Short Form (MNA-SF) (range: 0-14), Center for Epidemiologic Studies Depression Scale (CES-D) score (range: 0-60), and falls.

Results: Compared with baseline, the SPPB score increased by 3.24 points (95% confidence interval [CI]: 2.88, 3.60) at 12 months. The program reduced frailty (odds ratio: 0.06; 95% CI: 0.02, 0.16) and sarcopenia (odds ratio: 0.32; 95% CI: 0.15, 0.68) at 12 months. The MNA-SF score improved by 1.67 points at 12 months (95% CI: 1.28, 2.06), so did CES-D score (-3.83 points; 95% CI: 5.26, -2.39). However, the fall rate did not change significantly at 12 months (rate ratio: 1.18; 95% CI: 0.77, 1.81). Body mass index ≥27 kg/m² and instrumental activity of daily living disability at baseline were associated with poor improvement in physical performance.

Conclusions: A 24-week multicomponent program had sustained beneficial effects up to 1 year on physical function, frailty, sarcopenia,
Methods: A secondary data analysis was performed using data from participants in 2 arms of a randomized control trial: PT (N=135) or IBET (N=124) for symptomatic knee OA. Multi-level analyses examined associations of number of PT visits attended (up to 8) and number of days on the IBET website, during the initial 4-month study period, with changes in Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) total, pain and function scales and a 2-minute march test at 4-month and 12-month follow-up.

Results: Participants with more PT visits experienced greater improvement in WOMAC total score (estimate = -1.18, CI 95% = -1.91, 0.46, p <0.001) and function score (estimate = -0.80, CI 95% = -1.33, -0.28, p <0.001) across follow-up periods. A greater number of PT visits was associated with improvement in WOMAC pain score across follow-up time periods (estimate = -0.29, 95% CI= -0.46, -0.11, p=0.001) however, there was a stronger association of PT visits with WOMAC pain at 4-months than at 12-months. More frequent use of the IBET website was not associated with greater improvement in any outcomes.

Conclusions: Greater number of PT visits was associated with better outcomes, with some benefits persisting 8 months following the conclusion of PT sessions. This provides guidance for PT clinical practice and policies.

B107 Student Presentation


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INTRODUCTION: Excessive daytime sleepiness has been associated with incident stroke in some longitudinal studies. There have been few studies in the elderly and none in Asian populations. We studied excessive daytime sleepiness as a risk factor for incident stroke in an elderly cohort of Japanese-American men.

METHODS: The Kuakini Honolulu Heart Program is a longitudinal cohort study of cardiovascular disease in Japanese-American men living in Hawaii that began in 1965. At exam 4 (1991–93), 3,741 men (80% of survivors) ages 71-93 years participated in the study. Excessive daytime sleepiness (EDS) was measured at exam 4 by a response of “yes” to the question, “Are you sleepy most of the day?” After excluding those with prevalent stroke or cognitive impairment at baseline and those with no reported sleep data, 75.1% (N=2,809) participants were prospectively followed for 8-year incident stroke, through December 1999. Stroke was classified as all strokes (ALL-CVA), thromboembolic stroke (TE-CVA) and hemorrhagic stroke (HEM-CVA) using a comprehensive surveillance system and standardized criteria.

RESULTS: EDS was noted in 206 (7.3%) men, and 174 (6.2%) had an incident stroke over 8 years of follow-up. Age-adjusted rates of incident ALL-CVA and TE-CVA were significantly increased in those with EDS (9.1 vs. 16.4 per 1,000 person years follow-up, p=0.024; and 6.1 vs. 11.5 per 1,000 person years follow-up, p=0.041, respectively). Using Cox regression, adjusting for age, body mass index, physical activity index, pack-years of smoking, hypertension, diabetes mellitus, hypercholesterolemia, and alcohol use, those with EDS had an increased risk for incident ALL-CVA (RR=1.63, 95% CI=1.01–2.64, p=0.046) and incident TE-CVA (RR=1.82, 95% CI=1.04–3.21, p=0.037). There were no significant associations with incident HEM-CVA.

CONCLUSION: Among older Japanese-American men in Hawaii, excessive daytime sleepiness increased the risk of incident overall stroke and thromboembolic stroke over 8 years of follow-up. Clinical screening for excessive daytime sleepiness with subsequent...
sleep hygiene counseling and treatment of underlying etiologies such as obstructive sleep apnea may prevent overall stroke in ethnically diverse older adults.

**B108**

**Effect of Bisphosphonates on Nonvertebral Fracture among Older Nursing Home Residents**

A. R. Zullo,1 D. P. Kiell,2 S. D. Berry,3 1. Brown University, Providence, RI; 2. IFAR, HSL, Boston, MA.

**Background:** To date, no studies have examined whether bisphosphonates (BP) prevent fracture (fx) in nursing home (NH) residents. We evaluated the comparative effectiveness of BPs versus calcitonin for prevention of nonvertebral fx in a retrospective cohort of NH residents using several approaches to minimize measured confounding.

**Methods:** We used a nationwide sample of 24,571 NH residents ≥65 yrs old who were not taking osteoporosis medications between 2008 and 2009. BP and calcitonin use was assessed via Medicare Part D, nonvertebral fx via Part A, and over 100 covariates for confounding adjustment via Medicare, Minimum Data Set, and NH facility data. Individuals were followed from the date of the new BP or calcitonin dispensing until the first occurrence of fx, death, Medicare disenrollment, or study end (2013). We used Cox and competing risk regression models to compare nonvertebral fx risk for BP and calcitonin new users. Multiple complementary approaches were used to adjust for bias, including propensity score matching, inverse probability weighting (IPW), multiple imputation, and machine learning (Figure).

**Results:** Mean age of the cohort was 84 yrs (SD 8), 85% were female, and 55% had at least moderate functional impairment. 2,036 residents (8.3%) had a nonvertebral fx and 16,553 (67.4%) died over a mean follow-up of 2.5 years (SD 1.7). After propensity score matching, BPs were associated with a 9% reduced risk of fx compared to calcitonin (hazard ratio [HR] 0.91, 95% CI: 0.80–1.03). Results varied by method used to minimize bias, but suggested BPs did not impact or slightly reduced fx (Figure).

**Conclusions:** These findings suggest that BPs have, at best, a modest benefit for nonvertebral fx prevention in NH residents. The findings do not rule out the possibility that BPs prevent vertebral fx in the NH setting.

**B109 Student Presentation**

**Do Fall Risk Factors Differ by Age in Hospitalized Adult Patients?**

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**Background:** Falls can be major events in hospitalized patients. The Morse score is commonly used to identify patients at risk of falling. At Mount Sinai Hospital (MSH), a more accurate enhanced fall risk algorithm (EFRA) was developed using Morse scores, Braden score components, lab values, medications and demographics. This study sought to determine if the EFRA identified risk factors contributed similarly to fall risk in patients of older age.

**Methods:** Data were collected from EPIC data warehouse on 171,515 hospitalizations of 109,873 patients at MSH from July 2011-September 2015. Exclusions were: patients <18 years old, on Psychiatric, Pediatric and ED services. Risk factor values were obtained within 12hrs of admission. The distribution, significance, and contribution to pooled risk of the EFRA’s significant risk factors were analyzed by age group: <65, 65-74, 75-84 and ≥85.

**Results:** The rates of falls for the respective age groups were: 2.29, 3.04, 3.25, and 3.61 falls per 1000 hospital days (p=0.0001). Distribution of risk factors among age groups and significance of factors within age groups differed. High Morse score and low red blood cell count contributed most to the pooled risk of every age group. Male sex and antiepileptic drug uses also contributed significantly to all ages groups except for those ≥85, where Braden scale scores for nutrition and friction and shear had higher contributions.

**Conclusion:** EFRA risk factors for falling differ for older adults. Our next steps will be to re-derive the EFRA algorithm for each age group to determine whether its accuracy in identifying older adults at highest risk of falling can be improved.

**B110**

**‘Til Death Do Us Part: The Influence of One Spouse’s Death on the Second Spouse’s End-of-Life Experience**

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**Background:** Married couples are known to share many health-related behaviors, but it is unknown if there is similarity among spouses in end-of-life (EOL) experiences. A better understanding of how spouses’ EOL experiences relate to one another could inform clinical interventions aimed at promoting advance care planning (ACP) and appropriate hospice use.

**Methods:** We used the nationally representative Health and Retirement Study (HRS), linked to Medicare claims, to study 4,252 community dwelling older adults who died, representing 2,126 male-female married couples (1992-2013). We measured three aspects of each spouses’ EOL experience: 1) enrollment in hospice for more than 3 days before death; 2) documented ACP; and 3) ICU use during the last 30 days of life. Multiple logistic regression was used to determine if the EOL experience of the first spouse was a significant predictor of the EOL experience in the second spouse, after adjusting for demographics, socioeconomic status, chronic conditions, functional status, and time between first and second spouses’ death.

**Results:** The first spouses who died were on average 79 years old, 62% were male, 21% utilized hospice, 26% utilized the ICU, and 71% had engaged in ACP. The second spouses who died were on average 83 years old, 62% were female, 32% used hospice, 27% used the ICU, and 84% had engaged in ACP. After adjustment, individuals were more likely to use hospice if their spouse used hospice services (34% vs 25%, aOR=1.63, 95% CI: 1.25-2.12), as was the case with ACP (83% vs 64%, aOR=2.94, 95% CI: 2.08-4.13). Both associations were stronger when deaths were closer in time to one another (p-value for interaction < 0.05). Individuals were more likely to use ICU services in the last month of life if their spouse was in the ICU prior to death (42% vs 29%, aOR=1.77, 95% CI: 1.27-2.45), but less likely to use the ICU if their spouse received hospice services (26% vs 34%, aOR=0.68, 95% CI: 0.50-0.92).

**Conclusions:** Older spouses have strong associations in EOL experiences. Interventions for improving hospice use, appropriate ICU use, and early ACP should leverage dyadic decision making by
married couples. The time following a spouse’s death may be propitious for engaging the surviving spouse in ACP.

**B111**

Mid-life falls are associated with increased risk of mortality in women: Findings from the National Health and Nutrition Examination Survey III

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Background: Nearly one-third of older adults fall annually, and those falls are a leading cause of hospitalization, disability and mortality. Emerging evidence suggests that the number of falls among mid-life adults, those age 40-65 years of age, is comparable to estimates among older adults. However, it is unknown whether these falls result in the same adverse consequences. Thus, using data from the National Health and Nutrition Examination Survey (NHANES) III, we evaluated whether falling during mid-life was associated with an increased risk of mortality.

Methods: Participants (n=1,295) from NHANES III were age 60-64.9 years of age and had non-missing falls, mortality and covariate data. Falls in the previous 12 months were assessed via questionnaire. Mortality status was available through 2011 via the public-use mortality file linked to NHANES III. Survey-weighted Cox regression models were used to generate hazard ratios (HR) and corresponding 95% confidence intervals (CI) to estimate the 10-year risk of death among recurrent fallers (fell twice or more) versus those that fell once or less.

Results: The 10-year mortality risk was 16.6% overall. Among those that died within 10 years of the baseline falls survey, 20% were recurrent fallers as compared to only 5.5% among participants who survived for at least 10 years after the survey. Recurrent fall status was greater among women and those with cardiovascular disease, stroke, and greater numbers of prescription medications. Among women, in models adjusted for race/ethnicity, body mass index, smoking, education, cardiovascular disease, stroke, diabetes, cancer and number of medications, recurrent fallers had more than a 4-fold increased hazard of death in 10 years (HR=4.07, 95% CI: 1.99,8.31). In parallel models among men, however, the association of recurrent falls and mortality was much weaker and not significant at the α=0.05 level (HR=1.72, 95% CI 0.66,4.50).

Conclusions: Women experiencing multiple falls during the mid-life period may be at higher risk for premature mortality. Future work should examine the mechanisms underlying observed sex-specific risk of recurrent falls in women, and the fall sequelae unique to women that contributes to mortality.

**B112**

Latent profiles of home environmental modifications use in older women

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Background: Home environmental modifications (HEM) are used by aging adults to preserve function and maintain independence. Analyses of patterns of HEMs can illuminate common types of strategies.

Methods: A cross-sectional questionnaire regarding HEM use was collected among 69,904 women in the Women’s Health Initiative Oct 2013 to Dec 2014. Demographic, health, and categorical HEM use data were collected. Descriptive measures were used to characterize the women and summarize the responses, and latent class analyses were conducted to identify discrete patterns of HEM usage.

Results: Fifty-five percent of the women, ages 64-98, reported “any HEM usage,” with higher usage among women with older age, poorer self-reported health, ADL and/or iADL limitations, and who had fallen in the prior year. Latent class analyses identify 4 HEM strategies, specifically low HEM use (56%), hand rail and grab bar use (21%), lighting and decluttering (18%), and heavy use (5%) in which multiple strategies were used.

Conclusions: The current findings identify HEM utilization patterns based on a latent class analytic approach from a large cohort of aging women. Our analysis identified a substantial number of women who implemented strategies to preserve independence in the home environment, including using hand rails and grab bars to prevent falls and making space brighter and less cluttered. Future analyses are underway to identify predictors of HEM use and its association with function.

Funding Source: NIA R03AG049232

**B113 Student Presentation**

Prescriptions of Potentially Inappropriate Medications in Older Adults in the US: Results from the NAMCS 2013-2014


Background: The American Geriatrics Society (AGS) developed Beers Criteria for potentially inappropriate medications (PIMs), in which the risks outweigh the benefits in the elderly population. Yet, studies have shown that 42% of elderly American adults from 2006-2010 were prescribed at least one medication on Beers List.

Study Aim: To assess the frequency of PIM use, and to determine if selected patient characteristics are associated with PIM prescriptions in adults 65 years or older in the United States.

Methods: We analyzed cross-sectional data from the 2013 and 2014 National Ambulatory Medical Care Surveys (NAMCS). All patients 65 years and older were included (n=26,506). We assessed the association of being prescribed a PIM with the following patient characteristics: polypharmacy (use of ≥5 medications), race/ethnicity, age, gender, source of payment, and physician type. In this study, we narrowed our definition of PIMs to only include medications on Beers List with a “strong” strength of recommendation, “high” quality of evidence and recommendation to “avoid”. Multivariable logistic regression analysis was conducted to determine the independent association of selected patient characteristics and PIM prescriptions.

Results: We found that 14% of patients in our study received PIMs. The PIM categories prescribed were related to central nervous system (73%), cardiovascular (18%), endocrine (6%), and pain (3%) medications. Patient characteristics found to be independently
associated with prescription of PIMs were: polypharmacy use [adjusted Odds Ratio (aOR)=4.0; 95% Confidence Interval (CI)=3.4-4.7], females (aOR=1.4; 95% CI=1.2-1.5), Non-Hispanic Blacks (aOR=0.7, 95% CI=0.5-0.9, compared to Non-Hispanic Whites), and self-pay insurance status (aOR=2.7; 95% CI=1.1-6.4, compared to private insurance).

Conclusions: Of public health concern, 14% of older adults in ambulatory care settings received potentially inappropriate medications, with a strong recommendation to avoid. CNS-related PIMs were most frequently prescribed. Initiatives to decrease PIM prescriptions should be developed, giving special attention to patients with the characteristics identified to be significant in this study.

B114 Student Presentation
Urinary Incontinence, Care Receiving, and Caregiving in a Nationally-Representative Cohort of Older Women
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Background: Among older women, urinary incontinence (UI) can affect the ability to perform activities of daily living (ADLs) and provide care to others. However, little is known about factors that predispose older women with UI to becoming functionally dependent or about the prevalence and impact of UI among older female caregivers.

Methods: We analyzed data from older women in the 2010-2011 National Social Life, Health and Aging Project. Participants completed questionnaires about UI, difficulty with ADLs or instrumental ADLs (IADLs), care-receiving and caregiving. Multivariable logistic regression models evaluated associations between UI frequency and care-receiving or caregiving, as well as risk factors for care-receiving among women with UI. Among caregivers, multivariate models examined differences in self-reported health by UI status.

Results: Of the 1703 women (mean age 71 years), 27% reported UI at least a few times a week (severe), 13% a few times a month, and 59% a few times a year or less (minimal). Compared to those with minimal UI, women with moderate-severe UI were more likely to have difficulty with ADLs (OR=2.6, CI 1.9-3.4) or IADLs (OR=1.7, CI 1.3-2.3) and receive care for ADLs (OR=2.4, CI 1.6-3.6) or IADLs (OR=1.9, CI 1.4-2.6) in adjusted models. Compared to 46% of women with minimal UI, 60% of those with moderate-severe UI reported an unmet need for assistance, defined as having difficulty but not receiving care for ADLs/IADLs (p=0.0002 in adjusted models). Among women with moderate-severe UI, factors associated with care-receiving included more frequent UI, older age, marital status, and fair/poor health (p<0.05 for all). Overall, 13% of women served as a caregiver, which did not differ significantly by UI status (p=0.84). However, female caregivers with UI reported lower health than those without UI (p=0.0004).

Conclusions: Older women with UI are more likely to be functionally dependent and have an unmet need for care than those without UI, even after adjusting for other factors. Yet, more than 1 in 10 older women with UI serve as caregivers, despite having worse overall health than female caregivers without UI. Findings show need for systematic assessment of the care needs of older women with UI to preserve their ability to live independently and provide care.

B115
Benefits and harms of high intensity antihypertensive treatment in complex older adults
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Background: Intensive antihypertensive treatment reduces cardiovascular risk in healthy older adults. However, benefits and harms in older patients with functional disability may be quite different. Understanding these potential tradeoffs is crucial to effective shared decision-making. As such, we examined the potential associations between antihypertensive treatment intensity and mortality, major adverse cardiovascular events (MACE), and falls injuries in a real-world cohort of older adults. We also investigated whether these associations varied by the presence of mobility disability.

Methods: The study includes 5749 treated hypertensive patients aged 65 enrolled in the nationally-representative Medical Expenditure Panel Survey (MEPS), from 2008-2013. Follow-up was approximately 2.5 years. We categorized treatment intensity as moderate (1-2 drugs) or high (≥ 3 drugs). The outcomes were (1) mortality, (2) MACE, i.e., acute myocardial infarctions and strokes and (3) fall injuries, i.e., fractures, dislocations, and intracranial injuries. We defined mobility disability as difficulty with 3-block ambulation. We used multivariable Cox proportional hazards regression to model the association between treatment intensity and time to each outcome. We adjusted for the probability of receiving a given treatment intensity as well as other confounders including demographics, comorbid conditions, and polypharmacy.

Results: 33.5% of patients received high intensity treatment and were more likely than those on moderate intensity treatment to be older, nonwhite, have coronary artery disease, diabetes, and prior stroke, and to take several other medications. The risks of MACE, death, or fall injuries did not vary significantly by treatment intensity (MACE: HR high vs. moderate intensity 1.04, p=0.789; death: HR 0.95, p=0.750; fall injuries: HR 1.07, p=0.687). For each of the outcomes, there was no significant treatment x mobility disability interaction.

Conclusions:
Intensive antihypertensive treatment was not associated with the risk of MACE, fall injuries, or death regardless of the presence of mobility disability in a community-dwelling cohort of older adults with hypertension. While no increased harms were found, the lack of evidence for benefit calls into question the value of intensive antihypertensive therapy in complex older adults.

B116 Resident Presentation
The effect of pain severity on major cognitive impairment in older adults with pain
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BACKGROUND Pain is frequently reported in older adults, and cross-sectional studies have shown that pain is associated with worse cognitive function. The aim of this study is to examine the longitudinal relationship between pain severity at baseline and future risk of cognitive impairment among older adults with chronic pain.

METHODS We prospectively studied 285 non-demented participants who reported pain of any severity, aged 65 years and older, enrolled in the Central Control of Mobility in Aging Study. Pain severity was measured using the 20-point Medical Outcomes Study pain severity scale. The Repeatable Battery for the Assessment of Neuropsychological Status was used to measure attention and delayed memory and the Trail Making Test Delta for executive function. We defined major cognitive impairment as a score of one Standard Deviation (SD) or more below the baseline mean for each cognitive test. We analyzed the longitudinal association between pain severity and major cognitive impairment using Cox regression analysis adjusted for age, gender, ethnicity and education.

RESULTS Over a mean follow-up of 2.81 years (S.D. 1.95 years), 22 individuals developed major attention impairment, 22 executive function impairment and 18 memory impairment. Compared to...
older adults with mild pain, older adults with severe pain had a higher risk of developing incident major memory impairment (adjusted hazard ratio: 6.39, 95% Confidence Intervals: 1.86-21.96), but not incident impairments in attention or executive function. This association remained significant after additional adjustments for general health status, depressive symptoms and psychiatric medications and analgesics.

CONCLUSIONS Our findings show that severe pain increases the risk of developing memory impairment in older adults. The results shed light on a potentially modifiable risk factor for cognitive impairment in aging.

B117 Identifying acceleration of physical function decline in aging adults
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Aging adults vary in progression of dependency in activities of daily living (ADL) and instrumental activities of daily living (IADL). Models have been developed to describe and predict this decline. We aimed to identify trajectories of function across the life course of older adults. We hypothesized that these trajectories have change age-points marking the acceleration of decline.

We analyzed waves 1995-2014 of the Health and Retirement Study, a nationally representative health interview survey (n=16,052 adults age 60 or older). Function was defined as limitations in 6 ADLs and 5 IADLs. Clusters of disability trajectories were identified using latent process mixed-effects; a spline-based method estimated trajectory change points. We used ordinal logistic regression for associations with demographic characteristics and chronic diseases.

We identified 4 distinct trajectories of function over the 20-year period: 85%-no/minimal disability; 7%-progressive mild disability; 6%-late accelerated deterioration; 3%-early accelerated deterioration. Change points were found at ages (years): 70 early accelerated deterioration, 73 late accelerated deterioration, 76 progressive mild disability; Characteristics and chronic diseases associated with early or late accelerated deterioration were: female, Black, unmarried, less education, low net worth, diabetes, heart disease, stroke (p<.01 for each).

Distinct trajectories of functional decline can be identified for aging adults; change age-points that mark the acceleration of decline are group specific. These findings can be a base for future work examining physical decline as a function of disease duration and age of disease onset. These findings also are a critique of selecting the arbitrary age 75 in health policy decisionmaking.
age 25. Weight changes between baseline and each time were categorized as greater/less than 5% or weight neutral (between 5% and +5%; referent). Logistic regression assessed weight change (gain, loss, no change) on the outcome of frailty after adjusting for age, sex, race, education, smoking, diabetes, arthritis, coronary artery disease, and cancer.

RESULTS: Of 4,984 participants (56.5% female), mean age and BMI were 71.1 years and 28.2 kg/m². Prevalence of frailty was 9.2%. In the past year, frail participants were weight neutral (56.9%), lost 5% weight (27.1%) and gained 5% weight (16.0%) with a p=0.001. As compared to 10 years earlier, rates were 25.8%, 36.7% and 37.4%, respectively (p<0.001), and as compared to self-reported weight at age 25 years, rates were 8.2%, 18.9%, and 72.9% (p<0.001). Both 5% weight gain or 5% loss over the past year was associated with a higher risk of incident frailty (OR 1.59 [1.09,2.32] and OR 1.55 [1.02,2.36]). Weight loss (≥5%) over 10-years had a higher risk of frailty (1.68 [1.05,2.69]) while weight gain (≥5%) had no difference in risk (OR 1.26 [1.09,1.78]). As compared to weight at age 25, risk of frailty was significantly elevated (OR 2.94 [1.72,5.02]) for a 5% weight loss, as compared to a 5% weight gain (OR 1.35 [0.90,2.02]).

CONCLUSION: Weight loss of ≥5% suggests a significantly increased risk of frailty, as compared to weight gain. Future longitudinal studies using objective measures are needed for verification.

B120 Encore Presentation
The association of frailty with in-hospital bleeding among older adults with myocardial infarction in the ACTION Registry

Background: Our aim was to determine whether frailty, a common syndrome in older adults, was associated with increased bleeding risk in the setting of acute myocardial infarction (AMI).

Methods: We examined frailty among AMI patients age ≥65 treated at 775 U.S. hospitals participating in the ACTION Registry from 1/2015 – 12/2016. Frailty was classified based on impairments in 3 domains: walking (unassisted, assisted, non-ambulatory), cognition (normal, mildly impaired, moderately/severely impaired), and activities of daily living (ADLs; independent, partial assist ≥1 ADL, full assist ≥1 ADL). A summary frailty score was generated based on number of domains with none (0), mild (1) or full (2) impairments summed and grouped as (0, 1-2, 3-6). In-hospital major bleeding was defined using previous ACTION Registry criteria. Multivariable logistic regression was used to examine the independent association between frailty and bleeding.

Results: Among 129,330 AMI patients, 16.5% had any frailty. Frail patients were older, more often female, and had more comorbidities. Frail patients were less likely to undergo cardiac catheterization. The overall rate of major bleeding was 7.0%, and increased across categories of frailty (6.5% to 9.9%). This trend occurred in the subgroup that underwent cardiac catheterization, but not in the subgroup managed conservatively. After adjustment, frailty was independently associated with bleeding among patients who underwent catheterization (OR 1.40, 95% CI 1.24-1.58) but not those managed conservatively (OR 0.96, 95% CI 0.81-1.14), when compared with non-frail patients.

Conclusions: In our sample, frail patients had lower use of cardiac catheterization and higher risk of major bleeding (when catheterization was performed) than non-frail patients. These findings highlight the conundrum with invasive management in frail AMI patients, and the need for novel informed decision making approaches in this setting.
Results: Falls, injurious falls, and restraint use were decreasing prior to the CMS payment change. Compared to the 2 years prior to the payment change, there was acceleration in the 1- 4- and 7-year annual rate of decline in falls: -2.1% [-3.3%, -0.9%], -2.2% [-3.2, -1.1], -2.2% [-3.4, -1.0], respectively. For injurious falls there a statistically significant 7-year acceleration in decline -3.2% [-5.5, -1.0]. However, the decline in restraint use slowed, with a statistically significant deceleration in 7-year annual change restraint prevalence = +3.3% [0.5, 6.1].

Conclusions: In this large sample of self-selected hospital units, there have been long-standing declines in both fall events and physical restraint use. There was modest acceleration of declines in falls, with long term decreases in injurious falls and increases in physical restraint use. Falls and their prevention remain an important problem for hospitals.

B123
Rate of Weight Change and Risk of Mortality in Older Veterans
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Background: Weight and weight trajectories are important measures that influence clinical outcomes. In popular culture, “speedy” weight loss into the recommended BMI range is often seen as healthy. However, there is little scientific basis for whether weight loss in general, or any rate of weight change, may be healthy. We sought to ascertain the association between rate of weight changes and risk of death in older adults. The intentionality of weight change among these individuals is unknown.

Methods: We analyzed the weight trajectories of a randomly selected sample of 100,000 Veterans aged 65 and older during a 10-year period. Based on distributions, we identified three rate categories (slow, 2-3 years; medium, 1-2 years; and rapid (6 months – 1 year). We computed each group’s mortality over the next 5 years, based on the starting BMI and total percentage change.

Results: Individuals with weight stability had the least risk of death compared with individuals with any weight change over any time interval. In the 5 years after any weight change, individuals with a starting BMI 18-24 had more than twice the risk of death compared with those with a BMI 24-30 or BMI 30-40. Individuals with 10-15% weight loss had >3 times the risk of death than those with weight stability in the same weight class. Individuals with a BMI of 18-24 with 5-10% weight gain did not increase their risk of death. In all BMI classes, slow weight loss was associated with a 50% increased risk of death and rapid weight loss associated with a 150% increased risk of death compared to weight stability. Among individuals with a starting BMI of 18-24 and 24-30, any rapid (<1 year) weight change of 5% or more was associated with a 50% increased risk of death.

Conclusions: Although rapid weight change was associated with greater risk of death in all individuals, the main risk factor for death was significant weight loss (>10%) over any time frame. Groups with the lowest risk of death were those with higher BMI, weight stability, or slight weight gain. These findings underscore the importance of early identification of significant weight changes in older adults, especially >10% weight loss. In situations where weight gain or loss is clinically indicated in older adults, it may be prudent to have these changes occur gradually over a period of at least one year.

B124 Student Presentation
Relationship between gait speed and survival among older adults with hematologic malignancies
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Background: There are limited data regarding the utility of brief geriatric screening tools for patients with blood cancers. Gait speed is a known predictor of mortality, but has not been extensively studied in patients with blood cancers.

Methods: Prospective study of all patients aged 75 and older who presented to the Dana-Farber Cancer Institute for an initial consultation for myelodysplastic syndrome or a hematologic malignancy and agreed to a frailty screening assessment. Gait speed was measured by a 4-meter walk at a normal pace and administered by a trained research assistant. We examined cutpoints of <0.3 meters/second (m/s), 0.3-0.6 m/s, and ≥ 0.6 m/s as predictors of mortality based on prior definitions of dismobility. We used Cox models to estimate the relation between gait speed and survival.

Results: Of the 420 consecutive patients approached between February 1, 2015 and March 31, 2017, 360 (86%) consented and were included in this analysis. The average age of the study population was 79.8 years ± 3.9 SD. 132/360 (37%) had aggressive malignancies; the majority of patients had at least 2 comorbidities. Gait speeds of 0.3-0.6 m/s and < 0.3 m/s were associated with an increased risk of death compared to speeds ≥ 0.6 m/s. Hazard ratios and 95% confidence intervals were 1.82 (1.02-3.26) and 3.54 (1.96-6.38), respectively, after adjustment for age, Charlson comorbidity score, and disease aggressiveness. Even among patients who reported excellent or very good physical performance status (ECOG=0 or 1), gait speed < 0.6 strongly predicted mortality (fully adjusted HR 2.38, 95% CI 1.23-4.42).

Conclusions: Gait speed is an important predictor of survival among older patients with blood cancers. Integrating this metric into routine clinical care may improve the functional assessment of this population for management decisions.

B125 Student Presentation
Influence of age and marital status on stage at diagnosis and survival of patients with Merkel cell carcinoma
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Background: Merkel cell carcinoma (MCC) is a rare and aggressive skin cancer; the majority of cases occur in older adults. Marital status has been shown to influence stage of diagnosis and survival among elderly melanoma patients. We aimed to investigate the effect of age and marital status on disease stage and survival in MCC patients.

Methods: Retrospective analysis among 3,431 histologically confirmed cases of MCC identified in the Surveillance, Epidemiology, and End Results (SEER) registry 1973-2014. 3,210 cases had at least 3 months of follow-up survival data and were included in the study. Variables included age (<65 and ≥65), marital status (married or unmarried), race (non-Hispanic white, Hispanic, black, other) and sex. Outcomes were stage at diagnosis defined as early (in situ, local) and late (regional, distant), and disease-specific survival. Logistic regression was used to calculate odds ratios (OR) and 95% confidence intervals (95% CI) of predictors for late vs early stage disease, and Cox proportional hazards models were used to calculate hazard ratios (HR) for survival.
**B126 Incidence of hip fracture in Native American residents of U.S. nursing homes**

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Native American (NA) suffer from disproportionately high hip fracture rates, yet it is unclear if this difference persists after accounting for differences in other resident characteristics. Our objective was to estimate the incidence rate (IR) of hip fracture in U.S. Native American nursing home (NH) residents and compare it to those of other ethnicities after adjusting for demographic and clinical risk factors.

**Methods:** We included all U.S. NH residents who were 65 years or older, enrolled in fee-for-service Medicare and qualified as long-stay (≥ 100 days in the NH) between 1/1/2008 and 12/31/2009 (n=1,136,544). Information on demographic factors, functional status, comorbidities, medications and other risk factors was collected from the Medicare claims and the Minimum Data Set. Hip fractures were defined using Medicare Part A diagnostic codes. Residents were followed from the date they became a long-stay resident until the first occurrence of hip fracture, death, Medicare disenrollment or study end (12/31/2013). Crude IRs with bootstrapped 95% CIs were calculated for each ethnicity. Inverse probability weighting was used to standardize ethnicity-specific rates for age, sex, medication use, and other clinical characteristics.

**Results:** 4,391 (0.4%) of the NH residents in our sample were NA, 980,602 (86.1%) were white, 116,098 (10.2%) were black, and 35,222 (3.1%) were of other ethnicity. The crude IR of hip fractures was 2.21/100 person-years among NA residents compared to 2.10 in whites, 0.87 in blacks and 1.44 in residents of other ethnicities. Standardized IRs after adjustment were similar (see Table), with NA having the highest standardized IR of hip fracture among all ethnicities.

**Conclusion:** NA residents of U.S. NHs had the highest rates of hip fractures even after adjustment. The persistent racial disparity in these rates may be due to facility characteristics such as rural location, quality of care or unmeasured factors that merit further investigation.

**B127 Resident Presentation**

**Interrelations of Incident Cognitive Impairment with Adiposity, Leptin, sTNFR2 and Diabetes in African Americans**

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Background: An estimated 70% of the cross-sectional relation of waist circumference (WC) to cognition in African Americans (AA) may operate through diabetes and hypertension, and 10% by leptin and soluble tumor necrosis factor receptor 2 (sTNFR2). We examined these pathways’ contributions to incident cognitive impairment (ICI) in the AA GENOA cohort.

**Methods:** We included AA without cognitive impairment (MMSE≥20 & global cognition z-score<1.5) at Visit 2, when clinical conditions and labs were assessed. Using race-specific cutoffs, ICI was defined as follow-up MMSE<20, z-score<−1.5, MMSE decline >1 point/year, or z-score decline of >0.1/year over 7 years average follow up. Total, direct, and indirect mediation pathways of standardized WC, leptin, and sTNFR2, and diabetes were estimated using structural equation models.

**Results:** Among 585 AA (mean age 62.3years, 73% women, 74% with hypertension, 54% with obesity), 108 (18.5%) developed ICI. Higher WC was associated with 46% greater odds of ICI (OR=1.46 [95% CI: 0.932, 0.724]); 38% of this total effect operated through diabetes, 6% through leptin and sTNFR2 (indirect effect), leaving 56% unexplained (direct effect) (See Figure).

**Conclusion:** In contrast to cross-sectional results, previously shown paths explained a small proportion of the WC to ICI relationship; other mechanisms may explain relations of obesity with incident dementia in AAs.
Methods: The 2014 National Ambulatory Medical Care Survey was used to identify patient visits in which a DH-CCB was continued. A potential PC was defined as “the continuation or initiation of a loop diuretic in the absence of documented congestive heart failure, cancer, venous thromboembolism, obstructive sleep apnea, chronic kidney disease or end-stage renal disease, obesity, or resistant hypertension (i.e., treatment with ≥3 classes of antihypertensives excluding DH-CCB).” Multivariable logistic regression identified factors related to potential PC including age, sex, number of additional medications, race, geographic region, number of patient visits in the prior 12 months, and comorbid conditions.

Results: Among the estimated 47.5 million patient visits in which a DH-CCB was continued, 4.6% had a potential PC (approximately 2.2 million patient visits). Patients aged 65-84 years (OR 2.56, 95% CI 1.20-5.43) and ≥85 years (OR 3.89, 95% CI 1.76-8.61) were more likely to have potential PC compared to patients aged 18-64 years. Patients with 5-7 medications (OR 3.75, 95% CI 1.72-8.19), 8-11 medications (OR 2.20, 95% CI 1.09-4.44), and ≥12 medications (OR 5.23, 95% CI 2.29-11.94) were more likely to have potential PC compared to patients with 0-4 medications. Sex, race, geographic region, number of patient visits in the prior 12 months, and comorbid conditions were not associated with potential PC.

Conclusion: A potential DH-CCB-associated LEE loop diuretic PC was present in about 2.2 million patient visits in which DH-CCB was continued. Older age and an increasing number of concomitant medications were associated with this potential PC.

B129
Exploring Patterns of Multimorbidity and In-Network Healthcare Utilization Among Older Adults Using Cluster Analysis

Background: Multimorbidity appraisal remains an important component of a geriatric assessment, providing an opportunity to characterize illness burden, emphasize potential risks, and formulate patient-centered care plans. A growing body of literature suggests a role for data mining (e.g., cluster analysis) within medical record systems to derive additional insight, though there are few publications demonstrating this methodology among a geriatric patient panel. This study has two aims: (1) to apply cluster analysis methodology to explore specific patterns of multimorbidity among a cohort of patients 65 years and older, and (2) to identify the relationship between patterns of multimorbidity and healthcare utilization.

Methods: This retrospective study uses administrative and clinical data spanning 2012-2015, from an urban academic institution in Philadelphia, PA. Cluster analysis, a statistical approach to identifying relatively homogenous sub-groups among a large heterogeneous cohort according to calculated measures of similarity, was used to analyze a panel of 2,676 primary care patients aged 65 years and older. Clustering, or subgroup designation, was performed based on the joint presence of up to 38 chronic conditions.

Results: Demographics were stable from 2012-2015, with mean age of 72.6 yrs (SD 6.9) in 2015, and most individuals listed as female (64.5%; 2015) and African American (58.0%; 2015). Clustering according to patterns in comorbid chronic conditions revealed 6 distinct subgroups. Of note, a single subgroup, constituting 8.4% of the panel, was associated with a disproportionate share of chronic disease and frailty associated conditions, as well as statistically significantly (p<0.05) higher mean healthcare utilization (e.g., routine visits, cardiology and pulmonology visits, ED visits, and hospitalizations) compared to the other patients.

Conclusions: This application of a data mining methodology to a geriatric primary care patient panel provides an example of the potential for gaining insight regarding clinically salient patterns in multimorbidity and the possible association with healthcare use. Further studies are needed to refine statistical methodology and explore the feasibility of more widespread implementation to inform quality improvement and care coordination efforts.

B130
End of life (EOL) plans and discussions among the socially isolated
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Background: EOL plans and discussions are a critical aspect in the care of older adults. Numerous barriers exist that prevent these important discussions and processes. Socially isolated individuals may be at greater risk for not having discussed their EOL plans and care wishes with anyone, identified a legal proxy, or put these wishes in writing.

Methods: This is a nationally-representative cross-sectional study of community dwelling participants from Round 2 of National Health & Aging Trends Study (NHATS) who completed the EOL plans and care module (n=2015). Social isolation was operationalized from four domains: living arrangement (alone/with others), social network, religious attendance and social participation. We compared response differences (yes/no) on three questions: (1) discussion with anyone about the medical treatment desired if seriously ill (EOL discussion); (2) having legal arrangements for a proxy to make treatment decisions (Durable power of attorney (DPOA)); and (3) having written instructions about treatment desired if unconscious or unable to communicate (Advance Directive (AD)). Responses were compared between participants who were classified as socially isolated vs not socially isolated (reference). Logistic regression (LR) analysis was performed to evaluate the association between social isolation and EOL plans and care, after adjusting for age, marital status, gender, race, education, income and self-rated health.

Results: Of the NHATS respondents, approximately 24% were socially isolated. Among the socially isolated, 49.4% reported having a EOL discussion vs 61% of those not socially isolated (p<0.001); 43% reported having a DPOA vs 51.4% of those not socially isolated (p=0.002); and 45.7% reported having a AD vs 53.3% of those not socially isolated (p=0.007). Additionally, in adjusted LR models, socially isolated individuals were more likely to not have EOL discussion (OR 1.592; 95%CI 1.23,2.06) or have a DPOA (OR 1.433; 95%CI 1.11,1.86). However, the association between social isolation and having an AD was not statistically significant after adjusting for covariates (OR 1.296; 95%CI 0.99,1.69).

Conclusion: Older adults who experience social isolation are at increased risk for not having EOL discussions or a DPOA. More studies are needed to further understand the end of life plans and care wishes of socially isolated older adults, and the best strategies to address these important issues in practice.

B131 Student Presentation
What Happens to Hospitalized Older Adults Transferred to Long-Term Acute Care Hospitals?
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BACKGROUND: Long-term acute care hospitals (LTACs), originally designed for the chronic critically ill requiring prolonged mechanical ventilation, now also provide care for patients with other intensive care needs including intravenous antibiotics and complex wound care. Hospitalized older adults are increasingly being transferred to LTACs but little is known about the natural history and how many potentially achieve meaningful recovery.

METHODS: We conducted a retrospective cohort study using national 5% Medicare data from 2009-2013. We included all adults ≥65 years with Medicare Parts A and B who were transferred from
an acute care hospital to an LTAC on the same or next day and no previous LTAC use in the prior year. The main outcomes and analyses were mortality using Kaplan-Meier estimates and the cumulative incidence of achieving a 60-day consecutive period of time without a hospitalization or an institutional post-acute care encounter as a proxy of meaningful recovery using the Fine and Grey method to account for competing risks of death and hospice enrollment.

RESULTS: We included 14,072 older hospitalized adults subsequently transferred to an LTAC. The 1- and 5-year mortality were 55% and 82% respectively. Comparatively, older adults hospitalized for ≤7 days but not transferred to an LTAC had 1- and 5-year mortality of 16% and 44%; and those hospitalized for >14 days and not transferred to an LTAC had 1- and 5-year mortality of 45% and 65% (log rank p<0.01). Following LTAC discharge, only 48% achieved a 60-day period without inpatient or post-acute care use with the cumulative incidence curve plateauing at approximately 12 months, meaning few recovered beyond this point in time.

CONCLUSIONS: The mortality rate for hospitalized older adults transferred to an LTAC is extremely high, comparable to having advanced cancer (e.g., prostate, lung, colon). Furthermore, only half experience a minimal definition of short-term meaningful recovery. If recovery does not occur within the first year, patients are unlikely to ever recover. In light of this poor prognosis, patients, families, and physicians should begin goals of care discussions earlier, avoid interventions with long time horizons to benefit (i.e., cancer screening, osteoporosis management, intensive diabetes management), and consider shifting from aggressive treatment to palliative care.

B132 Effects of comorbidities on functional decline in nursing home residents with multiple sclerosis

Background: Prior research demonstrated reductions in functional dependence and cognitive ability among nursing home (NH) residents with multiple sclerosis (MS) within their first year of admission. These long stay NH residents also experienced increased comorbidity burden. We examined the interplay between comorbidities and changes in (1) physical and (2) cognitive function in a national, long-stay NH cohort with MS.

Methods: Using NH assessments [Minimum Data Set (MDS) versions 2.0 and 3.0] from 1999-2015, we identified a retrospective cohort with MS who were new long-stay (LS>100 days) NH residents. Subjects were required to have at least one baseline and one follow-up MDS assessment. Follow up began at the time of NH admission and continued until the last available assessment of activities of daily living (ADLs) or cognition [cognitive performance scale (CPS) or cognitive functional scale (CFS)] within 6 months following admission. Comorbidities were identified from the baseline MDS. Competing risk proportional hazard regression was used to examine the association between comorbidities and study outcomes [decline of ADLs (at least 3 points’ increase) or CFS/CPS (at least 1 point’s change)], adjusting for sex, age, and race.

Results: The cohort included 76,914 NH residents with MS (mean age: 62.3; SD 14.8 years; women: 69.7%). The most common comorbidities included depression (42.9%), hypertension (42.9%), diabetes (19.9%) and anxiety (14.6%). In total 15.4% of subjects had an ADL decline, 11.7% had a CFS decline and 15.8% experienced a CPS decline during 6-month period. Anxiety (1.13; 95% CI 1.05-1.20) and hypertension (HR 1.13; 95% CI 1.07-1.19) were associated with 6-month ADL decline. Hypertension (HR 1.18; 95% CI 1.03-1.13), Parkinson’s disease (HR 1.17; 95% CI 1.02-1.34), Alzheimer’s disease (HR 1.29; 95% CI 1.15-1.46) and deep vein thrombosis (HR 1.18; 95% CI 1.05-1.32) were associated with 6-month CPS decline.

Conclusions: We identified several major comorbidities that were associated with significant declines in physical and cognitive function for NH residents with MS. Further research should examine the potential for appropriate comorbidity prevention and management to mitigate increased dependence among this vulnerable population.

B133 Suicide attempts, psychological distress, and resilience in older adults
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Background: Age is an important risk factor for suicide in epidemiologic studies. The stress-diathesis model has been used to explain suicide in older adults with psychiatric disorders, stating that age-related changes in cognitive control can predispose older individuals to make impulsive decisions under acute stress. We sought to test this stress-diathesis concept in the general population by asking whether advancing age is associated with greater predisposition to attempt suicide in the face of psychological distress.

Methods: The sample consisted of adults (age ≥18) who completed the 2008-2014 National Survey for Drug Use and Health questionnaires (n=269,078). We calculated the weighted prevalence of past-year suicide attempts in each age group. We used logistic regression to predict suicide attempts using age, the Kessler-6 (K6) psychological distress scale, and their interaction, while controlling for gender and race/ethnicity. Finally, we plotted the predicted probability of suicide attempts over age group and K6 score.

Results: The weighted prevalence of suicide attempts decreased with age (p<0.001): 18-25 years old (1.2%); 26-34 years old (0.5%); 35-49 years old (0.5%); 50-64 years old (0.4%); 65 and over (0.2%). Adults aged ≥65 had the lowest prevalence of suicide attempts as the K6 score increased (see Figure).

Conclusions: Our findings suggest that at the population level, older adults are the least likely age group to attempt suicide when facing acute psychological distress. There could be underappreciated resilience to psychological distress among many older adults.

B134 Student Presentation
A Qualitative Study of Obesity Stigma in Older Adults
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Background: Obesity affects approximately one-third of older adults in the United States and accounts for 10% of medical costs. Excess weight and the term ‘obesity’ are associated with societal
stigma, and patients with obesity may face weight-based prejudice and discrimination in multiple arenas, including the medical setting. Inherent perceptions of weight bias and stigma are known to increase the risk of depression, low self-esteem and exercise avoidance. Understanding the role of obesity bias and stigma in older adults is vital to enhancing the quality of care and to engaging individuals in behavior modification to improve health and prevent future immobility and obesity-related conditions.

**Methods:** We conducted 8 individual semi-structured interviews and 5 focus groups with 29 older adults with obesity, 7 primary care clinicians, and 4 community leaders in a rural setting. Interviews and focus groups were 60 and 90 minutes in length, respectively. Questions pertaining to obesity stigma were asked in the final 15-20 minutes. All interviews were recorded, transcribed and subsequently coded and analyzed for thematic content.

**Results:** Clinician participants perceived that older adults are less affected by obesity stigma than younger adults; however, patient participants with obesity revealed a contrary perspective in which they often felt weight-based shame and stigma. There was also a disconnect between clinician and patient understanding of obesity, itself—obesity as a disease concept vs obesity as a stigmatized term—which may persist despite attempts to medicalize the word as a disease defined by the American Medical Association. Casual use of the word ‘obesity’ in a medical setting may hinder effective communication between clinician and patient. Heightened sensitivity and awareness on the part of clinicians may help to change the dialogue around obesity, thereby improving efforts to engage patients in effective conversation around behavior modification.

**Conclusions:** Just as physiological aspects of obesity persist into older adulthood, so do perceptions of stigma. For older adults with obesity, the word ‘obesity’ itself is charged with negative connotations. Use of the word ‘obesity’ in a medical setting may hinder effective communication between clinician and patient. Heightened sensitivity and awareness on the part of clinicians may help to change the dialogue around obesity, thereby improving efforts to engage patients in effective conversation around behavior modification.

**B135**

**Association of Surrogate Decision Makers’ Religious/Spiritual Beliefs with End of Life Decisions**

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1. Rush University, Chicago, IL; 2. Regenstrief Institute, Indianapolis, IN; 3. Indiana University, Indianapolis, IN; 4. Indiana University Health, Indianapolis, IN.

Nearly half of hospital decisions for older adults are made by surrogates, who often turn to religious or spiritual (R/S) beliefs.

We enrolled patients 65+ and their surrogates from 3 Midwest hospitals. The legal surrogate was surveyed during hospitalization regarding R/S beliefs. Due to the multi-dimensional nature of R/S, we assessed: Organizational Religious Activity, Non-Organizational Religious Activity and Intrinsic Religiosity (Duke University Religion Index); positive and negative religious coping (Brief RCOPE); spiritual well-being (Functional Assessment of Chronic Illness Therapy-Spiritual Well-Being Scale-non-illness); belief in miracles (“I believe a miracle or divine intervention might change the course of (patient’s) illness”); and surrogate’s preferences for code status. For patients who died within 6 months, chart reviews assessed receipt of Life Sustaining Therapy (LST) within 30 days of death and hospice. Separate multi-variable logistic regressions for each outcome variable included all religious variables, patient and surrogate demographics, trust, anxiety, health literacy and patient illness severity.

Of 364 patient/surrogate dyads, patients were 28% African American and 69% white, with mean age 81.9. Surrogates were 67% adult children and 91% Christian; 47% attended religious meetings weekly or more; 56% agreed/strongly agreed with the miracle item. We found 54% of surrogates preferred DNR status; of 156 who died, 76% received at least one LST within 30 d of death and 45% died in hospice. Only belief in miracles was associated with surrogate preferences for DNR (adjusted Odds Ratio (aOR) 0.44 (95% CI 0.21, 0.94); p=0.0340). No religious variables were associated with LST within 30 d of death. Receipt of hospice was associated with lower intrinsic religiosity (aOR=0.69 (0.51, 0.93) p=0.0154) and lower belief in miracles 0.24 (0.07, 0.87) p=0.0297).

Among mostly Christian surrogates, belief that a miracle could change the course of a patient’s illness is associated with lower preference for DNR and lower hospice use. Belief in miracles should be explored with surrogates as death approaches. Few other R/S variables were associated with end of life care. Understanding how R/S affect decision making may require individual spiritual assessment.

**B136 Student Presentation**

**Ethical Challenges in the Care of Unrepresented Adults in the Safety Net**

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**BACKGROUND:** Ethical challenges in decision-making for unrepresented adults, i.e. those who lack capacity to make medical decisions and have no identifiable surrogate, is a pressing concern in safety net health care systems where patients are particularly vulnerable.

**METHODS:** We performed semi-structured interviews with key stakeholders in San Francisco’s safety net health care system and city services, including clinicians, social workers, the Public Guardian, court investigators, and Adult Protective Services, as well as national experts (total n= 20) to understand challenges in caring for unrepresented adults. Questions explored their roles in working with unrepresented adults, thoughts on the process for decision making for unrepresented adults, and potential alternatives to the current process. Interviews were recorded and transcribed, and we performed content analysis using Dedoose v7.6.17 to identify major themes related to ethical challenges.

**RESULTS:** Interviewees, who feel they have moral agency, grappled with multiple ethical dilemmas around decision-making. Interviewees were concerned with ensuring that patients were “safe” (beneficience) and acknowledged that maximizing safety impinged on patients’ autonomy. Others expressed wishing to avoid harm (nonmaleficence) as the primary driver of their actions and that this conflicted with respect for autonomy. What was considered harm varied, for example preventing someone from being harmed in her living situation or concern about harm from poor decision-making. Challenges around respecting autonomy were expressed by all interviewees: concern about taking away the rights of a person too quickly; paternalism in the approach to care; and the failure to incorporate patient views and values. Distributive justice was a concern of many interviewees with regard to potentially inappropriate and disproportionate use of hospital resources. Lastly, stakeholders stressed the importance of a consistent and fair process (procedural justice). Interviewees conveyed the large emotional burden on them and the unrepresented adult from these dilemmas.

**CONCLUSIONS:** We identified that caring for unrepresented adults presents complex dilemmas between competing ethical concerns for stakeholders in a safety net health care system. Ethical challenges in the care of these adults exacts a moral and emotional toll on providers.

**B137**

**LGBT elder and US health care systems: experiences and unmet needs**

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**Background and aims:** Approximately 2.7 million US adults over 50 self-identify as members of the LGBT or sexual minority community. Many in this population have been unable to live...
authentically—or be openly “out”—until recently, and as a result lacked targeted, supportive health care. The aim of this study was to develop increased understanding of the attitudes toward and experiences of aging and accessing elder-specific services among LGBT elders. **Methods:** This report describes a focus group study conducted in Orange County (OC), California. We conducted individual semi-structured interviews with ten LGBT elders ages 65 or older from the local LGBT community. Interviews were audio-taped and then translated (if required) and transcribed verbatim. Transcripts were analyzed via thematic analysis using in vivo coding. Codes were clustered into families and then ultimately into broader themes. **Results:** Identified major themes were “Outness;” “Things are Different Now;” and “Additional Resources.” These themes respectively describe how comfortable participants were in being “out” among their community and with health care providers; how their perceptions of the treatment they received had changed over the course of their lifetimes, and things they felt were helpful to them or were lacking in the community. In particular, “Things are Different Now,” included a code family called “Vicarious trauma,” which encompassed participants’ reports of negative and at times violent experiences that they attributed to others’ reactions to their LGBT identity. **Conclusions:** Our findings highlight strengths of and remaining challenges in LGBT health care and particularly provision of elder-specific resources. While many LGBT elders are accustomed to navigating social mores to avoid the violence or negative experiences relating to their LGBT status, it is vital that health care and social service systems specifically seek ways to meet the unique needs of this community. The results of this study will be used to develop educational programs for geriatric workforce and healthcare professionals, thereby contributing to a responsive and compassionate healthcare system for vulnerable LGBT senior citizens.

**B138 Student Presentation**

**A tale of two settings: a qualitative study of multidisciplinary perceptions of advance care planning in primary care**

C. Quintana, J. Hua, K. Kwaschyn, L. Hargis-Fuller, B. A. Blomberg, E. Roberts, M. A. Drickamer. Center for Aging and Health, University of North Carolina at Chapel Hill, Chapel Hill, NC.

**Background:** Approximately 70% of patients lack decisional capacity at end-of-life, indicating a need for advance care planning (ACP). ACP offers multiple benefits: alignment of patient-defined wishes with care received, higher quality of care, and increased satisfaction with care. Primary care is the ideal setting for ACP, as providers develop close relationships with patients over time. Despite the benefits of ACP, rates of ACP in primary care remain relatively low.

**Study Objective:** To explore perceptions of barriers and facilitators to ACP in a cohort of multidisciplinary providers in primary care settings.

**Methods:** Purposive sampling was used to recruit a multidisciplinary cohort of 16 healthcare professionals practicing in primary care settings in the southeastern United States. Eleven interviewees were employed at Programs of All-Inclusive Care for the Elderly (PACE) while 5 were employed at Community Health Clinics (CHC). The semi-structured interviews were recorded, transcribed, entered into MAXQDA12 software, and analyzed for themes with a team-based iterative approach.

**Results:** Prior provider experience with ACP and the availability of a structured approach to ACP emerged as key facilitators. Opinions on optimal timing of ACP were divided between an “early is best” and a more gradual approach, but lack of dedicated time for ACP was often cited as a barrier. There were notable differences in perception between interviewees from PACE, where a structured interdisciplinary approach was in place, and those from CHC, which did not have well-defined staff roles or consistent ACP processes. PACE providers more often focused on patient-family dynamics, socioeconomic factors, and cultural differences, while CHC providers tended to discuss logistics of advance directive completion and personal discomfort with the topic.

**Conclusions:** Our study identified specific barriers and facilitators to ACP in primary care. The findings highlight the need for resource development, promotion of public awareness regarding ACP, and interprofessional training to increase comfort with complex discussions. The differences in perceptions between PACE and CHC interviewees illustrated that the ACP structure in the PACE setting could be adapted to promote ACP in other primary care settings.

**B139 Student Presentation**

Cardiologist perspectives on shared-decision-making in the treatment of older adults after acute myocardial infarction

E. Grant, J. V. Dickson, D. Matlock, J. Summapund, S. Chaudhry, C. Blaum, J. A. Dodson. 1. NYU Langone Health, New York, NY; 2. Yale School of Medicine, New Haven, CT; 3. UC Denver, Denver, CO.

**Background:** Medical and interventional therapies for older adults with Acute Myocardial Infarction (AMI) reduce mortality and improve outcomes in selected patients, but there are also risks associated with many of the treatments. If and how shared decision-making (SDM) would be useful in the management of such patients has not yet been investigated. We therefore sought to understand cardiologists’ perspectives on SDM in older adults with AMI through a qualitative study.

**Methods:** We conducted 20 in-depth interviews with NYU cardiologists using a semi-structured interview guide. The interviews were audio-recorded and transcribed, then analyzed using ATLAS.ti, a qualitative analytic software program. Two investigators independently coded transcripts using the constant comparative method, and an interactive, team-based process was utilized to determine the themes.

**Results:** Three major themes emerged from the interviews (Table): (1) cardiologists believe SDM is important in the treatment of older adults with NSTEMI but not STEMI; (2) despite a general consensus that cardiologists are using SDM in their practices, interpretations of what this means vary widely; (3) many cardiologists are amenable to a tool to facilitate SDM by using personalized risk scores.

**Conclusions:** While SDM is widely accepted as important and useful in the treatment of high-risk older adults with AMI, there is a disparity in how cardiologists interpret and implement it. Cardiologists are amenable to a decision aid that would give personalized risk scores for patients in an accessible and visually appealing manner.

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<tr>
<th>Theme</th>
<th>SDM Strategy</th>
<th>Description</th>
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<td>(1) Importance of SDM</td>
<td>“I think it’s important that the patient and the family understand the options.”</td>
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<td>“I think this is a very important part of the process.”</td>
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<td>“I think it’s a critical part of the process.”</td>
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<td>“I believe it’s very important to the patient.”</td>
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<td>“I think it’s important that the patient and the family understand the options.”</td>
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<td>(2) Varied interpretations of SDM</td>
<td>“We make the decision on a team whether or not the patient should go for a cath.”</td>
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<td>“I don’t frequently give patients— if I’m sending a patient, I make the decision that is appropriate, then we go through the risks and benefits.”</td>
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<td>“I think getting more data, putting the data into a form that’s more personalized to the patient or the individual.”</td>
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<td>“Create a calculator of risk. That should pop up on CCP for the MI patient or be available. You just say, ‘Yuck, for 80-year-olds and up, we have this kind of a calculator.’”</td>
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**B140 Student Presentation**

Paid Caregiver Communication with Families and the Healthcare Team


**Background:** Homebound, older adults are especially reliant on paid caregivers (PCGs) in order to remain in the community. PCGs hold a unique perspective on the health, functioning, and needs of patients, which offer valuable insights into patient preferences and needs. This report describes a focus group study conducted in Orange County (OC), California. We conducted individual semi-structured interviews with ten LGBT elders ages 65 or older from the local LGBT community. Interviews were audio-taped and then translated (if required) and transcribed verbatim. Transcripts were analyzed via thematic analysis using in vivo coding. Codes were clustered into families and then ultimately into broader themes. Identified major themes were “Outness;” “Things are Different Now;” and “Additional Resources.” These themes respectively describe how comfortable participants were in being “out” among their community and with health care providers; how their perceptions of the treatment they received had changed over the course of their lifetimes, and things they felt were helpful to them or were lacking in the community. In particular, “Things are Different Now,” included a code family called “Vicarious trauma,” which encompassed participants’ reports of negative and at times violent experiences that they attributed to others’ reactions to their LGBT identity. **Conclusions:** Our findings highlight strengths of and remaining challenges in LGBT health care and particularly provision of elder-specific resources. While many LGBT elders are accustomed to navigating social mores to avoid the violence or negative experiences relating to their LGBT status, it is vital that health care and social service systems specifically seek ways to meet the unique needs of this community. The results of this study will be used to develop educational programs for geriatric workforce and healthcare professionals, thereby contributing to a responsive and compassionate healthcare system for vulnerable LGBT senior citizens.

**B138 Student Presentation**

A tale of two settings: a qualitative study of multidisciplinary perceptions of advance care planning in primary care

C. Quintana, J. Hua, K. Kwaschyn, L. Hargis-Fuller, B. A. Blomberg, E. Roberts, M. A. Drickamer. Center for Aging and Health, University of North Carolina at Chapel Hill, Chapel Hill, NC.

**Background:** Approximately 70% of patients lack decisional capacity at end-of-life, indicating a need for advance care planning (ACP). ACP offers multiple benefits: alignment of patient-defined wishes with care received, higher quality of care, and increased satisfaction with care. Primary care is the ideal setting for ACP, as provid...
homebound patients. However, they are not typically integrated with the healthcare team, and there are no data on how PCGs communicate health information to family members and health professionals.

Methods: The study included 1) homebound individuals > 65 years with ≥1 hospitalization in the past 12 months, functional impairment, and PCG support for >8 hours per week for >6 months, or their proxy if the individual had dementia, and 2) their PCG. Separate one hour, semi-structured, qualitative interviews were conducted with patients or proxies (n=15) and PCGs (n=15). Interviews were audiorecorded and transcribed. Transcripts were thematically coded and analyzed using NVivo software.

Results: PCGs frequently communicate about patients’ health needs, changes in status, and day-to-day well-being. In general, PCGs communicated information about the patient and their needs to family members or proxies, many of whom noted that PCGs know the most about the patient’s health. In turn, families and proxies communicated with the healthcare team. This was true both for patients with dementia as well as for patients with no formal dementia diagnosis, but whose PCGs noted “memory problems.” While a majority of PCGs attended doctors’ appointments and communicated with nurses when they visited, few reported initiating communication with doctors, nurses, or other members of the healthcare team. When patients did not have dementia or memory problems, PCGs deferred communication with families or the healthcare team to patients themselves. Barriers to more frequent PCG communication with the healthcare team included fear of upsetting the patient and wanting to respect the family’s authority.

Conclusions: PCGs play an active role in communicating patient needs and health status to families or proxies, who depend on these observations to notify the healthcare team. This reliance on PCGs’ for insight into patients’ health is especially true when patients have dementia or memory problems. Interventions to improve PCG integration into the healthcare team must take into account this important relationship between PCGs and the families of the patients they care for.

B143 Understanding why older adults opt out of osteoporosis clinical trials after screening
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Background: Older adults are underrepresented in clinical trials despite the need to determine therapy effectiveness in an older population. Residents of long-term care (LTC), in particular, are often excluded from clinical research due to strict inclusion criteria and transportation difficulties. Even if these barriers are removed, recruitment and retention of older adults in clinical trials are challenging.

Methods: We conducted semi-structured interviews with LTC residents who consented to be screened but subsequently opted out of clinical trials after screening.

Results: Participants from all groups expressed that mHealth technology could improve health behaviors of this population. Older adults were optimistic that mHealth could prompt individuals to track their health (steps, nutrition). Participants believed that such technology could improve patient insight into health, motivating change and assuring accountability to prompt behavior change (healthier eating, physical activity). Yet, participants described barriers to using technology, including a lack of technology infrastructure in rural areas and technical complexity; privacy was not brought up as a major concern. Clinicians appeared less likely to use technology than community leaders or patient participants, and patient participants had limited first-hand experience using these devices.

Conclusions: Using technology in older adults with obesity residing in rural areas is perceived to be useful, yet barriers must be overcome for successful implementation in this population.

B142 Technology for Behavioral Change in Rural Older Adults with Obesity
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Background: The delivery of clinical weight loss interventions is fraught with difficulties, particularly in rural areas where transportation difficulties and access to care are problematic. Mobile health (mHealth) technologies provide a potential solution for overcoming these challenges and successfully delivering health promotion interventions. We evaluated the potential of using technology in rural older adults with obesity. As part of initial usability testing, we also determined whether messaging from a mobile health (mHealth) device would be acceptable.

Methods: We conducted a convergent, parallel mixed-methods study using semi-structured interviews, focus groups, and self-reported questionnaires, using purposive sampling of 29 older adults, 4 community leaders and 7 clinicians in a rural setting. We transcribed the data, and developed codes informed by thematic analysis using inductive and deductive methods and assessed the quantitative data using descriptive statistics.

Results: Participants from all groups expressed that mHealth technology could improve health behaviors of this population. Older adults were optimistic that mHealth could prompt individuals to track their health (steps, nutrition). Participants believed that such technology could improve patient insight into health, motivating change and assuring accountability to prompt behavior change (healthier eating, physical activity). Yet, participants described barriers to using technology, including a lack of technology infrastructure in rural areas and technical complexity; privacy was not brought up as a major concern. Clinicians appeared less likely to use technology than community leaders or patient participants, and patient participants had limited first-hand experience using these devices.

Conclusions: Using technology in older adults with obesity residing in rural areas is perceived to be useful, yet barriers must be overcome for successful implementation in this population.
Participating in clinical trials of zoledronic acid or denosumab for osteoporosis. Interviews were audio-recorded, transcribed, and subjected to thematic analysis using an iterative approach. Two investigators independently coded transcripts, with consistency ensured through full adjudication. Resultant themes were then used to capture the primary reason for study refusal in a larger sample of potential participants.

Results: We interviewed 15 older adults (age 85.6±5.8, 87% female). Three central themes emerged: personal reasons, advice from others, and study-related concerns. Personal reasons that arose included being “too old,” having “too many” other illnesses to manage, and a desire to not take additional medications. Some individuals felt osteoporosis was not an important health concern requiring treatment in light of their other comorbidities. Several of those interviewed withdrew participation based on the advice of health professionals, family members, or friends. Older adults also expressed study-related concerns about adverse medication effects, not being guaranteed active treatment due to randomization, and discomfort with study procedures. Using these themes, we recorded the main reason for withdrawal from 109 individuals. The primary drivers of the decision to opt out were counsel from others (27%) and personal health-related issues (21%). Fewer older adults withdrew over concerns related to medication side effects (9%), feeling “too old” (6%), or placebo group placement (3%).

Conclusion: Future studies should consider strategies to engage family and physicians in the participation process. Additionally, educating older adults about the importance of their participation in clinical trials can help address the perception that they have too many health concerns to participate.

B144 Prescribing and Monitoring Controlled Substances in Home Care: A Qualitative Study
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Background: Public health departments have guidelines to regulate controlled substances. Though interventions occur in the ambulatory setting, none exist in the home-based primary care setting. This study aims to examine the attitudes, knowledge and trends of geriatrics providers in regards to prescribing and monitoring controlled substances in home care.

Methods: The study took place at a large urban safety-net hospital. The subjects were 17 geriatrics providers who practice in the home care setting, including registered nurses, nurse practitioners, and physicians. The study was comprised of an anonymous 57-item survey.

Results: Survey response rate was 94%. Approximately 67% of respondents noted that >30% of their patients have chronic nonmalignant pain (CNMP). Almost all providers believed that diversion of CNMP was a common problem. Advices and patients, providers often feel that they cannot comply with all the recent prescribing/monitoring regulations for several reasons. The results of this study may serve as a stepping stone in developing efficient and effective plans for prescribing and monitoring controlled substances in the geriatrics home care setting.

B145 Loss of IL-6 increases mortality in an animal model of chronic inflammation
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Background: In older adults chronic inflammation (CI) commonly accompanies frailty and increases risk of mortality. From all the different pro-inflammatory cytokines that were demonstrated to be increased in frailty, IL-6 elevation was independently associated with worse decline and with the progression of age related diseases. IL-6 has been therefore suggested as a therapeutic intervention target. However, the utility of selective disruption of IL-6 in frailty remains unknown. We previously demonstrated in mouse model of inflammation (IL-10−/−) an elevated level of IL-6 and marked inflammation related metabolic abnormalities in mitochondria. Here, we investigated the impact of genetic disruption of IL-6 on physical performance and survival in mouse models of aging, inflammation and the combination of aging and inflammation.

Methods: We developed a mouse model that demonstrates CI but lacks IL-6 (IL-10−/−/IL-6−/−). We compared young and aged IL-10−/−/IL-6−/− mice to age- and gender-matched C57BL/6J wild-type (WT) mice and IL-10−/− mice (n=5-9 per group). Inflammatory mediators, oxidative damage and mitochondrial parameters in cardiac muscle as well as functional performance on treadmill and mortality were compared in our mouse cohorts.

Results: Compared to WT and IL-10−/− mice, the IL-10−/−/IL-6−/− mice developed early inflammatory pathway activation as shown by higher levels of TNFaR1 (p<0.05) and had higher cellular ATP concentration per mitochondrial copy number (0.0021ug/ml, 0.0015ug/ml, 0.0040ug/ml, respectively, IL-10−/−/IL-6−/− vs IL-10−/− p<0.01, IL-10−/−/IL-6−/− vs WT p<0.005). Furthermore, young IL-10−/−/IL-6−/− mice showed the least amount of cardiac peroxynitrite level indicating reduced mitochondrial free radical damage (p<0.05). The IL-10−/−/IL-6−/− mice showed a better performance on the treadmill only in the first 15 minutes of running time. Furthermore, we observed a significantly higher mortality with aging in IL-10−/−/IL-6−/− compared to IL-10−/− or WT mice (39%, 10%, 8%, respectively, p<0.05).

Conclusion: Selective disruption of IL-6 in the mouse model of CI was reversal of some of the age and inflammation related molecular changes and with better short term functional performance but with worse survivorship highlighting the critical role of IL-6 as a repair cytokine.

B146 Student Presentation
The role of germline proteasome in aging of somatic tissues
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Background: Ubiquitin-proteasome system (UPS) maintains proteostasis by degrading damaged proteins. After reproductive period, in somatic tissues, UPS activity declines with age, leading to proteostasis collapse, aging, and neurodegeneration. However, interestingly, in germline tissues, UPS activity becomes elevated at reproductive maturity and maintained at high levels throughout age.

Objective: Germline tissues may require high UPS activity in order to maximize reproductive outcome by 1) clearing up damaged proteins in sperms and eggs to ensure that progenies do not inherit
any damaged proteins from their parents and 2) rapidly producing large amounts of reproductive proteins by recycling existing proteins. Germline tissues may thus compete with somatic tissues for maintaining high UPS activity. Germline tissues may actively repress somatic UPS activity and cause aging. The purpose of this study is to test these hypotheses.

Methods: In order to see whether high germline UPS activity is essential for synthesizing reproductive proteins and maximizing reproductive output at the sacrifice of longevity, we treated C. elegans expressing GFP-labelled vitellogenins (reproductive proteins) with bortezomib (proteasome inhibitor) during reproductive period. Then, we measured GFP fluorescence, number of progenies, and lifespan. In addition, we dissected ovaries and somatic tissues from long-lived fly lines (chico flies) and measured 26S proteasome activities.

Results: In line with our hypotheses, after bortezomib treatment, vitellogenin levels decreased by 80% (P ≤ 0.001). Subsequently, the number of progenies decreased by 70% (P ≤ 0.001) and progenies showed developmental defects. However, the same treatment significantly extended the median lifespan in a dose dependent manner. Similarly, chico flies, compared to wild-types, showed 5 times lower 26S proteasome activities in ovaries but 2 times higher 26S activities in somatic tissues, implying that germline and somatic tissues may compete for achieving high UPS activity. High levels of germline UPS activity may be essential for making reproductive proteins and improving reproductive outcome. However, maintaining high UPS activity of germline tissues may impair UPS activity of somatic tissues and cause aging. In future, we are going to genetically manipulate UPS activity in only germline tissues and investigate the effect of this intervention on aging.

B147 Aurora Geriatric Scholars Program: Developing Geriatric Expertise to Address the Challenges of an Aging America

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Background: The older (65+ yrs) population is projected to double by 2030. Older adults have multiple chronic diseases and highly vulnerable to adverse outcomes when hospitalized. Specialized geriatric knowledge and skills are needed to provide care and achieve optimal outcome for older adults.

Purpose: The Program is to develop nurses and certified nursing assistants (CNA) with specialized knowledge and skills to deliver care for older adults and improve inpatient unit-based patient outcomes and is a replication of the UAB Geriatric Scholars program. Geriatrics Workforce Enhancement Program (GWEP) Grant #U1QHP28712.

Conceptual Framework: An implementation science framework guided this project.

Sample/Setting: Implemented on three inpatient nursing units at two acute care hospitals, led by the CNS/NC, with RNs (n=11) and CNAs (n=5), all BSN ranging from newly licensed to proficient.

Methods: This 2 year project involved providing foundational and specialized geriatric knowledge and skills during interactive workshops featuring regional and national experts. Participants received education and support for conducting a unit-specific process improvement project aimed at fostering teamwork and improving patient outcomes. Electronic data were used to evaluate and support implementation with near real time feedback with improvement efforts.

Results: Full day workshops (n=8) were conducted quarterly engaging staff in carrying out essential practices such as assessing function and mental status, safely mobilizing, managing behavior, supporting advance care planning and conducting process improvement. Workshop evaluations revealed high levels of engagement and appropriate content. Despite positive evaluation, practice changes in Year 1 were limited. The team shifted focus from disseminating knowledge to implementing strategies to promote mobilization using electronic metrics for near real time feedback. By end of Year 2, the use of standard assessments and mobility measures improved. Time from admission to first out of bed showed consistent improvement with increased frequency of egress testing and reduced falls.

Conclusions: The Gerischolar Workshops received positive evaluations, but education by itself did not improve outcomes. Transitioning to focused efforts on promoting mobilization were more effective.

B148 Development and Evaluation of a Quality Assurance and Process Improvement (QAPI) Curriculum Using the INTERACT Program


Introduction: In 2016-17, we designed a QAPI curriculum for Geriatric Medicine Fellows and Nursing Home (NH) Staff, focused on training NH staff to assess patients and communicate better with physicians.

Methods: The curriculum had 3 components: 1) A four-hour introductory QAPI seminar for NH staff and Geriatric Medicine Fellows; 2) Fellows provided monthly staff in-services on common medical conditions and SBAR technique using the INTERACT program; and 3) Fellows monitored weekend-on-call logs for quality of communication and SBAR use. All components of the curriculum were evaluated. Knowledge questionnaires and Inter-Professional Collaborative Practice Core Competencies (12 questions on attitudes and skills) were completed by fellows and NH staff before and after the introductory QAPI seminar. For the monthly in-services, pre-post questionnaires were done by NH staff about level of comfort in managing conditions using SBAR. Weekend on-call logs were monitored for quality of communication and use of SBAR. We evaluated pre-post differences in scores and percent use of SBAR before and after curriculum implementation.

Results: Seven Geriatric Medicine Fellows and five NH staff participated in the introductory QAPI seminar. Total knowledge scores (range 0-5) increased significantly after participating in the seminar (2.25 vs. 3.50, p=0.01). Similarly, mean scores on the IPEC competencies increased after participating (4.23 to 4.52, p=0.008). SBAR in-services were attended by 128 trainees, and 112 completed pre-post questionnaires which showed significant improvements in all questions. Overall mean score increased from 3.44 to 4.11 after the in-services, p<0.0001. Weekend on-call logs showed nurses’ use of SBAR increased significantly after in-services, from 26.2% in November 2016 (before in-services), to 47.5% in December 2016, 59.0% in January 2017, and 61.1% in February 2017 (p for trend <0.0001).

Conclusions: We were able to successfully implement a QAPI curriculum using the INTERACT program. Participants in the curriculum demonstrated significant increases in knowledge and use of the SBAR technique. Previous studies have found that proper use of SBAR has been associated with reductions in hospital re-admissions. We plan to review the impact of our curriculum on hospital re-admissions next year.

B149 Internal Medicine Resident Practice Change After Implementation of an Ambulatory Geriatrics Curriculum


Background: Data from a pilot Geriatrics curriculum for Internal Medicine residents at Yale identified statistically significant increases in knowledge and learner confidence post-intervention. The goals of this follow up study were to a) characterize commitment to change...
(CTC) themes immediately post-invention and b) to identify the practice changes made 6 months later.

Methods: Based on a needs assessment of Yale Internal Medicine residents, sessions on Medication Management and Primary Care in the Older Adult (MMPC) and Goals of Care (GoC) were developed. Residents completed a survey after each session to identify perceived knowledge gaps, planned practice changes, barriers to and facilitators of change. Six months post-intervention, residents completed a follow-up CTC survey. Two coders analyzed the data independently and together, iteratively refined the coding key to resolve coding discrepancies.

Results: Thirty-nine interns attended the GoC session and 87% completed the initial CTC survey. Interns committed to using a formalized framework for delivery of bad news (35.3%) and initiating advance care planning discussions into primary care visits (32.4%). Of the 114 residents (PGY1-3) that attended the MMPC session, 89% completed the initial CTC survey. Residents committed to deprescribing unnecessary medications (48%) and performing thorough medication reconciliation (25.5%). Six months after the GoC session, 20 (51.2%) interns responded to the survey, 16 (80%) made a practice change and 7/16 (43.7%) made changes consistent with their original commitments. Six months after the MMPC session, 50 (43.9%) residents responded to the survey, 44 (88%) made a practice change and 25/44 (56.8%) made changes consistent with their original commitments.

Conclusions: Following administration of a structured Geriatrics curriculum, a substantial percentage of residents committed and adhered to practice changes. As a next step, we will examine whether this educational intervention is associated with clinical practice changes by reviewing patient charts pre- and post-intervention.

B151 Physicians’ challenges in discussing code status decisions with geriatric patients

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Background

According to international standards, physicians are required to document whether cardio-pulmonary resuscitation (CPR) is medically indicated and desired by hospitalized patients. Scant research and training exists regarding how CPR conversations are conducted with patients, in particular when advanced age and multimorbidity challenge the prospects of the procedure. This study identifies the challenges involved in discussing CPR with elderly patients; its results inform the design of training for resident physicians.

Methods

The study uses natural data consisting in ethnographic observations and 40 recordings of routine CPR discussions between patients and resident physicians on admission to a Swiss geriatric rehabilitation facility. Thematic and Conversation Analysis were used to analyze the content of CPR conversations.

Results

Initial results indicate that the topic of CPR is easily approached by patients but less so by physicians. Physicians introduce the topic tentatively, using a depersonalized question (“we ask all our patients”), or building on previous occasions in which such decision was discussed. Frequently, they describe the situation of CPR necessity as an unlikely situation (“if your heart were to stop, but it won’t happen”), which is at odds with the geriatric patients’ morbidities. Physicians then ask for the patients’ decision, failing to provide prior information on CPR, recovery prognosis, benefits, burdens, and alternatives.

CPR discussions are an occasion for patients to display their attitude regarding end of life, whether in favour of CPR (“I still enjoy living”) or not (“I don’t expect any miracles”), and mention other sensitive issues such as their wish to die and depressive symptoms. As such, an additional challenge for physicians concerns their uptake of the patient’s response and decision. Furthermore, the patient’s answer is a resource which enables the physician to evaluate whether the patient is sufficiently knowledgeable about CPR and is making an informed decision.

Conclusions

Communication is a core component of patient-centered healthcare, particularly when it comes to broaching sensitive matters with vulnerable populations such as geriatric patients. The results of the study can inform the training of “new on the job” physicians regarding how to approach routine yet difficult issues such as CPR with aged patients.
B152

Teaching Aging: A Geriatrics Fellowship Medical Education Curriculum

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Background: Teaching is a core skill for Geriatrics fellows, in both the ACGME Milestones and ADGAP/AGS Entrustable Professional Activities, to enable them to lead education efforts to improve care for older patients; yet most geriatrics fellows have not received formal training in medical education, and new fellows indicated low self-efficacy in teaching geriatrics.

Methods: The Teaching Aging curriculum aims to prepare fellows to be effective and enthusiastic teachers of geriatrics. Objectives were to increase fellows’ self-efficacy in teaching geriatrics and knowledge of principles of adult learning, expand their learner-centered teaching strategies, hone their ability to receive and give feedback, and develop a portfolio of geriatric teaching modules. The curriculum included a monthly seminar series of 1-2 hours on principles of adult learning and teaching strategies, as well as 4-6 peer-led talks per fellow, for which they received feedback and mentorship. Fellows received training for setting and assessing specific learning goals in preparation for precepting first year medical students during home visits for the Harvard Medical School Geriatrics Clinical Immersion. 15 fellows participated in the pilot curriculum from 2015-2017. Teaching self-efficacy was measured in a pre and post survey using a 5 point Likert scale, and compared using a two-tailed students’ T-test.

Results: After participating in the Teaching Aging curriculum, Geriatrics fellows reported increased confidence in their teaching skills and applying adult learning theory, from a pre-curriculum average of 2.6 on a Likert scale where 5 was “very confident”, to a post-curriculum average of 4.1 (delta 1.5, 95% CI 1.3-1.7; p<0.0001). 21% of fellows indicated feeling “confident” or “very confident” in their ability to teach geriatrics prior to the curriculum, while 88% did after implementation. Fellows described more interactive teaching strategies informed by adult learning theory, such as varying the types of questions asked to activate and build on learners’ prior knowledge.

Conclusions: The Teaching Aging medical education curriculum improved geriatrics fellows’ self-efficacy as teachers of geriatrics. Improving fellows’ teaching skills may increase the impact each geriatrician makes on their learners and ultimately improve care for older adults.

B153

Student Presentation

Impact of a System-focused ECHO® Network to Improve Rural and Frontline Care Transitions


Project ECHO® is a model for lifelong learning that creates virtual communities of practice through which an expert hub team co-mentors providers at spoke sites in the management of a certain condition. Providers in rural and frontier areas face increased barriers to effective transitions of care for older adults including geography, long drive times to medical centers, and fewer home and community-based services. The UW ECHO® in Rural and Frontier Care Transitions utilized the ECHO® model to create an online community of local care coalitions working to improve care transitions for older adults in Wyoming and Montana. The hub team is composed of interprofessional leaders in care transitions. This ECHO meets every other week and each session includes a case discussion and a didactic presentation. Case discussions focus on system-level situations and processes contributing to the challenging care transition. Methods: A mixed-methods approach including surveys of participants following each session (n=86) and semi-structured phone interviews (n=7) evaluated the impact of this ECHO Network. Descriptive statistics were calculated on survey data and thematic analyses were used to analyze interview data. Results: Evaluation surveys revealed that participants were highly satisfied with didactic presentations (M=4.45, SD=.65; 5=high) and the overall learning experience (M=4.54, SD=6.1). Further, 91% (n=78) of participants felt that they learned new information from didactic presentations, and 87% (n=75) endorsed feeling increased connection with providers across the state. Participants reported intent to change practice by providing better care to patients (n=34; 40%), improving communication between provider and patient/caregiver (n=34; 40%), improving education of patients (n=30; 35%) and educating other providers (n=29; 34%). Semi-structured interviews revealed a sense of universality gained through learning the common challenges of care transitions and highlighted the utility of the differing perspectives expressed. Conclusions: This ECHO Network contributes significantly to providers’ sense of connection with other providers in the state. The experience has a significant impact on knowledge of care transitions and intent to improve practice.

B154

Impact of Hospital Elder Life Program Volunteer Service: A Geriatric Workforce Pipeline

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BACKGROUND: The Hospital Elder Life Program (HELP) uses trained volunteers to deliver evidence-based interventions to prevent delirium and functional decline in hospitalized older adults. Many studies document the benefits of HELP to patients, yet no studies have described the HELP volunteer experience. This study sought to describe the characteristics of HELP volunteers and to determine if their volunteer experience influenced their educational and/or career choices and attitudes toward older adults.

METHODS: All former HELP volunteers from May 2010 to March 2017, who had completed at least 45 hours of service as a University of Utah Hospital HELP volunteer were invited to complete an IRB approved survey (n=127). The survey included Likert-type scaled and free text responses.

RESULTS: Fifty volunteers (40%) responded to the survey. The average age was 26.3 years (SD=4.7), and 67.6% were female. During their time as a volunteer, 68% were students seeking community service experience. On a scale ranging 0 (not true) to 7 (absolutely true), respondents felt their experience was valuable personally (M=6.7, SD=.78), positively influenced their attitudes toward older adults (M=6.5, SD=.91), and increased their understanding and empathy for hospitalized older adults (M=6.8, SD=.47) and older adults in general (M=6.5, SD=.93). 96% would recommend the experience to other people. Similarly, respondents felt their experience encouraged them to pursue a career working with older adults (M=5.4, SD=1.9). 83% discussed their HELP experience during interviews and felt their experience as a HELP volunteer strongly contributed to their acceptance into graduate school (M=6.8, SD=1.3). At the time of the survey, 66% of the 35 who were either working or in a graduate program were in a healthcare setting.

CONCLUSIONS: Former HELP volunteers rated their experience as extremely valuable. They reported a beneficial impact on educational and career endeavors. The experience may foster positive attitudes towards older adults. Further analysis of former HELP volunteers is warranted to expand our understanding of the impact of this unique volunteer experience and examine long term outcomes. We predict it has a positive influence on geriatric workforce development.
B155
**UW ECHO® in Geriatrics: Relevance and Practice Change in Rural Geriatric Providers**


The goal of Project ECHO® is to create a virtual community of practice through which practitioners build expertise in the assessment, treatment, and management of a specific condition. This is accomplished through regular consultation with a specialty hub team as well as a network of colleagues. The UW ECHO® in Geriatrics hub team was led by a geriatrician and six interprofessional geriatric specialists. Participants were rural interprofessional providers representing 8 disciplines. This ECHO® met every other week, and each session contained case and didactic presentations. **Methods:** The objectives of this study were to assess the relevance of the UW ECHO® in Geriatrics content to participants, as well as the impact of ECHO® on continuing education behavior and clinical care. Post-session evaluation surveys of participants (N=299) were collected via online survey tool and paper forms. Participants were from 69 spoke sites in five states. **Results:** Participants indicated that both the didactic (n=268; 90%) and case presentations (n=257; 86%) were relevant to their practice in geriatrics. The vast majority of participants learned new information from the didactic (n=279; 93%) and case presentations (n=271; 91%). Participants indicated they would seek additional training in the didactic topics (n=209; 70%) as well as the case presentation material (n=188; 63%). As a result of the sessions, 63% (n=187) of participants indicated they would provide better care to patients. Other clinical behaviors endorsed as areas for intended practice change include: improved education of family caregivers (n=126; 42%), improved education of patients (n=95; 32%), improved communication between provider and patient/caregiver (n=101; 34%), and education of fellow providers and/or staff (n=155; 52%). **Conclusions:** Both the didactic and case presentation material of the this ECHO® are highly relevant to rural participants’ practice in geriatric health care and serves to inform and promote their future training and continuing education endeavors. ECHO® participation results in intent to change practice through improved communication with and education of patients and caregivers, and also through the education of peers.

B156
**Cross cultural considerations in language and practice working with American Indian/Alaska Native (AI/AN) populations in geriatrics**

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**Background** Five of the 44 Geriatric Workforce Enhancement Programs (GWEPs) funded by the Health Services and Resources Administration have formed a coalition named the AI/AN Collaborative, to address the unique needs of American Indian and Alaska Native (AI/AN) geriatric patients. The mission of the GWEPs is to provide training in geriatrics and interprofessional care for older adults and integrate geriatrics into primary care. The AI/AN Collaborative is customizing tailor products and care processes to meet the needs of minority populations, ultimately reaching 503,345 people in 149 tribes.

**Methods** The purpose of this project was to create guidelines for healthcare practitioners and social service providers to promote culturally-competent care of American Indian and Alaska Native older adults. The guidelines were identified through expert consensus. The expert panel was comprised of geriatric healthcare providers who are also tribal members of the Navajo Nation, Cherokee Nation, and Athabascan tribe.

**Results** The AI/AN Collaborative has developed 36 culturally respectful best practices that health care providers can apply to care of AI/AN elders. These include important aspects of historical context including; intergenerational trauma, issues specific to dementia and perception of memory changes associated with aging, AI/AN perceptions of the health care system, communication tips, cultural practices that impact health care delivery, and information on systems of care. Specific advice on appropriate language, cultural foods, and the use of stories helps establish a therapeutic relationship across cultural gaps. These best practices will be incorporated into health professions trainings in the participating 5 states and beyond.

**Conclusion** The development of culturally respectful best practices is an important step in addressing the unique health needs of AI/AN elders. Disseminating these principles across multiple professions and applying them to different tribes will enhance the geriatric care of AI/AN people and improve the cultural competency of non-native health care providers.

B157
**Tideswell/AGS Emerging Leaders in Aging Program: Leading Tidal Change for the Future**


**Background:** Leadership development for junior and mid-career health professionals in aging is needed. The Emerging Leaders in Aging Program (ELIA) is a year-long training program for rising leaders in aging. Program elements include in-person workshops; monthly group videoconferences; and a mentored practicum project. Faculty and mentors are established leaders in aging and business. The curriculum focuses on self-awareness and skill-building. Our objective was to evaluate ELIA using the Kirkpatrick model for measuring training impact based on reaction, learning, behavior and results.

**Methods:** Reaction was measured by asking participants to retrospectively rate satisfaction with program elements and overall on a 5-point Likert scale. Learning was measured with pre/post change in confidence (9 items, 10-point Likert scale). Behavior was measured with self-reported likelihood of change (5-point Likert scale). Results were measured based on publications, presentations, awards, and funding/cost savings. Participants also were asked about the importance of a leadership program specifically for aging.

**Results:** Fourteen individuals participated in the 2016-2017 cohort (5 clinical, 5 education, 4 research). Reaction scores were high for all program elements (means: 4.3 to 4.9), and 100% rated the program as excellent (5) overall. Learning improved significantly for all nine confidence items (mean pre: 5.5 ± 1.7, mean post: 8.0 ± 1.1, p<0.001). 100% reported that they would definitely (n=12) or were highly likely to (n=2) change their behavior (mean: 4.9); specific skills learned included communication, goal setting and team management. Results included 24 publications, 27 presentations, 6 awards, additional funding ($1,455,000 direct) and cost savings (reduced emergency/inpatient utilization). 100% indicated that the aging focus was important: reasons included networking with like-minded people, the demographic imperative and healthcare challenges unique to aging.

**Conclusions:** ELIA had a high impact in all domains assessed. Participants expressed high satisfaction and reported learning practical skills. Additional follow-up is needed to determine the longer-term impact on participant’s career trajectories and impact in the field of aging.
B158
Interprofessional Education for Geriatric Falls Risk Reduction

Background: One in three people over the age of 65 fall every year, leading to functional decline, diminished quality of life and premature death. Fall risk reduction requires an interprofessional (IP) approach that incorporates perspectives from healthcare and community based providers. Educational models that teach IP practice skills across the continuum of care for geriatric syndromes such as falls are limited.

Methods: We designed and implemented a didactic, simulation and practice-based educational experience for IP students. Pre-simulation learning consisted of online didactic content including falls assessment/intervention skills and teamwork concepts. Simulation events began with interactive falls risk assessment skills practice. Students then reviewed findings for a simulated patient and engaged in a team meeting simulation, where they practiced team skills as they developed a care plan. Finally, students performed a falls risk assessment on an actual “patient” volunteer and collaboratively developed a falls risk reduction plan with an expert panel team. Progression in IP competencies was measured pre and post education using the Interprofessional Socialization and Valuing Scale (ISVS).

Results: 237 students participated including nursing, medicine, pharmacy, physical, speech and occupational therapy, nutrition, chaplain, social work, exercise science, speech and language pathology and paramedic. Statistically significant improvement was seen on 19 of the 24 ISVS items crossing all subscales. Four items which did not change significantly were scored highly at baseline (>5 on a 6 point Likert scale). One item that did not reach significance appears ambiguous in interpretation (i.e., IP practice is difficult to implement). Progression in IP competencies was measured pre and post education using the Interprofessional Socialization and Valuing Scale (ISVS).

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B159
Use of a Novel Dementia Screening Pathway in Alzheimer’s Disease and Related Dementias (ADDRD) Education for Primary Care Providers
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Background: Cognitive impairment is unrecognized in 27%-81% of affected patients in primary care. Many of the signs and symptoms associated with neurodegenerative disease are unrecognized. The Annual Wellness Visit (AWV) requires cognitive screening for older adults but there is no consensus on how to do this. Patients with uncomplicated neurocognitive disease need to be diagnosed and supported in primary care practices because there is a shortage of specialists. However primary care providers require an improved understanding of differential diagnostic strategies and a clinical pathway to identify patients with cognitive impairments.

Methods: Through the HRSA funded GWEP, we provide a comprehensive ADDRD program to address the needs of providers, patients and caregivers through community support networks and educational resources. Based on evidence based guidelines, we developed a dementia pathway that is user friendly and available electronically for providers to follow once cognitive impairment is identified. Brief, validated instruments to screen for cognitive impairment were implemented in the pathway. Faculty created the ADDRD education for primary care physicians and internal and family medicine residents.

Results: The ADDRD educational program includes the screening pathway as a cornerstone of the educational program. We implemented the AWV at primary care sites that care for over 40,000 older adults. 701 medical providers have received training in dementia. 86% of those that responded indicated the ADDRD education would change practice.

Discussion: Comprehensive ADDRD education and a novel evidence –based clinical pathway guide the primary care physician in the identification and management of patients with underlying neurocognitive disorders. The pathway provides evidence based recommendations for appropriate referrals to specialists in geriatrics and neurology. This method of identifying and managing neurocognitive disorders has been well received among providers in our network.

B160
Area Agency on Aging Practicum: Building Primary Care Trainee Awareness of the Aging Services Network
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BACKGROUND: Optimizing linkages between primary care and community resources may improve health outcomes for vulnerable patients, but such linkages are rarely forged in primary care practice. Exposure to an Area Agency on Aging (AAA) during primary care training has the potential to bridge this gap. The NW GWEC collaborated with two AAAs to design an AAA Practicum for primary care trainees. The practicum includes short didactics and online material but primarily focuses on hands-on experiences with AAA staff (e.g. accompanying an AAA case manager on home visits, assessing needs of family caregivers, or observing community-based programs such as Enhance®Fitness).

METHODS: We collected anonymous pre- and post-surveys in which trainees rated their confidence (10-point scale, 1 “Not at all Confident” to 10 “Totally Confident”) on 9 questions asking about their AAA knowledge and self-efficacy to refer patients to community resources. Post-surveys included open-ended practice change questions. Pre-surveys were distributed to a subset (N=25) of trainees, post-surveys to all trainees.

RESULTS: From March 2016 to November 2017, 41 trainees completed the practicum: 6 geriatric medicine fellows, 30 family medicine residents, and 5 nurse practitioner students. Trainees completed an average of 2.0 (range = 1 – 5) visits. Twenty (80%) pre- and 30 (73%) post-surveys were returned. Confidence increased from pre to post on all 9 measures (overall mean improvement = 3.5 ± 0.87), and all statistically significantly (p < 0.001). The largest increases were: describing the Aging Network and the roles of AAAs (4.8, 95% confidence interval (CI) = 4.0–5.6), describing role of the AAA case manager (4.5, 95% CI = 3.7–5.4), and identifying community resources that support family caregivers (3.9, 95% CI = 3.1–4.8). All respondents indicated that their clinical practice with older patients would change as a result of the AAA Practicum, and 78% remarked about their new awareness of community resources.

CONCLUSIONS: An AAA Practicum is an effective approach to increase primary care trainees’ self-efficacy for describing and utilizing resources for older adults. This training is a way to bridge the primary care-community chasm and incorporate services available through the aging services network into the healthcare of older adults.
B161 Broadening Definitions of “Home”: A Models of Residential Geriatric Care Curriculum for Pre-clerkship Students

Background: Most older adults spend some time living in a community-based model of geriatric care. While there are small group and simulation curricula focused on transitions from inpatient care, no known curricula focus on models of long-term residential care and their impact on medical management beyond care transition periods. We created a two-day systems-based curriculum to immerse pre-clerkship medical students in diverse models of residential geriatric care and guide analysis of both the care models’ defining characteristics and potential impact on patient care.

Methods: Twenty community-based models of care were recruited to participate in student site visits, including residential care facilities for elders, PACE sites, skilled nursing facilities, and senior apartments. On day 1, all students were divided into teams that spent a half-day at one model of care. Teams interviewed site administrators and toured facilities utilizing a pilot-tested interview guide and “scavenger hunt” of features. On day 2, students debriefed their experiences in small groups with peers who visited different models, and peer-taught each model’s capabilities, financing, and target populations. They then applied this knowledge to case vignettes and discussed how providers might partner with models in delivering quality care. At the conclusion, students completed a retrospective pre/post session objective-based 5-point Likert-scale self-assessment.

Results: Students (n=144) rated overall site visit quality as 4.49/5.0, SD 0.88. Self-assessments showed significant improvement in confidence describing admission criteria and payment structures of the models (p<0.001 for all). The final exam of the parent course included an essay question requiring students to apply this knowledge to a patient vignette; 81% ‘passed.’ Student comments indicated we provided a unique and effective learning approach though they were surprised by the high monthly costs of residential care; participating sites indicated interest in ongoing participation.

Conclusions: While initially time-consuming to establish partnerships with community-based models of care, the collaborations were high-yield for students and sites alike. The curriculum could be improved by including more models for low-income populations. Curricular materials could be easily adapted for use by other institutions and for diverse health professions trainees.

B162 Student Presentation
Fall Prevention Education for Providers and the Diverse, Aging Community

Background: In 2014, older adults reported 29 million falls in the previous 12 months. Older adults can reduce fall risk in their homes and normal activities through small changes. Healthcare providers (HCPs) have a unique role in fall prevention by asking about falls or near falls, reviewing medications and screening for risk. Education can yield incremental and effective practice changes.

Methods: An interprofessional team of geriatric HCPs developed workshops highlighting fall risk and prevention for older adults and HCPs. An Occupational Therapist (OT) and Physical Therapist (PT) taught 5 workshops for community members and caregivers. Practical and culturally competent steps were emphasized including home modification and exercise. Materials were translated into South Asian languages and live-interpretation was provided as most participants did not speak English. The PT and geriatrician taught 3 workshops to medical trainees at 3 hospitals emphasizing risk factors, medication review, gait assessment, review of assistive devices and discharge planning. Pre and post surveys measured knowledge uptake from all participants.

Results: The OT and PT taught 166 community members, out of which 133 attendees (80%) completed the pre and post survey. The community participants’ median age was 72 and 63% were female. A majority (71%) identified as Asian. Across all community workshops, knowledge increased significantly, t(132)=6.197, p=0.001, between pre-workshop (M=−55, SD=27) and post-workshop (M=70, SD=24). The PT and a geriatrician taught 46 providers, 38 internal medicine residents and 8 medical students, out of which 31 attendees (67%) completed the pre and post survey. The providers’ median age was 32 and 63% were male. 56% identified as Asian. Across all provider workshops, knowledge increased significantly, t(30)=4.683, p=0.001, between pre-workshop (M=78, SD=18) and post-workshop (M=94, SD=11).

Conclusions: Older adult falls are largely preventable. HCPs support safe practices by discussing falls with older patients and providing appropriate interventions. Continued education can empower older adults with knowledge and emphasize easy steps to age in place, maintaining independence and quality of life.


B163 Geriatric Skills Lab: Preparing Students for Collaborative Practice
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Background: Clinicians must be prepared for collaborative practice in the care of geriatric patients. The UNTHSC Center for Geriatrics requires health professional students to complete an interprofessional geriatric education program, Seniors Assisting in Geriatric Education, in which student teams engage in home visits focused on the health, safety, and quality of life of geriatric patients. To prepare students for home visits, interprofessional faculty collaborated to create a Geriatrics Skills Training workshop for medicine, physician assistant, physical therapy, pharmacy, nursing, social work, dietetics student teams.

Methods: Skills training was offered in Spring 2017 during four, two-hour sessions. Teams of 6-10 students rotated among three 35-minute stations: 1) Cognitive Assessment – MMSE, 2) Fall Risk Assessment – CDC STEADI, and 3) Medication Review. Faculty (n=51) completed training and facilitated stations to ensure standardized learning experiences for students. At completion, students were assessed for confidence, skills and attitudes related to applying geriatric assessments, older patients, and interprofessional collaboration using a 5-point Likert Scale (strongly agree to strongly disagree). Open-ended responses were examined using qualitative thematic analysis.

Results: 761 students participated in the skills lab during Spring 2017. 718 (94%) evaluation surveys were completed, with the majority of respondents representing medicine (31%), nursing (27%), pharmacy (14%) and physician assistant studies (10%). Responses indicate increased confidence in conducting MMSE (95%), falls risk assessments (93%), medication reviews (78%), and understanding of team collaboration to improve patient care and safety (81%). Qualitative analysis of open-ended responses identify themes related to the benefits and challenges in collaborative care for geriatric patients, and greater appreciation for working with older adults and other health professions.

Conclusions: Results indicate that group learning and hands-on experiences with geriatric assessments can improve skills, knowledge and confidence while building a foundation for collaborative care. Geriatric skills training provides interprofessional learning opportunities for undergraduate and graduate health professions students.
B164
**“Techno Clyde”: Using a Telemedicine Enhanced IPE Geriatric Simulation to Improve Student Attitudes and Comfort toward Care of the Geriatric Population**

UAMS, Little Rock, AR.

**Background:**
The use of telemedicine to care for the geriatric population is steadily growing but learning opportunities for future health care providers using telemedicine are limited. An established Interprofessional (IPE) geriatric simulation was enhanced with a telemedicine component to allow a team of medical, nursing and pharmacy students from two campuses in geriatric rotations to provide telemedicine based care while determining its impact on student attitudes and comfort levels.

**Methods**
A telemedicine team created account names and roles using an iPad platform. Roles were assigned. The site had access to the simulation theatre via Interactive Video Network (IVN) and an iPad for their role. The IPE team communicated electronically until a care decision was reached. A pretest/posttest study design was used. The simulation ran 4 times to accommodate student schedules. Debriefing followed each session. The UCLA Geriatric Attitudes (GAS) and Comfort Scales (GCS) surveys were distributed at both sites before and after each simulation.

**Results**
Data was analyzed using SPSS V. 24 paired samples T Test to test for differences in scores between pre and post simulation with p<.05. Table 1 displays descriptive statistics with positive significant changes on 42.8% (6/14; N=56) and 75.0% (6/8; N = 50) GAS and GCS items respectively.

**Conclusion**
This enhanced simulation experience allowed students to conduct telemedicine care as an IPE team while improving their attitudes and comfort about caring for this population.

<table>
<thead>
<tr>
<th>Table 1</th>
<th>Pretest Statistics and t Test Results for Geriatric Attitudes Study (GAS and Comfort Scales (GCS))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Survey Item</td>
<td>Pretest Mean</td>
</tr>
<tr>
<td>Most sick people are pleasant to be with</td>
<td>4.54 (SD 1.17)</td>
</tr>
<tr>
<td>Prefer to see younger patients vs. older ones</td>
<td>3.79 (SD 1.14)</td>
</tr>
<tr>
<td>Other persons have disagreed and continued</td>
<td>3.24 (SD 1.17)</td>
</tr>
<tr>
<td>Did people not contribute to society</td>
<td>2.08 (SD 1.17)</td>
</tr>
<tr>
<td>Shaming is normalizing</td>
<td>0.09 (SD 0.16)</td>
</tr>
<tr>
<td>Comfort seeking for older adults with illness</td>
<td>3.27 (SD 1.17)</td>
</tr>
<tr>
<td>Difficult to diagnose</td>
<td>2.35 (SD 1.14)</td>
</tr>
<tr>
<td>Assisting in daily living</td>
<td>2.35 (SD 1.14)</td>
</tr>
</tbody>
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B165
**Impact of TACT© Protocols on Patient Outcomes**

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**Background:** Transition Across the Community Team© (TACT) identifies high risk patients through risk stratification and provides protocols for patient interventions. Through the Geriatric Workforce Enhancement Program (GWEP), Cheyenne Regional partnered with the University of Wyoming to ascertain if TACT improved health outcomes and service utilization among primary care patients with diabetes mellitus.

**Method:** Patients were included if they met the following criteria: (1) age≥18, (2) served within one of four clinics, (3) diagnosis of diabetes mellitus, and (4) clinical and service use data present from two time periods 1 year apart. Data for TACT patients were compared to a randomly selected panel of non-TACT patients who met the same diagnostic criteria. 70 patients were included in the study (35 TACT, 35 Control). Patients were in their 70’s (M=73.0, SD=9.8) and slightly more than half were male (n=54.1%) with moderate HbA1c (AIC) values (M =7.9, SD =1.2). TACT and Control groups were similar values.

**Results:** Chart reviews were conducted to obtain data over two 6-month time periods in 2016 and 2017. Measures included AIC, frequency of Emergency Department (ED) utilization and frequency of inpatient admissions of TACT patients for the same population during the same time. Repeated Measures ANOVA was utilized to determine significance of the changes. Alpha was set to p<.05. Results were two-tailed.

- Analyses of baseline data revealed TACT patients were significantly more likely to have an ED visit (F(1,69)= 20.9, p<.001) and inpatient admission (F(1,69)=101.0, p<.001) and showed significant reductions in the frequency of visits over the study period (e.g., ED Visits; F(1, 68)=14.6, p<.001). While TACT did not result in significantly greater reductions in A1C than did Control, TACT patients did show clinically meaningful reductions in the A1C (i.e., reduction greater than 0.5%).

**Conclusion:** Due to improvements in health outcomes and appropriate utilization of health services by the use of TACT protocols, this analysis should expand to include other clinical measures, indicators of service quality, further examination of demographics, and differences in the results derived from individual TACT RNs. As these protocols become operationalized, further enrichments to patient populations may be achieved.

B166
**Informing the Wyoming Alzheimer’s Disease State Plan on the Needs of Dementia Family Caregivers**


**Background:** In the US, more than 15 million people provide unpaid care for a family member or friend diagnosed with Alzheimer’s disease or a related dementia (ADRD). Informal caregivers improve quality of life for people with ADRD and allow them to live at home for extended periods of time. Nevertheless, caregiving negatively impacts the health, mental health, and financial well-being of caregivers (Alzheimer’s Association, 2017). Caregivers in rural and remote communities, such as those in Wyoming are at a greater disadvantage because there are fewer resources for individuals with ADRD and their caregivers. Moreover, formal and informal resources that do exist are often further away and more difficult to access (Steinman et al., 2016). This study sought to develop a rich description of the needs of Wyoming ADRD caregivers to inform the development of a statewide Alzheimer’s plan.

**Methods:** Ten town hall-style meetings were conducted by an expert facilitator in towns across Wyoming with community stakeholders. Stakeholders included past and current caregivers of, and people with ADRD, health care and social service providers, administration and policy makers. Focus group discussions were audio recorded and transcribed. Thematic coding was conducted by three coders. Participants were 175 individuals, with an average age of 59 years, mostly female (n=126; 74%), and white, non-Hispanic (n=158; 94%). Most participants were caregivers (n=62; 36%) who cared for a spouse with ADRD (n=26; 36%).

**Results:** Three overarching themes were needs for respite care, caregiver support, and education. Within all overarching themes, financial needs emerged as a sub-theme. Caregiver strain, mental health needs and education emerged as sub-themes within the caregiver support theme.

**Conclusions:** Findings suggest Wyoming ADRD caregivers need access to affordable respite care and education on diagnosis, course of the disease, caregiving skills, safety, and financial planning. The financial and emotional costs related to caring for a person with...
ADRD can be overwhelming. Caregiver needs are increasingly urgent in Wyoming, one of the most rapidly aging states in the country.

B167
Geriatric Communication Skills Training for Clinicians to Improve the Care of Older Cancer Patients

Background: Oncology health care providers (HCPs) who treat older adults with cancer face numerous communication challenges when patients present with geriatric syndromes such as sensory, functional, or cognitive difficulties. Ageism - stereotyping and discriminating against individuals based on their age - commonly interferes with medical care, and may result in ineffective communication, minimizing attention to medical problems that are attributed to “normal aging”, fewer treatment recommendations for medical or psychiatric problems, and/or less preventive and geriatric care. It is critical to improve the workforce by training oncology HCPs to better communicate with the older cancer patient.

Methods: An interdisciplinary team of geriatric HCPs from a comprehensive cancer center collaborated with the Communication Skills Training and Research Laboratory and developed a one-day training, consisting of three geriatric specific communication skills training (CST) modules: Geriatrics 101, Cognitive Syndromes and Shared Decision Making. Each module includes a brief didactic (30 min) with exemplary videos, and experiential role play (90 min) with standardized patients (SP), co-led by multidisciplinary facilitators. We examined efficacy of the training on multiple outcomes: course evaluations, participant self-efficacy, and coded SP assessment.

Results: Thirty two clinicians, including oncologists, family practitioners, physician assistants, nurse practitioners, social workers, and mental health professionals participated in the training. Overall, participants reported favorable evaluations of the training (93% positive ratings). Self-efficacy ratings increased significantly across all three modules, t(55)=-49.80, p<0.001 between pre (M=3.28, SD=.81) and post-training (M=4.35, SD=.52). In SP assessments, participants also demonstrated significant uptake of agenda setting skills; t(23)=-2.87, p<.01 from pre (M=.21, SD=.42) to post-training (M=1.00, SD=1.22).

Conclusion: The geriatric CST program was well received and led to improvement in self-confidence and clinician communication skills. Experiential role play facilitates learning by providing opportunities for skill practice in complex encounters relevant to caring for the older adult. Examination of patient outcomes is further warranted.

B168
Conversations with Caregivers: Video-Based Peer Education
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Background: Family members provide most of the care needed to support persons with dementia (PWD) to live in the community, and they often have little or no training to learn caregiving skills. Healthcare professionals have time constraints, limited expertise, and typically offer little support in this area, and community-based classes and support groups are often scarce or inaccessible.

Aim: To develop visually appealing videos that cover relevant topics for families caring for PWD and are freely available on the internet.

Methods: Tideswell at the University of California San Francisco (UCSF) partnered with the UCSF Memory and Aging Center, to produce a series of caregiving videos over the course of a year. A multidisciplinary team with expertise in dementia collaborated with a filmmaker and the UCSF Memory and Aging Center’s Family Advisory Council (FAC) to develop a topic list. Clinicians recruited three families from diverse backgrounds and a caregiver support group who consented to be filmed. Footage was reviewed and labeled by topic area and compiled into 6-15-minute video clips. Draft video clips were reviewed by the FAC and their feedback guided further editing.

Results: “Conversations with Caregivers” a series of nine 6-14-minute videos that offers practical advice from real family caregivers who care for PWD was released on YouTube on July 27, 2017. Our video release event was attended by about 70 people and included a Q&A forum with the cast. One PWD passed away before the videos were released, the other caregivers reflected on how much the PWD had changed since being filmed. We also distributed flyers and business cards with the web address: bit.do/conversationswithcaregivers. The videos cover topics such as accepting the diagnosis, ways to communicate, daily activity and engagement strategies, balancing safety and independence, and the value of caregiver support groups. In the first four months, the video series has been viewed 980 times and has 40 followers on YouTube.

Conclusions: It is feasible to develop brief training videos featuring advice from real family caregivers and post them on the internet. Challenges include recruiting PWD and families that represent varied cultural and socioeconomic perspectives. Increased investment in marketing and dissemination may improve accessibility.

B169
Student Presentation
A Comparison of Analgesics on Physical Function in Older Veterans with Osteoarthritis
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Background: Older adults with osteoarthritis experience pain that may affect physical function. Yet analgesics are often measured by their capacity to reduce pain, while physical function is overlooked. We compared physical function trajectories among older veterans with osteoarthritis who were prescribed NSAIDs and opioids.

Methods: This was a substudy of a multicenter, prospective longitudinal survey (4/15-9/17) of veterans 50+ years of age with a history of hip/knee osteoarthritis, recently prescribed an outpatient analgesic prescription (opioid or NSAID) or a control medication (any non-analgesic prescription), after having been at least 180 days analgesic prescription free. The Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) was used to calculate a physical function score at baseline (within 30 days of prescription) and 30 days thereafter. WOMAC scores were compared within treatment groups using Wilcoxon signed-rank test. Logistic regression was used to compare the likelihood of having a clinically important improvement in physical function (≥5 point change in WOMAC function score) between treatment groups, adjusting for age, gender, race/ethnicity, joint index, study site, self-reported confirmation of analgesic type use, and baseline WOMAC pain and function score.

Results: A total of 497 respondents (mean age=66) completed the WOMAC at baseline and 30 days. Opioid respondents (n=137) had improved function (2.1 points, p<0.01) while NSAID (n=200) and control respondents (n=160) had no significant change in function (p=0.49 and 0.38, respectively). Respondents prescribed opioids were more likely to have a clinically important improvement in physical function (OR=2.49, [1.38, 4.47], p<0.01) when compared to controls. NSAID respondents were not more likely to have a clinically important improvement in physical function (OR=1.51, [0.82, 2.78], p=0.13) compared to controls.

Conclusions: Early findings suggest opioids may have a short-term association with improved physical function. Should these findings persist in final analyses, physical function may also be considered as a patient-centric measurement to assess analgesic effectiveness.
B170 Student Presentation
The Geriatric Consult Index: A Surrogate Marker for Short-Term Mortality
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1. University of Washington School of Medicine, Seattle, WA; 2. Anesthesiology and Pain Medicine, Harborview Medical Center, Seattle, WA; 3. Orthopaedics, Harborview Medical Center, Seattle, WA.

BACKGROUND Hip fractures result in significant morbidity and mortality in the older population. Indicators of the frailty syndrome are associated with poor outcomes in patients with hip fractures. Many commonly used frailty tools rely on motor skills that cannot be performed by this population. We determined the association between the Charlson Comorbidity Score (CCS), intraoperative hypotension (IOH), and a geriatric medicine consult index (GCI) with short term mortality in hip fracture patients.

METHODS A retrospective cohort study was conducted at a single level one trauma center over a two-year period. All patients age 65 years of age and older who sustained a hip fracture following a low energy mechanism were identified using billing records and an orthopedic trauma registry. Medical records were reviewed to collect demographic data; fracture classification and operative records; calculation of the CCS; intraoperative details including hypotension; and assessments recorded in the geriatric consult notes. The GCI was calculated using 30 dichotomous variables contained within the geriatric consult note. The index, ranging from 0 to 1, included markers for physical and cognitive function, as well as medications. A higher GCI score indicated more markers for frailty.

RESULTS One hundred and eight patients met inclusion criteria. Sixty-four were females (60%) and the average age was 77.3 years (range: 65-100). Thirty-five patients (32%) sustained a femoral neck fracture, 73 patients (68%) sustained an inter/subtrochanteric hip fracture. Eighty-nine patients were treated with fixation while 19 patients underwent arthroplasty. The 30-day mortality was 6%; the 90-day mortality was 13%. The mean GCI was 0.30 in the 30-day survivor group as compared to 0.52 in those who died (P=0.002). The mean GCI was 0.28 in the patients who were alive at 90-days as compared to 0.46 in those who died (P=0.001). In contrast, the CCS and IOH were not associated with 30 or 90-day mortality.

CONCLUSIONS In our older hip fracture patients, an index calculated from information routinely obtained in the geriatric consult evaluation was associated with 30 and 90-day mortality whereas the CCS and measures of intraoperative hypotension were not.

B171 Student Presentation
General Population’s Knowledge of Hospice as an Explanation for Underutilization
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Background: Hospice services in the US are underutilized by eligible patients. Reasons for this have been researched from the physician perspective as well as the effect of race/ethnicity, but how patient/family knowledge plays into the decision making process is not well understood.

Objectives: The primary goal of this project was to establish the general population’s level of knowledge regarding hospice, and secondarily to identify demographic differences that correlate with hospice knowledge level.

Methods: Adults attending three CT health fairs were surveyed about their demographic information followed by twenty statements about hospice using a Likert scale. We calculated a literacy score based on the factual questions. Non-parametric statistics were performed on all of the responses.

Results: Of 230 participants, 65% agreed that they were knowledgeable about hospice and 75% reported having known someone who used hospice. Of 16 factual questions, 9 were correctly answered by the majority of people. Those who indicated they were knowledgeable about hospice demonstrated greater literacy (P=0.000). Those who knew someone who had used hospice agreed with the correct definition of hospice 90% of the time, compared with 66.0% among those who did not know anyone in hospice (P=0.000). Those who knew someone in hospice agreed to being interested in it themselves 83% of the time. Those who did not have a family member/friend who used hospice agreed 54% (P=0.000).

Conclusion: The general population lacks knowledge about hospice without direct exposure to the program. However, there is an overall positive attitude and interest in the service despite the apparent knowledge gaps.

Implications: Education regarding palliative care and hospice needs to be more widely available to the general population in order to increase benefit through earlier utilization. More research is required to determine how best to achieve a higher level of knowledge.

References:

B172
Prevalence of CKD-Discordance in a Diverse Patient Population

Background: Chronic kidney disease (CKD) occurs in individuals with multiple chronic conditions. We have previously shown that among Veterans with CKD, the co-occurrence of conditions that have opposing treatment recommendations (i.e., CKD-discordance) is associated with increased mortality and healthcare utilization. However, the prevalence of CKD-discordance has not been described in more diverse populations.

Methods: We assembled a retrospective cohort of 31,535 Kaiser Permanente Southern California patients 65 years and older who had incident CKD (new-onset estimated glomerular filtration rate < 45 ml/min/1.73 m2) between 2008 and 2014. Discordant conditions were identified by diagnosis codes and prescriptions for renally inappropriate medications. A CKD-Discordance Index was then calculated as the individuals’ number of discordant conditions divided by the number of possible discordant conditions (range 0-1, higher score indicates greater discordance). We compared the CKD-Discordance Index in age (65-79, 80+), gender (men, women), and race/ethnicity (White, Black, Asian, and Hispanic) subgroups and among those who were and were not hospitalized in the year following incident CKD.

Results: Overall, the mean (SD) age was 77.9 (7.6), 55% were female, and 59%, 7%, 12% and 20% were White, Asian, Black, or Hispanic, respectively. The mean (range) number of discordant conditions was 1.8 (0—9). The mean (SD) CKD-Discordance Index was 0.1 (0.1) with a range of 0.0 to 0.7. The mean CKD-Discordance Index was similar by age (0.1 for both 65-79 and ≥ 80 years of age) and race (0.1 for each group). However, women had a higher CKD-Discordance Index (0.2 vs. 0.1, P<0.001). Patients who were hospitalized in the following year had a higher mean CKD-Discordance Index, than those without a hospitalization (0.2 vs. 0.1, P<0.001).

Conclusions: These findings suggest that CKD-discordance is similar across age and race groups, but may be greater among women. Identification of CKD-discordance is a novel concept and may have implications for a wide range of older CKD patients.
B173
Predicting Outpatient Falls after ED Visits Using the Hendrich II Inpatient Fall Risk Screen
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Background: Most Emergency Departments (EDs) do not screen for outpatient fall risk, despite guidelines suggesting the practicing. Many ED patients are, however, screened for inpatient falls as part of the standard triage process. We evaluated the utility of routinely collected Hendrich II fall risk scores in predicting ED visits for a fall within 6 months of an all-cause index ED visit. We hypothesized that this screen, validated to predict inpatient falls, would additionally have predictive value for outpatient falls.

Methods: In this retrospective medical record review, we examined all visits made by individuals aged 65 and older and resulting in discharge occurring from 1/1/2013–9/30/2015. We used logistic regression to evaluate the association between Hendrich II score and this outcome both alone and controlling for age, gender, insurance status, mode of arrival, triage ESI acuity score, HCC score, and presence of fall at the index visit.

Results: Among in-network patient visits resulting in discharge with a completed Hendrich II score (N = 4366), the return rate for fall within 6 months was 8.3%. The area under the ROC curve (AUC) when using the score to predict return visits for falls was 0.64. In a univariate model, the OR for returning with a fall in 6 months was 1.23 (95% CI 1.19-1.28) for a one point increase in Hendrich II score. When included in a model with other potential confounders or predictors of fall, the Hendrich II score remains a significant predictor of return visit for fall (AOR 1.15, 95% CI 1.10-1.20). The area under the ROC curve (AUC) for this model was 0.75.

Conclusion: Routinely collected Hendrich II scores demonstrated correlation with outpatient falls, but would likely have little utility as a stand-alone fall risk screen. However, when combined with easily extractable covariates, the screen performs much better. These results highlight the potential for secondary use of EHR data for risk stratification of ED patients. Using data already routinely collected, patients at high risk of falls after discharge could be identified for referral without requiring additional screening resources to be employed.

B174
Patient age, frailty, and renal failure are associated with adverse outcomes following thyroidectomy for multinodular goiter

Background: The prevalence and size of multinodular goiter (MNG) increases with patient age. Thyroidectomy is recommended for patients with MNG who are symptomatic, have higher malignancy risk, or substernal extension. The association of patient frailty with outcomes in thyroidectomy for MNG has not been studied.

Methods: We performed a retrospective cohort study of patients >40 from the 2011-2016 American College of Surgeons National Surgeons Quality Improvement Program (NSQIP) Participant Use File who underwent thyroidectomy for MNG. The association of the 5-item NSQIP modified frailty index (mFI-5) with 30-day serious complications, readmission, and length of stay (LOS) was assessed using multivariable logistic and linear regression adjusting for patient and procedure characteristics.

Results: We identified 24166 patients who underwent thyroidectomy, of whom 9433 (39.0%) underwent lobectomies, 2797 (11.6%) had substernal goiters, and 324 (1.3%) required sternotomy. Serious complications occurred in 300 (1.2%) patients and unplanned readmission in 400 (1.7%). A high mFI-5 (>=0.4) was present in 3833 (15.9%) patients and was associated with increased odds of serious complications (2.5%, OR 1.81, 95% CI 1.40–2.34; p<0.001), readmission (2.6%, OR 1.56, 95% CI 1.22 – 1.97; p<0.001), and prolonged adjusted LOS. Serious complications were also significantly associated with older age (>85 years, OR 6.53, 95% CI 2.95–14.45; p<0.001), renal failure (OR 5.28, 95% CI 2.63–10.60; p<0.001), and sternotomy (OR 4.02, 95% CI 2.52–6.41; p<0.001). Thyroid lobectomy was independently associated with a decreased risk of serious complications (OR 0.55, 95% CI 0.42-0.72; p<0.001), readmission (OR 0.66, 95% CI 0.53-0.83; p<0.001), and decreased adjusted LOS compared to total or subtotal thyroidectomy.

Conclusions: Frailty is independently associated with increased morbidity, readmission, and LOS in patients undergoing thyroidectomy for MNG. However, increasing age, renal failure, and need for sternotomy are more strongly associated with adverse outcomes. These patient characteristics should be considered in patient selection, operative planning, and informed consent for thyroidectomy in older, frail patients with MNG, and lobectomy should be performed when appropriate to minimize morbidity and improve surgical outcomes.

B175 Resident Presentation
Pharmacist-led medication reconciliation for older adults with chronic kidney disease: management of polypharmacy to improve clinical care

The purpose of this prospective pilot study is to evaluate the impact of pharmacist-led medication reconciliation in a collaborative outpatient nephrology clinic including a nephrologist, geriatrician and clinical pharmacists.

This was an prospective quality improvement study conducted at the VA Boston Healthcare System. Patients in the outpatient nephrology clinic deemed high risk met with a clinical pharmacist for a full medication review utilizing geriatric principles at their clinic visit. Primary composite outcomes included the number and type of drug therapy problems and medication discrepancies. Secondary outcomes included changes in care process related to the medication review, as well as outpatient nephrology clinic team satisfaction.

A total of 118 patient visits were conducted for 89 unique patients by the clinical pharmacist as part of the nephrology clinic visit. Pharmacists identified 343 medication discrepancies and 299 drug therapy problems. 289 changes in the care process were identified retrospectively as a result of the pharmacists’ interventions. The renal team resolved discrepancies or implemented pharmacist-recommended changes in 71 of the 118 patient visits, and non-renal providers did the same in 58 instances. 21 consults were placed to other disciplines, and the pharmacist or renal team communicated directly with the primary care team on 63 occasions to address findings from the medication reconciliation. Post-intervention survey and descriptive interview of nephrology clinic staff members indicated that all 6 interviewees strongly agreed that patients and staff benefited from pharmacist-led medication reconciliation. Other key themes from the interviews included reduced workload and a spotlight on how inter-professional care leads to improved communication and benefit to patients.

This pilot study suggests that integrating pharmacists as part of a multidisciplinary clinical team in a subspecialty setting with a high prevalence of older adults can effectively identify and resolve medication discrepancies and drug therapy problems, thereby improving clinical care. Polypharmacy and inappropriate prescribing in older adults with CKD is an issue which warrants further research and exploration.
B176 Student Presentation
Utility of Routine Head CT to Define Radiologic Indicators of Frailty in Older Trauma Patients
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BACKGROUND: Older trauma patients have disproportionately worse outcomes, accounting for 47% of trauma fatalities in 2016. Sarcopenia and brain atrophy are recognized risk factors for poor outcomes within this population and may be detectable via head computed tomography (CT), which is often part of the initial evaluation. We hypothesized that opportunistic assessment of sarcopenia and brain atrophy via head CT predicts 1-year mortality.

METHODS: In this retrospective cohort study, we used masseter muscle cross-sectional area and bicaudate ratio to define sarcopenia and brain atrophy, respectively. We performed measurements on adults ≥65 years, admitted to a level 1 trauma center 2011–14. One-year mortality was assessed using survival analysis.

RESULTS: Excluding CTs with anatomical distortions, 208 masseter and 196 bicaudate ratio measurements were derived from 269 patients who underwent head CT. After adjustment for age, injury severity, comorbidity, and gender, patients with both decreased masseter area and increased bicaudate ratio had a higher hazard of one-year mortality (HR=28.4, 95%CI=2.9-273.3, p=0.004).

CONCLUSIONS: The presence of both masseter muscle sarcopenia and brain atrophy on routine head CT was predictive of one-year mortality in older trauma patients. These radiologic indicators are associated with adverse outcomes and are easily measured through standard imaging software. The results can potentially guide conversations regarding prognosis and interventions with patients and their families.

B177 Encore Presentation
Frailty and Functional Status Trajectory After Aortic Valve Replacement
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Background: Despite symptomatic and survival benefits in older adults undergoing surgical aortic valve replacement (SAVR) and transcatheter aortic valve replacement (TAVR), the time course of functional recovery and modulating effect of frailty have yet to be defined.

Methods: We conducted a prospective study to characterize functional status in 103 patients who had SAVR and 143 patients at high or extreme operative risk who had TAVR at an academic medical center. Before procedure, we evaluated the frailty phenotype and comprehensive geriatric assessment-based frailty index. Telephone interviews were performed at 1, 3, 6, 9, and 12 months after procedure. A composite functional status score was defined by the number of 22 activities that patient was able to perform without help (range: 0-22).

Results: Over 12 months, 3 SAVR and 28 TAVR patients died. Preoperative frailty was associated with more functional limitations at baseline and during the first 3 months. SAVR patients experienced functional decline at 1 month (-3.1 points; 95% CI: -4.0 to -2.3) but recovered to preoperative functioning at 3 months and remained stable at 12 months. TAVR patients had lesser decline at 1 month (-1.3 points; 95% CI: -2.0 to -0.6) and transient improvement at 3 months, followed by stability in non-frail patients and by gradual decline in frail patients.

Conclusion: Frail TAVR patients have persistent functional limitations at 1 year, whereas most non-frail TAVR patients and SAVR patients recover within the first 3 months.

B178 Nursing Home Residents with Dementia Lack Vital Health Information on their Emergency Department Transfer Communication
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Background: Nursing home (NH) residents account for over 2.2 million US emergency department (ED) visits annually. EDs rely upon the accuracy of written communication from NHs to assess patient needs. Incomplete information could adversely impact patient care, especially for NH patients with dementia or mental status deficits, but the frequency this occurs is not well known.

Methods: In this retrospective study we examined NH transfer documents and the corresponding electronic health records (EHRs) of visits to the three EDs of Rhode Island’s largest healthcare system from 9/2015 to 9/2016. We reviewed the completeness of NH transfer documents according to the expected core components of transfer communication, as defined by the INTERACT 4.0 quality improvement tool. NH-documented health history was compared to the EHRs. Quality of NH transfer documentation was compared by admission/discharge disposition and EHR-documented dementia diagnosis.

Results: Of the 510 ED visits, the median patient age was 78 years; 43% were male, 38% were black. 33% had dementia noted in the EHR or by the NH. NH transfer documents were present for 95% (95% CI: 94-96%), the state Department of Health-required continuity of care form present for 69% (95% CI: 67-71%), and 77% (95% CI: 75-79%) of core components per the INTERACT 4.0 tool were complete. Patient baseline mental status was missing in 77% (95% CI: 75-79%) and functional status was missing in 81% (95% CI: 79-83%) of NH transfer documents. In 24% of patients with EHR-documented dementia, the documents did not list a dementia diagnosis. Mental status was absent for 73% (95% CI: 70-76%) and functional status for 79% (95% CI: 76-82%) of these patients. Component completion was similar according to admission/discharge disposition and patient dementia diagnosis.

Conclusions: NH transfer communication often does not indicate whether a patient has dementia or their current mental and functional status. Standardized transfer forms may improve the communication of this vital health information.
B179 Resident Presentation
Identifying a Catatonic Subtype of Delirium in Post-surgical Patients

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Recent studies support that catatonia and delirium can co-occur. Furthermore, researchers have begun to suspect that there is a catatonic delirium subtype that represents a different neurobiology and should be treated differently than classic delirium. This entity has been described in medically ill patients but data on the current incidence of co-morbid catatonia and delirium in postoperative patients does not exist. The purpose of this study is to determine the incidence of catatonia in postoperative patients diagnosed with delirium.

For this prospective cohort study, we recruited ambulatory English-speaking patients ≥18 years of age who were scheduled to undergo elective surgery with a planned overnight admission at a large academic medical center from June to September of 2017. Both delirium and catatonia are states of altered mental status that can occur due to medical illness and are diagnosed by bedside clinical assessment. Delirium was assessed using the Confusion Assessment Method (CAM). Patients diagnosed with delirium were assessed for concurrent catatonia using the Bush Francis Catatonia Screening Instrument (BFCSI). The diagnosis of catatonia was defined as the presence of 2 or more signs of catatonia on the BFCSI.

We enrolled 417 postoperative patients (18-85 years; 57% female). Similar to previous studies, we found an incidence of delirium of 19% on POD1 and 27% on POD3. Overall 15% (19/126) of patients diagnosed with delirium were found to have concurrent catatonia: 19% (15/77) on POD1 and 19% (8/43) on POD3. Among patients diagnosed with catatonia, the most common items present on the BFCSI were immobility/stupor, mutism, and staring. None of the patients diagnosed with catatonia were exposed to neuroleptics while inpatient.

This study supports that catatonic symptoms are common in postoperative delirious patients. Given the potential therapeutic value, a diagnosis of concurrent catatonia should be considered in all delirious patients.

B180 Student Presentation
The effect of aspirin on perioperative blood loss and transfusion in elderly hip fracture patients.

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Background: Aspirin (ASA) is a medication commonly taken by older patients who sustain hip fractures. Although ASA is known to alter platelet function, its effects on perioperative blood loss and transfusion in the hip fracture population remain unclear. The goal of our study was to determine whether preoperative use of ASA is associated with greater decrease in hemoglobin/hematocrit and greater blood transfusion requirement following hip fracture repair.

Methods: We utilized an existing database from a recently completed randomized controlled trial of hip fracture patients for analysis. Trial participants were divided into two groups: those routinely taking ASA preoperatively, and those not taking ASA. Groups were compared by perioperative decrease in hemoglobin/hematocrit and transfusion requirements. Multivariable models were created using known risk factors of blood loss and transfusion based on prior studies (STATA). P< 0.05 was considered significant.

Results: Two hundred hip fracture patients greater than 65 years of age were included. 44.5% (89/200) patients were taking ASA preoperatively. Preoperatively, there were no significant differences in demographics or laboratory values [platelets, hemoglobin (Hg), hematocrit (HCT)] between groups. In multivariable analysis, after adjustment for age, sex, platelets, and Charlson Comorbidity Index, ASA was not associated with preoperative to postoperative change in Hg, HCT or packed red blood cell (PRBC) transfusion requirements. However, surgical procedure (e.g. intramedullary hip screw) was significantly associated with change in Hg (β= -0.75, p<0.001) and HCT (β= -2.19, p<0.001).

Conclusion: Our study, no significant association was found between routine preoperative ASA use and perioperative change in Hg, HCT or transfusion requirements in hip fracture patients. Surgical procedure appears to be the more important determinant of perioperative changes in Hg and HCT.

B181 Resident Presentation
Outpatient Medication Burden of Patients Prior to Hospital Death

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Background: As older adults approach the end of life, new medications are often prescribed for symptom management. It can be challenging for both the patient and practitioner to manage these medications in addition to those for comorbid conditions. Continuing nonessential medications for chronic conditions can lead to an increase in adverse effects, increased healthcare costs, and decreased patient compliance. There is some literature surrounding the topic of polypharmacy burden in both palliative and hospice patients, which identifies a high incidence of prescribing non-essential medications. However, no one has studied outpatient medications of patients prior to hospital death. The objective for this study is to explore outpatient medication burden in patients prior to hospital death and identify potential areas of improvement in prescribing patterns to focus future research efforts.

Methods: A retrospective chart review was conducted to quantify outpatient medication use in all comfort measures only (CMO) patients who ceased to breathe at one of two hospitals between 1/1/2016 to 6/30/2016. Quantitative data was obtained using the medication reconciliation performed at hospital admission. We identified the number of medications, medication class, and medication subclass. Baseline characteristics were also obtained. Descriptive statistics were used to describe the results.

Results: A total of 82 patient charts were reviewed. Average age was 67 years old and average Charlson Comorbidity Index was 4. Most patients were on at least 10 medications prior to hospital admission. Over 50% of patients received either a proton pump inhibitor (PPI) or a histamine-2 receptor antagonist (H2RA). Other common medications included aspirin, antihypertensive agents, and statins.

Conclusion: Older adults within days of hospital death are often prescribed medications for chronic disease states. Future research efforts should focus on developing solutions to minimize medication burden in this vulnerable patient population.
B182
Is objective mobility data associated with pharmacologic venous thromboembolism (VTE) prophylaxis use among hospitalized older adults?

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Background: Clinical practice guidelines state that mobility is supposed to play an important role in determining use and duration of pharmacologic VTE prophylaxis. This study examines whether measured mobility levels relate to pharmacologic VTE prophylaxis use among hospitalized older adults.

Methods: Prospective observational data from a sample of community-dwelling older adults aged ≥60 years, admitted to an academic hospital's general medicine service. Inpatient mobility was objectively measured using ankle-mounted accelerometers from admission until discharge (or ≤7 days). Clinical and demographic factors, and pharmacologic VTE prophylaxis use was manually abstracted from the medical record. We performed descriptive statistics for daily mobility parameters (time spent in activity, sedentary time, and step counts) according to VTE risk stratification using a validated stratification tool (Padua Score) and prophylaxis use. Pearson's correlation was used to determine the correlation of mobility measures with use and duration of VTE prophylaxis.

Results: Among hospitalized older adults in this sample (N=65), 71% (n=46) were low risk for VTE occurrence, yet 62% (n=40) received pharmacological VTE prophylaxis during an average of 57% of their hospital stay (SD 46). Median time in activity was 65 minutes/day (IQR 40, 102; Range 5-289 mins/day). Median time spent in sedentary activity (awake but not moving) was 15 hrs/day (IQR 12, 17; Range 3-20 hrs/day). Median total daily steps was 1370 (IQR 852, 2387; Range 86-6134 steps/day). There was significantly greater sedentary time (16 hrs/day) for high risk patients compared to low risk patients (13 hrs/day) (p=0.02), but no differences in activity time or step counts. There were no detectable differences in mobility measures between those receiving and not receiving pharmacological VTE prophylaxis, and no significant correlations between mobility measures and duration of VTE prophylaxis.

Conclusions: Among hospitalized older adults, use and duration of VTE prophylaxis did not differ by higher or lower mobility activity, suggesting that better mobility awareness is needed to guide appropriate pharmacological VTE prophylaxis use.

B183
Acceptability of a brief motivational interview-based intervention to empower older adults with serious illness to formulate their goals for future medical care in the emergency department.

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Background: Most older adults with serious illnesses visit the emergency department (ED) near the end of life, yet they do not have advance directives. The lack of a feasible method to facilitate advance care planning constrains our current practice. We developed and refined a brief motivational intervention-based (BMI) intervention to empower older adults with serious illness to formulate their goals for medical care in the ED. We sought to understand the perspectives of older adults with serious illness who underwent this intervention.

Methods: We conducted semi-structured interviews to understand how older adults with serious illness perceived the BMI intervention, using convenience sampling, from September to November 2017 in an urban, academic ED. We included English-speaking patients ≥65 years old with serious illness (metastatic cancer, oxygen-dependent chronic obstructive lung disease, chronic kidney disease on dialysis, New York Heart Association stage 3 or 4 heart failure) or who treating ED clinician “would not be surprised if died in the next 12 months,” and has the capacity to consent. We excluded patients who were determined by the treating ED clinicians to be inappropriate for this study (e.g. in acute distress).

Results: We enrolled 23 older adults with serious illness. Mean age was 76 years (SD ±9 years), 70% were female, 79% were white, and the commonest serious illness was metastatic cancer (49%). 70% of participants expressed that they understood the intent of the intervention and felt the ED clinicians respectfully sought to understand their perspectives during the intervention. The representative quotes from the patients are listed in Table1.

Conclusion: Our BMI intervention was perceived to be respectful to their needs and acceptable to be performed in the ED.

Table 1 Table 1 Representative Quotations from Older Adults with Serious Illness

<table>
<thead>
<tr>
<th>Patients</th>
<th>Quotes</th>
</tr>
</thead>
<tbody>
<tr>
<td>84Y with abdominal strach</td>
<td>“Comforting and appreciate getting to know where I stand”</td>
</tr>
<tr>
<td>76Y COPD non home 02</td>
<td>“Nobody has ever asked me these things before”</td>
</tr>
<tr>
<td>67M non cough CA no 3rd lungoots</td>
<td>“What else should I think about? What’s next?”</td>
</tr>
</tbody>
</table>

B184
Trends in the Care of Older Adults in Emergency Department Observation Units

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Background: Emergency Department Observation Units (Obs Units) are common, but little is known about the care of older adults in Obs Units. We report the status of these units nationally with specific attention to older adults.

Methods: This is an analysis of 2010-2013 data from the National Hospital Ambulatory Medical Care Survey (NHAMCS), an observational cohort study. Weighted means are presented for continuous data and weighted percent for categorical data.

Results: Total adult ED visits varied from 100 to 107 million per year and 2.3% of patients were placed in observation. Older adults (≥65 years old) made up a disproportionate number of Obs Unit patients, 33.5%, compared to only 19.7% of total ED visits (OR 2.1). Approximately 825,000 older adults were cared for in Obs Units per year. The admission rate from observation was 35.6%, ranging from a low of 29% for ages 30-39 years to 54% for adults 90 years and older (p<0.001). Reason for placement was ascertained by grouping patients, 33.5%, compared to only 19.7% of total ED visits (OR 2.1).

Conclusions: Older adults comprised a third of Obs Unit patients. Obs Units may be an opportune setting within the ED for geriatric innovations.
B185 Vulnerable Elders-13 Score Predicts Complications and Death in Acute Trauma

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Background: The Vulnerable Elders-13 Survey (VES-13) is a short survey of functional status adapted for use in the acute trauma setting. We screened patients aged ≥65 admitted to an academic Level 1 trauma center for increased risk of complication and death.

Methods: We screened 195 patients with the VES-13 from 09/2012 to 09/2016. Using the hospital trauma registry, we collected surgical complications (e.g., infection, renal failure) and death. Using medical record review, we abstracted geriatric complications (delirium, fall, or pressure ulcer). We used multinomial logistic regression model to test whether the VES-13 score predicts any complication and death.

Results: Mean age was 78.1 and 49.0% was male. Mean injury severity score (ISS) was 12.4 (range 1-59), and mean VES-13 score was 3.7 (range 0-10). Nine (4.6%) died and 89 (45.6%) had complications. For every 1 point increase in VES-13, the relative risk ratio (RRR) of any complication vs no complication increased by 15% (95% CI 4-27%), and the RRR of death vs no complication increased by 48% (95% CI 14-91%), controlling for gender, comorbidity, and ISS.

Conclusion: Older trauma patients with a high VES-13 score are very high risk for complication and death. Preventive protocols should target these vulnerable hospital patients.

B186 Student Presentation

Social Support, Social Connectedness, Depressive Symptoms and Chronic Pain Symptoms among Older Adults: A Cross-Sectional Study

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Background: Chronic pain is a leading cause of disability and reduced quality of life in older adults. Treatment guidelines emphasize pharmacologic approaches, but analgesics are often poorly tolerated by older adults and carry substantial risks. We sought to examine associations between measures of social support, social connectedness, and depressive symptoms and chronic pain symptoms among older adults receiving care in the emergency department (ED) to gain insight into the possible contribution of other modifiable psychosocial factors to the presence of chronic pain in this population.

Methods: A cross-sectional study of patients (N=270) who presented to two U.S. academic EDs was conducted. Participants were asked to complete a survey assessing social support, social connectedness, depressive symptoms, and pain severity during the past month (0-10 scale).

Results: During the month prior to the ED visit, patients reported an average pain score of 4.9, with 189 patients (70%) reporting moderate or severe pain (score ≥4). Several measures of social support and connectedness were associated with statistically and clinically important differences in pain severity in the past month. For example, patients who said they have other people they can turn to in times of need had lower pain scores (4.7 vs. 6.2, 1.5 difference in pain, 95% CI 0.6 to 2.4). Those who reported feeling like others would be better off without them as well as those who reported feeling disconnected had higher pain scores (6.4 vs. 4.7, 1.7 difference in pain, 95% CI 0.7 to 2.7; 6.0 vs. 4.4, 1.6 difference in pain, 95% CI 0.8 to 2.3). Patients with depressive symptoms had higher pain scores than those who did not (6.0 vs. 4.3, 1.7 difference in pain, 95% CI 1.0 to 2.4). Pain scores were similar in patients who lived with someone vs. lived alone (5.0 vs. 4.8, 0.2 difference in pain, 95% CI -0.6 to 1.0).

Conclusions: In a sample of older adults receiving care in the ED, low perceived social support and connectedness and depressive symptoms were associated with higher pain scores, but living alone was not.

B187 Targeted Geriatric Assessment helps predict poor outcomes in acute care settings

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Background: Time pressure hinders the use of comprehensive geriatric assessment in acute care settings. Little is known about its predictive value in these contexts. We investigated the utility of the 10-minute Targeted Geriatric Assessment (10-TaGA) in predicting poor outcomes among older adults in acute care.

Methods: Prospective cohort study comprising 806 older adults (mean age 80, 64% female, 61% white) admitted to a day hospital for acute care, in Sao Paulo, Brazil. The validated 10-TaGA assessed at baseline living alone, recent hospitalizations, falls, number of medications, basic activities of daily living (ADL), cognition, self-rated health, depression, nutritional status, and gait speed. A total score from 0 to 1 was based on risk across the ten domains. Follow-up by monthly phone contacts occurred for one year. Primary outcomes were time to hospitalization, time to new ADL dependence, and time to death. Standard risk factors such as demographics (age, sex, ethnicity, and
intensive care unit.

Results: The one-year cumulative incidence of hospitalization was 39%, new ADL dependence was 36%, and death was 17%. Each 0.1 increment (new deficit) in the 10-TaGA total score significantly increased the rate of hospitalization (sub-hazard ratio [HR] 1.22, 95% confidence interval [CI] 1.14–1.31), new ADL dependence (sub-HR 1.35, 95% CI 1.24–1.46), and death (HR 1.33, 95% CI 1.19–1.49). The 10-TaGA markedly improved the outcomes discrimination (Table 1).

Conclusions: The 10-TaGA was a strong predictor of poor outcomes in older adults admitted to an acute care day hospital. This brief multi-domain screener may be a practical approach to assessing geriatric risk and differentiating between patients at low and high risk of adverse outcomes in fast-paced acute care services.

Table 1. Impact of 10-min Targeted Geriatric Assessment (10-TaGA) on outcomes discrimination

<table>
<thead>
<tr>
<th></th>
<th>Hospitalization</th>
<th>New ADL-dependence</th>
<th>Mortality</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model 1*</td>
<td>Hazard ratio</td>
<td>Hazard ratio</td>
<td>Hazard ratio</td>
</tr>
<tr>
<td>0.62 (0.59–0.66)</td>
<td>0.60 (0.54–0.67)</td>
<td>0.89 (0.86–0.92)</td>
<td></td>
</tr>
<tr>
<td>Model 1 - no TaGA</td>
<td>0.96 (0.92–0.98)</td>
<td>0.73 (0.67–0.80)</td>
<td>0.79 (0.76–0.82)</td>
</tr>
</tbody>
</table>

*Model 1 includes only demographics and Charlson comorbidity index

**p-value compares AUC with and without 10-TaGA

B188

Geriatric Trauma Partnership: Targeting The Right Population

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Background: Geriatric consults have been shown to improve outcomes for older trauma patients, however they are resource intensive and it is unknown which patients benefit most from this intervention. We examined the feasibility of targeting geriatric consults for older adults admitted to the Stanford Trauma service by 1) identifying vulnerable older adults with a Geriatric Screen performed by trauma surgeons, and 2) implementing subsequent geriatric medicine consultation.

Methods: We developed a 10-question Geriatric Screen for trauma patients age 65+ based on the validated Identifying Seniors at Risk and Edmonton Frail Scale tools. The screen included questions on cognitive and functional impairment, falls, delirium, and other geriatric syndromes. The Geriatric Screen was completed by trauma surgeons at the time of the trauma tertiary survey. We gave an educational lecture on geriatric syndromes in trauma patients at the beginning of the intervention, developed pocket cards, and implemented bimonthly reminders to use the screen. The acceptability and feasibility of screening was assessed through tracking the frequency of consults, extent of recommendations followed (some or all vs. none), adherence to the screen (percent of patients screened on the first 5 weekdays of the month).

Results: From Feb 1 to Aug 30 2017, geriatrics consults were requested on 104 trauma patients. Mean age was 84 years (range 66–103), and 52% were female. All (100%) patients that screened positive were found to have at least one geriatric syndrome. The most common geriatric syndromes were delirium, cognitive impairment, and functional decline. Some or all of the geriatrics recommendations were followed in 100% of patients. Trauma service reported willingness to use the Geriatric Screen, however monthly adherence ranged from 44% to 100%, and was higher on patients not admitted to the intensive care unit.

Conclusion: We implemented a Geriatric Screen which successfully identified a high-risk geriatric trauma population within a Level 1 trauma center at an academic hospital. The screen was well received, however implementing educational lectures and bi-monthly reminders were key to maintaining ongoing adherence to the intervention. Use of a Geriatric Screen done by trauma surgeons is a promising method to target trauma patients at high-risk for geriatric syndromes.

B189

Intensive Care Unit Volume And The Effect On Outcomes In Geriatric Trauma Patients


Introduction:

Literature supports that larger volumes of trauma patients cared for in fewer institutions leads to improved outcomes. The aim of our study was to analyze the association of institutional volume and trauma outcomes in geriatric trauma patients admitted to intensive care units (ICU).

Methods:

We performed a 2-year (2011-2012) analysis of all geriatric (age≥65 years) trauma patients with ICU stay >24 hours in the NTDB. Patients were stratified into two groups based on the facility they were managed; high-volume centers (HVCs) and low volume centers (LVCs) after categorizing volume into quartiles. HVCs (highest-volume quartile), while LVCs were reference category (lowest-volume quartile). Our outcome measures were in-hospital complications, and mortality rate. Regression analysis was performed to control for demographics, injury and vital parameters.

Results:

We analyzed 102,381 geriatric trauma patients admitted to ICU. Mean age was 77±7y, 53% were males. 64.5% of patients had a TBI. Median ISS was 16 [9–45], and median GCS 14 [12–15]. Overall 49.8% of patients were managed at HVCs and 6.2% at LVCs. Overall complications rate was 16.3%, and the mortality rate was 11.8%. Patients managed at HVCs had lower complications (14.2% vs 33.2%, p<0.001), and mortality (8.9% vs 35%, p<0.001). On regression analysis, patients managed at HVCs had lower aOR for complications (OR: 0.65 [0.59-0.72]) and mortality (OR: 0.53 [0.43-0.62]). Fig. 1 represents the association of increasing ICU volumes and complications & mortality among critically injured geriatric trauma patients.

Conclusion:

Geriatric trauma patients managed at high case volume is associated with lower complications and mortality. Regionalization of care and transfer of critical geriatric patients to designated centers may help improve outcomes.
**B190 Student Presentation**

**Comparison of Simple Frailty Assessments in Older Patients Undergoing Aortic Valve Replacement**

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**Background:** Frailty screening can identify high risk patients who would benefit from comprehensive geriatric evaluation and management. We evaluated comparative performance of simple validated frailty assessments, which require minimal training and can be administered within 3 minutes, in predicting poor recovery after aortic valve replacement (AVR).

**Methods:** We prospectively enrolled patients 70 years or older who underwent surgical (n=103) or transcatheter AVR (n=143) at an academic medical center. Frailty screening instruments included the Fatigue, Resistance, Ambulation, Illness, and Loss of weight (FRAIL) scale (0-5), Clinical Frailty Scale (CFS) (0-7), grip strength (kg), gait speed (m/sec), and chair rise (sec). Poor recovery was defined as death, or decline in ability to perform 22 daily activities and New York Heart Association class 3/4 at 6 months. Performance of instruments was compared by sensitivity, while maintaining a specificity of around 80% to detect poor recovery.

**Results:** Of 228 patients followed at 6 months (drop-out: 18 patients), 8 surgical and 34 transcatheter patients had poor recovery. In the combined cohort, chair rise (≥60 secs to complete 5 rises) had higher sensitivity (57%) than FRAIL scale (≥4; 17%; p<0.01), CFS (≥2; 24%; p=0.01), grip strength (≤11 kg; 26%; p<0.01), and gait speed (≤0.35 m/sec; 29%; p<0.01). Results were similar in the subgroups of surgical patients (chair rise ≥3 sec: 50% vs others: 13-25%) and transcatheter patients (chair rise ≥60 sec: 62% vs others: 21-32%).

**Conclusion:** Among evaluated simple frailty assessments, chair rise may be useful as a screening tool for older patients undergoing evaluation for AVR.

**Table: Simple Frailty Screening Instruments and Poor Recovery after Aortic Valve Replacement**

<table>
<thead>
<tr>
<th>Frailty Screening</th>
<th>Call-out</th>
<th>% Positive</th>
<th>Sensitivity</th>
<th>Specificity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Combined Cohort</td>
<td>Total n=143, Poor recovery 50/228</td>
<td>11.4%</td>
<td>97.5% (11.2%)</td>
<td>96% (12.0%)</td>
</tr>
<tr>
<td>CFS (0-7)</td>
<td>a=6</td>
<td>11.4%</td>
<td>97.5% (11.2%)</td>
<td>96% (11.2%)</td>
</tr>
<tr>
<td>grip strength</td>
<td>≤11 kg</td>
<td>23.7%</td>
<td>77% (7.7%)</td>
<td>60% (23.7%)</td>
</tr>
<tr>
<td>chair rise (sec)</td>
<td>≥60</td>
<td>23.7%</td>
<td>77% (7.7%)</td>
<td>60% (23.7%)</td>
</tr>
</tbody>
</table>

**B191 Encore Presentation**

**Validating Patient Reported Outcomes in Older Veterans with Chronic Back Pain**

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**Background:** Chronic back pain is a prevalent condition among older adults, incurring high physical and psychosocial burden. Identifying appropriate, efficient and reliable patient reported outcome (PRO) measures is critical for research and clinical purposes. The NIH’s Patient Reported Outcomes Measurement Information System (PROMIS) instruments provide robust PRO measures; however, these have not been compared to validated “legacy” instruments in older adults with chronic back pain. This study aims to evaluate convergent validity and time to completion (TTC) of PROMIS as compared to “legacy” instruments.

**Methods:** We enrolled older Veterans (age 60+) with chronic back pain/without leg pain (≥3 months) scheduled for lumbar epidural steroid injections. Participants completed PROMIS computer adaptive test (CAT) item banks and corresponding “legacy” instruments in the following domains: pain interference, behavior and intensity; functional status; depression and anxiety; fatigue; sleep and social functioning. Convergent validity between PROMIS and “legacy” instruments was evaluated using Pearson correlation coefficients in a correlation matrix. Paired sample t-tests compared average TTC between both instruments.

**Results:** Participants included 71 Veterans with average age 67, 94% men, 96% non-Hispanic. Average BMI was 32, 59% were diagnosed with depression, anxiety and/or PTSD. Average pain intensity was 5.7/10. Pearson correlations showed a strong convergent validity between PROMIS and “legacy” instruments in all the domains (correlation coefficients, r>0.5) except for social functioning (r=0.35). PROMIS items had significantly shorter total TTC than “legacy” items (8min,10sec vs 26min,44sec).

**Conclusions:** PROMIS measures, especially for pain, depression, anxiety, fatigue and sleep domains, have strong convergent validity in older Veterans with chronic back pain. Moreover, PROMIS measures require less time to complete. Given the efficiency of using PROMIS, along with strong convergent validity, PROMIS instruments are a valid and practical choice for both research and clinical purposes.

**B192**

**Quality of Life Priorities in Older Dialysis Patients**

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**Background:** Quality of life (QOL) in older dialysis patients can be especially limited by functional impairment, symptoms, and comorbidities. The Kidney Disease Quality of Life instrument (KDQOL-36) is routinely administered to all dialysis patients, but it may not capture domains of QOL that matter most to older dialysis patients. To fill this knowledge gap, we conducted a qualitative study to identify QOL themes of high importance to older dialysis patients.

**Methods:** We conducted semi-structured interviews with 12 hemodialysis patients aged ≥70 years. We used QOL themes identified in the interviews using content analysis to develop 35 opinion statements for a Q sorting task. Then, we recruited additional subjects to perform Q sorts (i.e., rank-order the 35 statements according to the extent to which they agree with each statement). We used the rankings to perform by-person factor analysis using PQMethod software and identify representative factors of QOL themes.

**Results:** Among the 29 hemodialysis patients who completed a Q sort, the mean (SD) age was 76.1 (5.6) years, 18 (62%) were female, and 17 (59%) were black. Our factor analysis revealed three major QOL themes (factors with eigenvalue >2) into which patients clustered: 1) Independence/Physical Health (prioritized by 44% of respondents), 2) Psychological/Energy (21%), and 3) Environment (35%). Together, these three themes explained 55% of the variance. Patients who prioritized Independence/Physical Health believed it was important to be able to move independently, do basic activities of daily living, and feel well. Patients who prioritized Psychological/Energy believed it was important to have energy to do things they enjoy and found strength in their spiritual beliefs. Patients who prioritized Environment believed it was important to have adequate finances, transportation, and a safe home environment. In all groups, one opinion statement was ranked among the top three: “It is important that I keep my memory and thinking ability”. Of these QOL themes, only items related to physical health and energy are represented in the KDQOL-36.

**Conclusions:** Older dialysis patients identify cognition, independence, spirituality, and environment to be highly important QOL
themes, but these are not captured in the KDQOL-36. Routine inquiry of these additional QOL domains can help prioritize management of problems that matter most to older dialysis patients.

**B193**
Comparison of Frailty Phenotype and Deficit-Accumulation Frailty Index for Predicting Recovery After Transcatheter and Surgical Aortic Valve Replacement

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**Background:** Frailty phenotype and deficit-accumulation frailty index (FI) are the most commonly used measures of frailty. This study compared their performance in predicting recovery after transcatheter (TAVR) and surgical aortic valve replacement (SAVR).

**Methods:** Patients who underwent TAVR (n=143) or SAVR (n=103) were prospectively enrolled and underwent evaluation of frailty phenotype and FI based on comprehensive geriatric assessment (mild <0.23, moderate 0.23-0.40, severe ≥0.41). Poor recovery was defined as death or functional decline and New York Heart Association class III or IV at 6 months. Ability to predict poor recovery between measures was compared using C statistics. Additive value to a clinical model (age, sex, and Society of Thoracic Surgeons predicted risk of mortality) was compared using net reclassification improvement (NRI) and integrated discrimination improvement (IDI).

**Results:** Among 137 TAVR and 91 SAVR patients, TAVR patients had higher prevalence of phenotypic frailty (85% vs 38%, p<0.01) and greater mean FI (0.36 vs 0.23, p<0.01) than SAVR patients. FI had significantly higher C statistics than frailty phenotype in the overall cohort (0.74 vs 0.63, p=0.01), with a similar trend in subgroups of TAVR patients (0.65 vs 0.54, p=0.07) and SAVR patients (0.81 vs 0.69, p=0.06). Adding FI to the clinical model significantly improved prediction of poor recovery in the overall cohort (NRI, 26.4%, p=0.02; IDI, 7.7%, p<0.01), while adding phenotypic frailty did not (NRI, 4.0%, p=0.70; IDI, 1.6%, p=0.08). The additive value of FI to the clinical model was particularly greater in TAVR patients (NRI, 42.8%, p<0.01; IDI, 4.7%, p=0.03) compared to phenotypic frailty (NRI, 6.8%, p=0.26; IDI, 0.2% p=0.63).

**Conclusion:** Deficit-accumulation FI improves prediction of poor recovery more than frailty phenotype in older patients undergoing TAVR and SAVR.

**B194**
Perioperative Optimization of Senior Health (POSH): A Descriptive Analysis of Deferred Surgery

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**Background:** POSH is an integrated care coordination model between surgery, anesthesia, and geriatrics. It is associated with improved surgical outcomes in high risk older adults. Our analysis describes the reasons for surgical cancellation among patients after preoperative POSH assessment.

**Methods:** Retrospective chart review of the first two years of the POSH program at Duke University Hospital (DUH) and Durham Veteran Affairs Medical Center (DVAMC) undergoing elective surgeries (n=609) identified a subset who did not have surgery (n=47). Demographics, medical conditions, medications, and functional status were reviewed. Primary reasons identified for surgery cancellation are categorized in Table 1. A random sample of charts (N=6) was reviewed by two authors to ensure agreement in assigned reasons for deferring surgery, with 100% concurrence.

**Results:** 7.7% of patients did not pursue elective surgery after undergoing POSH assessment. Those who forewent surgery had a mean age of 77 years. 23.4% (n=11) were dependent in 1+ ADL and 48.9% (n=23) were dependent in 1+ IADL. 46.8% (n=22) had cardiovascular comorbidities, 66.0% (n=31) had cognitive impairment, and patients took on average of 12 medications. Table 1 summarizes reasons that patients deferred surgery across both institutions.

**Conclusions:** Preoperative geriatric assessment using shared decision making led to nonsurgical management in 8% of potential operative cases. 21% of cancellations are driven by clarification in patient goals and preferences, and 34% are due to identification of candidates with prohibitively high risk.

**Table 1. Reasons for Cancellation of Surgery**

<table>
<thead>
<tr>
<th>Reason for Cancellation</th>
<th>Number of Patients (N=47)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient Declined</td>
<td>24 (51.1%)</td>
</tr>
<tr>
<td>Poor Surgical Risk</td>
<td>18</td>
</tr>
<tr>
<td>Patient Demise</td>
<td>17 (36.2%)</td>
</tr>
<tr>
<td>Change in goals of care</td>
<td>5</td>
</tr>
<tr>
<td>Poor surgical risk due to physical illness</td>
<td>1</td>
</tr>
<tr>
<td>Better understanding of risks and benefits</td>
<td></td>
</tr>
<tr>
<td>Patient did not provide reason for cancellation</td>
<td></td>
</tr>
<tr>
<td>Lost to follow-up</td>
<td>3 (6.3%)</td>
</tr>
<tr>
<td>Complication of Anesthesia</td>
<td>2 (4.2%)</td>
</tr>
<tr>
<td>Died Prior to Day of Surgery</td>
<td>1 (2.1%)</td>
</tr>
</tbody>
</table>

**B195 Student Presentation**
Frailty in Geriatric Surgical Patients: Assessing the Utility of a New 5 Factor Index

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**Background:** The modified frailty index (mFI-11) is a NSQIP based 11-factor index that has been proven to adequately reflect frailty and predict mortality and morbidity. These 11 factors, made of 16 variables, map to the original 70 item Canada Study of Health and Aging Frailty Index. In the past years, certain NSQIP variables have been removed from the database; as of 2015, only 5 out of the original 11 factors remain. While the predictive power and usefulness of this five factor index (mFI-5) has been proven in our previous work, it has yet to be studied in the geriatrics population. The goal of our study was to compare the mFI-5 to the mFI-11 in terms of value and predictive ability for mortality, post-operative infection and unplanned thirty-day readmission for patients 65 years and older.

**Methods:** The mFI-5 is made up of functional status, diabetes, history of COPD, hypertension, and history of CHF and was calculated by dividing the number of factors present for a patient by the number of available factors for which there were no missing data in patients 65 and older. Spearman’s Rho was calculated in order to compare mFI-5 and mFI-11 value. Predictive models, using both unadjusted and adjusted logistic regressions were created for each of the three factors. Above methods were conducted for nine surgical subspecialties.

**Results:** Correlation between the mFI-5 and mFI-11 were above 0.86 across all surgical specialties except for cardiac surgery. Adjusted and unadjusted models showed similar C-statistics for mFI-5 and 11. Overall predictive values of geriatric mFI-5 and mFI-11 were lower than for the general population, but still had effective predictive value for mortality and post-operative complication. Both indexes had weak predictive value for thirty day readmission.

**Conclusion:** The mFI-5 is an equally effective predictor as the mFI-11 in all subspecialties and an effective predictor of mortality and post-operative complication the geriatric population. It has credibility...
for future use to study frailty within the NSQIP database. It also has potential in other databases and for clinical use.

**B196 Student Presentation, Encore Presentation**

Predictors of Inpatient Acute Kidney Injury Following Infrarenal Abdominal Aortic Aneurysm Repair in Octogenarians

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**Background:** Acute kidney injury (AKI) is a common postoperative complication after abdominal aortic aneurysm (AAA) repair and is associated with significant morbidity and mortality. However, limited studies have investigated this complication in elderly patients. This study aimed to evaluate AKI in octogenarians following open (OAR) and endovascular AAA repair (EVAR).

**Methods:** Data were obtained from the Vascular Quality Initiative database on all patients who underwent elective infrarenal AAA repair between January 2003 and April 2017. Univariate analysis was performed to compare AKI as well as failure to rescue (FTR), defined as 30-day mortality following postoperative AKI, between octogenarians and nonoctogenarians in OAR and EVAR. Stepwise multivariate logistic regression analysis was implemented to identify independent predictors and develop a risk calculator of AKI in octogenarians undergoing AAA repair.

**Results:** A total of 32,297 patients (OAR, 4184; EVAR, 28,113) were included, of which 7830 (24.2%) were octogenarians (OAR, 440; EVAR, 7390). Postoperative AKI was more common in octogenarians as compared to nonoctogenarians in OAR (16.1% vs 11.5%, P < .01) and EVAR (5.1% vs 3.0%, P < .001). Similarly, FTR following AKI was higher in octogenarians whether undergoing OAR (28.2% vs 9.8%, P < .001) or EVAR (16.8% vs 8.9%, P < .001). On multivariate analysis, we identified several independent risk factors of postoperative AKI in octogenarians including OAR approach (OR, 3.50; 95% CI, 2.43-5.05), female sex (OR, 1.40; 95% CI, 1.07-1.82), symptomatic status (OR, 2.50; 95% CI, 1.87-3.34), aneurysm diameter (OR, 1.08; 95% CI, 1.02-1.14), peripheral arterial disease (OR, 1.58; 95% CI, 1.14-2.19), diabetes (OR, 1.39; 95% CI, 1.05-1.84), chronic kidney disease (OR, 3.28; 95% CI, 2.42-4.44), prior aortic surgery (OR, 1.90; 95% CI, 1.24-2.93), β-blocker use (OR, 1.55; 95% CI, 1.18-2.03), and intraoperative blood loss (OR, 2.67; 95% CI, 1.45-4.90). These predictors were incorporated in an interactive risk calculator of AKI after AAA repair in octogenarians (C-statistic = 0.735). The mean participant age was 76±7 years, 57% were women, 10% underwent a AAA repair, 50% CABG, 40% colectomy; 19% died within 1 year of their major operation. After adjusting for age, comorbidity burden, surgical type, gender, race and education, the following geriatric measures were significantly associated with 1-year mortality >1 ADL dependence (43% vs 17%, adjusted HR: 2.3, p=0.0007), >1 IADL dependence (40% vs 17%, adjusted HR: 2.2, p=0.0012), inability to walk several blocks (25% vs 14%, adjusted HR: 1.7, p=0.004), presence of depression (27% vs 15%, adjusted HR: 1.6, p=0.01).

**Conclusions:** In this older adult cohort, about a fifth of participants who underwent major surgery died within 1 year and geriatric measures were significantly associated with mortality. Specifically, certain geriatric measures, such as pre-operative function and psychosocial well-being, need to be incorporated into the pre-operative assessment. This information may be used in surgical decision-making and patient counseling.

**METHODS** We analyzed longitudinal data from the nationally-representative Health and Retirement Study linked to Medicare claims (N=1286 participants), age ≥ 65 and who underwent a major surgery (i.e., abdominal aortic aneurysm [AAA] repair, coronary artery bypass graft [CABG], colectomy). Our outcome was mortality within 1 year of the major operation. Predictors included the following geriatric measures: dependence in activities of daily living (ADL), dependence in independent activities of daily living (IADL), mobility ability, and presence of depression. Additionally, we examined demographic and clinical predictors. Analysis was performed using multivariate cox proportional hazard models.

**RESULTS** The mean participant age was 76±7 years, 57% were women, 10% underwent a AAA repair, 50% CABG, 40% colectomy; 19% died within 1 year of their major operation. After adjusting for age, comorbidity burden, surgical type, gender, race and education, the following geriatric measures were significantly associated with 1-year mortality >1 ADL dependence (43% vs 17%, adjusted HR: 2.3, p=0.0007), >1 IADL dependence (40% vs 17%, adjusted HR: 2.2, p=0.0012), inability to walk several blocks (25% vs 14%, adjusted HR: 1.7, p=0.004), presence of depression (27% vs 15%, adjusted HR: 1.6, p=0.01).

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**B198 Investigating the Effectiveness of Sensing in At-Risk Population (SARP) for Readmission - the SARP Study**


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**Background:** The majority of patients readmitted to hospital from acute rehab facility is due to functional decompensating. An objective and real-time physical function monitor can early detect such deconditioning. We developed SARP, a smart watch based remote health monitoring system and investigated its effectiveness in a rehab center.

**Objective:** Examine the accuracy and reliability of SARP to detect subjects’ physical activity and predict health outcome

**Design:** Prospective cohort study

**Setting and Participants:** Skilled nursing facility, 174 subjects

**Measurement:** Physical activities measured by smart watch were classified as walking and active/non-active sitting, standing, and lying down. Daily energy was calculated from motion signals as summary measures. From physical therapy and occupational therapy medical records, 23 the most common physical function evaluations were extracted and coded in Functional Independence Measure (FIM) standard scale. Discharge dispositions (home, hospital and other nursing facilities) were recorded as health outcome.

**Analysis Procedure:** Spearman with false discovery rate (FDR) test (α=0.2) was used to determine the association between variables from SARP and FIM. ANOVA was used to compare differences of variables among subjects with different outcomes. Logistic regression with FDR test (α=0.2) was used to identify independent predictors of high readmission risk.

**Results:** Among 174 subjects, mean age was 80.6±9.2 years old, 69% were female, 7.5% (N=13) were readmitted to hospital, and 19% (N=33) to other nursing facilities. The mean length of rehab stay was 23.4±15.7 days. Between FIM and SARP, 25 pairs of variable were significantly correlated. Comparing with subjects discharged to home or other nursing facilities, those readmitted to hospital spent 26% more time in lying down (P<0.001) initially and spent 30% less time in

**B197 Geriatric Measures as Predictors of 1-Year Mortality in Patients Undergoing Major Surgery**


**BACKGROUND** A growing proportion of older adults are undergoing major surgery despite the higher risk of post-operative mortality. Geriatric measures, such as functional status and psychosocial factors, are commonly used in geriatric assessments. Despite poor functional status and depression having significant association with poor health outcomes, these geriatric measures are often not included in studies evaluating post-operative outcomes in older adults. Our goal was to determine the association of geriatric measures and 1-year mortality in older adults after major surgery.

**METHODS** We analyzed longitudinal data from the nationally-representative Health and Retirement Study linked to Medicare claims (N=1286 participants), age ≥ 65 and who underwent a major surgery (i.e., abdominal aortic aneurysm [AAA] repair, coronary artery bypass graft [CABG], colectomy). Our outcome was mortality within 1 year of the major operation. Predictors included the following geriatric measures: dependence in activities of daily living (ADL), dependence in independent activities of daily living (IADL), mobility ability, and presence of depression. Additionally, we examined demographic and clinical predictors. Analysis was performed using multivariate cox proportional hazard models.

**RESULTS** The mean participant age was 76±7 years, 57% were women, 10% underwent a AAA repair, 50% CABG, 40% colectomy; 19% died within 1 year of their major operation. After adjusting for age, comorbidity burden, surgical type, gender, race and education, the following geriatric measures were significantly associated with 1-year mortality >1 ADL dependence (43% vs 17%, adjusted HR: 2.3, p=0.0007), >1 IADL dependence (40% vs 17%, adjusted HR: 2.2, p=0.0012), inability to walk several blocks (25% vs 14%, adjusted HR: 1.7, p=0.004), presence of depression (27% vs 15%, adjusted HR: 1.6, p=0.01).

**Conclusions** In this older adult cohort, about a fifth of participants who underwent major surgery died within 1 year and geriatric measures were significantly associated with mortality. Specifically, certain geriatric measures, such as pre-operative function and psychosocial well-being, need to be incorporated into the pre-operative assessment. This information may be used in surgical decision-making and patient counseling.
standing (P<0.001). Initial status of non-active standing (AUC=0.79) and total standing duration (AUC=0.76) were predictors for high readmission risk (both p<0.001).

Conclusion: The SARP evaluation is accurate and reliable compared with FIM. It detects significant differences among those with different health outcomes, and it can predict risk of readmission. Future study is aimed to evaluate SARP in various clinical settings and assess individual pattern changes of SARP on transition care.

B199 Student Presentation
The utility of CGA7, the simplified CGA screening tool in acute care settings
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Background: CGA7 is a simple screening comprehensive geriatric assessment (CGA) tool developed by the longevity scientific research CGA Guideline Research Group in Japan. CGA7 consists of seven questions assessing vitality, immediate and delayed recall, ADL, IADL and mood, and can be administered in in/outpatient settings in a couple of minutes. However, the utility of CGA7 has not been fully evaluated in acute care settings. The objective of this study was to assess the utility of CGA7 by examining the association of CGA7 with the length of hospital stay and geriatric syndromes in a tertiary care hospital.

Methods: We utilized the geriatric ward database of 429 inpatients at the University of Tokyo Hospital, discharged from April 2014 to March 2019. Patients were mainly admitted for cognitive impairment or treatment of illnesses such as pneumonia and heart failure. Short-term admissions for medical checkup were excluded.

Results: The average CGA7 score was 3.8 (SD 1.7) and the average length of hospital stay was 21.7 days (SD 16.0). They were significantly correlated (p<0.26 p<0.01). The CGA7 score was significantly and negatively associated with the number of geriatric syndromes after adjusted for age, sex, Charlson comorbidity index (β= -0.24, 95%CI (-0.42, -0.06)). The CGA7 score was also significantly and negatively associated with length of hospital stay after adjusted for age, sex, whether emergency hospitalization, Charlson comorbidity index and BMI (β= -2.33, 95%CI (-3.46, -1.20)).

Conclusions: CGA7 was originally developed as a screening tool and any abnormality detected by CGA7 should be followed by formal tests such as MMSE. However, our results suggest that CGA7 itself is useful in identifying patients at high risk for multiple geriatric syndromes and prolonged hospital stay. By conducting CGA7 at admission, treatment planning and discharge support can be implemented earlier.

B200 Resident Presentation
Prevalence and Factors Associated with Uptake of Digital Technologies for Health-Related Purposes among Frail and Non-frail Older Adults

Background: The adoption of technology among older adults is rapidly growing with an emphasis on websites and healthcare portals as a means to connect and engage patients. This study aims to understand access, use, and preference barriers to use of digital technologies for health-related purposes among frail older adults.

Methods:
This cross-sectional study was conducted using data from 4,551 adults aged 65-90 who responded to the Kaiser Permanente Northern California Member Health Survey in 2014-2015. The survey asked about ability to use the internet, email, text messaging, and apps; use of the health plan’s patient portal and online resources in the prior year; and interest in receiving health information and advice (HIA) through different digital modalities. Frailty status was based on a deficits accumulation model using self-reported data. Multivariable logistic regression was used to examine differences by frailty status after adjusting for 5-year age intervals, sex, and race.

Results:
Compared to the non-frail group, frail older adults were significantly less likely to use the internet (67.3% vs 85.1%) and email (67.1% vs 84.6%) alone or with help. In the past year, they were also less likely to have used the health plan’s patient portal to send emails, look up test results, or order prescription refills (49.9% vs 58.8%). Frail older adults were less interested in obtaining HIA through secure messages on the patient portal (17.3% vs 27.7%), getting HIA from websites (27.3% vs 38.3%), and using a health app on a mobile device (4.6% vs 8.4%). After adjusting for age, sex and race, frail seniors were less likely to use the internet (OR 0.63, 95% CI 0.47-0.84) and email (OR 0.61, 95% CI 0.47-0.81). Among internet users, frail seniors were more likely to use the patient portal (OR 1.48, CI 1.10-1.97) but did not significantly differ from non-frail on use of or interest in online HIA or securely messaging HIA.

Conclusion: Digital technologies have the potential to facilitate communication between patients and their healthcare providers; however, compared to non-frail older adults, frail counterparts have less ability to use and less interest in using digital technologies for health-related purposes. This disparity suggests that healthcare providers should plan on delivering HIA to frail older adults through more traditional methods of communicating information, such as telephone and print.

B201 Clinical outcomes associated with coexisting overactive bladder in Medicare patients with dementia

Background: Dementia and overactive bladder (OAB) appear to be independent risk factors for falls and fall-related injuries (e.g., fractures). However, little is known about the impact of OAB when coexisting as a comorbidity in older patients with dementia.

Methods: This retrospective analysis compared clinical outcomes and healthcare resource utilization between patients enrolled in a Medicare Advantage plan with dementia with and without OAB using administrative claims from 1/1/2007 through 9/30/2015. Date of first observed diagnosis of OAB, or date of first prescription for OAB medication, served as the index event. Patients with dementia and OAB, identified via diagnosis codes or medication proxy, were matched to patients with dementia without a diagnosis or medication treatment indicative of OAB. A 12-month pre-index continuous enrollment period was used to measure baseline patient demographic and clinical characteristics, and a 12-month follow-up period was used to compare clinical outcomes, including falls, fractures, urinary tract infections and skin infections/ulcers, and healthcare resource use between matched groups.

Results:
A total of 3,861 matched pairs of patients with dementia with and without OAB were included in the primary analysis. Patients with dementia and OAB had greater frequency of any fall (9.6% vs. 6.7%, P<0.001), fracture (9.4% vs. 7.7%, P=0.007), combined fall/fracture (14.8% vs. 11.9, P<0.001), and urinary tract infections (40.5% vs. 16.8%, P<0.001) than similar patients without co-existing OAB in the 12-month post-index period. Neither recurrent falls/fractures nor skin infections/ulcers were significantly different between groups. Patients with dementia and OAB additionally had significantly greater number of all-cause and dementia-related outpatient visits, physician
Vulnerable Elders-13 Score Predicts Delirium Severity in Acute Trauma

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Background: Older trauma patients are at greater risk of delirium compared to similarly-injured younger patients. We tested whether a short functional status survey can predict incidence and severity of delirium during acute trauma care.

Methods: We interviewed 195 older (age 65+) trauma patients admitted to an academic Level 1 trauma center from 09/2012-09/2016 using the Vulnerable Elders-13 Survey (VES-13), which includes age and pre-injury functional status. We reviewed medical records to collect incidence and severity of delirium, defined as:

- Mild: all delirium episodes ≤ 2 days
- Moderate: longest delirium episode 3+ days, but none needed pharmacologic treatment nor prolonged the hospital stay
- Severe: any episode needed pharmacologic treatment/restraints or prolonged the hospital stay

The VES-13 score was used to predict delirium (yes/no) and the increasing probability of severity of delirium using multivariable logistic and ordinal logistic regression, respectively, controlling for Injury Severity Score (ISS), gender, and comorbidity.

Results: Mean age was 78.1, and 67.7% had severe injury (ISS>9); 73 patients (37% of the sample) had delirium; of these, half (n=37, 50.7%) were severe. Of those with delirium, 6 (8.2%) prolonged the hospitalization; of these, the number of prolonged days could be clearly identified for 4 patients (mean 3.5 days (SD 2.6, range 1-7)). Every 1-point increment in the VES-13 increased the odds of delirium by 20% [95% CI 8-32%]. Furthermore, VES-13 predicted severity (Fig1). Among severely-injured men, those with VES-13 of 0 were much less likely to develop severe delirium than score of 10 or 1-7). Every 1-point increment in the VES-13 increased the odds of delirium by 20% [95% CI 8-32%]. Furthermore, VES-13 predicted severity (Fig1). Among severely-injured men, those with VES-13 of 0 were much less likely to develop severe delirium than score of 10 (21 vs. 62%).

Conclusion: The VES-13 can identify which older trauma patients could potentially benefit from delirium prevention efforts as well enhanced management of complex delirium cases to prevent prolonged hospitalization.

B203 Encore Presentation

Identifying Sarcopenia Among Men Living in Long-term Care Communities


Background: Prevalence estimates of sarcopenia vary widely depending on the population of interest and the diagnostic criteria employed. Few studies in the United States have examined sarcopenia in the long-term care (LTC) population, although it represents a high-risk cohort. Sarcopenia among women in LTC is near 30%, but there is a little agreement among three consensus panel diagnostic criteria about which women have sarcopenia. The objectives of the current study were to determine the prevalence of sarcopenia in male LTC residents and assess the degree of overlap among three sets of consensus diagnostic criteria.

Methods: We conducted a cross-sectional secondary analysis of baseline data from ambulatory men residing in LTC facilities screened for an osteoporosis clinical trial. Participants were evaluated using dual x-ray absorptiometry to assess muscle mass, dynamometry to measure hand grip strength, and 4-meter walk to evaluate usual gait speed. Sarcopenia was defined by three sets of consensus panel guidelines – the European Working Group on Sarcopenia in Older People (EWGSOP), the Foundation for the National Institutes of Health Sarcopenia Project (FNIH) conservative cut-points, and FNIH intermediate cut-points.

Results: A total of 52 men (age 83.9 ± 7.2, mean ± SD) were included in the analysis. Sarcopenia prevalence was the lowest at 3.8% (2/52) by FNIH intermediate cut-points. Using FNIH conservative cut-points, 4 participants (7.7%) had sarcopenia. The most participants with sarcopenia, 13.5% (7/52), were identified using the EWGSOP criteria. The three consensus guidelines agreed on only one participant with sarcopenia.

Conclusion: Current consensus panel recommendations lack agreement for diagnosing sarcopenia in male residents of LTC. Sarcopenia is prevalent among men in LTC, but to a lesser extent than in women. Further research is needed to identify clinically relevant and consistent criteria for determining sarcopenia among LTC residents in order to properly investigate and target management strategies.

B204 Frailty as a Prognostic Factor for the Critically Ill: A Propensity Matched analysis of 34,854 Geriatric Patients


Introduction: Frailty is highly prevalent in elderly and confers high risk for adverse outcomes. The aim of this study was to assess the impact of frailty on outcomes in critically ill geriatric trauma patients.

Methods: Five-year (2010-2014) analysis of critically ill geriatric trauma patients with ICU stay>24h in TQIP databank was performed. Patients were stratified into frail and non-frail using modified-Frailty index. Propensity score matching was performed in a 1:1 ratio controlling for demographics, admission vitals, comorbidities, and injury parameters. Outcome measures were major ICU complications, rehab/SNF disposition, and mortality.

Results: We included 88629 patients, of which 34854 patients (frail: 17427, non-frail: 17427) were matched. Mean age was 76±7y, GCS was 14 [13-15], and ISS was 17 [10-29]. Matched groups were similar in demographics, admission vitals, and injury parameters. Overall, 26.1% patients developed major complications, while 14.6% died. Frail patients had higher complications (34% vs. 18%, p<0.001), and mortality (19.5% vs. 9.7%, p<0.001), and were more likely to be discharged to rehab/SNF (58.7% vs. 21.2% p<0.001) compared to non-frail patients. Even in the frail group, adverse outcomes increased with increasing frailty index (Figure-1).

Conclusions: Frailty can be used as an objective measure to identify high-risk patients allowing for accurate prediction of adverse outcomes and resource allocation. Frailty should be an integral part of intensive care unit scoring systems.
B205 Student Presentation
Cost Comparison of Elective Invasive Procedures between Elderly and Non-Elderly Patients at an Academic Medical Center
A. Reisman, K. Farrell, I. M. Leitman. Icahn School of Medicine at Mount Sinai, New York, NY.

Background: There is a perception that age is a cost driver for complex elective procedures. An evaluation of the costliest elective interventional procedures among the elderly and non-elderly populations may provide information about the relationship between age and total hospital costs. The study objective was to determine whether a correlation exists between patient age and hospital charges for common complex elective surgical procedures.

Methods: Hospital charges at an urban academic medical center were categorized by diagnosis related group (DRG) for patients discharged January 1, 2015 – December 31, 2016. Patient encounter data were separated into two cohorts (≥65 years old and <65 years old). The total costs for each elective procedure were determined. The costliest procedures were identified and the average total hospital cost per procedure was calculated for each group. A Student t-test was performed to compare the average cost per procedure in each cohort.

Results: After reviewing 114,448 hospital admissions (33,803 aged ≥65 years and 80,645 aged <65 years), the 16 most costly elective procedures were identified. The following were statistically more expensive for patients ≥65 years: cardiac valve/other major cardiovascular procedure (+13%; $4,071.44; p<0.001), endovascular cardiovascular valve replacement (+46%; $16,418.41; p<0.001), percutaneous cardiovascular procedure (+4%; $4,695.54; p=0.0017), coronary bypass (+11%; $2,544.95; p=0.0001), major bowel procedures (+17%; $2,037.98; p=0.001), and spinal fusions (cervical +19%; $2,685.30; p=0.001), non-cervical (+9%; $2,270.38; p=0.0028), non-cervical with spinal curvature/malignancy/infection (+33%; $14,625.87; p<0.001).

The remaining procedures – transplantation (liver, heart, kidney, bone marrow), major vascular surgery, craniotomy/intracranial procedures, infectious/parasitic disease procedures, and joint replacement were not statistically more expensive.

Conclusions: Major elective cardiovascular, spine, and intestinal procedures are costlier in patients ≥65 years. Further analysis is required to determine the cause of these differences. Major transplantation, vascular procedures, infectious/parasitic disease procedures, and joint replacement surgery were not costlier. This finding, compared with other outcomes, may allow us to re-examine the age limits for these complex procedures.

B206
Analysis of suboptimal information management during older adults’ hospital-to-home health care transitions and implications for improvement
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Background: Older adults receiving skilled home health care (SHHC) after hospital discharge are at high risk for adverse outcomes. Optimal information management (IM) is critical to ensure safety; little is known about IM during this transition. This study’s objectives were: 1) identify risk factors for IM-related process failures; 2) characterize outcomes of suboptimal IM during transitions from multiple perspectives; and 3) discuss strategies SHHC providers use to obtain needed information.

Methods: Multi-site qualitative study at five SHHC agencies across the US. Guided by a human factors engineering approach, we performed semi-structured interviews and direct observations during the hospital/SHHC transition. The data collected were >180 hours of observation and ~80 hours of interviews of older adults, informal caregivers, SHHC providers, and SHHC administrators. We performed qualitative analysis of observation notes, interview transcripts, and descriptions of error propagation.

Results: 33 SHHC administrative staff, 60 older adults, 40 informal caregivers, and 46 SHHC providers participated. The most frequent risks contributing to IM-related process failures related to restrictive insurance regulations, lack of informal caregivers, communication breakdown, limited health literacy, improper medication use, and mismatched expectations during the care transition. IM-related process failures were associated with increased frustration, development of workarounds, delays in care plan implementation, and adverse events. SHHC providers used three key strategies to obtain needed information when facing IM-related process failures: using the older adult or informal caregiver as a messenger; using alternative methods to access information; and drawing on special relationships or connections with others.

Conclusions: IM-related process failures were associated with wide-ranging outcomes affecting older adults’ health, SHHC provider morale, and organizational efficiency. SHHC providers developed individual strategies to combat organizational problems. Efforts to improve IM during the hospital-to-home health care transition need to be multi-faceted, targeting a wide range of risk factors.

B207
Visualizing Socioeconomic Disadvantage to Inform Programs and Policy: The Neighborhood Atlas
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Background: Although neighborhood disadvantage is a social determinant strongly linked to health outcomes, real-world accessibility of updated national-level metrics of neighborhood disadvantage for policy and clinical purposes has been limited outside of research settings. If made accessible, such metric(s) might be rapidly applicable to a wide-variety of uses, including informing Medicare policy regarding readmission penalties. The Area Deprivation Index (ADI) is a neighborhood disadvantage metric validated in studies over three decades, but is reliant upon antiquated long-form Census data for construction. The ADI requires updating to more current American Community Survey (ACS) data and improved real-world accessibility to realize its potential.

Methods: Using block-group level ACS 2009-2013 data, we used updated methods to calculate ADI scores for each of the 220,334 US block-groups (i.e., “neighborhoods”), ranked these into percentiles
B209 Predictors and Variation in Long-Term Acute Care Hospital Use among Non-Mechanically Ventilated Hospitalized Older Adults

A. Makam, O. Nguyen, L. Xuan, M. Miller, E. Halm. UT Southwestern Medical Center, Dallas, TX.

Background: Despite providing a comparable level of care, it is unknown why non-mechanically ventilated hospitalized older adults are transferred to long-term acute care hospitals (LTACs) versus remaining in the acute care hospital.

Methods: We conducted an observational study using national 5% Medicare data. We included all non-mechanically ventilated hospitalized adults ≥65 years with Medicare Parts A and B in 2012 who were transferred to an LTAC or had a prolonged hospitalization without post-acute care transfer (≥ average hospital length of stay among those transferred to an LTAC), and who had one of the top 50 most common hospital diagnoses leading to LTAC transfer. We assessed predictors of transfer with a multilevel mixed-effects logistic regression model adjusting for patient, hospital, and hospital referral region (HRR)-level factors. We estimated proportions of variance at each level and adjusted hospital- and HRR-specific LTAC transfer rates using sequential models.

Results: Among 12,875 patients, 14.2% were transferred to an LTAC. The strongest predictor of transfer was being hospitalized near an LTAC (0-1.4 vs >33.6 miles, aOR 6.0, 95% CI 4.1-8.9). After adjusting for case-mix, differences between patients explained 56.7% of the variation in LTAC use (95% CI 51.5-61.8%). The remainder was attributable to hospital (15.5%, 95% CI 11.9-19.1%) and regional (27.8%, 95% CI 22.1-33.5%) differences. Case-mix adjusted LTAC use was very high in the South where most HRR transfer rates were 10.4%-53.1%, compared to the Pacific Northwest, North, and Northeast where most HRRs were <5.3%. From our fully adjusted model, the median adjusted hospital LTAC transfer rate was 7.2% (IQR 2.7-17.5%), with substantial within-region variation (intraclausal coefficient 0.25, 95% CI 0.21-0.30).

Conclusions: Nearly half of the variation in LTAC use is independent of patients’ illness severity and is explained by where the patient was hospitalized and in what region, with far greater use in the South. Even among hospitals in regions with similar potential LTAC access, there was considerable variation in LTAC use. Because of the increased fragmentation of care and greater Medicare spending with LTAC transfers (since LTACs generate a separate bundled payment from the acute care hospital), greater attention is needed to define the optimal role of LTACs in caring for older adults requiring prolonged acute care.

B210 Potential Impact of the Site-Neutral Payment Policy on Long-Term Acute Care Hospital Use: A National Study of Medicare Beneficiaries

A. Makam, O. Nguyen, B. Kirby, M. Miller, L. Xuan, E. Halm. UT Southwestern, Dallas, TX.

Background: Due to rising long-term acute care hospital (LTAC) use, by October 2018, the site-neutral payment (SNP) policy will substantially reduce reimbursement for all Medicare beneficiaries without prolonged mechanical ventilation or ≥3 day ICU stay prior to transfer because these patients are less likely to require this level of care. Since half of the variation in LTAC use is unrelated to patients’ severity of illness, we sought to examine the potential impact of the SNP policy on regions and hospitals with different LTAC use.

Methods: We conducted a retrospective cohort study using 5% national Medicare data. We included adults ≥65 years with Medicare parts A and B who were transferred from a hospital to an acute care hospital who were transferred to an LTAC. We calculated the proportion of LTAC transfers using the site-neutral payment policy for the baseline year (2016) and the post-policy year (2017) and compared the reduction in LTAC use by region and hospital. We also assessed the changes in LTAC use by hospital characteristics and the proportion of patients transferring to an LTAC who are eligible for the SNP payment.

Results: Among 12,875 patients, 14.2% were transferred to an LTAC. The strongest predictor of transfer was being hospitalized near an LTAC (0-1.4 vs >33.6 miles, aOR 6.0, 95% CI 4.1-8.9). After adjusting for case-mix, differences between patients explained 56.7% of the variation in LTAC use (95% CI 51.5-61.8%). The remainder was attributable to hospital (15.5%, 95% CI 11.9-19.1%) and regional (27.8%, 95% CI 22.1-33.5%) differences. Case-mix adjusted LTAC use was very high in the South where most HRR transfer rates were 10.4%-53.1%, compared to the Pacific Northwest, North, and Northeast where most HRRs were <5.3%. From our fully adjusted model, the median adjusted hospital LTAC transfer rate was 7.2% (IQR 2.7-17.5%), with substantial within-region variation (intraclausal coefficient 0.25, 95% CI 0.21-0.30).

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Conclusions: Nearly half of the variation in LTAC use is independent of patients’ illness severity and is explained by where the patient was hospitalized and in what region, with far greater use in the South. Even among hospitals in regions with similar potential LTAC access, there was considerable variation in LTAC use. Because of the increased fragmentation of care and greater Medicare spending with LTAC transfers (since LTACs generate a separate bundled payment from the acute care hospital), greater attention is needed to define the optimal role of LTACs in caring for older adults requiring prolonged acute care.
LTAC in 2012. We compared characteristics of patients transferred to LTACs by tertile of hospital referral region LTAC supply (beds per 100,000 residents) and by propensity-score matched hospitals with low (< median of 1.26%) vs. high (≥ 1.26%) historical LTAC transfer rates.

RESULTS: We included 3,898 and 1,673 older adults transferred to an LTAC for our regional and hospital-level analyses respectively. For both comparisons, demographics, prior healthcare utilization, comorbidities, and functional impairment were similar. Compared to regions with the lowest LTAC supply, patients in the highest supply regions had shorter hospital length of stay (5 fewer days), lower intensity diagnoses (DRG weight of 1.91 vs 3.06), fewer intensive therapies (11% vs 27% for tracheostomy), and were more likely to meet SNP criteria (47% vs 30%; p<0.01 for all). Similarly, patients from high LTAC transfer hospitals were less sick compared to patients from matched low transfer hospitals. However, the magnitudes of the differences were smaller than those between regions (i.e. length of stay difference of 2 days; 14% vs 22% for tracheostomy; 43% vs. 36% for SNP). Patients who meet SNP criteria for lower reimbursement were otherwise similarly ill between regions and hospitals with different LTAC use.

CONCLUSION: The SNP policy will impact LTAC use in high supply regions and from high transfer hospitals to a greater extent, however nearly a third of patients in low supply regions and from low transfer hospitals will also be affected. Further research is needed to study the impact of SNP policy on LTAC access and how this relates to patient outcomes, recovery, and costs.

B212 VA Home Based Primary Care (HBPC) Targeted Enrollment Improved By Risk Stratification Strategy
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Background The Independence at Home (IAH) Medicare demonstration has shown that interdisciplinary HBPC, when targeted to high risk patients, produces better care at lower cost. VA HBPC produced savings of 10-16% between 2012-2015, with savings concentrated among patients meeting IAH qualifying (IAH-Q) criteria. To increase the share of such high need, high risk (HNHR) Veterans served, VA identified Veterans who met IAH-Q criteria for possible HBPC enrollment.

Methods: Using VA data and Medicare claims for Veterans, we applied IAH-Q criteria (hospitalization and post-acute care prior 12 months, 2 or more ADL impairments, 2 or more chronic conditions). The HNHR algorithm was applied monthly to all VA users not in HBPC. VA facilities were provided lists of HNHR Veterans beginning May 2017 with monthly feedback on the share of new HBPC enrollees who were HNHR. We divided Veteran Integrated Service Networks into tertiles of HNHR growth between Quarter 1 (Q1) (baseline) and Q3-4.

Results: Among 6.2M VA users, 457,270 (7.4%) were IAH-Q; among 51,789 HBPC Veterans, 21,429 (41%) were IAH-Q and 30,360 were non-IAH-Q. Non IAH-Q Veterans in HBPC were of similar risk to targeted IAH-Q primary care patients not in HBPC (Nosos risk score 3.5 v 3.4; 1 year hospitalization risk 21% v 25%; mortality 12% v 23%), while lower risk than IAH-Q Veterans in HBPC (Nosos risk score 6.4; hospitalization risk 30%, mortality 30%). In the last 5 months of FY2017, of 8411 Veterans enrolled in HBPC, 18% met HNHR, compared to baseline Q1 rate of 14.2%. Growth of high risk enrollment was greatest among the tertile with lowest Q1 HNHR (127%, from 6.8% to 17.1% HNHR), and least among the tertile with highest Q1 HNHR enrollment (4%, from 18.5% to 19.2% HNHR). By Q4, the share of HNHR enrollment reached near equivalence in all tertiles (17.1%, 18.8%, 19.2%).

Conclusions: Identifying HNHR Veterans not in HBPC nearly equalized the HNHR share of new HBPC enrollees among programs regardless of baseline. Usual primary care processes identify and refer Veterans that are of nearly equivalent risk as patients who meet HNHR criteria in primary care. The use of risk stratification identifies Veterans that are even higher risk yet not routinely recognized as appropriate for HBPC.

B211 Student Presentation
Limited Social Support, Aging at Home, and Transitions to Nursing Homes Prior to Death: A Longitudinal Study
A. Oh,1 F. Wang,2 J. Boscardin,2,3 C. S. Ritchie,2 A. K. Smith.2,3

Background: Most older adults want to remain at home and avoid moving to a nursing home (NH) or residential care facility for the elderly (RCFE).

Methods: We used the National Health and Aging Trends Study (NHATS), a nationally representative survey of U.S. adults ages 65 and older, to identify participants living at home in 2011 and display residential transitions through 2016 (Figure 1). We used a Fine & Gray hazards model to estimate the risk of transition into NH/RCFE with death at home considered a competing risk. Primary predictors were social support factors (death of a partner, living alone, and lack of social network). Covariates included age, gender, race, cognitive status, and functional disability.

Results: In 2011, 4,848 NHATS subjects were living at home (78±8 years, 59% female, 71% white, 14% probable dementia, 11% 3+ ADL disabilities). By 2016, 64% remained at home, 22% died at home, 14% had transitioned to NH/RCFE. In multivariable analyses, participants were more likely to move from home into a NH/RCFE if they experienced death of spouse in past year (sub hazards ratio [sHR] 1.3, 95% CI 1.04-1.5, p=.02), were living alone (sHR 1.8, 95% CI 1.5-2.1, p=.001), or had no social network (0 vs. 3+ people, sHR 1.6, 95%CI 1.2-2.2, p=.004).

Conclusion: Policy initiatives should target older adults with limited social support in order to reduce risk of moving from home into a NH/RCFE.
**B213**

**Home Based Primary Care (HBPC) Reduces Hospitalizations to Produce Savings in the Independence at Home (IAH) Demonstration**

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**1. Medicine, University of Pennsylvania, Philadelphia, PA; 2. West Health Institute, La Jolla, CA; 3. JEN Assoc, Ann Arbor, MI.**

**Background:** The IAH demonstration has produced over $35M in savings over its first two years, with a program limit of 10,000 beneficiaries. IAH is a provider-managed shared savings program which aligns incentives for hbpc providers, mobile interprofessional teams who manage medically complex frail Medicare beneficiaries in the community. IAH impact on utilization has not been reported, creating doubt about the significance of the savings estimates.

**Methods:** We used National Provider Identification (NPI) linked 2010-2014 5% Medicare files, a funder-file of IAH demonstration enrollees, and 100% Medicare claims to identify 15 IAH practices, their IAH-eligible beneficiaries, and IAH enrollees in the counties where the practices operated. We selected administratively IAH-eligible controls that fit the age, disease, and utilization trajectory profiles of administratively IAH-eligible patients in the demonstration practices. Benchmark rates were created for each practice county, and were compared to the hospitalization rates for the demo practices, organized into tertiles of savings. IAH-eligible patients were determined by claims evidence of hospitalization and post-acute care in the 12 months prior to eligibility, 2 or more chronic conditions, and 2 or more ADL dependencies operationalized by a JEN frailty index >6. Savings are publically reported IAH Demo evaluation results for Years 1 and 2.

**Results:** We found 6404 IAH claims-eligible patients in demo practices, with 8712 IAH-eligibles in the demo practice counties not receiving hbpc. IAH rate ratio for hospitalizations overall was .84 (95% CI 0.74-0.92) from a control rate of 12.5/100 beneficiary months. The top savings tertile (13.6% savings, n=2173 beneficiaries) and mid savings tertile (5.4% savings, n=2370) had similar reductions in hospitalization (26% and 29%, respectively), while the lowest savings tertile (-1% savings, n=1861) had no hospitalization impact (-3%). While reduced hospitalization was correlated across savings tertiles (r=.71), it was less correlated among the subset of programs that achieved savings (r=.41).

**Conclusion:** HBpc, operating under IAH’s aligned incentives, reduces hospitalizations among successful programs, although not among programs who do not produce savings.

**B214**

**Effect of Medical and Functional Needs on Costs of Geriatric Hip Fracture Care**

C. Thirukumaran, P. Rubery, Y. Li, B. Ricciardi, D. Mendelson.

University of Rochester, Rochester, Rochester, NY.

**Background:** Hip fractures are the 8th most common diagnosis for Medicare inpatient admissions, and Medicare spends more than $4.7 billion for their care. In addition to being a high-cost cohort, these patients may have complex, coexisting needs such as multiple chronic medical conditions and functional limitations. While there is considerable focus on managing medical comorbidities, greater attention needs to be paid to functional limitations. The objective of this study is to assess the medical and functional needs, and the incremental role of functional limitations among hip fracture patients in influencing costs of their care.

**Methods:** We used 2015 Medicare Claims and Minimum Data Set 3.0 to identify geriatric patients admitted to New York hospitals and discharged to skilled nursing facilities (SNF). We defined high medical needs as presence of 3 or more comorbidities, and high functional needs as activities of daily living (ADL) composite score of 15 or higher. This composite score included 7 ADL scores at SNF discharge. We used univariate and bivariate statistics, and multivariate linear regressions to assess whether outcomes such as length of stay (hospital and SNF) and episode spending (acute and postacute) varied across patients (i) without high medical or high functional needs (Group 1), (ii) with high medical needs but not high functional needs (Group 2), and (iii) with high medical and high functional needs (Group 3).

**Results:** The cohort comprised of 4,923 patients. Mean number of comorbidities were 3.39±1.93 and mean ADLC score at SNF discharge was 15.30±4.52. Of these, 12% (n=592), 20% (n=969), and 44% (n=2,143) met group 1, 2, and 3 criteria respectively. As compared to groups 1 and 2, group 3 included older patients (mean age 85.5 years), and higher proportion of males (31%) and minorities (9%). On multivariate analysis, group 3 had 35% longer hospital stay as compared to group 1 (Est.: 2.20, 95% CI: 1.74 to 2.66, p<0.001) and 16% longer stay as compared to group 2 (Est.: 1.06, 95% CI: 0.67 to 1.44, p<0.001). Group 3 also had 11% higher episode spending (Est.: 4112.46, 95% CI: 2632.76 to 5592.15, p<0.001) as compared to group 1.

**Conclusions:** Our study demonstrates that high functional needs are important drivers of prolonged stays and greater costs. Strategies intended to optimize the costs of hip fracture care need to focus on not only the medical but also the functional needs of these patients.

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**B215**

**Using Functional Data to Identify High-Need Geriatric Patients**

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**Background:** Older adults with functional disability have high levels of pain, social isolation, and are at risk for death and burdensome healthcare utilization. Data on function are critical to identifying geriatric patients who may benefit from palliative care, but it is unclear which function measures are most efficient for screening.

**Methods:** The National Health and Aging Trends Study, a nationally-representative, Medicare-linked, annual survey of adults age ≥65 was used to compare cohorts identified through five functional screening criteria. Criteria included: (1) impaired activities of daily living (ADL) (7 items); (2) 1-year decline in ADLs (7 items, 2 time points); (3) life space conception (LSC), or frequency leaving home, (1 item); (4) self-reported LSC decline, or patient report that leaving home is harder than 1 year ago (1 item); and (5) measured LSC decline, i.e. calculated from year 1 to 2 LSC score (1 item). The 2-item LSC and reported decline (7-items), area under the curve 0.79 vs. 0.80, p>0.05. The 2-item LSC and measured LSC decline, 34.9% LSC, 17.3% measured LSC decline, and 21.5% ADL decline, 34.9% LSC, 17.3% measured LSC decline, and 21.5% self-reported LSC decline. All functional criteria predicted high rates of mortality, with self-reported vs. measured LSC decline associated with worse outcomes (1 year mortality 18.3% vs. 8.0%, 1 year hospitalization 45.2% vs. 30.6%). The 2-item LSC and reported decline measures predicted 1-year mortality as well as ADL severity and decline (7-items), area under the curve 0.79 vs. 0.80, p>0.05.

**Conclusions:** Functional screens predict a population with high rates of mortality and hospitalization. Single item and self-reported decline measures are promising as more efficient means of identify high-risk older adults. This work will help health systems and payers improve their use of functional data to target interventions and design payment models for high-risk geriatric patients.
B216 Linking Meals on Wheels and Medicare Data: A Tool to Enable Examination of Client Health Care Utilization

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Background: Access to social services (e.g., nutrition, transportation, etc.) is likely to have an impact on older adults’ healthcare utilization and health outcomes. Unfortunately, data documenting the relationship between receipt of services and objective measures of healthcare utilization remain limited. The goal of this project was to link Meals on Wheels (MOW) program data to Medicare claims to enable examination of clients’ health and healthcare utilization and to highlight the utility of this dataset.

Methodology: Using deterministic and probabilistic linking techniques, we matched MOW client data to Medicare enrollment and claims data. Descriptive information including clients’ demographic characteristics and chronic conditions is presented and clients’ healthcare utilization before and after receiving services from MOW was determined (hospitalization, emergency department use, and nursing home placement rates).

Results: Using linking techniques, we obtained a one-to-one link for 14,019 MOW clients for 13 programs. Almost 90% of clients were diagnosed with hypertension, approximately 80% with hyperlipidemia, and over half with catacastra, anemia, rheumatoid/osteoarthritis, and ischemic heart disease. In the 6-months before receiving services, 31.6% of clients were hospitalized, approximately 25% were admitted to the ED and 13% received care in a NH. In the 6-months after receiving meals, 24.2% were hospitalized, 19% were admitted to the ED, and 11% received care in a NH.

Conclusions: The linkage of MOW data to Medicare claims has the potential to shed additional light on the relationships among social services, health, and healthcare cost and use as well as the relationship between services received from home-delivered meals programs and clients’ well-being.

B217 Up to a Quarter of 30-Day Readmissions are Due to Fall-Related Injuries in Some High-risk Patients

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Background: Falls are a growing burden for older Americans. Medicare’s Hospital Readmissions Reduction Program (HRRP) will penalize hospitals $526 million in 2017. Readmission prevention efforts have focused on preventing exacerbation of the illness. Past research has shown that falls are common after hospital discharge. However, little is known about the relationship of readmissions and falls. Identifying high-risk patients would inform efforts to prevent readmissions when discharging older Medicare patients.

Methods: We used 1998-2012 Health and Retirement Study linked to Medicare data to identify 34,604 eligible index admissions among individuals ≥65 years, for six cohorts—cardiovascular (n=5,122), cardiorespiratory (n=6,430), neurology (n=1,993), medicine (n=13,579), surgery (n=6,492), and cancer (n=988). We identified fall-related injuries (FRI) using the UCLA/RAND algorithm. We assessed 30-day all-cause readmission rates and readmission rates associated with FRIs overall, for each cohort, and by age (65-74, 75-84, 85+). Using multivariable logistic regression, we estimated the odds of an FRI readmission using patient sociodemographic and health characteristics.

Results: Of eligible discharges, 19.8% involved 30-day readmissions—greatest for cardiorespiratory (22.8%) and medicine (20.9%) cohorts. Three percent of readmissions involved FRIs—greatest for surgery (5.7%), medicine (2.9%), and neurology (2.8%) cohorts. FRI readmissions increased with age (65-74: 2.0%, 75-84: 2.7%; 85+: 4.3%), particularly for the surgical cohort (65-74: 3.5%, 75-84: 5.3%; 85+: 13.6%). The most FRI readmissions were observed among those 85+ in the surgical cohort with multiple chronic conditions (17.2%), multiple ADLs (25.6%), home care use (15.8%), and a prior FRI (23.5%). In multivariable analysis, odds of FRI readmission were greatest for those 85+ (1.84, p<0.001) and with a prior FRI (2.84, p<0.001).

Conclusions: Many hospital readmissions, particularly for the oldest old, involve FRIs. As increasingly older patients receive surgery, preventing post hospital fall readmissions may be a ripe area for future research, particularly among those with history of functional impairment or prior falls. Whether FRIs can be reduced deserves further research, e.g., by including fall prevention in the discharge safety checklist, thus both reducing penalties under HRRP and improving health outcomes of the post-acute recovery period.

B218 Student Presentation

Opioids in nursing homes: what you get depends on where you are


Background: Despite the high prevalence of opioids to manage pain in nursing homes, little is known about how these medications are initiated and if practices vary by place. We evaluated geographic variation in the initiation of commonly used opioids within US nursing homes.

Methods: Using a cross-sectional study, we merged Minimum Data Set 3.0 from 2011 to Medicare data. Long-stay residents who initiated short-acting hydrocodone, oxycodone, or tramadol were included (~90% of opioids prescribed in this setting: N=62,889). We grouped residents into hospital referral regions (HRRs) and examined geographic variation by creating maps that grouped HRRs into quartiles based on the proportion of residents initiating each study drug. To measure the extent to which opioid choice was correlated within HRRs, multilevel logistic models were used to estimate intraclass correlation coefficients (ICC) after adjusting for state and resident/facility factors.

Results: Hydrocodone (56.2%) and tramadol (34.5%) were more commonly initiated than oxycodone (9.4%). Geographic variation was most extensive for oxycodone (range 0-74.2%), which was prescribed frequently in the Northeast but avoided elsewhere (e.g., Texas, Figure). The probability of being prescribed a specific opioid was strongly correlated within HRRs (oxycodone ICC=0.33; tramadol ICC=0.15). Resident factors were weakly associated with initiated opioids whereas state and facility factors explained a higher proportion of the observed variation.

Conclusion: Strong geographic variation may affect pain management in certain HRRs if clinicians avoid potent opioids despite residents’ needs. That variation was driven by state and facility factors suggests that efforts to improve pain management should intervene at these levels, but further work is needed to evaluate if/how current policy changes in response to the opioid crisis have unintended effects on managing pain in nursing homes.

Figure. Variation in the proportion of initiators prescribed oxycodone (N=62,889)
B221 Student Presentation
Teamwork at the Core: Secondary Survey Analysis of Interdisciplinary Teams and Home-Based Medical Care
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Background: Interdisciplinary teams (IDTs) are essential to high-quality geriatric care models, such as home-based medical care (HBMC). Quality standards for HBMC suggest IDTs consist, at a minimum, of members of the disciplines: medicine, nursing and social work. However, there is a paucity of data on the use and composition of IDTs in HBMC. The objective of this study is to describe the use of IDTs, as well as the inclusion of various disciplines in HBMC IDTs.

Methods: We performed a secondary data analysis using the results from the 2013 National Home-Based Primary Care and Palliative Care Network survey of HBMC practices. Descriptive statistics and bivariate analysis were used to describe routine IDT meetings, frequency of meeting occurrence and participation of various disciplines in IDT processes.

Results: Two-hundred-forty-six of 272 unique HBMC practices were included in this study; 26 were excluded for missing data. Of these, 148 (60%) of practices held routinely scheduled IDT meetings. Practices reporting routine IDT meetings were distributed evenly geographically and mostly in urban or suburban settings. Those using IDTs had an average of 1.6 sites per practice with an average daily census of 380 patients. Practices conducting regular IDT meetings compared to those not were more likely to be: a group practice rather than solo practice (59% vs. 45%, P = 0.03), owned or sponsored by a primary hospital or health system rather than independent (23% vs. 12%, P = 0.03), financially subsidized by a hospital or health system rather than independently financed (17% vs. 6%, P = 0.01), academic institution affiliated rather than not (30% vs. 16%, P = 0.01) and be not-for-profit versus for-profit entity (30% vs. 17%, P = 0.03). Most practices using IDTs reported meeting weekly (42.2%) or monthly (26.5%). Social workers attended IDT meetings 26% of the time, while physicians and nurse practitioners attended at least 75% of the time.

Conclusions: There is great diversity in IDT utilization in HBMC practices. Most practices that use IDTs reported meeting at least monthly, but few adhere to IDT quality standard recommendations to include social workers. Future research is needed to evaluate the effect of social worker involvement in IDT on patient outcomes.

B220 Medicare Payments for Medicine Subspecialty Consultations for Hospitalized Elderly Adults, 2014
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Background: Medicine subspecialty consultations are requested at the discretion of attending physician to provide organ-system or procedural expertise, with 90% of hospitalizations having ≥1 consultation in 2010. Under value-based payments, which aim to control overall spending, consultations may be a target for health systems working to reduce costs. Our objective was to measure the use and costs of subspecialty consultation for elderly adults hospitalized for non-surgical conditions.

Methods: We used Medicare professional and hospital billing data for a national random sample of 629,450 fee-for-service beneficiaries 65+ years of age hospitalized for non-surgical conditions between January and December 2014. Using generalized linear regression with gamma-log link, payments were adjusted for age, sex, race, Elixhauser comorbidity index, and the Diagnosis Related Group (DRG) for the hospitalization. Payments were aggregated at the hospital referral region (HRR) level and compared between top vs. bottom quintiles of consultation rate. The results from the random sample were extrapolated to the entire Medicare fee-for-service population.

Results: In 2014, 57.4% of hospitalizations included ≥1 consultation with a medicine subspecialist, corresponding to 22.5 million consult visits and $1.89 billion in physician payments. After risk adjusting, mean payments varied across HRRs (Figure). Total physician consultation payments to the quintile of HRRs with the highest consultation rate were $315 million higher than to the quintile with the lowest rate.

Conclusions: Medicare payments for medicine subspecialty consultations represent a considerable component of total hospitalization spending. Regional variation suggests this practice could be optimized. However, whether hospitals transitioning to value-based payment can reduce these costs without detrimentally affecting quality is unknown.
we added information on lymph node sampling, genomic testing, and treatment outcomes for lumpectomy only.

**Conclusions:** We developed a novel breast cancer treatment DA that is acceptable to women ≥70 years with a history of breast cancer. Next, we will test the DA among women ≥70 years newly diagnosed with ER+/HER2+ early stage breast cancer. We anticipate that our DA will improve the quality of older women’s decision making around breast cancer treatment.

**B222 Student Presentation**

**Opportunities for Improving Workflows Affecting Antibiotic Prescribing in Nursing Homes**


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**Background:** Rising antibiotic resistance in nursing homes (NHs) has been attributed to antibiotic overuse and misuse. Results of NH antibiotic stewardship programs have been mixed, but identifying NH variations can provide guidance for developing targeted interventions. We mapped the antibiotic prescribing workflow in NHs in two states to identify similarities and differences in antibiotic prescribing workflows.

**Methods:** We interviewed 55 individuals (leadership, nursing staff, and prescribers) about antibiotic prescribing workflows at one-day site visits in six NHs in Wisconsin (3) and Pennsylvania (3). We created a workflow map based on facility observations and visit debriefs. We identified workflow similarities, differences, and variations through comparative content analysis guided by the workflow map.

**Results:** We found two sets of commonly occurring steps: (1) staff work-up (recognition of change in condition, initial survey, nurse assessment, 24-hour board, temporary care plan) and (2) nurse-prescriber communication (nurse preparation, contact attempt, direct prescriber interaction). Content analysis showed pervasive variations in execution of common steps (Table 1), highlighting challenges to nurse-prescriber communication, including recognition, nurse assessment, preparation, and coordination.

**Conclusions:** We mapped antibiotic prescribing workflows across NHs and found the steps most prone to variation. Based on this study, interventions to improve workflows focused on preparation for and coordination of nurse-prescriber communication events appear to be prime targets for NH antibiotic stewardship programs.

**B223 Student Presentation**

**Access to Dementia Care in Rural and Remote Communities:** For Some, No Light at the End of the Tunnel

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**Background:** The quality and availability of health care services is critical for rural elderly individuals, especially for those diagnosed with Alzheimer’s disease and related dementias (ADRD). However, rural healthcare is constrained by lack of resources, often with fewer ADRD-specialized staff and facilities than urban regions (Bail et al., 2013). The majority of rural older adults with ADRD have unmet needs in one or more areas of functioning (Li et al., 2012). Though it is understood that the care needs of older adults with ADRD in rural communities are often unfulfilled, specific barriers to care have not yet been investigated in detail. The purpose of this research was to identify barriers to dementia care across the state of Wyoming and use this information to inform the development of a statewide dementia care plan.**Methods:** Ten town hall-style meetings were conducted in towns across Wyoming. Participants were residents of varying perspectives on dementia care, including caregivers, health and social service providers, and administration and policy makers; they provided their opinions and observations on various areas relating to the dementia epidemic at the statewide level. Town hall meetings were conducted by an expert facilitator, and were audio recorded and transcribed. Three coders were used to code the transcripts for common themes. **Results:** Participants were 175 individuals representing 10 towns in Wyoming with an average age of 59.32 years. The majority were female (n = 126; 73.7%), non-Hispanic (n = 158; 94%), white (n = 157; 98.1%) caregivers (n = 62; 35.6%) of their spouse (n = 26; 35.6%) with ADRD. Seven themes emerged as needs of improved access to memory care facilities, geriatric mental health, home health services, geriatric assessment, respite and adult day services, care coordination, and financially viable care options. **Conclusion:** The need for specialized, affordable, and convenient care for individuals with ADRD and their caregivers is prevalent and growing increasingly urgent across Wyoming, one of the most rapidly aging states in the country. Recommendations include recruiting existing facilities to increase the number of long-term care facilities, reducing regulatory barriers, increasing size of the workforce, and making long-term care more affordable in rural regions.

**B224 Student Presentation**

**“Nobody has a choice in here”: Prisoners’ Perspectives on Barriers to Advance Care Planning while Incarcerated**

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**Background:** With a rapidly aging prison population, a growing number of incarcerated patients face complex medical decisions. Advance Care Planning (ACP) – identifying, communicating, documenting patients’ values and care goals – is essential to provide these patients high-quality care. Yet little is known about ACP engagement among incarcerated patients, or their perspectives on barriers to ACP in the correctional setting.

**Methods:** This descriptive cross-sectional mixed-methods study enrolled 35 male prisoners from 3 states to complete interview-guided questionnaires with closed and open-ended questions. Eligibility included: English-speaking, age>50, ≥3 clinical appointments within 3 months, and providing consent via a teach-to-goal process. Validated items were used to measure self-reported health, multimorbidity (≥3 chronic conditions), functional impairment (>1 ADL difficulty), and knowledge and experience with ACP. We used illustrative quotes to enhance descriptive findings.

**Results:** Participants’ average age was 63 (range 50-79), with 57% reporting fair/poor health, 60% multimorbidity and 31% functional impairment. Though 43% endorsed familiarity with ACP, all defined it inaccurately (e.g. “planning for after release”). Many had engaged in ACP, e.g. discussed medical decision-making with friends/family (57%); signed a healthcare proxy (43%); or decided on end-of-life interventions (34%). However, only 11% had discussed ACP with a correctional clinician. Mistrust was common: 77% doubted correctional clinicians would “make appropriate medical decisions regardless of prison rules”; 34% rated their trust as “not at all”; 63% prefer
S. M. Vouri,1,2 M. Schootman,2 S. A. Strope,3 S. J. Birge,4 H. Xian,2 older adults
association with antimuscarinic discontinuation or switching in
Potential antimuscarinic-related adverse events and the
B225 Student Presentation
Potential antimuscarinic-related adverse events and the
association with antimuscarinic discontinuation or switching in
older adults
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Louis, MO.
Background: Patients who initiate an antimuscarinic for over-
active bladder may stop or switch their medication due to antimusca-
rinic-related adverse events (AEs). Our objective is to examine AEs
and the association with antimuscarinic discontinuation or switching
in older adults.
Methods: We performed a retrospective cohort analysis of
antimuscarinic (e.g., oxybutynin, tolterodine, trospium, solifenacin,
darifenacin, fesoterodine) new-users aged 66 years or older between
2007 and 2012 using longitudinal Medicare medical claims plus Part
D data. AEs included dry mouth, dry eyes, constipation, urinary reten-
tion, and cognitive impairment as time-varying exposures among
patients free of these adverse events in the year prior to antimuscarinic
initiation. The incidence of each AE was calculated. We performed
multivariable Cox proportional hazards models for the outcomes of
antimuscarinic discontinuation and switching to adjust for comorbid
conditions and patient demographics.
Results: Of the 42,336 older adults who initiated an antimus-
carinic, 21,975 participants were free of AE in the year prior. Within
12 months of antimuscarinic initiation, the percent of patients who
discontinued or switched was 67.8% (n=14,902) and 9.5% (n=2,096),
respectively. Incidence of AEs per 100 patient-years was 18.5 (cogni-
tive impairment), 14.9 (constipation), 8.3 (urinary retention), 8.0
(dry eyes), and 0.6 (dry mouth). Patients who developed constipation
(adjusted Hazard Ratio [aHR] 1.16, 95% confidence intervals [CI]
1.06-1.26) or urinary retention (aHR 1.79, 95% CI 1.63-1.97) were
more likely to discontinue antimuscarinics. Patients were more likely
to switch antimuscarinics if they developed dry mouth (aHR 2.05,
95% CI 1.02-4.11), constipation (aHR 1.25, 95% CI 1.03-1.51), or
urinary retention (aHR 1.93, 95% CI 1.53-2.43).
Conclusions: Specific AEs were associated with discontinu-
ing or switching of antimuscarinics. Our findings may help improve
prescribing and outcomes by informing providers about the potential
need for medication changes due to AEs.
B226 Mediating Role of Poor Doctor-patient Communication and
Delayed/Forgone Care in Minority Older Adults
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Background: Little is known about factors that contribute to
delayed/forgone care in racial/ethnic minority older adults. We investi-
gated if perceived racial/ethnic discrimination is associated with
delayed/forgone care, and whether poor doctor-patient communication
mediates this relationship in minority older adults.
Methods: Data from the 2015 California Health Interview Survey
were used. We limited our sample to adults ages 65 or older with
complete covariates (n=6,972 unweighted). Using a cross-sectional
survey research design and a population-based sampling strategy, we
conducted multivariable logistic regression analyses to estimate odds
of having delayed or forgone care when adjusted for other covari-
ties. Then, we performed mediation analyses to investigate whether
poor doctor-patient communication mediates the relationship. We also
performed stratified mediation analyses by race/ethnicity.
Results: In the full model, those who experienced racial/ethnic
discrimination had 2.29 times higher odds of having delayed/forgone
care (95% CI, 1.02-5.17) than did those who did not have such expe-
riences. Having poor communication with a doctor had 3.07 times
higher odds of having delayed/forgone care (95% CI, 1.98-4.75). In
the adjusted mediation analysis, we confirmed that poor doctor-pa-
tient communication was a mediator. When stratified by race/ethnic-
ity, neither perceived racial/ethnic discrimination nor doctor-patient
communication was associated with delayed/forgone care among
non-Hispanic whites. In contrast, among minority older adults, racial/
ethnic discrimination was significantly associated with delayed/forgone
care (odds ratio=3.60; 95% CI, 1.24-10.51), and the effect
mediated by poor doctor communication was 9.9%.
Conclusion: Findings suggest that improving doctor-patient
interactions may reduce disparities in access to care in minority older
adults.
B227 Predicting Alzheimer’s Disease and Related Disorders in Practicing
Physicians using Patient Complaints
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Background: Currently used tools to assess physicians’ cogni-
tive performance are imperfect. As Alzheimer’s Disease and Related
Disorders (ADRD) can be unrecognized, we tested if words used by
patients in unsolicited complaints identified physicians with definite
or probable ADRD.
Methods: Using a nested case control study of 33,814 physicians
practicing in one of 144 Patient Advocacy Reporting System (PARS)
sites, we identified 15 definite or probable ADRD cases in 2014-16.
These were matched twice: 4:1 for gender, age (+/- 5 yrs, n=60);
and 4:1 for having a PARS complaint at the same institution (n=60).
Qualitative analysis of complaints was performed by two raters who
achieved 100% inter-rater agreement following training. Phrases (“He
kept forgetting things we had just discussed”; “I no longer trust this
physician”) were categorized into domains (recent memory, compe-
tency) mapped to ADRD clinical criteria.
Results: 15 cases were 59-90 years old (mean 72.5 +/- 9.1) and 14 were male. Age, gender-matched controls were significantly less likely to lack board certification (p<.01). Site-matched controls were significantly younger (53.0 +/- 9.8) and had significantly fewer complaints. 73% of cases had a patient complaint with at least one word that matched ADRD criteria versus 18% of site-controls (p<.001). Individual words such as “forget”, “remember”, “memory”, “confused”, “inappropriate”, “seemed”, “age”, “trust”, and words suggesting apraxia were statistically more likely to appear in spontaneous complaints about cases. In multivariate analyses controlling for specialty, organizational setting, board certification, and international medical graduate status, cases were significantly more likely to have at least one complaint with any word describing ADRD than the two control groups (adjusted odds ratio 20.0 (95% confidence interval 4.9-81.7).

Conclusions: Analysis of words in unsolicited patient complaints found that physicians with definite or probable ADRD were significantly more likely to be described using words from one of the diagnostic domains for ADRD than were two different groups of controls. This information may assist health systems in their patient safety efforts and in supporting professionals with potential cognitive impairment.

B228
Intensification of antihypertensive regimens following hospitalization for unrelated conditions: too much of a good thing?

Background: Transient elevations of blood pressure are common in hospitalized older adults and may lead inpatient clinicians to intensify inpatient antihypertensive therapy and discharge patients on these intensified regimens. Intensification of outpatient regimens during hospitalization can easily become over-treatment once patients return home, increasing patients' risk of adverse drug events including syncope and falls. Thus, we evaluated the frequency of hospitalized older adults being discharged on intensified antihypertensive regimens.

Methods: We used national VA and Medicare data to identify veterans with an outpatient diagnosis of diabetes who were age 65 years and older and hospitalized in a VA in 2011-2013 with pneumonia, urinary tract infection or venous thromboembolism. Using VA pharmacy records, we compared diabetes medications prescribed on admission and discharge. We classified regimen changes as intensifications if patients were discharged on an increased dose of oral hypoglycemics, new insulin, or a greater number of either oral hypoglycemics or insulins.

Results: Among 11,276 veterans, 98% were male and the median age was 75 (IQR 68.62). Prior to admission, 30% of patients were prescribed insulin, 31% oral hypoglycemics and 40% no diabetes medications. Overall, 6% were discharged on an intensified regimen including 5% of patients with a hemoglobin A1c<7.0% prior to admission, 8% with an A1c 7.0-8.9% and 12% with an A1c>9.0% (p<0.001). Of patients with >=3 inpatient blood glucose readings >=300mg/dL, 12% were discharged on an intensified regimen, including 12% of those with a hemoglobin A1c<7.0% prior to admission, compared with 5% of patients without high inpatient readings. Rates of intensification did not substantively differ between the overall population and groups less likely to benefit from aggressive glycemic control: patients with dementia, metastatic cancer or age 85 years and older.

Conclusion: In a national cohort of hospitalized older veterans with diabetes, intensification of diabetes medications at discharge was uncommon, but occurred substantially more often in patients with elevated inpatient blood glucose levels, including those with excellent outpatient glycemic control.

B230
Delay in Filling Prescriptions Due to Cost as a Predictor of Satisfaction with Medical Care
T. Parikh, M. Black, L. K. Makaroun, W. Bryson, S. Thielke

Background: Patients with lower socioeconomic status frequently report delay in filling prescription medications due to cost (cost-related prescription delay, CRPD). Several studies have identified trust in providers as a predictor of CRPD. Little is known about how CRPD influences patient perspectives about medical care, especially if the association is mediated by financial hardship. We hypothesized that CRPD would be independently associated with lower satisfaction with various aspects of medical care.

Conclusion: One in 8 older adults hospitalized for common non-cardiac conditions were discharged on intensified antihypertensive regimens. Intensifications were common in groups with low likelihood of benefit, including older adults with transient inpatient BP elevations but well-controlled outpatient blood pressure.
Design and methods: We analyzed cross-sectional data from 2012 CAHPS Medicare Advantage Survey. Patients were asked to rate their personal doctor, specialist, and over all medical care on a 0-10 scale. This was dichotomized as satisfied (9-10) and dissatisfied (0-8). Participants reported if they had experienced CRPD during the last six months. Socioeconomic factors, including gender, race, age, medical comorbidity, low income subsidy status, and insurance, were also collected.

Results: Among 114,905 respondents, 13.4% reported CRPD, and 32% were dissatisfied with some aspect of care. Of those with and without CRPD, the following rates of dissatisfaction were found: 33% vs 24% for physician rating; 37% vs 26% for specialist rating; 55% vs 39% for medical care rating. After controlling for sociodemographic, health-related, and income variables, patients with CRPD were significantly more likely (all p-values < 0.001) than those without CRPD to be dissatisfied with their primary physician (38% increased risk), specialist (45% increased risk), and medical care in general (61% increased risk).

Conclusion: The inability to afford prescription medications independently predicted dissatisfaction with medical care and providers. This effect seemed to persist even after adjusting for financial hardship. Providers and health systems might improve patient satisfaction by explicitly discussing prescription cost, selecting prescriptions that are cost-effective from the patient’s perspective, and mutually negotiating affordable treatment plans.

B231 Trajectories of Antihypertensive and Statin Adherence Prior to Dementia

Background: Only half of the 5 million people in the US living with dementia have been diagnosed. We need tools to detect patients with undiagnosed dementia. Changes in medication adherence may be detected prior to dementia diagnosis. We sought to examine antihypertensive and statin adherence trajectories in community-dwelling older adults, comparing people who went on to develop dementia vs. those who did not.

Methods: We analyzed data from Adult Changes in Thought, a population-based cohort study. Analyses included 4368 participants aged ≥ 65 years and ≥1 follow-up visit. Research-quality dementia diagnoses were used to identify cases. We selected controls matched on age and sex who had a study visit at similar follow-up time as the case; we treated this as the index date. Computerized pharmacy dispensing data were used to calculate adherence among people with dementia. We analyzed data from the case; we treated this as the index date. Computerized pharmacy dispensing data were used to calculate adherence among people with dementia. We analyzed data from Ambulatory Care, a population-based cohort study. Analyses included 4368 participants aged ≥ 65 years and ≥1 follow-up visit. Research-quality dementia diagnoses were used to identify cases. We selected controls matched on age and sex who had a study visit at similar follow-up time as the case; we treated this as the index date. Computerized pharmacy dispensing data were used to calculate adherence among people with dementia. We analyzed data from pharmacy

Results: In the diabetes and statin adherence trajectories in community-dwelling older adults, comparing people who went on to develop dementia vs. those who did not.

Methods: We analyzed data from Adult Changes in Thought, a population-based cohort study. Analyses included 4368 participants aged ≥ 65 years and ≥1 follow-up visit. Research-quality dementia diagnoses were used to identify cases. We selected controls matched on age and sex who had a study visit at similar follow-up time as the case; we treated this as the index date. Computerized pharmacy dispensing data were used to calculate adherence among people with dementia. We analyzed data from the case; we treated this as the index date. Computerized pharmacy dispensing data were used to calculate adherence among people with dementia. We analyzed data from Ambulatory Care, a population-based cohort study. Analyses included 4368 participants aged ≥ 65 years and ≥1 follow-up visit. Research-quality dementia diagnoses were used to identify cases. We selected controls matched on age and sex who had a study visit at similar follow-up time as the case; we treated this as the index date. Computerized pharmacy dispensing data were used to calculate adherence among people with dementia. We analyzed data from pharmacy

Conclusion: Antihypertensive adherence may be particularly important in detecting dementia risk.

B232 Student Presentation
Advancing Age and Catatonia and Risk for Delirium in Critically Ill Patients

Background: Delirium and catatonia co-occur, but no studies have explored this relationship by age. Our objective was to assess whether advancing age and the presence of catatonia would have an association with delirium.

Methods: We prospectively enrolled critically ill patients at a single institution who were on a ventilator or in shock and evaluated them daily for delirium using the Confusion Assessment for the ICU and for catatonia using the Bush Francis Catatonia Rating Scale (1).

Results: We enrolled 136 medical and surgical critically ill patients with 452 matched delirium and catatonia assessments. Median age was 59 years (IQR: 52-68). Age was significantly associated with prevalent delirium (p=0.04) after adjusting for catatonia severity. Catatonia was significantly associated with prevalent delirium (p=0.0001) after adjusting for age. Peak delirium risk was for patients aged 55 years with 3 or more catatonic signs, who had 53.4 times the odds of delirium (95% CI: 16.06, 176.75) than those with no catatonic signs. Patients 70 years and older with 3 or more catatonia features had half this risk.

Conclusion: Catatonia is significantly associated with prevalent delirium even after controlling for age. These data support an inverted U-shape (highest risk in middle age, lower risk at extremes of age) risk of delirium after adjusting for catatonia. This relationship and its clinical ramifications need to be tested in a larger sample, including patients with dementia.

Reference: 1. PMID: 28841632

B233 Resident Presentation
Comparing CAM-ICU and 3D-CAM as early postoperative delirium screening tools
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Background: Older surgical patients are at higher risk for postoperative delirium, an acute confusional state associated with increases in risk of persistent cognitive deficits, longer hospital stays, and mortality. Despite the development of reliable and efficient screening tools, delirium is not routinely assessed in postoperative care units (PACU), and often goes undetected. Thus, it remains difficult to identify perioperative risk factors for delirium to target potential reversible causes. The implementation of a screening tool in the PACU could enable early detection of postoperative delirium. Possible tools include the CAM-ICU which is an abbreviated delirium detection tool optimized for

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for use in intubated patients in the intensive care setting and the 3D-CAM which is a screening tool designed for delirium detection in non-intubated, hospitalized patients.

Methods: We compared the feasibility of two established delirium assessment tools, the CAM-ICU and the 3D-CAM, in the PACU setting. We hypothesized that the 3D-CAM would detect more delirium cases in the PACU than the CAM-ICU, and would be feasible for use in the PACU. Adult patients in the PACU underwent CAM-ICU and 3D-CAM testing by trained interviewers. Inter-rater agreement was assessed and generally high (CAM-ICU: Kappa=0.77; 3D-CAM: Kappa=0.78). A total of 95 patients that underwent CAM-ICU and 3D-CAM testing were included in the analysis.

Results: Nine patients (9.5%) screened positive on the CAM-ICU, while 22 patients (23.2%) screened positive on the 3D-CAM (P=0.0003, McNemar’s test). No significant differences were found in sex (45% vs. 48% female, p>0.05 Fisher exact test), age (67 vs 61 years, p=0.05, Wilcoxon test), or time from PACU arrival (63 min vs 51 min P=0.05, Wilcoxon test) between 3D-CAM positive and negative patients. The mean duration of test administration was 2.5 and 6 minutes, for the CAM-ICU and 3D-CAM, respectively.

Conclusion: The 3D-CAM detects more delirium cases in the PACU than the CAM-ICU, and is a feasible screening tool for delirium in the PACU.

B234
Filial Discrepancy and Mortality: Findings from the PINE Study
M. Li, X. Dong. Rush Institute for Healthy Aging, Rush University Medical Center, Chicago, IL.

Background: Support from adult children has protective effects against elderly parents’ mortality, while negative relations with children was also found to be associated with lower risk of mortality among older adults. The conflicting findings in prior studies point to the nuanced nature of filial piety and mortality in later life. Less is known about the gap between filial expectation and filial receipt and its relevance to mortality. This study aims to understand the relationship between filial discrepancy and mortality.

Methods: Data were derived from the Population Study of Chinese Elderly (PINE), a community-engaged, population-based epidemiological study of US Chinese older adults aged 60 and older in the Greater Chicago area. Mortality ascertained during six years follow-up. Overall filial discrepancy was evaluated by filial expectation minus receipt. Levels of overall filial discrepancy divided older adults into four groups based on the medium value of filial expectation and receipt. Cox proportional hazard models were used to assess the relationship between filial discrepancy and mortality.

Results: Greater overall filial expectation than receipt was associated with higher risk of mortality (HR, 1.03; 95%CI, 1.00-1.05). Specifically, greater expectation than receipt in care (HR, 1.10; 95%CI, 1.01-1.21), respect (HR, 1.12; 95%CI, 1.01, 1.25) and greet (HR, 1.18; 95%CI, 1.06-1.30) was associated with higher risk of mortality. Compared with high expectation and low receipt, older adults with high expectation and high receipt (HR, 0.63; 95%CI, 0.45-0.89), or low expectation and high receipt (HR, 0.43; 95%CI, 0.27-0.68) have lower risk of mortality.

Conclusions: Filial discrepancy is a risk factor associated with mortality among US Chinese older adults. This study provides new insights into research on family relations and mortality in later life. Cultural relevancy of health interventions is important in the context of Chinese communities. The finding suggests that adult children should know more about their parents’ filial expectation and try to minimize the filial discrepancy. Health care professionals are suggested to pay more attention to the health and well-being of U.S. Chinese older adults with large filial discrepancy.

POSTER SESSION C
Friday, May 4
12:30 pm – 1:30 pm

C1 Acquired Hemophilia A Misdiagnosed as Cellulitis
D. Hasan,1 J. B. Goodin,1,2 K. Chaffee,1 A. Riggs.1 1. Geriatrics, University of Arkansas for Medical Sciences, Little Rock, AR; 2. Education, Walden University, Little Rock, AR.

Introduction: Acquired Hemophilia A (AHA) is rare bleeding disorder caused by inhibitors (auto-antibodies) to factor VIIIa.(1,2) It is associated with severe bleeding. AHA clinical presentation is different from the inherited hemophilia that leads to misdiagnosis.

Case Description: An 89-year-old female presented to the ED with shortness-of-breath, tingling and pale fingers on both hands, and a severely painful left thigh. She had decreased pulses bilaterally in her lower extremities. She was admitted to the Cardiac Intensive Unit under ACS protocol. One week prior to presentation, she was diagnosed with cellulitis of her LLE and treated with clindamycin (IV at hospital; oral upon discharge). On the following day, she had bleeding from the IV site which was managed at ER with pressure dressing. She was seen in a dermatology clinic later that week, where clindamycin was continued. Over the week she developed progressive pain and weakness in her LLE.

The patient had a history of essential hypertension, SSIS/p pacemaker, Adrenal Insufficiency, PMR, Hypothyroidism, Hip fracture with hemiarthroplasty, restless leg syndrome, GERD, cholecystectomy, hysterectomy and 5 vaginal deliveries. She had no abnormal bleeding in the previous surgeries. Her family history indicated Von Willebrand in a daughter and grandson. She was taking Atorvastatin 40 mg, Famiotidine 20 mg, Levothyroxine 25 mg, Valsartan 180 mg, Metoprolol 25mg, Roperinole 0.5 mg. Her labs showed high APTT 56.7 (39.6), low Hgb 7.7, low Factor VIII activity (%), a negative VWF panel, 1:1 Factor VIII mixing test: 56.7 to 36.9, Factor IX & XI normal, Lupus anticoagulant negative, thrombin time normal, ANA negative, Hepatitis panel nonreactive. The inhibitor level was 15 Bethesda Unit. PT and Platelets were unremarkable. An LE Doppler was negative for DVT. A CTA found 2 hematomas: one in the rectus femoris (8.6 x 4.4 x 4.1) as well as left anterior tibialis muscle (6.6 x 2.6 x 2.6). However, these findings were not reported on the initial read.

Discussion: AHA presents hematoma formation in fascial planes, mucosal bleeding, and purpura as seen in our patient in contrast to congenital hemophilia that involves haemarthrosis.(3) Geriatricians and dermatologists should be aware of the common clinical signs of this disease.

C2 Corticobasal Syndrome Can Be Elusive: A Case Report
B. Oxzemir,1 M. Yusuf,1 J. B. Goodin,1,2 M. Pippenger.1 1. Geriatrics, University of Arkansas for Medical Sciences, Little Rock, AR; 2. Education, Walden University, Little Rock, AR.

Background: Corticobasal syndrome (CBS) is a progressive neurologically clinical syndrome that may involve the extrapyramidal system, cognition, or both. Most commonly caused by corticobasal degeneration, it may be the clinical presentation of other dementias. Classically, it begins as a movement disorder, with affected individuals showing a unilateral paucity of movement and muscle rigidity with a tremor. It usually progresses slowly over the course of 6 to 8 years. During this time, the patient’s ability to live and function independently is diminished, leaving them dependent on others for activities of daily living.1

Case Presentation: A 69-year-old female presented to an outpatient geriatrics clinic in December 2014 reporting a decline in
cognitive function over the last year. She was having difficulties with finances, driving, and dressing. She complained that her left arm was not functioning well. SLUMS revealed a score of 11 of 30. A neurological exam showed that she was keeping her left arm tight against her body real with no arm swing while walking. She had spasticity at left arm and dystonic posturing at fingers. A brain MRI showed no evidence of an infarct, although it indicated asymmetrical dilatation of ventricles with a larger right lateral ventricle compared to the left (Figure 1). The patient was seen over the course of 3 years. During this time, her cognitive and motor function declined rapidly until she was admitted to a nursing home for total care and a feeding tube for nutrition.

Discussion: CBS is a rare, distinct clinical syndrome that remains underdiagnosed. While most cases are due to corticobasal degeneration, other dementias such as progressive supranuclear palsy, frontotemporal dementia, and Alzheimer’s dementia often initially present as CBS. It is important to improve recognition and proper diagnosis for patient prognostication and an opportunity for possible future treatments.

Methods: At the time of the visit, the patient was resistant to HC evaluation and could not understand why a medical provider was in her home. She was independent in her ADLS, but was unable to manage her own money, do her own shopping, or drive. She would occasionally prepare simple meals, though her daughter brought her meals after her own money, do her own shopping, or drive. She would occasion-

Results: She continued to lose weight (down to 83 lbs) and exhibited increased confusion (e.g., putting a hammer in her washing machine), but remained resistant to NHP. HC recommended inpatient psychiatric evaluation and on discharge was placed in an LTCF.

After 3 weeks, the daughter reported that haloperidol had been started for agitated behavior, was “not her normal self,” and appeared to be declining rapidly at home, placement in a medical system may have contributed to morbidity and mortality. Moreover, the initiation of haloperidol may have led to a functional decline and aspiration pneumonia.
AChROMOBACTER C6 circumstances of non-compliance. This case will help to raise awareness among healthcare professionals to look for elderly neglect in a newly immigrated non-English speaking elderly patient in cases of uncontrolled HTN, DM and other circumstances of non-compliance.

C6 A UNIQUE CASE OF UNCOMMON BACTEREMIA – ACHROMOBACTER
K. Wilson, R. Jain, K. Jones. 1. American Geriatrics Society, New York, NY; 2. Pharmacy Department, Western Marland Health System, Cumberland, MD.

Case Presentation: An 81-year-old Caucasian male presented to the emergency department (ED) from the nursing home with dyspnea worsening over 3-4 months and recent development of a cough and fever. Vital signs on admission included a temperature of 97.2°F, pulse 101 BPM, and blood pressure of 117/78 mmHg. Labs included a WBC of 10.4 x 10^9 cells/L, Hgb 8.6 g/dl, SCR of 1.7 mg/dl, and glucose of 36 mg/dl. Past medical history is significant for stroke, myocardial infarction, atrial fibrillation, cardiomyopathy, and insulin dependent diabetes mellitus. Two weeks prior to admission, he was seen in the ED for cardiac arrest and was diagnosed with pulmonary emboli. Initial impression suggested health-care associated pneumonia and anemia. The patient was admitted to the hospital, experienced altered mental status and periods of agitation suspected to be secondary to bacteremia and delirium. Empiric intravenous vancomycin and meropenem were started while awaiting cultures. Three days following admission, blood cultures returned positive for MRSA and a gram-negative bacilli; empiric therapy was continued. On day eight, blood cultures returned positive for MRSA and Achromobacter, with the latter sensitive to piperacillin-tazobactam and intermediately sensitive to levofloxacin. On day ten, he was discharged back to the nursing home, while remaining confused and agitated, possibly due to vascular dementia. Vancomycin and meropenem were continued for 3 weeks and 1 week, respectively.

Discussion: Achromobacter is an aerobic gram-negative bacilli that inhabits aqueous environments. Case reports emphasize their potential to cause bacteremia in immunocompromised hosts. Presently, no optimal antibiotic regimen exists for treating infections of Achromobacter. Most isolates demonstrate resistance to first and second-generation cephalosporins, aminoglycosides, and narrow-spectrum penicillins while showing sensitivity to sulfonamides, carbapenems, broad-spectrum penicillins, and third-generation cephalosporins.

Conclusion: This case highlights the use of carbapenems, specifically meropenem, and an extended-spectrum penicillin/beta-lactamase inhibitor, for treatment of Achromobacter bacteremia. It also suggests utility of piperacillin-tazobactam and other extended-spectrum penicillin/beta-lactamase inhibitors in treating Achromobacter infections.
monitoring. She had at least 2 witnessed syncope events while or right after eating at the kitchen table, episodes would consist of slumping forward while eating lunch, becoming unresponsive for approx. 30 seconds and then coming back to normal after a few minutes. Patient did not display any prodromal signs nor altered consciousness after these episodes. Vital signs within normal limits, A&O x 2, physical examination was unremarkable including cardiovascular and neurologic systems. Multiple laboratory tests showed no abnormalities, as well as cardiac and neurologic work up. Patient was sent to the Geriatric clinic where the diagnosis was suspected, BP medications were stopped, good hydration and compressive stocking were recommended, as well as supervision and follow up appointments.

CONCLUSION: Post-prandial hypotension is a common disease in the elderly and despite the rather simple work up required for its diagnosis it can be underdiagnosed in a good portion of our patient population, particularly if the presenting symptom is syncope. In our case, the patient was seen by multiple physicians during the span of approximately 3 years, undergoing several tests and studies without a definite conclusion, portraying the difficulties in the diagnosis of a disease more prevalent in the elderly than in the rest of the population.

C9 Encore Presentation
Negative Pressure Wound Therapy with Instillation for Treatment of Complex Non-Healing Pressure Ulcers: A Case Series

Background: Complex pressure ulcers often present with various barriers to healing including soft tissue infection, underlying osteomyelitis, senescent cellular activity, adherent non-viable tissue and complex three dimensional wound anatomy that may limit effective dressing contact with wound surfaces. Negative pressure wound therapy with instillation (NPWTi-d) is an innovative treatment modality to introduce irrigating fluid into previously difficult-to-access undermining and tunneling in cavitating wounds. Compared to standard NPWT, NPWTi-d can double the rate of wound bed coverage, advance bacterial clearance and induce more rapid granulation tissue formation.

Methods: NPWTi-d incorporates standard negative pressure wound therapy with alternating instillation of irrigant and soak phases in a closed system. NPWTi-d was used on 9 Spinal Cord Injured patients (7 Stage IV ischial, sacral and lower extremity pressure ulcers and 2 with complex post-op surgical wounds, refractory to standard NPWT, NPWTi-d can double the rate of wound bed coverage, advance bacterial clearance and induce more rapid granulation tissue formation.

Results: After initiation of NPWTi-d therapy, 7 patients experienced rapid effective wound bed preparation to bridge them to flap reconstruction, skin grafting and initiation of wound matrix applications and eventually experienced durable healed wounds. 1 patient left AMA and remains with an open wound. 1 patient that refused diverting colostomy experienced persistent fecal contamination of the sacral wound inhibiting wound healing, although NPWTi-d therapy did accomplish debridement of adherent exudate.

Conclusions: NPWTi-d should be considered to augment healing of complex pressure ulcers and surgical wounds refractory to standard negative pressure wound therapy and for effective wound bed preparation in flap reconstruction candidates.

References:
On Day 12 of levofloxacin, he develops vomiting and purulent discharge from his urethra and returns to the hospital. Blood and urine cultures grow Candida Albicans and the patient is started on a 2-week course of Fluconazole. He also presents with new-onset atrial fibrillation and acute renal injury. Imaging indicate left hydronephrosis and bladder outlet obstruction. The patient requires a ureteral stent and the pyelogram and ureteroscopy reveal copious fungal material in the left upper urinary tract. Pathology of the renal stones collected as outpatient confirms the presence of a fungal ball seeded on a calcium oxalate stone. Patient is discharged on fluconazole and the canagliflozin is discontinued. Repeat blood cultures two weeks later also grow candida, so the ureteral stent is removed and the course of fluconazole is extended. The last set of blood cultures is finally negative.

**DISCUSSION:** The appeal of SGLT2 inhibitor use in the elderly is their lack of association with hypoglycemic episodes. A clear disadvantage, however, is their side effects profile. Here we have a case of Candidemia in the setting of nephrolithiasis with a missed opportunity for early treatment of Candida UTI under the presumptive contaminated nature of yeast in urine cultures. This case highlights the importance of early diagnosis and treatment of yeast infections in patients on canagliflozin.

**C12**

“**It’s a Medical Problem”: Managing the Suffering Caused by Severe Lower Urinary Tract Symptoms**


**Background:** Lower urinary tract symptoms (LUTS) afflict approximately 70% of community-dwelling men age 80 and older. However, LUTS can be difficult to isolate as the cause of distress in individuals with cognitive impairment. Additionally, there is little guidance for palliative LUTS therapy in the multimorbid, very old patient with severe sequelae such as insomnia and psychological distress.

**Case:** A 94 year-old skilled nursing facility resident with a history of schizophrenia, cerebrovascular accident with residual right-sided weakness, moderate dementia, neurogenic bladder and benign prostatic hyperplasia developed nightly agitation. He repeatedly sought help with repositioning, sleeplessness and urination, and perseverated on a chronic globus sensation. During the day, he could not attribute his nightly agitation to one symptom but said it was “a medical problem.” Medications included aspirin, atorvastatin, finasteride (5 mg daily), and tamsulosin (0.8 mg daily). He previously stopped oxybutynin due to urinary retention. Nocturnal post-void residuals were occasionally elevated but straight catheterization did not improve his agitation. To address his insomnia and anxiety, melatonin 3 mg nightly and mirtazapine (maximum dose of 30 mg nightly) were started. These therapies did not help and were tapered off. Given his history of schizophrenia, quetiapine was started and increased to 50 mg per day. Quetiapine did not result in sustained improvement and was stopped after 8 weeks. Finally, esculapram and trazodone were initiated and increased to 10 mg and 50 mg, respectively. After three months of persistent insomnia and distress, an indwelling urinary catheter was placed. That night, he slept well. Over the next two months, trazodone was tapered off. The indwelling catheter has not been removed, and he has not had any distressing nighttime symptoms for over four months.

**Conclusion:** Lower urinary tract symptoms are common and can cause insomnia and suffering. When patients present with these symptoms, the underlying etiology can be difficult to elucidate, which may lead to polypharmacy. While indwelling urinary catheterization is typically avoided in older adults due to the risks of infection and delirium, catheterization may have utility as a palliative measure to treat severe symptoms that impair quality of life.

**C13**

**A Case for ECT in the Older Adult**

L. F. Schachter,1 C. Nicastri,2 A. Steinberg.1 Geriatrics, Stony Brook University Hospital, Stony Brook, NY. 2. Psychiatry, Stony Brook University Hospital, Stony Brook, NY.

The differential diagnosis of disorders with concomitant memory, motor and mood related symptoms are quite complex. Lewy body dementia (LBD) demonstrates the hallmark findings of cognitive dysfunction with parkinsonism, visual hallucinations, dysautonomia, and sleep disorders. Vascular dementia with depression can present similarly. There may also be significant overlap with delusional depression, which demonstrates evidence of major depression with either delusions and/or what may be thought of as hallucinations.

A 66-year-old woman presented to the geriatric psychiatry office for evaluation. She was accompanied by her husband who expressed concern with her recent diagnosis of LBD. Evaluation revealed a small woman with slowed movements, masked faces and hypophonia. She demonstrated logical thinking despite distractibility, but expressed thoughts of depression and worthlessness, ideas of persecution and paranoia, and reports of “hallucinations” of people around her who were out to get her. Given this presentation, there was significant concern she was a danger to self and was referred to an inpatient psychiatry unit. Labs were unremarkable. CT Head demonstrated evidence of a vascular component. While inpatient, treatment included medical regimens for depression and ultimately electroconvulsive therapy (ECT). She was discharged five weeks later and was no longer hallucinating, mood and weight were significantly improved, but she still demonstrated evidence of her underlying Parkinson’s Disease, including continued lack of spontaneous speech. Her diagnosis was reconsidered and felt to be more consistent with Parkinson’s Disease (in which it is not unusual to find both mood and memory disorders), depressive episodes, and a subcortical syndrome. ECT is planned to be continued weekly.

This case illustrates the importance of a thorough history and inclusion of a psychiatrist to help treat complex depression. Delusional depression is a clinical diagnosis, often responding less to medical regimens than standard unipolar depression, with more marked improvements when treated with ECT. Important to note is that not all patients with Parkinson’s who demonstrate hallucinations or delusional thoughts have Lewy Body dementia, and attempts at reversing these symptoms, including use of ECT, can significantly change quality of life for these patients.

**C14**

**A Geriatric Patient with Complex Regional Pain Syndrome as a Complication after Gamma Knife Radiation Therapy**

L. Parrillo. Geriatrics, Yale University, Meriden, CT.

**BACKGROUND:** Complex Regional Pain Syndrome is an exquisitely painful condition that has distinct pathophysiology, clinical manifestation, as well as options for treatment. As with many illnesses, CRPS is quite a different entity in the Geriatric population than in younger patients. The elderly usually require less drug quantities, heal more slowly, and their often sporadic sleep patterns can make living with CRPS even more challenging. In this case, an elderly woman developed CRPS in the upper and lower extremities after undergoing Gamma Knife Radiation Therapy. The treatment that ensued was consistently mindful of the potential for polypharmacy as well as the well-documented risks of chronic opiate therapy in the elderly.

**CASE DESCRIPTION:** JM is a 70 year-old female diagnosed with non-small cell lung adenocarcinoma in 2009. She was treated with Gamma Knife Radiation Therapy (GKRT) in April 2016. In May, 2016 JM began to have intense pain/edema/skin discoloration in the right lower and right upper extremities, described as numbness/tingling/burning. Her already weakened ability to ambulate was...
Breast Cancer: Do Not Forget the Elderly Males

L. Lopez, J. C. Olson. Geriatrics, Rush University and Medical Center, Chicago, IL.

Background:

Male breast cancer is a rare disorder typically discovered late both in life (mean age 67) and stage; thus, with a higher mortality than in women. It comprises about 1% of all the breast cancers. In 2017, roughly 2400 men will be diagnosed, and 18% of them will die from breast cancer. It has a worse prognosis in African American males. Due to its rarity, there are no RCTs guiding treatment. The most important risk factor is having other male family members affected found in 15 to 20% of cases. By analogy, treatment closely mirrors that of females with the exception that simple mastectomy is the favored versus breast-conserving surgery, obviating adjuvant radiation. Affected Males are counseled to seek Genetic testing; frequently, the implicated gene is BRCA. Nevertheless, most of the time, no specific genetic mutation can be found.

Case Report

An 88-year-old African American male with multiple medical conditions presented to the clinic in May 2017 with left-sided pleuritic chest pain. Initially, due to his history of previous chest pain from coughing, prior motor vehicle accident, and advanced COPD, it was dismissed as musculoskeletal pain. On follow up for the same complaint, he stated that breast cancer afflicted his 90yo brother and 42yo daughter. On exam, palpation found a 1cm mobile lump at the 3 o’clock location near the nipple on the left breast. A mammogram confirmed a suspicious nodule. Core biopsy revealed an invasive ER-positive (100%), PR-positive (9%), Her2negative ductal carcinoma. Partial mastectomy and sentinel node biopsies yielded node negative DCIS. Hormonal chemotherapy was not recommended, and he elected not to pursue radiation therapy as he had XRT for prostate cancer in the past and did not wish to endure it again. Since his brother had inconclusive genetic testing, he declined further testing.

Conclusions:

Male breast cancer is usually diagnosed at stage 3 to 4 due to delay in initial diagnosis; however, in this case, breast cancer screening was prompted by his strikingly positive family history. When family history is positive for breast cancer and other risk factors are present, such as obesity and advanced age, malignancy should be in the clinician’s differential when evaluating an elderly male.
Participants: Individuals, ≥ 75 years old, with Type 2 Diabetes Mellitus from 2010-2014 were categorized into two groups: with moderate intensity statins and without statins. Total N: 891 (258 on statins and 633 without statins in 2010) However, upon chart reviews from 2010-2014, 57 patients (mean age:82) stayed on statins and 322 patients (mean age: 81) remained off statins from 2010-2014.

Measurements: Electronic medical records were reviewed from 2010-2014 and the presence of the following ASCVD diagnoses were collected as defined by the ACC: stroke/TIA, acute coronary syndrome, stable/unstable angina, myocardial infarction, and peripheral arterial disease.

Results: The table below shows the incidence of clinical ASCVD for statin vs. without statin groups. Calculations were made using the Chi-Square of Independence with a significance level of 0.05.

Conclusion: The data supports that moderate intensity statin therapy is not significantly effective in the old-old population with diabetes as a preventative measure for clinical atherosclerotic cardiovascular disease.

Incidence of Clinical Atherosclerotic Cardiovascular Disease: Statin vs. Without Statin Therapy

<table>
<thead>
<tr>
<th>Measure</th>
<th>With Statin</th>
<th>Without Statin</th>
<th>Chi-Square P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total ASCD</td>
<td>31.59%</td>
<td>16.14%</td>
<td>0.006</td>
</tr>
<tr>
<td>Stroke/TIA</td>
<td>14.03%</td>
<td>6.52%</td>
<td>0.009</td>
</tr>
<tr>
<td>Acute Coronary Syndrome</td>
<td>3.75%</td>
<td>0.49%</td>
<td>0.075</td>
</tr>
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<td>Stable/Unstable Angina</td>
<td>5.26%</td>
<td>0.62%</td>
<td>0.005</td>
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<td>Myocardial Infarction</td>
<td>3.51%</td>
<td>2.40%</td>
<td>0.057</td>
</tr>
<tr>
<td>Peripheral Arterial Disease</td>
<td>7.65%</td>
<td>5.59%</td>
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</table>

C18 Gabapentin Induced Urinary Incontinence – A Rare Side Effect

m. s. kaler, geriatrics, metrohealth hospital, Lakewood, OH.

Background: Gabapentin was initially discovered as an anticonvulsant then it successively became a first-line agent for neuropathic pain control. Moreover, gabapentin is used to treat alcohol withdrawal, fibromyalgia, and restless leg syndrome. Amongst its many side effects, urinary incontinence is a rare side effect. There have been a few case reports acknowledging this. Similar to our patient, all previous case reports mentioned a resolution of incontinence promptly after discontinuing gabapentin. Although the age of these patients ranged from 12-66 years old, most of these patients were elderly and the dose of gabapentin ranged from 400-2400mg daily.

Case: A 72 year old male with a history of alcohol abuse, hypertension, depression who was admitted to hospital for a left ankle fracture after a fall, and underwent an uncomplicated ORIF under general anesthesia. For alcohol withdrawal the patient received valium during hospitalization and was discharged to a SNF on gabapentin 300mg three times a day (receiving the first dose at the SNF). On day 6 in the SNF, patient complained of increased urinary frequency q20-30 min for two days. His post void residual and urine analysis were unremarkable. Gabapentin was the only new medication, and this was discontinued on day 6 and his urinary frequency resolved the next day.

Discussion: The urinary tract is a complicated interconnection of the central and peripheral nervous system. Micturition is controlled by the spinobulbospinal reflex and the pontine micturition center. Gabapentin binds to alpha-2-delta-1 subunit calcium channels of the myelinated A-8 and unmyelinated C-fibers, which are located on the bladder submucosa, causing reductions of calcium current which inhibits detrusor muscle contraction and leads to overlap incontinence. Other proposed mechanism is via GABA-B receptors inhibition which has a small effect on external sphincter. Some believe that gabapentin binds to GABA-B receptors causing external sphincter relaxation.

Conclusion: Gabapentin is distributed in most organs as it doesn’t bind to plasma protein therefore gabapentin related urinary frequency is associated with a combination of both local effects on the urinary tract and central nervous system. Although gabapentin induced urinary incontinency is rare, patients should be educated, especially the elderly population of this side effect along with dizziness, somnolence, tremors, nystagmus, and ataxia.

C19 Attention: ADHD, Anxiety, or Alzheimer’s A new focus for cognitive problems in older adults

M. S. Mout, B. Yoo, M. A. Drinkamer. Geriatrics, UNC-Chapel Hill, Chapel Hill, NC; 2. Geriatrics, UNC-Chapel Hill, Chapel Hill, NC; 3. Geriatrics, University of North Carolina, Carrboro, NC.

Introduction: Prevalence studies suggest 2-4% of older adults have Attention Deficit Hyperactivity Disorder. Primarily a problem of frontal lobe function, in older adults ADHD affects attention, working memory, encoding and retrieving information, and behaviors. It is hard to differentiate from anxiety disorders or cognitive decline.

Case: A 70 y.o. man was referred to Geriatric Assessment Clinic for evaluation of cognitive impairment thought to be dementia. Patient and family described a 3 year hx of memory problems, difficulty finding words, and emotional lability, easily agitated and belligerent. He had a long hx of alcohol abuse, though stopped 3 years ago. He had been taking an SSRI for a year for depression, with no change in mood or cognition. Examination revealed a healthy-looking male who fidgeted constantly during the interview and was easily distracted. No neurologic deficits were noted. Keeping him carefully focused, cognitive testing was done. SLUMS exam score was 29/30, missing only 1 of 5 items on recall. All other answers were correct and easily performed. The patient and family were very relieved at the cognitive testing results. The antidepressant was tapered off as it had not changed his mood or ability to function. We prescribed concentration tasks to increase attention span, and he feels they improved his function. A trial of Bupropion will be the next step.

Discussion: ADHD symptoms negatively impact older adults’ quality of life and are associated with mood disorders, pulmonary and cardiovascular disease. Diagnosis is challenging: Symptoms may be multifactorial. Symptom history may be obscured by substance abuse, misdiagnosis, or social constructs. ADHD has traditionally not been considered in older adults, whose symptoms can manifest differently than younger persons’. Dementia, anxiety and ADHD may affect the same cognitive functions and behaviors, but differentiation is important as they have different treatments and prognoses. Benzodiazepines have adverse effects in patients with dementia and are unlikely to help ADHD. Stimulants, Bupropion can exacerbate anxiety and have not been shown to help in dementia, but are proven effective in ADHD. Older adults may be more prone to adverse medication effects. Diagnostic criteria and treatment research for older adults are needed.
remove NIV even for a short time without having severe debilitating dyspnea. She answered “yes/no” questions with head nods and clearly indicated that she perceived her quality of life had become unacceptable. Her family did not want her to die at home and it was predicted that she would have a high symptom burden with the discontinuation of respiratory support. A recommendation was made that the patient be transferred to the hospital for NIV removal. A plan of care was implemented in a time limited manner, including coordination of care with the patient’s primary care provider, arranging transportation with an ambulance service that could safely transport the patient with NIV, and direct admission to the hospital under hospice care. This involved extensive coordination with nursing, hospice, and respiratory therapy services.

Discussion: This case highlights the unique challenges of accommodating an ALS patient’s wishes at end-of-life. Specifically, this patient did not want feeding tubes or invasive ventilation. Individual preference can lead to a variety of patient outcomes, making it difficult to develop a streamlined process for symptom management. In this case, the palliative care team provided patient-centered end-of-life care that yielded a positive experience for those involved. As the field of palliative care grows it can hopefully adopt practices to make these transitions seamless to improve patient/family satisfaction and ensure best outcomes.

C21
A Millennial Caring for a Septuagenarian with Dementia
M. K. Soliz, P. G. Mera. Geriatrics, Rush University, Chicago, IL.

Background: Patients with dementia have a range of physical and psychosocial needs which can lead to caregiver stress and burnout and impact patient care. In efforts to keep loved ones at home, families will go to extreme lengths. Providers can play a pivotal role with early intervention with recognition of caregiver burnout.

Case Presentation: The patient is a 79 year old male with major neurocognitive disorder (MMSE 18/30), B Cell lymphoma and Korsakoff syndrome who was admitted to the geriatric psychiatry unit for further evaluation of his uncontrollable hiccups and frequent spitting and provide respite care to his college student son who is his only caregiver.

The son expressed distress about his father’s symptoms as he felt his father was feeling winded and was unable to speak in full sentences. Swallow study, EGD, CT chest and MRI brain were unrevealing. He tried thorazine and baclofen without any improvement. He denied nausea, vomiting, dysphagia, odynophagia or voice changes. During hospitalization, he was noted to have hiccups, but this did not affect his communication nor was he bothered by the symptoms.

The son demonstrated signs of caregiver burnout including aggressive behavior with the medical staff and calling the inpatient psych unit several times a day. Patient denied any abusive behavior at home and the son was appropriate and loving toward his father. However, the son was unable to provide the 24 hour supervision his father needed and refused higher level of care at a nursing home. Ultimately, in an interdisciplinary meeting with the son, the team expressed concerns for patient safety when left alone. Adult Protective Services (APS) was notified which the son reluctantly agreed to and the patient was discharged home. APS found no evidence of abuse or neglect and was able to expedite enrollment in adult daycare, which allowed the son to manage his own school and work responsibilities.

Conclusion: This case illustrates the difficult decisions health care providers have to make in the best interest of the patients while also mediating and negotiating with caregivers so as to maintain trust. To many, APS has a negative connotation and families fear ramifications of a report. However, APS can provide insight to families on the needs of the patient and offer social services to help keep their loved ones at home.

C22
Determining Capacity of a Surrogate Decision Maker

Case: J (husband) and R (wife) are a married couple of 57 years, each aged 77, both admitted to the hospital on the same day. R had sustained a fall, and there is concern for J’s altered mentation. The two also share a delusion that prostitutes are pursuing J. Both are retired (J was a lawyer and R worked at an auction house) and have significant financial means. They are in excellent physical health, and independent in ambulation and ADLs. R had been noted to have dementia with delusions for 10 years and alcohol abuse. Though well-groomed, roaming the halls independently, and inviting visitors into their hospital room as if it were her home, R has severe cognitive impairment. She cannot speak coherently or participate in medical decision-making. J had no known history of a cognitive disorder and had been responsible for all IADLs for the couple. Upon cognitive testing, he is found to be moderately impaired. He has no insight into impairment of his own cognition and acknowledges only slight memory difficulty for R. He had been supplying R with alcohol though he disapproved and saw it as destructive. The care team recommends 24-hour supervision, but he insists they both return home. He is deemed to not have the capacity to make decisions about safe discharge for himself or R, for whom he would have been surrogate decision maker. Additionally, an ethics committee determines that independent of his capacity, J does not have the legal authority to override the care team’s ethical obligation to ensure safe discharge for his incapacitated wife. The care team and J’s brother agree that, given the pair’s co-dependence, it would be difficult to separate them. A move to a facility with different levels of care is initiated, to which J reluctantly assents.

Discussion: This case is remarkable for the complexity of the decision-making process. We often face capacity determinations for an individual, but it is less common to formally consider a surrogate’s capacity to make decisions for another. In this case, the couple’s impairments came to light due to the unusual circumstance of a dual hospitalization. Furthermore, we note the ability of previously high functioning individuals to become co-dependent, and to compensate for their cognitive impairments, despite a likely shared psychotic disorder. One of the contributing factors is the less common case of individuals in excellent physical health, with co-existent moderate to severe mental deterioration.
as more anxious and upset by his hallucinations. He required two hospitalizations for agitation. Evaluation revealed a MOCA for the blind of 16/22 (impaired), no Parkinsonism and caregiver burnout. Non-pharmacologic interventions included availability of caregivers for reassurance and reorientation, mental health visiting nurse, and activities that the patient enjoys. Psychiatric consultation introduced a low dose atypical antipsychotic at night that improved some of his symptoms.

Discussion: The neuropsychiatric symptoms of dementia are extremely troubling for both patients and caregivers. Dementia with visual hallucinations early in the course of illness is often associated with dementia with Lewy bodies. This unique case describes a patient with long standing hallucinations secondary to CBS who became problematic as cognitive decline left the patient unable to distinguish between reality and the hallucinations. Management of this complex case required a multidisciplinary approach and support for both the patient and his caregivers.

C24
The complex dilemma- Decision for anticoagulation in cerebral amyloid angiopathy (CAA) with microbleeds
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Background: Cerebral amyloid angiopathy is a common disease primarily as a cause of lobar intracerebral hemorrhages (ICH) in the elderly. Over the last years, there has been increasing interest and research in the development of neuroimaging and new biomarkers for the disease. CAA has also been recognized to have important implications for cognitive impairment and dementia. With an aging population, indications for antithrombotic therapy for atrial fibrillation or vaso-occlusive disease increase, as well as the incidence of CAA. Reported cases of the risks of antithrombotic therapies in patients with CAA, and in this case, further hemorrhagic risk should be weighed against the benefits of systemic anticoagulation for prevention of thromboembolic events.

Methods: Case presentation of lobar ICH in a patient with inherited hypercoagulable state on systemic anticoagulation with underlying CAA

Results: An 86 year old independent female with a history of multiple deep vein thrombosis (DVTs) and heterozygous for Factor V Leiden and prothrombin gene mutations on lifelong anticoagulation with coumadin, who initially presented to the emergency department with aphasia and right arm weakness, was found to have ICH with intraventricular extension on head CT. She was given Kcentra for reversal of anticoagulation. Subsequent MRI showed approximately 50 microbleeds with primarily lobar distribution, meeting the Boston criteria for probable CAA. Lower extremity non-invasive study showed multiple deep vein thrombosis (DVTs) and heterozygous for Factor V Leiden and prothrombin gene mutations on lifelong anticoagulation with coumadin, which was prescribed by his PCP for such behavior. Mr. A was able to enjoy dinner with his family that evening. The next morning, the family attempted to take Mr. A to his PCP but he was not responding. Video taken by the family showed Mr. A with an abnormal posture in bed showing his right upper limb adducted, right wrist flexed and hand clenched. Mr. A’s eyes were open and he was not shaking. One year prior, Mr. A had an episode where he got out of his car in a busy street and started yelling and screaming. Mr. A received haloperidol for that episode of abnormal behavior.

Workup in the hospital excluded metabolic, infectious, cardiac, and intracranial causes of the current episode. EEG was negative for seizure and CT head negative for stroke. Mr. A was diagnosed with probable DLB as he had core features along with supportive clinical features such as fluctuating cognition, visual hallucinations and severe sensitivity to antipsychotics.

This case shows the importance of properly identifying patient with LBD as treatment with antipsychotics can have major adverse effects. Unfortunately sometimes it is difficult to differentiate between the types of dementia but it is necessary to keep in mind the diagnostic criteria for LBD as it can effect treatment and related side effects.

C26
Management of Osteoporosis in Older Adults; a Prognostic Approach to a Common Scenario
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Introduction: In practice most clinicians are reluctant to prescribe pharmacological agents for management of osteoporosis in older patients due to misconception that they might not benefit much from them. However, studies reveal pharmacological therapy in older osteoporotic adults with reasonable life expectancy has statistically significant impact on reducing the fracture risk within 1-year of initiation. Careful selection of appropriate patients for treatment could lead to reduced morbidity and functional dependence in this age group.

Case #1: “A” is 84-year-old white female with HTN and Hyperlipidemia. Her medication list includes Valsalina and Atorvastatin. She has never smoked cigarette. BMI is 24.6. She never had any bone fracture. She is independent in all ADLs and IADLs. Her femoral neck T-score is -1.9. Her FRAX ® for Hip fracture is 4.8.

Case #2: “B” is a 68-year-old white female with HTN, HFP EF, DM, CKD Stage 3A and Severe COPD on home Oxygen. Her medication list includes Lisinopril, Atorvastatin, Furosemide, Metoprolol, Fluticasone-Salmeterol and Ipratropium bromide inhalers, Oxygen and Insulin. She had 3 hospitalizations in the past 12 months for COPD exacerbation and decompensated heart failure. She is independent in her ADLs but dependent in most IADLs. She has been actively smoking 5 to 10 cigarettes a day for the past 30 years. BMI is 20.7. She
Discussion: Most current osteoporosis guidelines do not include functional status and life expectancy as independent factors to determine the best course of management. Most clinicians might not see patient “A” as a better candidate for pharmacological treatment due to her advanced age comparing to “B”. But based on Gagne life expectancy Index patient “A” has 1-year mortality risk of 2.4% and “B” has 1-year mortality risk of over 36.5%. Patient “B” has a lower T-score and is younger than “A” but her multiple comorbidities and shorter life expectancy makes her a less appropriate candidate for pharmacological treatment than patient “A”.

Conclusion: Based on major studies older patients who have life expectancy more than 1-year will benefit from pharmacological management of osteoporosis. We recommend utilization of prognostic tools in routine practice to determine patient’s life expectancy and to evaluate if they will benefit from pharmacological interventions.

C27 Chronic painless leg mass with sudden onset chest pain

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BACKGROUND: Soft tissue sarcomas (STS) are a heterogeneous group of rare tumors that arise from mesenchymal cells at all body sites. Leiomyosarcomas are characterized by smooth muscle differentiation. They most commonly present as an enlarging, painless mass in extremities or trunk. Distant metastasis at the time of diagnosis is uncommon but more likely in large, deep, high-grade sarcomas. 80% of metastasis are located in the lungs. There is lack of research regarding sarcoma evaluation and management in elderly.

CASE: 84 year old man with h/o CVA, CAD, chronic lung mass, CHF, bilateral leg swelling and frequent left leg cellulitis, was admitted to community living center after hospitalization for sudden onset chest pain. He was noted to have new onset pulmonary embolus (PE) and increased size and numbers of previously noted lung mass on CT. On work up for the etiology of PE, he was negative for DVT, had “calcified hematoma” of Right leg on CT. Repeated CT of right leg suggested soft tissue sarcoma. CT-guided biopsy of the lung lesions done and patient was diagnosed with leiomyosarcoma with the right leg thought to be the primary site. He was diagnosed with Stage IV T3 N0 M1 Leiomyosarcoma of the right leg with pulmonary metastasis. He declined amputation of the leg and received chemotherapy with palliative radiation therapy. He developed severe radiation-associated dermatitis. He had a minimal response to treatment and his overall condition has progressively declined. He opted to inpatient hospice. He died in hospice unit shortly after.

DISCUSSION: STS are rare tumors and the diagnosis is often unsuspected and challenging especially in elderly with multiple comorbidities. MRI is preferred for evaluation of soft tissue masses of extremities. Surgical resection is the cornerstone of potentially curative treatment. Majority of patients with metastatic STS are incurable. Early diagnosis is the only way to improve survival. His diagnosis was delayed, because it was a chronic painless mass of right leg, there was a lack of long-term follow-up of his pulmonary nodules, also MRI couldn’t be done due to pacemaker placement, and initial CT scan suggested calcified hematoma.

CONCLUSION: Although very rare in elderly, diagnosis of sarcoma should be suspected with chronic painless mass. Delay in diagnosis increases the chance of metastasis which decreased chances of cure. Practice guideline regarding sarcoma evaluation and management in elderly is needed.
angioembolization. Hgb remained stable throughout hospitalization and patient did not show signs of adrenal insufficiency. Follow-up CT imaging revealed no active extravasation from left adrenal gland. Patient was subsequently discharged to assisted-living facility with plans to restart warfarin in 1 week with follow-up MRI abdomen in 6-8 weeks.

Discussion: Adrenal hemorrhage is an uncommon condition with often a benign course but in rare instances presents with adrenal crisis. This case highlights the most common approach to management of adrenal hemorrhage: observation. Adrenal hemorrhage in stable patients can be managed non-operatively with serial hemocrits and supportive care. Hemostasis of the adrenal gland can be achieved through angioembolization in cases with persistent bleeding. Suspected adrenal insufficiency can be identified with serum cortisol achieved through corticotrophin stimulation test. Adrenal insufficiency can be managed with hydrocortisone. In anticoagulation-induced adrenal hemorrhage individual risk vs benefit analysis must be completed prior to resuming oral anticoagulants.

C30 Clostridium difficile toxin reactive arthritis
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Introduction: Clostridium difficile is commonly associated with colonic manifestation pseudomembranous colitis, also can have extraintestinal manifestation. Reactive arthritis due to C. diff toxin is not instantly recognizable due to rare number of cases reported. We present an 85 year old female with recurrent C. diff enterocolitis who developed sudden onset of non-traumatic left shoulder pain and swelling.

Case Presentation: The patient presented with recurrent C. diff infections over 3 months requiring IV Metronidazole, PO Vancomycin. On admission, she was started on IV fluid, PO Vancomycin 500 mg QID, IV Metronidazole 500 mg IV Q8h, eventually Fidaxomicin. 6 days later she complained of chest pain radiated up to her left shoulder. Acute coronary syndrome workup was negative. Physical exam showed no evidence of warmth or erythema of the affected shoulder. There was mild tenderness on palpation and diffuse swelling. Range of motion was limited, she had functional range of motion of the elbow and limited shoulder flexion/abduction with shoulder hiking. Labs showed: WBC 13.1, CRP 19.1, ESR 19. Left upper extremity extremity X-rays showed severe osteoarthritis. MRI of left shoulder showed severe osteoarthritis with fluid collection at glenohumeral joint and surrounding bursa suspicious of septic arthritis as well as myositis and edema around the intramuscular fascial planes and piperacillin/tazobactam was started. Motor function and joint stability were intact. Bedside aspiration of the left shoulder joint was indicative of inflammation rather than infection and patient was switched from antibiotic to Naproxen which resolved her symptoms.

Discussion: This patient had recurrent C. diff diarrhea for over 3 months before sign symptom of sudden arthritic pain. She had asymmetric oligoarthritis of left shoulder for 48hrs after symptoms appeared and NSAID was started. She was initially started on IV antibiotos due to the original suspicion of septic arthritis. However after excluding that by aspiration she was immediately started on NSAID which ultimately resolved her symptom.

Conclusion: Recognition and treatment of reactive arthritis secondary to C. diff colitis are usually complicated by non-specific presentations of diarrhea, variable interval between gastrointestinal and arthritic symptoms and the vast differential of mono and poly-arthritis. It is vital to recognize and correlate between colonic symptoms secondary to C. diff colitis preceding complaints of joint pain and swelling.

C31 Stiff Person’s Syndrome: Challenging symptom control
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Introduction: Stiff-person syndrome (SPS) is characterized by progressive rigidity and muscle spasms affecting axial and limb muscles. Prevalence is 1-2 per million, most patients between 20-50 years, affects women 2-3 times more. The subtypes are Classic, Partial and paraneoplastic SPS. SPS is frequently associated with anti-Glutamic acid decarboxylase antibodies. This case highlights the challenge with symptom management in a patient where intrathecal route was contraindicated.

Methods: Case report

Results: 73 y/o Caucasian female with a h/o HTN, CAD, contractions of bilateral Achilles tendons, and SPS, who was admitted for elective tendon lengthening of the b/l Achilles. Two months before this procedure, patient was diagnosed with SPS by EMG (co-activation of the agonist and antagonist muscles in the L distal leg) and CSF studies which were positive for antiampiphysin antibodies. Treatment included steroid taper and Immunoglobulin for 5 days. Paraneoplastic workup was negative. She was on Oxycodone(5mg q6h pm), acetaminophen(650mg q6h pm), baclofen(20mg q8h) and diazepam (3mg q8h pm) for pain and spasm control.

Patient started having worsening crying episodes post-surgery; 5-7 episodes/hour. It was attributed to pain and spasm. Increase in dosage was challenging as over medication caused somnolence while under dosing caused continuous spasms.

She received intrathecal catheter placement (hydromorphone and baclofen). Next day, she had an acute L posterior temporal stroke and the catheter was discontinued. Her condition was complicated with inability to communicate due to aphasia. Oxycodone was changed to 5mg q6h due to concerns that patient was unable to ask for meds. There was no change in symptoms. The psychology team assisted with mood changes induced by the spasms. We increased diazepam to 5mg q8h, duloxetine to 60mg daily and her episodes were slightly less frequent. Third day, diazepam was increased to 10 mg q8h with no excessive somnolence. Frequency of episodes was lowered to few/day. Keeping a log of spasm episodes helped to titrate medications. The discharge regimen was diazepam 10mg Q8h, gabapentin 600mg Q8h, baclofen 20mg Q8h, oxycodone 5mg Q6H, duloxetine 60mg daily, and trazodone 12.5mg qhs.

Conclusion: This case illustrates that symptom management in SPS can be challenging to create a balance between symptom control and avoiding side effects. Psychological aspects of the care should also be taken into consideration.

C32 Case Study: Delirium with Complex Multisystem Chronic Conditions
P. C. Scott. Geriatric Medicine, Eastern Virginia Medical School, Norfolk, VA.

Delirium in hospitalized older adults is common and carries high morbidity and mortality, especially in patients with complex illnesses. Accurate diagnosis, prompt and thorough evaluation for reversible causes, and appropriate therapies for symptoms are imperative. Common etiologies such as sepsis, electrolyte disorders, and CNS insults are reflexively evaluated, but work-ups may neglect less conspicuous causes such as polypharmacy, medication withdrawal, and untreated pain. This case presentation examines missed opportunities during evaluation and management of delirium in a medically complicated older adult.

A 70-year-old male with PMH of ischemic cardiomyopathy s/p cardiac transplant, ESRD s/p renal transplant, immunosuppression, DMII and CVA presented to the ER with weakness, gait instability, uncontrolled pain, worsening tremor and acute encephalopathy for...
1 week. Prior to admission, he was independently functional. He had recent travel to Utah, and flu vaccine. He had no sick contacts, and no history of substance misuse or psychiatric illness. Labs including CBC, CMP, tacrolimus level, UA, rapid flu, and CT head were unyielding with exception of mildly elevated sodium and CK-MB. Initial therapy included empiric antibiotics and antivirals. For his agitation, he received high dose neuroleptics which caused extrapyramidal symptoms, and he was maintained in physical restraints. He was later treated with high dose corticosteroids, and IVIG. CT chest/abdomen/pelvis, TTE, EEG, MRI head, and lumbar punctures including bacterial, viral, fungal, prion, autoimmune, and neurodegenerative studies were negative. Neuron specific endolase was positive, suggesting a demyelinating process. On day 16 he developed sepsis with bacteremia, and death occurred on day 17. Brain-only autopsy results are pending.

In this case, the patient’s presenting symptom of acute pain was inadequately addressed. Prescription monitoring program did not show recent opiate refills. On chart review, neither pain nor opiate withdrawal were considered as a possible causes of delirium. Non-pharmacological management of his neuropsychiatric symptoms could have avoided adverse effects of the neuroleptics, which are not indicated for treatment of delirium. Physical and chemical restrains likely lead to his iatrogenic infection and resultant death. This case demonstrates the potential value of Geriatric assessment, and Geriatric consultation for older adults with multisystem and complex illness.

C33
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Background:
Painless hematuria may herald serious or benign underlying disease. Evaluation and treatment of hematuria in older patients demands person-centered risk/benefit consideration.

Case:
An 86 year-old gentleman developed painless gross hematuria. He had Alzheimer’s disease and benign prostatic hypertrophy and was taking donepezil, memantine, finasteride and aspirin. He was in excellent physical health, exercising frequently. He lived with his wife. He had long-standing urinary incontinence, no significant post void residual and a normal urinalysis. Computed tomography (CT) scan suggested a bladder jackstone with overlying clot. Cystoscopy confirmed jackstone.

Discussion:
Jackstone calculi are urinary bladder stones that have a star-shaped, spiculated form, resembling toy “jacks.” Most commonly found in canines, jackstones also occur in humans. Composed of calcium oxalate dihydrate, jackstones form in crevices and trabeculations of the urinary bladder. As they grow, new minerals are deposited on the irregular shape, forming larger spicules. The specific appearance of jackstones can be identified on both plain radiographs and CT. Cystolithotomy is the treatment of choice to remove Jackstones. Among all bladder calculi, the incidence of jackstones is not well known. Bladder outlet obstruction remains the most common cause of all bladder calculi in adults. Other predisposing factors for bladder calculi include foreign bodies, spinal cord injuries or infection. Males with prostate disease or previous prostate surgery and women who undergo anti-incontinence surgery are at higher risk for developing bladder calculi. Bladder calculi can be asymptomatic or present with hematuria, supra pubic pain, dysuria, hesitancy, nocturia, frequency or urinary retention.

Discussion:
Although benign, the jackstone is an uncommon and complex cause of hematuria in older adults. Surgical treatment requires careful patient-centered risk/benefit consideration. Recurrence prevention requires identification of the underlying etiology of stone formation, such as bladder outlet obstruction.

C34
Frailty associated with apixaban: A case report and review of literature
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Introduction:
Apixaban, a newer direct acting anticoagulant is increasingly used for anticoagulation in atrial fibrillation and venous thromboembolism. Although side effects of bleeding are well known, frailty associated with apixaban is not common. We report a case of frailty in elderly patient due to apixaban use.

Case report:
A 92-year-old Caucasian male with past medical history of Chronic Lymphocytic Leukemia, Immune thrombocytopenic purpura, hypertension, hyperlipidemia presented to the clinic with sudden onset of left leg swelling for 1 week. The venous duplex showed non-occlusive deep vein thrombosis of right femoral, popliteal and proximal posterior tibial veins. After discussion regarding risk and benefit of starting anticoagulant, apixaban 2.5 mg two times daily was started. He tolerated the medication initially but after 2 months, he started having generalized weakness, decreased appetite and increased tendency to fall. He had few falls at home and reported weight loss of around 10 pounds, fatigue and decreased activity level. He denied fever, cough, constipation or blood in stool. Physical exam showed frail, elderly male with normal vital signs and systemic examination. Hemoglobin, metabolic panel and thyroid stimulating hormone were normal. Once infectious and metabolic causes were ruled out, the frailty was attributed to apixaban. After completion of 3 months of apixaban and hematology consultation, it was stopped. Patient started feeling well, his appetite improved and his fatigue as well as activity level improved after discontinuation of apixaban. On follow up in the office, he was back to his baseline performance status.

Discussion:
Frailty is common in elderly population. When three out of five characteristics of weight loss, fatigue, slow gait, decreased hand grip, decreased activity level are present, it is labelled as frailty. Our patient had weight loss, slow gait and decreased activity level. Whenever any medication is suspected as the cause of frailty, it should be stopped if possible. Our patient had frailty associated with apixaban that resolved after its discontuation. Frailty associated with apixaban is not common and thus more studies are needed to look for its association with frailty.

C35
A Syndrome of Remitting Symmetrical Synovitis With Peripheral Edema
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Introduction:
Remitting seronegative symmetric synovitis with pitting edema (RS3PE) is characterized by acute onset of pitting edema in peripheral extremities with symmetrical joint synovitis. It commonly involves the metacarpophalangeal (MCP), proximal interphalangeal (PIP), wrist, shoulder, knee, ankle, and elbows. It can be associated with other rheumatological diseases or neoplastic processes. Low dose steroids have been noted to be beneficial.

Case:
A 93-year-old man presents with his wife complaining of bilateral hand swelling and pain of 14 days. There is no history of recent illness, trauma, or family history of autoimmune disease. He reports decreased grip strength but retains digital mobility. Denies morning
stiffness and other joint involvement. Patient tried OTC analgesics with minimal relief. On physical exam, bilateral hands have pitting edema and he is unable to make a fist. His left 2nd, 3rd PIP and right 2nd, 3rd, and 4th PIP are tender to palpation. Laboratory findings were significant for ESR of 53 mm/hr, CRP of 50 mg/L, and negative Rheumatoid Factor. X-ray showed soft tissue swelling without signs of erosions. Ultrasound revealed bilateral hand soft tissue swelling and synovitis, particularly left 2nd and 3rd MCP. Patient was started on a prednisone taper with marked improvement in grip strength and resolution of swelling. CRP decreased to 9.2 mg/L and ESR to 26 mm/hr.

Discussion:
RS3PE is a condition of acute onset affecting the joints. Diagnostic criteria include bilateral pitting edema, polyarthritis, age above 50 years, and negative RF. It has an atypical presentation and often mimics rheumatoid arthritis or polyarthritis rheumatica. Imaging typically will be negative of erosions. There are some associations noted between RS3PE and rheumatological diseases, and patients may develop other rheumatoid conditions in the future. Correct diagnosis is crucial to provide optimal management. RS3PE, although benign, can be a precursor for development of neoplastic processes. Treatment involves a low dose steroid taper. There is also evidence to suggest that hydroxychloroquine may provide additional benefit. The patient above met all criteria and given correct diagnosis and treatment, had resolution of his symptoms.

C36
Stent selection in the elderly: a cause to pause?
R. Malhotra, A. Lee, D. Pardo. Medicine, Temple University Hospital, Philadelphia, PA.

Background: DES are used in about 80% of PCI1 and are known to pose a higher risk of in-stent thrombosis (IST). IST is a serious adverse event often associated with sudden death or acute ML.2 Risk factors for IST include renal failure, decreased EF, DM, delayed arterial healing associated with DES,3 and premature discontinuation of antiplatelet therapy.4 Current guidelines for PCI recommend dual antiplatelet therapy (DAPT) to prevent IST. Med non-adherence (MNA) is a common problem in the elderly.

Case: 67 yr F with a PMH of ESRD on HD, CAD s/p DES to LAD and D2, HF/EF 40%, HTN, and T2DM presented on 11/6/17 with sternal CP and SOB. The CP was 10/10 severity, radiating to B/L arms without nausea or diaphoresis, relieved by nitro SL. PE on adm: VS stable except BP 157/76, SpO2 99% 2 L O2 /NC, and bibasilar crackles. Labs: Glu 435 mg/dL, Scr 4.50 mg/dL, BNP 1288 pg/mL, and cTNI 0.04 ng/mL (initial), 1.40 (12 hrs), 1.18 (D#2), 2.69 (D#3), peak 8.47 (D#4).

Cardiology service was consulted but they were hesitant to cath/PCI the patient as she had a history of NMA. Geriatrics service was consulted for suspected dementia/delirium, as well as input regarding the patient’s MNA. TTE on 11/8/17 showed LVEF 15 to 20% (drop from previous 40%) along with RWMA. A cardiac cath, performed in light of rising cTNI and abnormal TTE, revealed 95% stenosis of mid-RCA, which was treated with PCI/BMS. During pre-procedure discussion with primary team regarding patient’s many co-morbidities and limited life expectancy, geriatrics suggested BMS instead of DES given patient’s MNA to decrease risk of IST. She was discharged home 3 days later with home PT.

Conclusion: We present a geriatric patient treated for NSTE-ACS with a BMS instead of DES in the context of her multiple risk factors for IST, i.e., DM, low EF, renal failure along with MNA. Per FDA, “physicians should consider certain patient characteristics in deciding whether to use DES or BMS. For example, patients who cannot comply with extended clopidogrel use...may not be candidates for DES”.5 The above clinical scenario is quite common and prompts further clinical studies to determine the most effective option for revascularization in the elderly.

References

C37
Cryptococcus meningitis presenting with delirium and hydrocephalus in an immunocompetent host
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Although Cryptococcal meningitis (CM) is a fungal infection usually afflicting immunocompromised patients, we present an immunocompetent patient with CM who was evaluated for normal pressure hydrocephalus (NPH).

A 68-year-old man with no significant past medical history presented with new onset confusion, fever (101°F) and ataxia. Exam was unremarkable except for confusion and optic atrophy. Brain CT-Scan and MRI were unremarkable as were initial labs except for a (→)UA. He was treated for urinary tract infection, with no improvement in mental status. A lumbar puncture (LP) subsequently revealed high WBC (100 /cmm, predominantly lymphocytes) and high protein (113 mg/dl). Treatment were started for viral and bacterial meningitis. Yet, bacterial and mycobacterial smear, Lyme, lymphocytic choroiditis, mumps, HSV, HIV, and RPR were all negative. Patient’s mental status continued to wax and wane. Repeat brain MRI revealed vasculitic/inflammatory changes to the right parietal and left occipital lobes. Patient was stabilized and transferred to a rehabilitation facility. He was discharged home several months later but remained severely debilitated and readmitted 9 months later for episodes of confusion, dysarthria and ataxia. Brain MRI at that point revealed enlarging ventricles which prompted a high-volume LP for possible NPH. Nonetheless, neither gait nor mental status improved. CSF again revealed WBC 29/cmm (11% N; 85% L), protein 109 mg/dl, glucose 27 mg/dl (serum 146 mg/dl). CSF cryptococcal antigen was 1:2, and patient was treated with 6-week course of amphotericin B and fluconazole, followed by 11 months oral fluconazole. His mental status markedly improved. MMSE 22/30 to 27/30 after treatment, then 29/30 after 1 year.

Although Cryptococcus causes an invasive fungal infection in immunocompromised patients; up to 20% of cases occur in those who are immunocompetent, often manifesting with fever, headache, lethargy, personality changes, and memory loss rather than florid delirium. Furthermore, enlarged ventricles on imaging that may be confused with NPH, and these patients also often have a more subacute course, highlighting the importance of evaluating CSF for evidence of Cryptococcus when doing the large-volume LP for NPH, even in an immunocompetent patient.

C38
Forgetting Lewy Body. DAT’s Just Wrong
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BACKGROUND: Dementia with Lewy Body (DLB) is one of the most common types of degenerative dementias after Alzheimer’s disease (AD) yet remains under-diagnosed in clinic practice. The most common reasons for missed diagnosis include absence of extrapyramidal signs and misdiagnosis as Alzheimer’s disease (AD). The use of dopamine transporter SPECT (DAT scan) has been well established as a means of distinguishing DLB from AD and establishing neurodegenerative parkinsonism.

Lab: Glu 435 mg/dL, SCr 4.50 mg/dL, BNP 1288 pg/mL, and cTNI 0.04 ng/mL (initial), 1.40 (12 hrs), 1.18 (D#2), 2.69 (D#3), peak 8.47 (D#4).

Cardiology service was consulted but they were hesitant to cath/PCI the patient as she had a history of NMA. Geriatrics service was consulted for suspected dementia/delirium, as well as input regarding the patient’s MNA. TTE on 11/8/17 showed LVEF 15 to 20% (drop from previous 40%) along with RWMA. A cardiac cath, performed in light of rising cTNI and abnormal TTE, revealed 95% stenosis of mid-RCA, which was treated with PCI/BMS. During pre-procedure discussion with primary team regarding patient’s many co-morbidities and limited life expectancy, geriatrics suggested BMS instead of DES given patient’s MNA to decrease risk of IST. She was discharged home 3 days later with home PT.

Conclusion: We present a geriatric patient treated for NSTE-ACS with a BMS instead of DES in the context of her multiple risk factors for IST, i.e., DM, low EF, renal failure along with MNA. Per FDA, “physicians should consider certain patient characteristics in deciding whether to use DES or BMS. For example, patients who cannot comply with extended clopidogrel use...may not be candidates for DES”. The above clinical scenario is quite common and prompts further clinical studies to determine the most effective option for revascularization in the elderly.

References
METHODS: Case study of DAT scan use to confirm striatal dopamine loss in a patient presenting with a history suggestive of DLB.

RESULTS: A 75-year-old male with history of obstructive sleep apnea and depression presented to memory clinic with progressive memory loss in addition to word finding difficulties starting approximately 3-4 years ago. His wife also reported difficulty with alertness and attention described as excessive daytime sleeping and difficulty following conversations. Other symptoms included aggressive movements while sleeping at night and at least one episode of visual hallucination. His physical exam was only notable for forward tilting posture with reduced arm swing and short-stepped gait but no shuffling. Cognitive testing revealed deficits in visuospatial, attention, language and delayed recall on Montreal Cognitive Assessment (MOCA) with a score of 19/30. Prior laboratory data and CT head without contrast were unremarkable. Given his visual hallucination, fluctuations in attention and sleep disturbances, diagnosis of DLB was raised and he underwent a DAT scan. Results showed decreased radiotracer binding in the basal ganglia, greater on the right than left, consistent with asymmetrical presentation of parkinson’s disease. Meeting the 2017 DLB consensus criteria for probable DLB, he was referred to a parkinson’s specialty clinic for further management.

CONCLUSION: Clinical features remain core to diagnosis of DLB but can often be subtle, ambiguous and difficult to elicit accurately. DAT imaging is a valuable tool that improves diagnostic accuracy in patients with possible DLB but clinical uncertainty.

C39 T-Cell Large Granular Lymphocytosis: An Unusual Presentation of a Rare Cause of Lymphocytosis

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A 72-year-old man sought medical advice for fatigue progressing over several months. He had no other complaints, no significant medical history and took no medicines. He showed no signs of weight loss, adenopathy, organomegaly or joint deformity. His hemoglobin was 7.9 g/dL with macrocytosis and low reticulocyte count. Total WBC was 32,000 with predominate large granular lymphocytes. Flow cytometry identified a population of CD3+/CD8+/CD16+/CD57+ lymphocytes consistent with T-Large Granular Lymphocytic Leukemia (T-LGL). T-Cell gene rearrangement studies identified a clonal T-cell receptor gamma lymphocyte population. Bone marrow confirmed T-LGL in a hypercellular marrow with increased CD8+ LGL in an interstitial/sinusoidal infiltrative pattern. Autoimmune screen was negative. Whole body CT images showed no adenopathy and a normal spleen.

DISCUSSION: Lymphocytosis is a common finding in geriatrics. Benign, reactive lymphocytosis, characterized morphologically by size and shape variation, may occur, but age skews the causes toward malignancy. B-CLL is the most common cause of malignant lymphocytosis characterized by monomorphic cells with small, round nuclei and clumped chromatin rather than large granular lymphocytes observed in our patient. T-LGL accounts for only 2-5% of chronic lymphoproliferative disorders in North America. Our patient was unusual in his paucity of symptoms and relative good health. He did not have recurrent infections or aphthous ulcers often related to neutropenia. He had no associated autoimmune diseases, such as rheumatoid arthritis, SLE, Sjogren’s, thyroid disease, cryoglobulinemia, or inclusion body myositis, nor did we identify a myeloid malignancy, aplastic anemia, PNH or a separate B-cell lymphoproliferative disorder. We treated him with weekly methotrexate (MTX), low dose prednisone and etrhropeitin stimulating agents with improvement in his lymphocytosis and neutropenia. Daily cyclophosphamide is the other common initial treatment and is an option when MTX is not effective. Other therapies are difficult to assess given T-LGL’s rare occurrence.

CONCLUSION: Lymphocytosis is a common finding in the elderly. Consultation with a hemato-pathologist is requisite to identifying rare lymphoid malignancies such as T-LGL to avoid misdiagnosis and inappropriate treatment decisions.

C40 Simultaneous Asymptomatic Hematologic Malignancies in a Healthy Nonagenarian

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An asymptomatic 92-year-old man was referred for evaluation of an abnormal serum protein electrophoresis found during routine health maintenance. He exercised regularly and was engaged with his community of friends. Past medical history included treatment for hypertension, hyperlipidemia, and hypothyroidism. Physical exam showed a man who appeared younger than his age, weight 175 lbs., height 72 inches, and normal vital signs. There was no lymphadenopathy or palpable enlargement of the liver or spleen. Serum protein electrophoresis revealed an M-spike of 1 gram/dL. Immunofixation confirmed an IgG kappa paraprotein. Total immunoglobulins IgG, IgA, IgM and serum free light chains were normal. CBC demonstrated mild thrombocytopenia present in old records for more than a year. There was no leukocytosis or anemia.

Bone marrow aspirate and biopsy identified 3 malignancies: a plasma cell neoplasm with 5-10% clonal plasma cells, JAK2 V617F positive myeloproliferative neoplasia (MPN) with 2-3 out of 4+ reticulum formation, megakaryocytic hyperplasia, dysmegakaryopoiesis, and finally, an aberrant monoclonal B-cell lymphocytosis identified by flow cytometry.

DISCUSSION: Monoclonal gammopathy of undetermined (MGUS) significance is a premalignant plasma cell disorder associated with lifelong risk of myeloma. The risk of MGUS is 4-fold higher in a general population of people older than 80 years (6.6%) compared with those aged 50-59 (1.7%). JAK2V617F presence is relatively frequent in the aging healthy population and may be associated with multiple hematologic and solid tumors. Age related deregulation of hematopoietic stem cells may facilitate JAK mediated MPN in the elderly. There is clonal evidence of B-lymphocytes with a C.LL phenotype or other low grade non-Hodgkin’s lymphomas present in 4% of the age greater than 40 years in a general population. Age is a risk factor for cancer with half of all cancers occurring over age 65. Why aging is related to cancer has no single explanation. Cumulative exposure to sunlight, radiation, chemicals, random errors in DNA, ineffective DNA repair, damaged regulatory genes, and immune senescence are purported explanations.

CONCLUSION: The presence of simultaneous, subclinical malignancies in the elderly offers an opportunity to better understand the biology of aging and to someday identify a final common pathway to malignancy.

C41 WHEN THE SOLUTION IS THE PROBLEM: GERIATRIC POLYPHARMACY


Introduction: Optimal drug therapy is a critical part of geriatric care. More than prescribing a drug, it includes an appropriate drug, an appropriate dose, monitoring for efficacy and toxicity. Prescribing for elders has unique challenges. Drug trials often exclude them; age-related changes in pharmacokinetics and pharmacodynamics may affect
dosing. ADEs are more common in the elderly, and the risk increases with the number of medications prescribed.

**Clinical scenario:** A 68 yo assisted living resident came to the ED after a few days of altered mental status and hallucinations. PMH included Parkinson’s disease, anxiety and depression. Speech was slurred; she was confused, unable to follow questions. Anxious and paranoid, she claimed to have been shot by an intruder at home and called police. Although oriented to self, she could not recall her age or birth date. She denied alcohol or substance use. A daughter reported similar behavior 2 years ago when the patient was non-compliant with meds. CNS exam, head CT and metabolic panel were normal. Current med list was reviewed. She was taking 29 meds, 11 with psychotropic potential, including 2 SNRIs, 2 benzodiazepines, and an extremely high dose of Sinemet. UDS was positive for THC. She was admitted with polypharmacy-induced delirium, excess serotonergic and dopaminergic symptoms. Some meds were tapered and stopped, some switched from scheduled to prn. Sinemet dose was significantly reduced; Seroquel was prescribed prn. Alpracet was added. Depression, anxiety, and psychotic symptoms stabilized slowly. On day 4 there was improvement in interaction and conversation, as well as sleep. By day 7, mood improved, behavior was stable, she slept well and was compliant with treatment. With no thoughts of self-harm or suicide, she was able to contract for safety. She was discharged back to her living facility to follow up with her PCP and psychiatrist.

**Conclusion:** Delirium management relies on expert consensus and observational studies, with only a small number of RCTs in patients having cognitive impairment. An ADE should always be considered when evaluating delirium in older patients. ADEs increase hospitalization by 400% in elders and are a particular problem in nursing home residents. The increased acceptance and availability of marijuana adds another potential component to both presentation and evaluation.

C42

**CADASIL: A Consideration in the Differential Diagnosis of Early Vascular Dementia**


**Background:** Diagnosis and management of early cognitive impairment in younger adults (age 18-65 yrs) requires a different approach. Although common causes of early onset dementia are the same in younger and older adults, such as Alzheimer’s, vascular and fronto-temporal dementias, certain rare syndromes with early dementia do differ. CADASIL syndrome is a rare form of early onset dementia warranting family member testing for mutations in NOTCH3 gene.

**Case:** 49 year old Hispanic male with diabetes mellitus, hypertensive hyperlipidemia had multiple prior episodes of transient sensory symptoms of the extremities, emotional lability and progressive memory loss. Neuroimaging confirmed non-specific diffuse white matter changes. Despite multiple hospitalizations, a precise diagnosis was not made until he was 57 years old after a test that confirmed positive for Notch3 gene mutation.

His 31 year old daughter with spells of dizziness, headache, numbness, and falls was diagnosed with multiple sclerosis. A 8-year-old grandson had headache and related insomnia. A son has episodes of numbness. The mother had numbness of extremities and stroke.

**Discussion:** Cerebral autosomal dominant arteriopathy with subcortical infarcts and leukoencephalopathy (CADASIL) is an autosomal dominantly inherited angiopathy from mutations in the NOTCH3 gene on chromosome 19. CADASIL has 100 % penetrance, but the age of onset, severity of symptoms and progression varies. Those who don’t inherit the gene do not pass it on to future generation. The disorder is life-threatening and disabling, with only empiric treatment available, to relieve disease symptoms. CADASIL is a non-atherosclerotic, non-amyloid cerebral angiopathy involving small arteries and arterioles presenting with stroke, TIAs, bipolar disease, depression or dementia. Differential diagnosis includesBinswanger dementia, a disorder from advanced subcortical small vessel hypertensive disease.

**Key points:** Although rare, CADASIL must be considered in the differential diagnosis of early onset dementia. Presentation is ambiguous with neuropsychiatric features or vascular brain disease. Early diagnosis calls for testing of family members.


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C43

**Multidisciplinary Care of a Patient with Cowden Syndrome at a Geriatric Center.**

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**Background:** Cowden syndrome is caused by a genetic mutation that manifests as recurrent benign or malignant tumors over the life time of patients. We present the diagnostic and therapeutic challenges of managing Cowden Syndrome in a geriatric patient and the role of a geriatric center in coordination of care.

**Method:** Chart review

**Results/ Case Study:** Patient is a 71-year-old retired nun with history of multiple skin cysts, moles, neurofibromas, hemangiomas and warts from childhood to adulthood. Three decades ago, she underwent right subtotal thyroidectomy for nodular goiter with benign pathology and later had left thyroid lobectomy. At the age of 31 years she underwent surgery for uterine cancer. She developed a cerebellar mass at age 62 years which was initially followed conservatively. A couple of years later the brain lesion grew, prompting retro mastoid craniotomy in 2010. Pathology showed ganglioglioma of the cerebellum. With her history of multiple malignancies, she was suspected to have Cowden Syndrome. Genetic testing revealed PTEN mutation confirming the diagnosis.

At age 66 years she was referred to our geriatric center for further management. Over the next five years she continued to have a turbulent course with development of invasive ductal carcinoma of right breast, numerous colonic polyps (benign), granulosa cell tumor of the tongue, etc. She has required intense medical surveillance by a multidisciplinary medical team of GI, Endocrinology, Gynecology, Neurosurgery, Neurology, Dermatology, Urology, ENT specialties coordinated by the Geriatrician. Additionally, patient has had age related functional decline and has developed Parkinson’s disease, anxiety and depression, constipation, osteoporosis, urinary incontinence, etc. To help her meet these challenges, she moved from independent living into personal care and was recommended to discontinue driving with which she complied. Despite her tumultuous course she has remained resolute and actively participated in treatment decisions.

**Conclusion:** Cowden syndrome is a rare genetic disorder that predisposes patients to a variety of benign and malignant tumors. In elderly patients with this syndrome, optimal long term care and surveillance are best provided in a geriatric center in coordination with other medical disciplines.

C44

**Home or Heaven: Which Way am I Headed?**

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In early stages of dementia, it is important to determine if there is a reversible cause such as depression, substance abuse, normal pressure hydrocephalus, hypothyroidism, and B-12 deficiency. We present a case of a patient with a less known potentially reversible dementing process. A 70 year old male veteran with a 4-year history of Parkinson’s disease, no history of alcohol or drug use, and no family history of neurologic disorders presented with new-onset psychosis. Auditory hallucinations and occasional delusions started a year earlier. His neurologist offered antipsychotics which he declined due to mild
symptoms. Despite minor forgetfulness he continued to function well including driving, walking without assistive device and socializing until he was brought to ED with worsening delusions, hallucinations and agitation. He was admitted to the psychiatric ward for acute psychosis. Symptoms did not improve with discontinuation of levodopa-carbidopa. He required increasing doses of quetiapine which caused hypotension and falls. Quetiapine was changed to pimavanserin. Routine dementia labs were normal, MRI showed microvascular changes, lumbar puncture showed no infection and EEG showed global slowing. He had a complicated course with upper GI bleeding, aspiration pneumonia, atrial fibrillation, UTL and autonomic dysfunction. The patient was transferred to our skilled nursing facility on diltiazem for rate control, pimavanserin, tapering dose of haloperidol for combative behavior and off levodopa-carbidopa with moderate lower extremity rigidity. By now it is about 3-4 months since his initial ED visit. He is not walking, is incontinent of bowel and bladder and is disoriented to time and place. In a goals of care meeting patient’s wife opted to complete a workup for any reversible causes before choosing palliative care. Further study yielded an ESR: 94, ANA: 1/160 with a negative rheumatologic panel. Repeat MRI did not show any characteristic findings of CJD. A lumbar puncture was repeated which showed elevated protein: 99 and negative infectious work up. At the time of this writing, he is still being tested for immune mediated dementia vs Lewy body dementia. Immune-mediated cognitive impairment can easily be missed in geriatric populations. We should have a high index of suspicion for this potentially reversible condition in patients with atypical presentation of cognitive impairment.

C45
Thromboembolism after prolonged flight in the elderly- Need for increasing awareness
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Background: Venous thromboembolism (VTE) is a known complication after long flights especially in the elderly. However, there is a lack of awareness of VTE risk associated with prolonged flights in the elderly. Geriatricians need to actively educate patients about VTE risks and prevention.

Case Presentation: An 88-year-old-female with PMHx of CHF, HTN, OA, and glaucoma was admitted to SNF, status-post pulmonary embolism (PE)/deep vein thrombosis (DVT). Patient lost her husband 6 months ago, after which she felt depressed and lonely. She had a fall on her knee that reduced her walking due to debility. Patient then visited her daughter for which she took a flight round trip 6 hours each way. Patient developed VTE within a week post-travel and since then is wheelchair bound.

Discussion: The annual incidence rate of VTE is ~1% at very old age as compared to 0.1% in general population. Knowledge of risk factors, clinical presentation, prevention, and treatment of VTE may be insufficient among medical professionals although available data are limited. Research has shown that improved public awareness reduces mortality from disease. The AHA at a vascular disease summit in 2015 proposed public awareness campaigns and evidence-based quality/systems of care initiatives for prevention of VTE.

The current patient had multiple comorbidities that increased the risk of VTE: OA, debility, CHF, HTN and depression/loneliness. In addition, she took a long flight and was probably dehydrated. She was unaware of her baseline risk and effect of long flight on VTE risk.

Conclusions: There is a need to proactively increase the awareness of the risk of VTE in the elderly and medical professionals. The elderly should be encouraged to avoid dehydration, exercise their leg muscles while seated in-flight and take a walk in the aisle frequently. If necessary, graduated compression stockings, 15-30 mmHg at the ankle should be recommended for flights longer than 6 hours. Further research is warranted to define risk levels associated with duration of air travel and presence of risk factors of VTE. A simple risk assessment tool such as an office-based electronic record-embedded programs that automatically incorporates patient information to calculate the absolute risk of VTE needs to be developed. Easy to understand information sheets can be given to the elderly/families in clinics and in partnership with airlines, outlining the VTE risk with long flights, and the need to hydrate and exercise.

C46
Angioedema, an uncommon side effect of Angiotensin-converting enzyme Inhibitor use
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Background: Angioedema is a rare but life-threatening side effect of angiotensin-converting enzyme inhibitor (ACEI). It is seen in 0.1-1% people who are taking this drug but accounts for the 30-60% cases of drug-related angioedema cases seen in the emergency room. If not treated emergently, it can be fatal due to airway compromise.

Case: A 69 year old women with history of hypertension, COPD, tobacco use, presented to the ED with swollen lips, tongue and change of voice. She was well until the night before the ED visit. She had hotdogs for dinner, and an episode of vomiting and diarrhea. She had similar episode 3 months back which responded to oral Benadryl. Her regular medications included aspirin (ASA), amloidpine, lisinopril and atorvastatin. She was treated with IV corticosteroids, diphenhydramine and famotidine. Fibrinect laryngoscopy showed swollen base of the tongue and arytenoid process. She was intubated for airway protection. Fresh frozen plasma 2 units were given for persistent swelling. Her condition improved, was extubated and discharged home on the 3rd day. Possible causes of angioedema in her case were food-related, hereditary angioedema (HAE), and drug-induced. Lack of pruritic rash and delay in symptoms excluded ASA and food-related angioedema. Both HAE and ACEI-AE are bradykinin-induced, HAE cases presents with recurrent attacks at a much younger age. By exclusion, this episode of angioedema was attributed to lisinopril. She was discharged home on Aspirin and amloidpine and had no problems on follow up visit.

Discussion: Angioedema associated with ACEI can occur years after initiation; in most instances it is self-limited, but occasionally it can result in fatal airway obstruction. Prompt recognition, immediate treatment with standard therapy is usually sufficient. When not, close monitoring, laryngoscopy and early intubation are critical steps in the management. Decreased degradation of bradykinin, a potent vasodilator leading to increased permeability of the vessels, is thought to be the primary pathway leading to AE. FFP contains kimmase II which is identical to ACE, leads to rapid degradation of bradykinin, the recent off-label use of this agent in refractory cases has helped resolve the swelling in short period of time thus shortening the duration of intubation and further complications.

C47
A Geriatric Syndrome or Another Great Pretender?
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The variable, nonspecific presentation of adrenal insufficiency (AI) in the older adult can serve as a diagnostic challenge. Presenting symptoms can be as vague as weight loss and fatigue in the absence of electrolyte abnormalities. This case report demonstrates how nonspecific symptoms of AI can be easily attributed to various geriatric syndromes.

A 63-year-old male was admitted to a skilled nursing facility (SNF) after 1-month of hospitalization for a hemorrhagic stroke. His past medical history included a seizure disorder and hypertension. After 3 weeks in the SNF he became more lethargic with poor oral intake, weight loss and hypotension. A complete blood count, comprehensive metabolic panel, B12 and ammonia level were unremarkable. An EEG revealed nonspecific encephalopathy. A MRI showed chronic
white matter disease. When the patient’s mental status improved with IV fluids, he was sent back to the SNF where he underwent the same pattern of encephalopathy, poor oral intake and hypotension responsive to fluid. An 8 AM cortisol level of 4.0 mcg/dL and a corticotropin stimulation test yielding a peak cortisol level of 12.8 mcg/dL confirmed the diagnosis of AI. The patient was started on hydrocortisone and once therapeutic doses were achieved, the patient was alert and out of bed.

This case illustrates how AI can mimic various geriatric syndromes such as functional decline, fatigue and anorexia in the absence of electrolyte abnormalities. The 2016 Endocrine Society Guidelines for AI reserve lower diagnostic and therapeutic thresholds for the acutely ill and those with predisposing factors. Until recommendations for the geriatric population can be established, it would be worthwhile to keep AI on the differential until it is ruled out.

**Laboratory Studies**

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### C48

A Clinical Conundrum: Progressive Weakness with Mixed Upper and Lower Motor Neuron Signs

S. Shackford, N. Harmon, A. Beyea

Weakness is a common complaint in the elderly. Evidence suggests a higher incidence of Amyotrophic Lateral Sclerosis (ALS) in this population, but multiple comorbidities may mislead proper diagnosis if presenting symptoms are attributed to other conditions.

**Case:** A 61 year old woman with intellectual disability, depression and malnutrition was seen in a skilled nursing facility for a capacity evaluation after multiple hospitalizations for recurrent falls and weakness attributed to failure to thrive and deconditioning. She was found to have new onset right wrist drop, dysphagia and diffuse weakness. Neurological exam revealed mixed upper motor neuron (UMN) signs with hyperreflexia and spasticity of the upper extremity (UE) and lower motor neuron (LMN) findings with profound extensor UE and flexor lower extremity (LE) weakness, muscle atrophy, and absent LE reflexes. She was unable to give a clear timeline of symptoms. Given unclear symptom onset, progressive course, and UMN and LMN signs on exam, polyneuropathy (PN) superimposed on a primary motor neuron disease was suspected and consistent with complex abnormal findings on EMG. IVIG was initiated pending further diagnostic studies. Brain and cervical spine MRI showed no abnormality. CSF and serological studies evaluating for autoimmune disease, paraneoplastic process, infection, and toxicity exposure were unremarkable except for elevated thyroid peroxidase antibodies with a normal TSH. Despite IVIG, acute respiratory failure requiring intubation ensued. The patient ultimately succumbed to an intracranial hemorrhage in the setting of anticoagulation for an UE DVT.

This case is an interesting presentation of ALS with probable superimposed PN of unclear etiology given rapidly progressive weakness with respiratory failure. Diagnostic criteria for ALS with LMN and UMN signs were clearly met. Concomitant comorbidities in the elderly complicate the diagnosis of ALS and delay appropriate management. This was demonstrated in the case by the multiple hospitalizations for recurrent falls and progressive weakness occurring months prior to this presentation, and emphasizes the importance of approaching weakness and falls in the elderly with a broad differential diagnosis.
Psychosis is a common complication of Parkinson’s disease (PD). Hallucinations are the most common psychotic feature and can affect up to 40% of patients (1). These features can be seen predominantly in the advanced stages of disease. Causes can include infection, delirium, dementia, or medications. The most important cause of psychosis in PD is probably the dopamine agonists used to treat it.

A 73-year-old female patient with a 2-year history of parkinsonism treated with carbidopa/levodopa and dementia presents with catatonia/unresponsiveness. The month prior to admission, she was using a walker getting food on a buffet line. A few days later she started to have hallucinations and depression and was started on quetiapine and citalopram. After the medications were started, she woke up one morning unable to move. MRI of the brain was unremarkable. She was transferred to the psychiatric unit and discharged to a skilled nursing facility on primavaserin and olanzapine after 8 days. She continued to have “unresponsive” or “trance-like” episodes every other day. Concerns were raised regarding possible Lewy body dementia and Neuroleptic Malignant Syndrome (NMS). Extensive workup including autoimmune studies revealed that anti-TPO was positive. She underwent IVIG for concerns of Hashimoto’s encephalopathy with no improvement. An infected stage 4 sacral ulcer was treated. Stopping her rivastigmine and antipsychotics improved affect and cognition. Carbidopa/levodopa was restarted after cessation worsened PD features.

This case illustrates that challenges of identifying etiology with symptoms overlapping several diseases. Factors contributing to her psychosis included medications, infections, dementia, delirium and disease progression. What made her presentation striking was her sudden decline in functional status. After extensive management, the persistence of her symptoms made it difficult to know whether the presentation was due to her PD or is it now a result of NMS. Improvements in imaging or diagnostic modalities are needed for PD or parkinsonisms to aid in its management without causing detrimental damages to an individual’s life. As clinicians, it is important for us to know the proper algorithm for medication removal in patients with PD and dementia, and to be aware that there is a greater incidence of psychosis in patient diagnosed with PD later in life (1).

### C51

**The Risk of Polypharmacy in Treating Insomnia**

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**Background:** Polypharmacy is a growing concern for older Americans. Defined as the use of medically unnecessary medications, polypharmacy impacts almost 50% of older adults. Specific interventions designed to reduce numbers of prescribed and over the counter medications have been shown to improve and prevent negative consequences in all care settings. This case highlights the use of multiple medications to treat insomnia and the potential for adverse health outcomes.

**Case:** A 71-year-old male came to a Geriatric Medicine clinic to establish care and discuss ongoing issues with sleep difficulty. He reported insomnia, present for at least 5 years, for which he had seen multiple providers of various specialties. On presentation to clinic, patient was taking the following medications all used to induce and maintain sleep: ramelteon, temazepam, amitriptyline, quetiapine, hydrocortisone, anastrozole, testosterone, progesterone and DHEA. He also reported seeing a naturopathic provider who was prescribing additional supplements— the active ingredients of which were unknown. In addition, he would consume large quantities of alcohol nightly to aid with sleep.

After evaluation by a geriatrician and clinical geriatric pharmacist consultant the patient was advised to taper off and discontinue ramelteon, temazepam, amitriptyline, melatonin and quetiapine. An Endocrine evaluation was completed and found no hormonal abnormality. He was advised to discontinue hydrocortisone, anastrozole, testosterone, progesterone and DHEA. Pt was counselled extensively on sleep hygiene practices.

At a subsequent primary care visit the patient was taking only quetiapine. He reported insomnia had significantly improved. Alcohol use had diminished, but was still an issue. He was advised to follow up with a psychiatrist for evaluation of quetiapine and resources were given for alcohol cessation.

**Conclusion:** This case report highlights the inappropriate and unnecessary use of medications with potentially adverse effects to treat insomnia. The medications, in this case, included one with a black box warning, and many medications had no FDA approval for the treatment of sleep disturbance. Most cases of insomnia can be improved or resolved by discussing sleep hygiene and patient habits. When necessary, treatment should be targeted with minimum numbers of medicines at the lowest effective doses to prevent adverse effects.
C53
Weight loss in a nonagenarian female
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This is a case of a 95-year-old widowed Caucasian female with a past medical history of hypertension, coronary artery disease, and depression who presented to our practice as a new patient. She was accompanied by her daughter and son. They wanted to establish care because they were dissatisfied with their previous primary care provider. Her chief complaint was uncontrolled hypertension, anxiety, and weight loss. The daughter reported the blood pressure was around 190 systolic mmHg at home and that the patient was started on paroxetine three weeks ago for ‘anxiety and depression’. The patient’s cardiologist told the family to double the dose of her losartan and carvedilol. According to daughter, the patient was referred to a cardiologist for hypertension, had a recent echocardiogram showing an ejection fraction of 67%, and had a normal chemical stress test. Manual blood pressure done during the clinic visit was 128 and 138 mmHg SBP and the patient denied any vision loss nor severe headaches. The son revealed the patient had a 45-pounds unintentional weight loss within the past four months. The family revealed a thyroid-stimulating hormone level (TSH) was checked by her previous physicians but they were not made aware of the results. The transferred records revealed a TSH of < 0.01 done two months prior. Repeat laboratory studies confirmed the patient’s hyperthyroidism. The patient reported she was a homemaker of three years when her husband had died from a ‘heart attack’. She has since been living with her children and apparently had intact activities of daily living. The patient admitted she needed assistance with managing her finances and transportation. The patient had a past medical history of hypertension, anxiety, trigeminal neuralgia since the 1970s, overactive bladder, and chronic hyponatremia who presented to our practice as a new patient. She was referred to a psychologist literature as a major cause of negative clinical consequences. We determined the biggest contributor to her symptoms was the regimen, she continued to have pain from trigeminal neuralgia, symptoms of anxiety intermittently self-treated with alcohol, and no improvement in serum sodium despite the high salt intake.

Management and Outcome: After a thorough geriatric assessment, we determined the biggest contributor to her symptoms was polypharmacy. With motivational interviewing, recruiting family support, and a discussion of patient’s goals (which included restoration of quality of life and driving) we created a step wise approach to deprescribing. We tapered off alprazolam, diphenhydramine-APAP, gabapentin, carbamazepine, and sodium tablets. She was referred to pain clinic for a nerve block for her trigeminal neuralgia which was successful in achieving pain control and reducing anxiety. Patient and family reported restoration of memory, improved social interactions, and a return to driving.

Discussion: With motivational interviewing, a thorough evaluation of patient’s goals, and recruiting social support it is possible to approach deprescribing in a stepwise. More nuanced guidelines are needed to reduce polypharmacy. Cases such as this illustrate the importance of involving the patient in creating a mutually negotiated and personalized treatment plan.

C54
Reducing Polypharmacy to Improve Quality of Life: Case Study in Deprescribing to achieve Optimal Treatment Plan
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Introduction: Polypharmacy is prominent in geriatric medicine literature as a major cause of negative clinical consequences. We provide an example of how to approach a patient on multiple high-risk medications experiencing negative impacts of polypharmacy to achieve optimal treatment plan, increase satisfaction from medical care, and improve quality of life.

Case: PT is a 74-year-old community dwelling woman with past medical history of hypertension, anxiety, trigeminal neuralgia since 1970s, overactive bladder, and chronic hypotension who presented with reduced stability, two syncopal episodes over the past two years, and short term memory loss. Her medication regimen included alprazolam 1mg three times a day; diphenhydramine-APAP 25-500mg one tablet every night; gabapentin 600mg three times a day; carbamazepine three times a day (100mg, 100mg, and 200mg); sodium chloride 3g three times a day; and oxybutynin 10mg every night. Despite this regimen, she continued to have pain from trigeminal neuralgia, blood pressure was 128 and 138 mmHg SBP. The patient's medications were stopped, and she started on methimazole 5 mg twice daily and vitamin B12 2500 mcg once daily. Further conversations revealed that ‘mother never had any cancer screenings because we don’t believe in them’. On physical examination, we discovered bilateral nontender cervical lymphadenopathy and palpable lymph nodes on the sternal notch. Fecal occult blood testing was positive. Given the suspicion for malignancy, a colonoscopy was offered however the patient refused. The patient, with the daughter at her side, was tearful when informed of this possibility and agreed to complete a MOLST form. The patient's son would like the family to double the dose of her losartan and carvedilol. According to daughter, the patient was referred to a cardiologist for hypertension, had a recent echocardiogram showing an ejection fraction of 67%, and had a normal chemical stress test. Manual blood pressure done during the clinic visit was 128 and 138 mmHg SBP and the patient denied any vision loss nor severe headaches. The son revealed the patient had a 45-pounds unintentional weight loss within the past four months. The family revealed a thyroid-stimulating hormone level (TSH) was checked by her previous physicians but they were not made aware of the results. The transferred records revealed a TSH of < 0.01 done two months prior. Repeat laboratory studies confirmed the patient’s hyperthyroidism. The patient reported she was a homemaker of three years when her husband had died from a ‘heart attack’. She has since been living with her children and apparently had intact activities of daily living. The patient admitted she needed assistance with managing her finances and transportation. The patient had a past medical history of hypertension, anxiety, trigeminal neuralgia since the 1970s, overactive bladder, and chronic hyponatremia who presented to our practice as a new patient. She was referred to a psychologist.

Management and Outcome: After a thorough geriatric assessment, we determined the biggest contributor to her symptoms was the regimen, she continued to have pain from trigeminal neuralgia, symptoms of anxiety intermittently self-treated with alcohol, and no improvement in serum sodium despite the high salt intake.

Management and Outcome: After a thorough geriatric assessment, we determined the biggest contributor to her symptoms was polypharmacy. With motivational interviewing, recruiting family support, and a discussion of patient’s goals (which included restoration of quality of life and driving) we created a step wise approach to deprescribing. We tapered off alprazolam, diphenhydramine-APAP, gabapentin, carbamazepine, and sodium tablets. She was referred to pain clinic for a nerve block for her trigeminal neuralgia which was successful in achieving pain control and reducing anxiety. Patient and family reported restoration of memory, improved social interactions, and a return to driving.

Discussion: With motivational interviewing, a thorough evaluation of patient’s goals, and recruiting social support it is possible to approach deprescribing in a stepwise. More nuanced guidelines are needed to reduce polypharmacy. Cases such as this illustrate the importance of involving the patient in creating a mutually negotiated and personalized treatment plan.

C55
TB or not TB? That is the question

Background: Disseminated or miliary tuberculosis (TB) is a clinical disease that results from the hematogenous spread of Mycobacterium tuberculosis. Risk factors for developing disseminated TB include young or advanced age, underlying medical conditions including Human Immunodeficiency Virus (HIV) infection and other forms of immunosuppression. Nevertheless, many cases of miliary TB do not show clear risk factors for dissemination. It is estimated that about 1-2% of cases of miliary TB occur in immunocompetent patients (1). Atypical presentations of disseminated TB can often delay diagnosis and treatment in these patients.

Case: An 81-year-old Chinese female presented for a second opinion regarding a large right upper chest mass. She was recently told that this was likely Stage IV colorectal carcinoma due to Positron Emission Tomography (PET) imaging showing a large hypermetabolic mass of the right chest wall, in addition to extensive uptake throughout her neck, mediastinal, hilar, axillary, abdominal and pelvic lymph nodes, as well as her bones, and colon. Biopsy of her right chest wall mass showed necrotizing and non-necrotizing granulomas with acid-fast bacilli. Cultures initially were negative for TB or Mycobacterium avium complex (MAC), but repeat cultures grew Mycobacterium tuberculosis and a diagnosis of disseminated TB was made. She was treated with rifampin, isoniazid, pyrazinamide and ethambutol (RIPE) with marked improvement of her disease on subsequent scans over 18 months.

Discussion: Mycobacterium tuberculosis infection continues to be common amongst minority populations in the United States. For example, the incidence of TB in Asians was 18 cases per 100,000 persons in 2016; this is the highest incidence amongst different racial/ethnic groups (2). Disseminated or miliary TB can occur in immunocompetent patients and have atypical presentations. It is important to abstain from narrowing one’s differential diagnosis too early, especially in someone whose imaging and pathology do not correlate, in order to avoid causing unnecessary and significant distress to our patients, and to avoid delaying necessary treatment.

References:
C56  
**A Case Study Demonstrating the Special Needs of Transgender Older Adults**  
Y. Ildoi, S. Fosnight, S. Hazlett  
*Geriatric Medicine, Summa Health, Copley, OH.*

**Background:** Transgender individuals often encounter a health care system that is ill-prepared to provide culturally competent care. This problem is amplified in the older population where issues of sexuality are often ignored, resulting in lack of access to appropriate care and poorer patient outcomes.

**Case:** This 55 year old male to female transgender patient was referred to our High Intensity Clinic (HIC) which provides primary care for the most complex chronically ill patients. The HIC uses an inter-professional team approach with comprehensive assessments, team collaboration, and RN care manager follow up. The HIC team’s first encounter with this patient involved a hospitalization with an episode of cardiac arrest. Her medical history included coronary artery disease, end stage renal failure with dialysis, HIV, high dose estrogen therapy, hypertension, chronic pain with more than 40 ED visits and admissions in the previous 12 months. Her estrogen level was 3 times the normal limit for a transgender transformation. Upon further investigation it was found that she was self-managing her estrogen, originally with products bought on the street due to lack of transgender resources. She also had breast implants that were inserted over 20 years prior without follow up. She had been through several primary care physicians and consultants due to non-adherence and drug seeking behavior. Her history of non-adherence, drug abuse, and multiple disease states was made worse by lack of a transgender specialist, lack of support, and stigma. Her HIC individualized care plan included a pharmacist assessment at each visit, access to a social worker, weekly nurse phone calls, follow up appointments every 2 weeks and utilization of motivational interviewing. As a result, her utilization of the emergency room and admissions were decreased by 56% (16 visits to 7 visits) when comparing 4 months of enrollment in clinic to 4 months after.  
**Conclusion:** As the population ages there will be a growing number of transgender patients. This case illustrates that an interprofessional approach which addresses not only the medical but also the psychosocial needs of this population can optimize quality of care, patient outcomes and significantly decrease avoidable healthcare utilization.

C57  
**Auditory Hallucinations in Older Adults: a case of very late life onset of schizophrenia**  
Y. Ildoci, S. Fosnight, S. Hazlett  
*Geriatric Medicine, Summa Health, Copley, OH.*

**Background:** Schizophrenia is generally regarded as a disease of young adults rarely occurring in older adults. Typically the disease peaks at 18-26 years old. Schizophrenia after 65 years old is defined as very late onset schizophrenia. The disease is very rare and often a controversial and highly debated diagnosis in the older population occurring only 0.5% of individuals over 65 years old. However, with the aging baby boomers, improvement in technology and health, the 65 and older population will more than double in the next 30 years thus statistically increasing the emergence of very late onset schizophrenia. The symptomology of schizophrenia in very late onset schizophrenia often makes it difficult to differentiate from other psychotic condition including dementia with psychosis.

**Case:** This case is a 78-year-old Puerto Rican female with a past medical history of depression. She was brought in by her daughter with both caregiver and patient in a distraught state. Per daughter patient’s symptoms of auditory hallucinations started 3 years ago when she entered a court room demanding the arrest of her cousin who she claimed was trying to kill her. Her persecutory, well systematized hallucinations were highly sexual, contained partition delusions, in which she believed that her cousin would transgress the walls of her room and kill. Third person auditory hallucinations with sinister content were present continuously Past testing that included neuropsychiatric examination revealed no abnormality. Her mini-mental status examination (MMSE) score was 28/30, Addenbrooke’s Cognitive Examination Revised (ACE-R) was 96/100. Magnetic resonance imaging (MRI) of brain showed age related cortical atrophy. MMSE was 14/30 at the time of our visit and she continued to have significant decline in activities of daily living. Her daughter also reported significant memory loss and behavioral disturbances such as inappropriate toileting. Due to patient’s age, low MMSE score and behavioral disturbances her symptoms seemed to be from dementia with psychosis. After starting on antipsychotics that included risperidone and quetiapine her symptoms improved and her MMSE increased to 25/30. Proper identification of the underlying condition causing psychosis is critical to facilitate diagnosis and support the development of specific treatment interventions.
C59 Design and Implementation of Academic Post-Hospital Nursing Facility Network and Attending Service
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Background: Safe and efficient movement of patients through the post-hospital care continuum is increasingly incentivized. Discontinuity and transition errors are potential consequences as pace of care transitions increases. Affiliation agreements between hospitals and nursing homes is a natural solution. Medical care continuity is fostered by having hospital-originated rounding teams in the nursing facilities designated the Nursing Facility Attending Service (NFAS) medical team. We describe the early design and results of such an initiative at a large urban academic medical center, designed to ultimately handle all skilled NH referrals within the metro area.

Methods 3-year observational study of the developing NFAS. Results include program census, duration of NFAS care, days to first visit, patient encounters and visit frequency by NFAS team, patient demographics, illness severity, and hospital readmission rates.

Results Hospital discharges to nursing homes (NHs) averaged 2062 annually over 3 years (5.6% of all discharges). The NFAS included 12 facilities in a local urban affiliation network, located at distances of 7 to 15 miles from hospital, representing 1,793 total NH beds. Medicare star ratings across the network average 3 (range 1 – 5, 5 are 4-star, 1 is 1-star, 0 are 5-star). Network NHs receive half of the hospital’s NH discharges. To monitor progress, there is a quarterly joint operating committee meeting focused on efficiency, quality and safety, including shared data.

During the study period, the NFAS visited 802 unique patients, mean age 71. NFAS annual case volume increased from 165 to 508, now representing 50% of our hospital’s NH metro area discharges or 25% of all NH discharges. DRG case mix weight rose with time with CMI> 3 being 20.6 % initially to 27.3%, as sicker patients were moved into NH care. Daily NFAS rehab census increased to 85. Initial visits occur 2.6 days after discharge on average. There were 7.9 mean visits per case (front-loaded). 30-day hospital readmissions averaged 18.2%, and return to ED (without admission) was 8.6%.

Conclusions Development of an academic NFAS and NH network is achievable with hard work, has strongly positive measurable results, improves quality and should reduce total costs of patient care. Many lessons learned have come from the initial 3 years of this work.

C60 Delirium in Older Adults with Hip Fracture: Variability in Provider Knowledge and Practice
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Introduction: Delirium in older adults with hip fracture is under-recognized and under-managed resulting in longer hospitalization, postoperative complications and increased mortality. This gap is noteworthy despite proven screening tools such as the Confusion Assessment Method (CAM) and validated clinical and environmental management strategies. We assessed knowledge practices in delirium management in 3 provider disciplines with objective of improving processes through targeted education and checklist methodology.

Methods: A multiphase, IRB approved, quality initiative to detect, prevent and manage delirium at an urban tertiary care teaching hospital. Surveys on evidenced-based methods were administered at two time points, 2 weeks apart, to assess current knowledge and serve as an educational tool. Surveys were administered to orthopedic residents, physician assistants (PA) and registered nurses (RN) caring for patients on the Ortho-Geriatrics comanagement service. Continued focused education to providers on CAM, with checklist methodology for daily bedside implementation.

Results: Surveys were completed by 59 providers: 22 residents, 8 PAs and 29 RNs; 14%, 7%, 2% respectively reported diagnosing delirium at least once. Survey report in Table 1. Pain assessment and Foley removal were not different between groups. On 2nd survey up to 50% of providers reported increased frequency of performing these measures, with reported 33% more frequently evaluating for polysubstance abuse (p=0.004), 18% more frequent assistive devices placement and 13% more frequently diagnosing delirium.

Conclusion: Among our institutional providers, diagnosing delirium was rare. There is an observed gap in provider-reported adherence with instituting and addressing delirium prevention and management practices. RNs consistently reported implementing best practices more than residents or PAs. Providers reported improved delirium management at the second survey. Future efforts will focus on targeting the professions most in need of acquiring delirium detection and management skills.

Table 1

<table>
<thead>
<tr>
<th>Delirium Prevention / Management Task</th>
<th>Resident</th>
<th>PA</th>
<th>RN</th>
<th>Pvalue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assessed for delirium risk</td>
<td>50% very often/always</td>
<td>25% very often/always</td>
<td>5% very often/always</td>
<td>0.001</td>
</tr>
<tr>
<td>Placed assistive device at bedside</td>
<td>99% rarely</td>
<td>99% rarely</td>
<td>3% very often/always</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Gave patient oral/parenteral fluids</td>
<td>47% very often/always</td>
<td>47% very often/always</td>
<td>47% very often/always</td>
<td>0.05</td>
</tr>
<tr>
<td>Raised/Shakes</td>
<td>77% rarely</td>
<td>38% rarely</td>
<td>38% very often/always</td>
<td>0.0001</td>
</tr>
<tr>
<td>Evaluated for polysubstance abuse</td>
<td>49% rarely</td>
<td>59% rarely</td>
<td>99% very often/always</td>
<td>0.001</td>
</tr>
</tbody>
</table>

C61 Cognitive Impairment Assessment and Care Planning: Implementing a New Medicare Billing Code
A. Brungard,1 H. Lumm,1,2 B. Parsons,1 D. Fixen,1 K. Hartley,1 J. Hardland.2 1. Anschutz Medical Campus, Aurora, CO; 2. VA Eastern Colorado GRECC, Denver, CO.

Background: The current standard of practice for cognitive assessment varies by provider and may be limited in primary care. Medicare approved a new code to support comprehensive care planning for individuals with cognitive impairment. Cognitive Impairment Assessment and Care Planning (G0505) has ten required components for billing and generates a 58% increase in clinical charges compared to a level 5 follow-up visit. This quality improvement project aims to develop and evaluate the process and outcomes of using G0505.

Methods: Visits were conducted at an outpatient geriatric clinic. We elected to involve 3 disciplines: pharmacy, primary care providers (PCP), and social work to maximize comprehensive and collaborative care. Providers offered select established patients a G0505 visit to systematically assess their care related to cognitive impairment concerns. Medication reconciliation was conducted by the pharmacy team by phone prior to the visit. At the 40 minute visit, the PCP completed a cognition-focused evaluation including standardized assessment of functional, decision-making, and behavioral health needs. Patients/caregivers met with a social worker for discussion of social supports and referral to community resources. Patient-level, clinic-level, and qualitative outcomes were collected by chart review and evaluative interviews of the care team.

Results: Nine patients were referred and completed the visit (4 women; median age 79). All were successfully billed as G0505. A diagnostic change occurred for 4 patients. 33% of pharmacist recommendations were accepted by the PCP; 3 patients had a medication change or discontinuation. Through social work, use of community resources increased for 3 patients. Themes from care team interviews included: benefit of dedicated time for cognitive evaluation, positive feedback from patients, needed improvements on coordination and documentation, and potential use of G0505 for consultation.

Conclusion: We found that the G0505 visit is a beneficial process for patients, caregivers, and teams to engage in comprehensive care planning for individuals with cognitive impairment. On-going refinement is needed for increased adoption by additional PCPs and
adaptation to other primary care clinics. This project implies the potential to alter best practices for care of individuals with cognitive concerns in primary care.

C62 Home-based Management of Behaviors in Dementia
A. Cook, J. Davagnino, R. Sloane, T. Holsinger, J. Twersky. 1. Duke University Medical Center, Durham, NC; 2. Veterans Affairs Health Care Center, Durham, NC.

Background: COACH (Caring for Older Adults and Caregivers at Home) is a home-based program delivered by an interdisciplin ary team, aimed at coordinating care for veterans with dementia and providing caregiver (CG) education. The aim of this project is to evaluate the changes in veterans’ behaviors and their impact on CGs following enrollment in COACH.

Methods: Eligible veterans were 65+ years old with a diagnosis of dementia, residing at home with a CG. Behaviors were measured using the ABID (Agitated Behavior in Dementia) scale, which assesses frequency of agitated behaviors and corresponding CG response in patients with Alzheimer’s dementia. The ABID score assessment is done via in-home CG interview by a provider at entry and every 6 months. ABID scores were analyzed for all veterans who remained in COACH for at least 12 months between 9/1/2010 and 6/30/2016 (n=278).

Results: Participants had a mean age of 81.1, 58.3% were Caucasian, and 97.8% were male. Dementia severity was 17.2% mild, 72.5% moderate, and 10.3% severe. Mean ABID scores at entry for behaviors and CG response were 7.66 (0-31, SD 6.78) and 6.16 (0-48, SD 8.09), respectively. Over 12 months, the mean ABID score for behaviors and CG response decreased by 1.08 (p=0.006) and 2.21 (p=0.001), respectively. A trend toward decreased ABID scores for behaviors and CG response was seen for younger (age <75) and older (age 75+) participants, as well as those with all severities of dementia. The 12 month changes in mean ABID scores for behaviors and CG response were compared by age, race, dementia stage and CG type. Over 12 months, the mean ABID score for behaviors decreased more for severe than moderate dementia (2.39 vs 0.43, p=0.03), and the mean ABID score for CG response increased 0.86 for CG sons and decreased 2.77 for CG daughters (p=0.03). Other comparisons were not statistically significant.

Conclusions: In the first 12 months following enrollment in COACH, CGs of patients with dementia reported decreased behaviors and decreased CG response to these behaviors. By improving behaviors in dementia and CG response, the COACH program has potential to improve quality of life for patients and their CGs through decreased CG burden and delayed placement in long-term care facilities.

C63 Challenges, Opportunities and Outcomes of an Interdisciplinary Geriatrics Team (IDT) in 3 Community Health Care Centers (CHCs)

Background: With support from a Geriatrics Workforce Enhancement Program (GWEP) grant Baystate Health launched an interprofessional team to provide geriatrics consultation for frail elders in 3 inner city CHCs. Our goal was to move beyond one on one consultation to true team care embedded within these primary care practices.

Methods: The team consisted of 2 advanced practitioners (APs), a social worker and 2 geriatricians. Each CHC chose an MA and RN to support the program but staffing shortfalls led to a loss of RN support at one CHC; the program contracted to the 2 remaining CHCs. Later, staffing gaps arose there as well so we hired a team RN. We now also are seeking a full time MA. We recruited a community health educator and launched a pilot consultative home care program as well in the past year. All patients (pts) are discussed before and after their visits in weekly IDT. Standard tools screen for frailty and geriatric syndromes.

Results: The team saw 420 pts between Dec.’15 and late Aug, ‘17 with an average no-show rate of 20%. The median age was 75 yrs (range 47-104); the majority were women (67%), 74% were Hispanic and 11% were non-Hispanic Black. Half the patients were dependent in ≥1 ADL; 31% were dependent in ≥3 ADLs. Only 15% were independent in all IADLs; 50% were dependent in all IADLs. Fully 1/3 had fallen in the prior 6 months. 100% of pts seen (418/420) were diagnosed with ≥1 new geriatric syndrome; 68% had ≥3 geriatric syndromes. 78% were cognitively impaired, 23% took ≥ 4 medications, 37% were depressed, 24% had sleep disorders and 17% had pain, and 18% of caregivers had high stress levels, etc. Full team input was provided for all pts; most were seen 2-3 times (range 1-10).

Conclusion: Many challenges faced us: staffing in CHCs, a high no show rate and the need to develop processes iteratively with shifting team members. We restructured several times, are now working to expand our home care program and are shifting to exclusively target Next Gen ACO pts. Despite our growing pains we have provided “gold standard” geriatrics care to > 400 elders who previously lacked access to team-based geriatrics care. The need is enormous as evidenced by the functional and cognitive impairment of these pts and the universal identification of new geriatrics problems following evaluation.

C64 Decreasing Falls Through Integration of Healthcare and Community Based Providers in an Interprofessional Falls Risk Reduction Clinic
A. Harvan, M. Gareri, S. Fosnight, K. Lehotsky. 1. Duke University Medical Center, Durham, NC; 2. Veterans Affairs Health Care Center, Durham, NC.

Background: One in three older adults falls each year with costs to Medicare of over $1 billion 1. Given the multifactorial nature of falls, an interprofessional (IP) team approach that spans the continuum of care is necessary to optimally address all falls risk factors.

Methods: We established an IP Falls Risk Reduction Clinic that links healthcare and community-based social support providers including advanced practice providers, physicians, pharmacists, physical therapists, EMS, social workers and RN care managers. Patients are seen in an outpatient clinic, during inpatient admissions and at home visits. Patients undergo a comprehensive evidence-based falls risk assessment that follows AGS guidelines. The IP team develops a plan of care and a nurse follows up with the patient for 3 months to ensure care plan implementation. 3 month pre and post intervention data was analyzed using a paired t-test. Results: n=73 patients were seen in the Falls Risk Reduction Clinic. At 3 months there was a mean decrease in falls of 2.3, from an average of 3.1 at baseline to 0.8 at 3 months (p<0.0001, 95% CI (-2.87, -1.73)). Conclusions: We have established the feasibility of integrating healthcare and community based providers in a Falls Risk Reduction Clinic. Our preliminary data indicate a statistically significant decrease in falls over a 3 month time frame. The results are also clinically significant as they relate to improved patient health and quality of life outcomes. This team approach to decrease falls risk can extrapolate to high cost savings as well. This model of care is easily generalizable to other geriatric syndromes.

Funded by HRSA grant #U77HP28539

1https://www.cdc.gov/hoemandrecreational safety/falls/fallcost.html
Potential Causes and Opportunities for Reduction of 30-Day Hospital Readmissions in a Skilled Nursing Facility: A Quality Improvement Project


Background: Readmissions to the hospital from skilled nursing facilities (SNF) can be emotionally and physically difficult for residents, costly, and result in numerous complications of hospitalization. This quality improvement initiative sought to identify opportunities for prevention of 30-day hospital readmissions among newly admitted residents by identifying factors that may increase readmission risk. The project was based at the largest SNF in Rochester, NY, which serves a diverse population with unique and complex care needs including rehabilitation, dialysis, memory care, and ventilators.

Methods: A team of 4 Geriatric Medicine Fellows from University of Rochester reviewed the medical records of all 45 adult residents who required inpatient hospital readmission within 30 days of their admission to a long-term unit between 7/1/16 – 12/31/16. Residents were identified via Abaqus and pertinent information was obtained via chart review. Record reviews were accomplished using a modified version of the INTERACT® (Interventions to Reduce Acute Care Transfers) acute care transfers review tool that was developed for this project and documented online through REDCap (Research Electronic Data Capture).

Results: The most common diagnoses associated with readmission were CHF, dementia, and stroke. The presence of multiple active medical problems (e.g. CHF, COPD and Diabetes in same resident), polypharmacy (>9 medications), tracheostomy, gastric/jejunostomy tubes were also associated with readmission risk. Most frequent signs/symptoms prompting transfer were abnormal vital signs, altered mental status, and shortness of breath. At the time of transfer, the most common presumed diagnosis was pneumonia and 53% were from respiratory care units. Most transfers occurred on Fridays. All residents reviewed had a NYS MOLST form in place at the time of transfer that documented their wishes for life-sustaining treatments.

Conclusions: Most transfers were associated with acute decompensation in mental status, respiratory status and/or vital signs. Interventions that develop and expand the interdisciplinary team’s ability to identify and treat acute respiratory illness and delirium, reduce polypharmacy and revisit of goals of care & prognosis, may prevent rehospitalization from the nursing home.

Improving Care for Seniors: Understanding Processes to Address Unmet Social Needs


Background: Social factors (e.g., housing, transportation, nutrition) significantly impact health outcomes and costs. As a result, there is a need for holistic care models that link clinical and community services to meet the full spectrum of senior patient needs, including both medical and non-medical. This formative study examined processes for connecting seniors with community resources in a clinical and community setting and was conducted as part of a multi-year quality improvement project to enhance senior care through comprehensive service navigation.

Methods: Informational interviews were conducted with key personnel from a Community-Based Organization (n = 6) and select members of an interdisciplinary clinical care team from a Senior Health Center (n = 7). Respondents were asked to describe their process to assess social needs and challenges addressing identified needs. Additional broader formative work included a two-hour focus group with community providers (n = 14) and a 25-item clinical provider survey (n = 12). Key findings were summarized and discussed among project team members.

Results: Findings suggest social needs are identified in both settings. However, there is currently no formal process for screening social needs within the clinical setting. Respondents reported several challenges addressing social needs, including a lack of available resources, time constraints, and costs or insurance coverage. In addition, clinical respondents described difficulties identifying available community providers and delays in service delivery. While most respondents recognized the value of sharing senior’s information, there is minimal interaction among clinical and community providers.

Conclusions: Despite challenges, opportunities exist to improve clinical care to enable seniors to maintain their functional independence. Potential quality improvements include a standardized process for identifying social needs and a designated team member with knowledge of community resources to help connect seniors with appropriate services and facilitate coordination among providers. Findings will inform a redesign of care delivery for senior patients to include community service referral and navigation.

Is There an Association between Age and Antibiotics Prescription Patterns in Outpatient Management of Acute Respiratory Tract Infections?


Background: In March of 2016, the American College of Physicians published guidelines for antibiotic use in Acute Respiratory Tract Infections (ARTI). Although there is strong consensus supporting the lack of benefit and the increased risk of antibiotic use is the outpatient treatment of ARTI in the general population, the evidence remains ambivalent in the geriatric population. We explored whether physician antibiotic prescription frequency in ARTI is increased in older adults.

Methods: We conducted a multicenter retrospective chart review of the first consecutive 197 patients from a data set of 13,782 adult outpatients assessed for an ARTI in 2016 within a large health system. Three outcomes were examined: antibiotics prescribed at first visit, number of follow-up visits within 30 days, and antibiotics ordered on follow-up. The Mann-Whitney test, Chi-square test, or Fisher’s exact test was used, as appropriate, and multivariable logistic regression.

Results: Mean patient age was 63.6 (range: 21-97); 58.9% were female. There was no association between age and antibiotics given on first visit (p<0.69). There was no association between age and follow-up visits (p<0.78). The median age of those with one or more follow-up visits versus those with no follow-up visits was 63.0 and 63.5, respectively. There was a significant association between antibiotics given at visit 1 and follow-up visit (p<0.01). In a multivariable logistic regression model, antibiotic prescription at visit 1 was significantly associated with follow-up visits (OR: 2.65, 95% CI: 1.26, 5.58, p<0.01). There was no association between age and follow-up visit (p<0.67) and between age and antibiotics given at a follow-up visit (p<0.45). There was no association between antibiotics given at visit 1 and antibiotics given at one or more follow-up visits (p=0.17).

Of interest, only 8/197 (4%) patients had either an emergency department visit or hospitalization within 3 months, and 5 had previously received antibiotics.

Conclusions: This pilot study found no evidence of increased antibiotic prescribing frequency for ARTI in the geriatric population, consistent with the ACP and CDC 2016 guidelines for antibiotic use for ARTI.
C68
Staff Perspectives and Acceptance of Telehealth in Scaling a House Calls Program
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Background: Novel and sustainable approaches to scale House Calls programs are required to meet the medical needs of a growing number of homebound older adults in the US. The purpose of this qualitative study was to gain insight into the perspectives of House Calls staff regarding adopting telehealth technology to scale the program.

Methods: Qualitative data were collected from House Calls staff (physicians, nurses, nurse practitioners, social workers and medical coordinators) at one practice in the New York Metropolitan area through 16 semi-structured interviews and 3 focus groups. Data were analyzed thematically using the template analysis approach with Self-Determination Theory concepts (relatedness, competence, and autonomy) as an analytical lens.

Results: Three themes related to telehealth adoption were identified. Within the theme of technology’s impact on autonomy, participants perceived alerts generated from patients and caregivers using telehealth as an increased burden necessitating a rapid response by an already busy staff. Regarding technology’s impact on competence in providing care, participants noted that although technology can increase efficiency while enabling more informed care provision, it will require a substantial adjustment in staff roles and responsibilities. Participants were concerned with handling an influx of data, accountability for monitoring the data and difficulty for patients and caregivers to use the technology at home. Regarding technology’s impact on the patient-provider relationship, participants noted the opportunity to make caregivers part of the team through telehealth, and the importance of video visits. Some participants, however, were concerned that patients or caregivers might be overinvolved, and many patients would prefer in-person visits.

Conclusions: These findings demonstrate the importance of taking into account the perspectives of medical professionals regarding telehealth adoption. A proactive approach exploring the benefits and concerns professionals perceive in the adoption of health technology within the House Calls program is likely to facilitate the integration of telehealth innovations.

C69
Can Acute Care for the Elders (ACE) Tracker Identify Vulnerable Hospitalized Older Adults? A. Khan,1,3 M. Punj,1 M. L. Malone,1,3 1. Aurora Health Care, Milwaukee, WI; 2. Senior Services, Aurora Health Care, Milwaukee, WI; 3. University Of Wisconsin School of Medicine and Public Health, Milwaukee, WI.

Background: Acute Care for Elders (ACE) Tracker is a clinical decision support tool that summarizes information from the electronic medical record (EMR) of patients aged 65 years and older. We describe a quality improvement project to evaluate the ability of geriatricians to identify vulnerable older adults in the hospital using ACE Tracker.

Methods: A copy of ACE Tracker with nine patients was provided to four geriatricians. The geriatricians were asked to identify 6 most critical variables and provide appropriate recommendations. They were asked to identify 3 most vulnerable patients at high risk for poor outcomes. The responses were compared amongst the group. The 30-day readmission and inpatient mortality for the vulnerable patients was compared to those not deemed as vulnerable. The criterion for a vulnerable patient was not provided to the geriatricians and the patients were not identified.

Each participant had approximately 26 possible variables documented. The variables are auto-populated using assessments already present in the EHR. The ACE tracker provides information regarding sensory impairment, cognition, medications usage, functional status, skin care, restraints, therapies, hydration, nutrition, prognosis, pain score, and last bowel movement.

Results: Four geriatricians provided feedback. Two patients were reported by all 4 geriatricians as being vulnerable. One patient had a 30-day readmission and was reported as vulnerable by all the geriatricians. Two patients passed away in the hospital. Of these one was reported by all four geriatricians as vulnerable, while the second was noted by only one geriatrician as vulnerable. Three geriatricians reported at least one of 6 concordant critical variables. The recommendations provided were all varied amongst the 4 geriatricians.

Conclusion: This study demonstrates that using the ACE tracker geriatricians were likely to identify the most vulnerable patients. In the future we would like to demonstrate the ability of non-geriatricians to identify the most vulnerable older adults using the ACE Tracker.

C70
Surgical Acute Care for Elders (ACE) – Nursing-Driven High-Value Care A. Block,1 N. Storr-Street,2 T. Kiss-Lane,1 T. Takano,7 C. Cadet,4 K. Schroeder,2 M. Sheltlin,1 M. Martin,1 K. Staudemayer,1 A. Bharija.1 1. Geriatric Medicine, Stanford University School of Medicine, Stanford, CA; 2. Geriatrics, Stanford Healthcare, Stanford, CA; 3. General Surgery and Trauma, Stanford University School of Medicine, Stanford, CA; 4. Nursing, Stanford Healthcare, Stanford, CA.

Background: A key component of an ACE (Acute Care for Elders) model is a nursing-driven screen for geriatric syndromes and protocols for addressing positive findings in a timely manner. Our goal was to test the feasibility of adopting such a model of care on one surgical unit of an academic medical center, and to assess validity of the nursing screen.

Methods: Using the “SPICES” acronym for geriatric syndromes (modified as Sleep, Pain/Polypharmacy, Immobility, Confusion/Constipation, Enteral Nutrition and Social Support), we developed an eight-question admission screen for all patients 65 years and older. The screen was embedded into the EMR and each positive item was followed by a suggested action for the nurse. Nurses were introduced to the screen and new admission workflow during a two-hour staff in-service and at interdisciplinary rounds. We reviewed new patient charts daily for completed admission screens. We also conducted spot checks to determine if suggested actions were being implemented. To assess the validity of the nursing screen, we interviewed a sample of patients and compared their report of geriatric syndromes to those documented on the nursing screen.

Results: The ACE pilot began Oct 1, 2017. From October 1 to November 30, 98 patients were screened. Daily compliance rates for the screening tool varied from 20-100% with a mean of 57% in October and mean of 64% in November. In a sample of 10 patient charts, suggested actions for positive items were completed by nursing 75% of the time. 11 patients were interviewed to assess the validity of the nursing screen. Of those 11, five patients reported at least one geriatric syndrome during interview that was not identified on the nursing screen. Three out of these five cases involved pain prior to admission.

Conclusion: Implementation of a nursing screen for geriatric syndromes at admission to a surgical unit is feasible at our institution. Variation in implementation most often occurred on weekends or holidays. Since baseline pain was under-recognized on more than one occasion, coaching the nurses to more thoroughly assess for pain present prior to admission may improve the admission screen validity.
C71  
Melatonin Effect on Incident Delirium in Hospitalized Patients  
A. E. Krebs,2 G. Wolff,3 S. Ahmad,3 S. Fosnight,1 J. Drost,2 

**Background:** Sleep disturbances in hospitalized patients are common and have been associated with delirium. Delirium has been associated with poor outcomes (i.e., increased mortality, increased hospital length of stay (LOS), and prolonged cognitive deficits). According to previous research (and recently reaffirmed by a meta-analysis by Chen et al), melatonin administration had a significant preventive effect in decreasing delirium incidence in elderly patients in medical wards. The goal of this quality improvement (QI) study was to evaluate the use of melatonin in patients at high risk for delirium.

**Research Methods:** This retrospective QI study evaluated patients admitted April-June 2016. Inclusion criteria included age ≥ 65 years, positive six item screen for cognitive impairment (demonstrating increased delirium), and no delirium on arrival. Groups were divided: non-melatonin group (n=109) and melatonin group (n=107). These two study groups were compared using SPSS®24.0 software. There were no significant differences in risk factors for developing delirium between groups including age, gender, use of high-risk medication, and history of prior confusion. In the presence of insignificant risk factor differences (p>0.05 for all two-sided tests), outcomes were analyzed without adjustment for any confounding factor. Outcomes including hospital LOS, rates of new delirium, and in-house mortality were analyzed using Student’s t, Pearson chi-square, and Fisher’s exact tests, respectively.

**Results:** There was no significant difference in incidence of delirium, length of stay, or mortality between groups. In fact, although not statistically significant, worse outcomes were observed when using melatonin.

**Conclusion:** Melatonin use was not associated with reduced delirium rates which is in direct opposition to evidence presented in a recently published high-quality meta-analysis. This result was not anticipated and may be reflective of additional confounding factors (severity of illness, selection bias) that were not measured in this retrospective review. Results have prompted a prospective trial at our institution.


C72  
Quality assessment of warfarin management in an urban geriatric outpatient clinic  
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**Background:** Although proven efficacious, warfarin use is challenging due to its narrow therapeutic range and interactions with medications and foods. Warfarin is often implicated in emergency department (ED) visits for adverse drug events by older adults. We conducted a quality improvement project to improve anticoagulation control and prevent adverse events for patients on warfarin managed by a geriatric clinic in a safety net hospital in New York City.

**Methods:** We performed a retrospective chart review of patients on warfarin managed by the geriatric clinic at Bellevue Hospital from April 1st to September 30th, 2017. Inclusion criteria included taking warfarin for >6 months. Demographic information, medical history, medication use, bleeding or clot events, ED visits/hospitalizations, and frequency of non-guideline warfarin management were collected. Time in therapeutic range (TTR) was calculated for each patient during the study period by the Rosendaal method.

**Results:** Total 105 patients (mean age 78.8 ±SD 7.0 years; 52.4% women; 53.4% Hispanic, 24.8% Black, 12.4% Asian, 10.5% White; 9.5% with dementia; 3.8% homeless) underwent 1067 International Normalized Ratio (INR) tests. Indications for warfarin included: atrial fibrillation (75.2%), deep vein thrombosis and/or pulmonary embolism (12.4%), valve replacement (3.8%), left ventricular thrombus (3.8%), and 4.8% with ≥1 indication. The mean TTR for all patients was calculated as 65.5 ±SD 23.6% with 44.8% in excellent control (TTR >70%), 37.1% in intermediate control (TTR 50%-70%), and 18.1% in poor control (TTR<50%). During the study period, 58.1% of the patients were on a drug known to affect INR and 26.7% were on anti-platelet medication. Major bleed requiring hospitalization was seen in 1.9% patients, there were no stroke or clot events while 32.4% used the ED, and 15.2% were hospitalized. Non-guideline warfarin management (i.e different dosing on weekends) was noted for 21.9% patients.

**Conclusions:** The quality of warfarin management in a diverse older population was found to be adequate, but there are opportunities to improve. The next step is designing an intervention focused on patients with intermediate/poor TTR. The strategies identified include: intensive case management for patients with poor control and frequent ED use, education in different languages, minimizing non-guideline warfarin prescribing, and the identification of patients who may benefit from direct oral anticoagulants.

C73  
A geriatric fellow initiative to reduce the incidence of urinary tract infection in nursing home residents transferred to emergency departments  
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**Background:** Urinary tract infections (UTIs) are the most common infection in long term care facilities. UTIs are also a common diagnosis in emergency departments and represent a significant source of morbidity and antibiotic utilization. Educational initiatives have been targeted at long term care facilities to decrease the incidence of UTI through evidence based guidelines. However educational interventions have not been widely attempted in emergency departments. This research demonstrates that educational interventions directed at emergency room staff lead to more precise diagnosis of UTI, decreased incidence of UTI and improved antibiotic stewardship in nursing home residents transferred to emergency departments.

**Methods:** The study involved a chart review of 205 long term care residents of Villa Scalabrini nursing home. A chart analysis was performed of all residents transferred to 2 local emergency departments between June to August 2017. The residents diagnosed with UTI in local emergency departments were counted. An educational intervention was then directed at local emergency departments. Specifically, one hour powerpoint presentations were created and tailored to emergency department staff and physicians. The presentations used McGeer’s criteria to establish an evidence based protocol to diagnose urinary tract infection and improve antibiotic stewardship. Informatic cards listing McGeer’s criteria were placed at nurse’s stations. After the educational intervention, transfers of Villa Scalabrini residents to emergency departments were again analyzed over the period of November 2017 to January 2018. The number of residents diagnosed with urinary tract infection was compared to the pre-intervention period.

**Results:** During the pre intervention period, 15 residents were diagnosed with UTI in local emergency departments, of 50 total resident transfers. During the post intervention period, 10 residents were diagnosed with UTI, of 51 transfers. This represented a 2.3 percent reduction in UTI incidence amongst total residents of Villa Scalabrini
and a 10.4 percent reduction in UTI incidence amongst residents transferred to emergency departments.

Conclusion: An educational initiative directed at emergency department staff can lead to more accurate diagnosis of UTI, reduced UTI incidence and improved antibiotic stewardship.

C74
Replacing PHQ-9 with Geriatric-specific Depression Screening in an Academic Geriatric Clinic
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Background: Depression screening is commonly performed in primary care using the PHQ-2 and if positive, the PHQ-9. However, 5 of 9 PHQ-9 items are frequently seen in multi-morbid elderly patients who may not have depression (sleep and appetite changes, fatigue, difficulty concentrating, slow movement/speech). The objective of this Quality Improvement project was to implement a geriatric-specific depression screening tool in a system where systematic screening is recommended and the PHQ2/9 is the standard.

Methods: The Seniors Clinic is an academic geriatric practice within a large health system (UC-Health). The clinic has a QI committee, is a patient-centered medical home, and is in the Comprehensive Primary Care+ program (CMS). The process to change depression screening (April-November, 2017) is described. Before/after depression screening rates were obtained from EHR programs and a manual chart audit.

Results: A literature review was conducted, and providers were polled and discussed the topic by email and at meetings. When the PHQ-2 is positive, providers supported screening with the GDS-15 instead of the PHQ-9. Health system support was solicited and obtained, and the needed EHR programming changes were completed. The clinic’s Patient Advisory Group reviewed the process, and recommendations were made. The clinic’s QI committee prioritized this, and through multiple iterations and a pilot, a process was designed and implemented. Major challenges were due to unplanned turnover of clinic staff, resulting in non-adherence to protocol and delays. Depression screening improved as follows:

Pre, May 2016-May 2017: 97% of visits had PHQ-2. Of 200 positive PHQ-2s, 36 (18.0%) had a PHQ-9 completed.

Post, October 2017: 96% of visits had PHQ-2. Of 31 positive PHQ-2s, 20 (64.5%) had a GDS-15 completed. Chi-squared p<.0001.

Conclusion: A geriatric-specific depression screening tool (GDS-15) was successfully implemented in a geriatric clinic that is part of a large health system that used the PHQ-9. The implementation process was complex and is ongoing, involving multiple steps, including provider and health system buy-in, EHR changes, QI committee process development, piloting, staff training, and patient input.

C75
Frequency and Causes of 30-day readmissions of high-risk geriatric patients during a multifaceted care transitions intervention

Introduction: The Safe Transitions for At-risk Patients (STAR) program aims to decrease 30-day readmissions among high-risk hospitalized patients age 75 and older, and combines multiple care transition interventions that have shown some effectiveness in previous research. The purpose of this study is to describe frequency and causes for 30-day readmissions among STAR patients discharged to diverse post-acute settings.

Methods: High-risk patients were identified on admission to the hospital and received a structured geriatric evaluation and follow up care transition recommendations. High-risk criteria included admission within the past 30 days, acute mental status changes and/or dementia, shortness of breath, fall or syncope, volume depletion, and generalized weakness or failure to thrive. The usual discharge planning process was enhanced by pre-discharge visits with trained home health nurses and follow up discharge visits by these home health nurses and a nurse practitioner. A multidisciplinary team met every week to evaluate each case. 30-day readmission frequency and main causes of readmission across discharge settings were determined. Post-acute care organizations were trained to implement the INTERACT program. Results: Of the 194 patients who received the STAR intervention, 36 were readmitted within 30-day of discharge. 16 were from a SNF, 14 from home, 5 from an ALF, and one from an acute rehabilitation hospital. Common diagnoses associated with readmission included Pneumonia 5 (14%), Congestive Heart Failure 4 (11%), Gastrointestinal Bleed 3 (8%), Urinary Tract Infection 3 (8%), Atrial Fibrillation 3 (8%), Gastrointestinal Obstruction 2 (6%), Dehydration 2 (6%), and Aspiration 2 (6%). Factors associated with readmission included poor adherence to follow-up recommendations, onset of new conditions unrelated to the initial hospitalization, and lack of advance care planning and advance directives. Conclusion: Despite a multifaceted intervention, 30-day readmissions were common among high-risk patients older than 75. Additional strategies are needed to prevent readmissions in this population.

C76
Adherence to Transitions of Care Recommendations among High Risk Geriatric Patients during a Multifaceted Intervention Program

BACKGROUND: Among other factors, the effectiveness of transitions of care programs depends on the adherence with geriatric recommendations given to patients enrolled in such programs. The aim of this study is to assess adherence to care transition recommendations (CTR) during the implementation of a multifaceted intervention program targeting a high-risk geriatric population followed by a specialty trained nurse practitioner (NP) and home health nurses.

METHODS: Descriptive analysis of type and adherence rate to CTR within 30 days after hospital discharge among patients enrolled in the Safe Transitions for At Risk Patients (STAR) Program. Eligible patients received inpatient CTR in the following categories: goals of care, medications, functional/mobility, geriatric conditions, cognition, nutrition, and social support. Adherence was assessed during regular interprofessional clinical meetings using data collected during weekly patient assessments performed either face-to-face or via telephone.

RESULTS: A total of 219 high-risk patients were evaluated by our geriatric team before hospital discharge. Of those, 78 (36%) moved, died, refused home visits, went to hospice or were unable to reach. The remaining 141 patients received 942 CTR, of which 665 (71%) were followed. Medication related issues (n=192) followed by functional/mobility (n=190), geriatric conditions (n=184) and cognition (n=141) were the most recommended care transitions and the least followed (ranging from 61% to 72%). The least recommended CTR were nutrition (n=105), social support (n=74), and changes in goals of care (n=56), but were the most followed (ranging from 77% to 86%).

CONCLUSION: In a multifaceted intervention program that includes an NP and trained home health nurses, more than two thirds of all geriatric care transition recommendations were followed. This is as high or higher than reported in other geriatric populations. The rate of adherence is not associated with the frequency that each type of CTR.
C77 Increasing Access to Geriatric Care in a FQHC
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Background: The need for healthcare tailored to an aging population has outpaced the capacity of the current geriatrics workforce. Developing the geriatrics knowledge and skills of primary care practitioners (PCPs) in partnership with geriatricians would provide a sustainable model to expand access and meet this need. The object of our program is to expand access to geriatric care for older adults seen in a federally qualified health center (FQHC).

Methods: In 2016, the Yale GWEP, entitled the Connecticut Older Adult Collaboration for Health (COACH), established a geriatric consult clinic at Cornell Scott Hill Health Center (CSHHC), a large urban FQHC in New Haven, CT. CSHHC sees over 34,000 patients annually, of whom 67% have Medicaid, 10% are uninsured, and 30% have limited English proficiency. Within the health center, 7% (2,300) are ≥ age 65. In addition to providing consult services to the health center’s patients, a geriatrics mini-fellowship was created for CSHHC PCPs to increase proficiency in geriatric care. The fellowship was designed in a staggered manner to include one PCP in the weekly geriatrics clinic over 12 months. Outcomes included patients seen within the consult clinic and patients seen by PCPs who received training within the mini-fellowship.

Results: Among patients ≥ 65 years, 79 attended 131 visits to the geriatric consult clinic and 119 were seen in primary care by 2 PCPs participating in the mini-fellowship from March 2016 to October 2017. The consult clinic was challenged by a show rate of 62% (19% late cancellation, 17% no show) and language barriers for 44% of patients (42% Spanish, 2% other).

Conclusions: Implementation of a Geriatrics Consultation Service and a geriatrics mini-fellowship for PCPs is feasible in an urban FQHC and expanded direct access to geriatric care and indirect access to primary care aligned with geriatric care principles for older adults. Particular challenges include limited transportation, lower show rates, and English proficiency that is lower than the health center as a whole. To overcome these barriers, a community partnership to provide transportation services and a trained Spanish language interpreter were added to the clinic. Future work will examine the cause of low show rates and determine the impact of increased geriatric services on health outcomes in this population.

C78 Current Approaches to Cancer Screening with Older Adults
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Background: Recommendations for cancer screening and screening cessation in older adults vary. Guidelines are based on evidence from younger populations and do not address individual variations in life expectancy, comorbidities, functional status, or preferences. Although cancer-screening decisions for older adults should be individualized, the question of how to have this conversation, when to bring it up, and if there is enough time to approach complex, shared decisions with patients are all challenges faced by primary care providers (PCPs). There is little information on how PCPs currently approach these decisions in practice. This study involved a chart review to assess current approaches to cancer screening with patients age 75 and older.

Methods:

Charts in the Electronic Medical Record were reviewed to assess whether PCPs are recommending screening for breast and/or colon cancer in patients 75 and older, and whether or not there was a documented discussion about the decision to continue or discontinue screening. Patients were excluded if they had a history of breast or colon cancer, or if studies were performed for diagnostic or surveillance purposes.

Results: 100 charts were reviewed from a random sample of patients age 75 and older. Of 100 charts, 68% (n = 68) were female and 58% (n = 58) were African American. Of 68 female patients, 8 were excluded, 60 were potential mammography screening recipients and 43/60 (71.6%) had a mammogram completed at or after the age of 75. A discussion was documented for 8/60 (13.3%) patients, which usually involved patient preference. Of 100 patients, there were 58 potential colon cancer screening recipients, 42 were excluded, 8 (13.8%) had colon cancer screening performed at or after the age of 75. A discussion was documented for 7/58 (12.1%) patients, which usually involved patient preference.

Conclusion:

A majority (71/6%) of women had screening mammography performed at the age of 75 and older, yet there was documentation of shared decision-making in only 13.3% of those women’s charts. Colon cancer screening was performed in 13.8% of adults age 75 and older. There was documentation of shared decision-making in only 12.1% of those charts. There is ample room for improvement in standardizing an approach to and documentation of shared decision-making for cancer screening with older patients.

C79 Use of Cancer Screening Decision Aids with Older African-American Women
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Background: Little is known about the acceptability of cancer screening decision aids (DAs) among older African-American women. This study explored African American women’s understanding and willingness to engage in discussions about individualized decision-making about breast cancer screening involving life expectancy, benefits and harms of screening, and assessment of values and preferences, using two different DAs.

Methods: Semi-structured interviews were conducted in an urban geriatric primary care practice with African-American women age 75 years or older. One DA was paper-based and the other was on-line. Both DAs include a series of questions about age, health and functional status, as well as comorbidities, to determine a harm/benefit score for breast cancer screening. Both DAs present a list of pros and cons for whether to continue mammography screening; participants were asked to select relevant pros/cons, and could add their own.

Results: Twenty-four African-American women with a mean age of 83 participated. Twenty-nine percent reported having had a discussion with their provider about whether or not they should continue receiving cancer screenings. Most participants (60%) completing the DA did not need assistance, but 40% did. 66.7% of participants found the DAs “very helpful” in reflecting their thoughts towards cancer screening and 58.3% had no preference regarding the paper or online version. 75% of participants would be willing to complete the DA before a provider visit. Equal numbers of participants preferred a health educator versus a provider facilitating the cancer screening discussion. While the majority of participants reported learning something new from the DAs, most (52.6%) reported that the DAs did not change their thinking about cancer screening.

Conclusions: Older African-American women are willing to engage in discussions about whether or not to continue breast cancer screening and found decision aids helpful.
C80 Providers’ Views and Preferences about Cancer Screening with Older Adults
B. Salzman,1 J. Kim,2 A. Cunningham,1 A. Silverio,1 R. Sifri,1 1. Family and Community Medicine, Thomas Jefferson University, Philadelphia, PA; 2. Sidney Kimmel Medical College, Philadelphia, PA.

Background: Recommendations for cancer screening and cancer screening cessation in older adults vary, but there is general agreement that cancer-screening decisions for older adults should be individualized and that routine cancer screening is likely to have minimal benefit for older adults with limited life expectancy. Primary care providers’ (PCPs) recommendations are highly influential in whether to continue or discontinue cancer screening. The purpose of this study was to explore PCPs views and current approaches with cancer screening with older adults and identify preferences for implementing tools to help facilitate shared-decision making for cancer screening.

Methods: A semi-structured focus group was conducted with 8 PCP including 5 family physicians, 2 geriatricians, and 1 nurse practitioner. Interviews were audio recorded, and recordings were then transcribed and analyzed to identify key ideas and themes.

Results: PCPs shared on a variety of challenges to shared decision-making about cancer screening with older adults. Major themes included who brings it up and when is the best time to have these discussions; concern about patients’ understanding and response to discussions; lack of helpful information or tools to guide these discussions; automatic reminders in the EMR or from radiology; lack of time to have these discussions; and concerns about these discussions conducted by someone other than PCP.

Conclusion: PCPs identify a variety of challenges to shared decision-making about cancer screening with older adults. Standardized approaches and tools may be helpful for improving this process.

C81 Community-based Habilitation Therapy for Care Partners of Persons Living with Dementia.

BACKGROUND. Agitated behaviors of patients living with dementia lead to suffering, high risk medication usage, and hospitalizations. Habilitation therapy (HT) is a person-centered approach, developed by the Alzheimer’s Association (AA), designed to promote a positive outcome for daily interactions by focusing on patient’s strengths. By educating care partners, this training can reduce behaviors caused by unmet needs, ultimately reducing care partner stress.

Although this therapy has primarily been studied in nursing homes, there needs to be a greater focus on function. Further research and interventions are needed to assist these patients with the goal of safe discharge home to be able to continue to live in the community.

METHODS. The AA initially taught HT to the core team, and the lead social worker (SW) then disseminated the training to the healthcare workforce from December 2015 to August 2017. The SW received subsequent skills-building training in HT through Positive Approach to Care®, which allowed one-on-one coaching to inpatient staff, and care partners of patients with cognitive disorders who screened positive on a validated caregiver burden tool (Zarit score ≥8) at three community health centers.

RESULTS. Of the initial cohort (n=245) of patients seen by the SW, 90% (n=219) had a cognitive disorder diagnosis. A total of 126 care partners of patients completed a Zarit during their visit, about 28% of those (n=35) had high caregiver burden (scored ≥ 8). Fourteen percent (14%; n=31) of care partners of patients with a cognitive disorder were offered longitudinal coaching in Habilitation Therapy. Altogether a total of 409 care partners and health professionals were trained in this approach to meet unmet needs of persons living with dementia.

CONCLUSION. The GWEP project provided SW support to care partners for 219 pts with cognitive disorder under a fee-for-service model; due to logistic and staffing constraints only 14% of care partners were offered the longitudinal coaching in HT. The remaining pts were offered referrals to the local Alzheimer’s Association and local support groups. With increased SW and supportive staff intervention offering HT, another 188 care partners could have benefited from a potential reduction in antipsychotic medication usage, hospitalizations, increase in quality of life, as well as a reduction in care partner stress.

C82 Geriatric Consultation in Trauma Patients with Dementia
C. Jones, M. Cleveland, C. Mastroioppi. Wake Forest, Winston-Salem, NC.

Background: The geriatric patients admitted to the trauma service are vulnerable, and those individuals with dementia are especially so. Patient evaluation using a comprehensive geriatric assessment (including medical, psychosocial, and functional data) with appropriate treatment and follow up increases likelihood of patient being alive and in their own home one year after discharge by 25 percent.

METHODS: In the development of a geriatric consultation service to the trauma team, data was gathered regarding patients over the age of 70 admitted to the trauma service. Data was obtained from the trauma registry to further characterize the patients in regards to mechanism of injury, injury severity score, dementia status, length of stay, and discharge disposition.

RESULTS: From September 2016 to September 2017, 3638 patients were admitted to the trauma service, 993 (27%) of who were over the age of 70. In the patient population over the age of 70, 194 (20%) had a documented history of dementia. The most common mechanism of injury was ground level falls (531; 53%), and 117 (22%) of these individuals had dementia as a comorbidity.

In regards to discharge disposition, more patients without dementia were discharged home (38% vs 32%), and more patients with dementia were admitted to subacute nursing facilities (47% vs 38%).

Conclusion: Elderly patients with dementia on the trauma service would benefit from a geriatric consultation. During hospitalization, there needs to be a greater focus on function. Further research and interventions are needed to assist these patients with the goal of safe discharge home.

Discharge Disposition of Geriatric Trauma Patients

<table>
<thead>
<tr>
<th>Discharge</th>
<th>Dementia Diagnosis</th>
<th>No Dementia Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home (self-care)</td>
<td>62 (32)</td>
<td>300 (38)</td>
</tr>
<tr>
<td>Home (with services)</td>
<td>20 (10)</td>
<td>99 (11)</td>
</tr>
<tr>
<td>Long-term care</td>
<td>5 (03)</td>
<td>8 (01)</td>
</tr>
<tr>
<td>Subacute Nursing Facility</td>
<td>92 (47)</td>
<td>305 (38)</td>
</tr>
<tr>
<td>Rehab</td>
<td>1 (005)</td>
<td>30 (04)</td>
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<tr>
<td>Transfer Service</td>
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<td>1 (005)</td>
</tr>
<tr>
<td>Hospice</td>
<td>2 (01)</td>
<td>3 (06)</td>
</tr>
<tr>
<td>Not Admitted</td>
<td>1 (005)</td>
<td>1 (005)</td>
</tr>
<tr>
<td>AMA Discharge</td>
<td>1 (005)</td>
<td>0</td>
</tr>
<tr>
<td>Morgan</td>
<td>10 (06)</td>
<td>51 (06)</td>
</tr>
</tbody>
</table>

C83 Let’s Get It Right: Continuous QI to Improve Psychotropic Prescribing
C. Larrain,1, 2 R. Brooks,7 R. Kaiser,1, 2 E. Cobbs,1, 2 N. Lepcha.1, 2 1. George Washington University, Washington, DC; 2. Veterans Affairs Medical Center, Washington, DC.

Background: Evidence points to the harms of many psychotropic medications, specifically antipsychotics and sedative/hypnotics. Federal mandates require data collection in the Minimum Data Set to
be reflected in quality measures. We embarked on an interdisciplinary quality improvement effort to optimize psychotropic use in our 120-bed VA CLC.

Methods: From December 2013 to September 2017, an interdisciplinary team (IDT) of mental health, medicine, nursing and pharmacy professionals used the Plan-Do-Study-Act method for reducing psychotropic prescribing. Our population consists of mostly men, short and long stay, from rehabilitation to long term care to hospice, with complex mental health and medical conditions. The IDT met weekly to review medication use and indications for prescribing. The QI focused on developing a more systematic approach to reducing or avoiding psychotropic prescribing. Data were collected from the electronic medical record and reflected total psychotropic prescribing and the Centers for Medicare and Medicaid Services subclasses (antipsychotics, sedative/hypnotics, antidepressants, anxiolytics, and mood stabilizers). The percent of CLC residents on psychotropics (scheduled and prn) was calculated. Residents on at least 1 psychotropic were counted once, divided by census, and multiplied by 100 to determine percent of residents prescribed a psychotropic. Data from September 2013 (pre-QI intervention) were used as baseline.

Results: At baseline 60% of residents were prescribed psychotropics: 30% antipsychotic, 1% sedative/hypnotic, 47% antidepressant, 12% anxiolytic, 6% mood stabilizer. At the conclusion of the QI effort, 63% were on psychotropics: 23% antipsychotic, 6% sedative/hypnotic, 40% antidepressant, 11% anxiolytic, 22% mood stabilizer. While the percent of residents on psychotropics remained steady, there was a trend towards increased use of mood stabilizers and decreased use of antipsychotics. An unexpected outcome was the decline in the use of prn psychotropics although formal tracking was not conducted.

Conclusion: A sustained QI effort around appropriate psychotropic prescribing yielded a shift in the type of medications prescribed and a decrease in prn use. It also provided an opportunity for the IDT to systematize an important CLC practice and provide data trends for leadership to review.

C84 Percutaneous Endoscopic Gastrostomy Tube Patient Characteristics and Outcomes in Hospitalized Older Adults: A Retrospective Study
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Background: Benefits of percutaneous endoscopic gastrostomy tube (PEG tube) have been demonstrated for patients with head and neck cancer. There are less clear benefits of PEG tubes placed for other indications. Our objective was to assess patient characteristics and outcomes following PEG placement for indications other than head and neck cancer.

Methods: Retrospective data collection was done from electronic medical record to identify patients 65 years and older who had PEG tube placed while hospitalized at Hackensack University Medical Center, Hackensack, NJ from January 2017 to June 2017. Patients with head and neck cancer were excluded from this study. Information was collected for age, sex, BMI, and activities of daily living (ADLs) at time of PEG tube insertion. Charlson comorbidity index was used for risk stratification of the patients. Information was also collected for palliative care consultation during index hospitalization. Primary outcomes included hospital length of stay, in-hospital mortality, and 30-day readmission rate.

Results: 143 patients who had PEG tubes recorded, patients had full independence for 16.64% of activities, required assistance for 36.08% and complete dependence for 45.87% of activities. Average hospital length of stay was 27 days and in-hospital mortality was 13.01%. Palliative care consults were utilized for 28 patients (19.18%). 35 patients (23.96%) were readmitted to the hospital within 30 days.

Conclusions: Our data suggests poor outcomes in terms of patient mortality, 30 day hospital readmission and length of stay for older patients receiving PEG tubes. Despite significant medical comorbidities and functional dependence, only 19% of patients received palliative care consults. Future research direction should involve whether early palliative care consultation prior to PEG tube placement affects outcomes in high risk patients.
Discussion: This multidisciplinary approach suggests a framework can be established to increase surveillance for delirium in the postoperative period, and institute preventative interventions for high-risk patients prior to surgery. Through this ongoing study, we hope to analyze additional factors beyond medications that contribute to post-operative delirium.

C88 Changing the Culture of Delirium Care

Background: Delirium or acute confusion is commonly encountered during hospitalization and results in adverse outcomes. It is not an inevitable part of hospitalization, nor a transient, reversible condition without sequelae as once thought. The key reasons that clinicians fail to identify patients at risk for delirium are failure to use evidence-based screening tools and presence of pre-existing dementia and depression.

Methods: The project implemented both structured clinical support and comprehensive staff education to achieve its objectives. Clinical support included: 1) established an interprofessional delirium consult service whose consult is trigger by nursing assessment or individual free-standing order; 2) development of an EMR delirium order set, in which the nurse can activate non-pharmacological interventions; and 3) embedded the nursing screening scale in the nursing admission and shift assessment notes. The educational approach included: 1) self-directed pre-work; 2) simulated learning experience in which cognitive decline could be understood firsthand; and 3) skills fair focused on prevention, early identification, assessment, nonpharmacological interventions, documentation.

Results: Over two fiscal years, the clinical and educational efforts demonstrated effectiveness. Consult utilization rose from 165 to 444; pilot unit data shows continued downward trend in restraint hours and length of stay. In-hospital mortality rate for the consult service decreased from 7% (2016) to 5% (2017 YTD) and the 30-day readmission rate decreased from 28% (2016) to 22% (2017 YTD). 389 nurses completed all steps of the education program. 100% of the staff reported confidence in recognizing signs/symptoms of delirium, 97% felt confident in knowing interventions, 95% felt they would provide better care to delirious patients.

Participants reported statistically significant changes in attitude and increased sensitivity after their simulated learning experience.

Conclusion: To translate evidenced-based delirium care into everyday practice, structured clinical support and comprehensive education to frontline clinicians may be of benefit.

C89 Delirium Identification and Management on an Orthopaedic Unit
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Background: Delirium is an acute, fluctuating disturbance of consciousness, attention, and cognition. Postoperative delirium is recognized as the most common surgical complication in older adults, occurring in 5% to 50% of patients. Delirium is not only associated with an increased mortality, but also an increased hospital length of stay and likelihood of discharge to a nursing home. About 50% to 80% of delirium cases go unrecognized or undocumented by the treating clinical team.

Methods: A hospital orthopaedic unit was selected to pilot a delirium quality improvement project. The purpose of the pre-intervention phase was to determine the baseline incidence of delirium and/or cognition deficits in patients on admission and discharge with usual medical care. The staff received education regarding delirium and cognitive impairment, 3 of those 4 were male, and 0 were on high-risk medications.
**C90 Bridging the Gap: Enhancing Interprofessional Team Conferences in Community Health Centers with Geriatric Resources**

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**Background:** A Federally Qualified Health System developed monthly Interprofessional (IP) Case Conferences within their Community Health Centers (CHCs). The Indiana Geriatrics Education & Training Center (Indiana GETC) identified the absence of geriatrics IP cases within the Case Conferences and developed older-adult focused Conferences.

**Methods:** Indiana GETC provided a conference liaison, educators and older adult case conference training materials to initiate geriatrics IP older-adult focused Case Conferences in the CHCs. The liaison, a new position, obtained a list of patients to be discussed for each case conference and assembled representatives from community and health-system based programs to attend and participate in the Conference discussion. These representatives provided education on services, geriatrics educational materials, and case conference training tools, can increase utilization of local geriatrics services for older adults and enable CHC teams to include case conferences in their care processes for older adults.

**Results:** Refer to table

**Conclusions:** As expected, the elective joints had the lowest occurrence of delirium. This is most likely related to a healthier patient selection and shorter hospital stays. The literature suggests a higher occurrence of delirium in hip fracture patients, which was corroborated by this study. The lack of significance with the intervention may relate to the small numbers in the post intervention group. The medical patient subgroup did show a significant decrease in delirium post intervention and a downward trend in length of stay.

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Mini-Cog Percent</th>
<th>CAM Percent</th>
<th>Dementia Percent</th>
<th>Length of Stay</th>
<th>P&lt;</th>
<th>df</th>
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</thead>
<tbody>
<tr>
<td>Pre n=67</td>
<td>6.3</td>
<td>1.5</td>
<td>0</td>
<td>2.1</td>
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<tr>
<td>Post n=41</td>
<td>2.6</td>
<td>1.0</td>
<td>0</td>
<td>1.8</td>
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<tr>
<td>Pre n=10</td>
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<td>30.0</td>
<td>10</td>
<td>4.0</td>
<td></td>
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<tr>
<td>Post n=55</td>
<td>37.3</td>
<td>21.8</td>
<td>9.1</td>
<td>4.0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Statistically significant

**C91 Exploratory Study of Community-Based Screening for Early Detection of Age-Related Health Changes in Agricultural Workers in Rural Eastern North Carolina**

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**Background** Agricultural workers are the foundation of rural communities across the country and account for the majority of workers in eastern NC. Farming, fishing, and logging have the highest mortality in the US while the average age of these workers continues to rise. Fatalities in each profession rose 10 percent from 2008 to 2015 with the highest rate of fatalities among workers age 65 and older. Early detection of age-related health changes can prevent or delay development of disease. Loggers, fishers and farmers are a hard-to-reach population. Community screening is a viable methodology for improving population health. **Research Question** Does community-based health screening for hard-to-reach older adult agricultural workers provide early detection of impairment that could impact worker health and safety? **Method** Convenience sample of 614 agricultural workers: 386 farmers, 24 loggers, 23 fishers, 181 other. Health screenings performed by RNs in community settings: Mini-Cog, STEADI, PHQ2 depression screen. Time-space sampling used through community-based organizations. Those with abnormal findings were referred to their primary provider or given contact information for clinical sites in the area that accepted patients with and without insurance. **Results** 13.5% of the 614 workers had positive findings on 1 or more screening. Abnormal findings on the PHQ2/Mini-Cog peaked age 60-70. Abnormal findings on the STEADI increased with age. **Conclusion** Community-based screening provided access to hard-to-reach agricultural workers. Identifying abnormal findings in cognition, balance, mood enables early-intervention and promotes safety for aging workers. Continued GWE intervention will expand knowledge about workers as they age.

**References**


**C92 Improving the Safety of Chronic Opiate Prescribing in the Geriatric Ambulatory Clinic**

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**Background:** Opioid use, abuse, and adverse consequences, including death, have escalated at an alarming rate since the 1990s. Older adults are particularly at risk of these opiate side effects. In 2015, CDC guidelines were published to guide safer prescribing of opioids. Recognizing practice variation in opiate prescribing within our academic geriatric ambulatory clinics, we aimed to improve the safety of opiate prescribing with a focus on chronic opiate use (>3 months).

**METHODS:** A retrospective chart review of outpatient opiate prescribing among 7 geriatricians was performed with analysis of
opiate dose prescribed, completion of pain contract, use of urine drug screen, and concomitant sedative prescribing. To address gaps in practice, several interventions were designed including an opioid clinical practice policy, extensive provider education, EMR smart phrases, as well as patient education materials. Background data was measured November 2016 through January 2017. Interventions commenced February 2017.

RESULTS: At baseline, an average of 72 discrete patients received opiates each month. Average age of patients followed was 82 years with 70% female. With the described interventions after 6 months of project implementation, pain contract use rose from 4.1% to 45.3% with UDS use increasing from 13% to 30.2%. Total prescriptions for opiates have fallen from baseline 72 patients to current 53 patients. Patients with moderate and high dose opiates (>50 morphine milligram equivalents) dropped from baseline 18.6% to 16.9%. On the other hand concurrent use of benzodiazepines increased from 15.8% to 17% post-implementation.

CONCLUSIONS: With extensive education and feedback about safe prescribing of opiates, we have seen substantial improvements in our safe prescribing practices. Through continued auditing and provider ownership of their practice panel, we aim to drive continued improvement. Next steps include attention to de-prescribing of concurrent benzodiazepines. Opportunities exist to collaborate with other primary care practice groups to enhance safe opiate prescribing across the university.


C93
Can a Score Accurately Predict Readmissions in Geriatric Patients with Congestive Heart Failure?

Background: Congestive heart failure (CHF) affects 5.7 million Americans. It is considered the main cause of readmissions in adult population, associated with 134,500 readmissions annually. The LACE index is a commonly used tool to identify patients at risk of readmission or death within 30 days after hospital discharge.

METHODS: This is a retrospective study, we analyzed Electronic Medical Records of geriatric patients admitted with diuretic non-response with elevated BP. Patients who had at an initial elevated BP, normalized after recheck. The most common reason for elevated readings reported was anxiety/agitation in both pre and post intervention cohorts.

CONCLUSIONS: With the recently updated definition of HTN and management guidelines, it is important for providers to accurately assess BP, to make sure patients are accurately being identified as having uncontrolled HTN. Geriatrics patients may not be appropriately triaged and thus unnecessarily deemed to have uncontrolled HTN, leading to polypharmacy and complications of low BP. The QI process implemented in this clinic, was simple and provided an improvement in properly diagnosing uncontrolled HTN as well as assessing the etiology to be addressed.

C95
Delirium Quality Improvement (QI) Project in a Skilled Nursing Facility

Background: Minimal research has been done on delirium in post-acute care (PAC). Prior studies estimate delirium prevalence ranges from 5.5% to 51% of patients admitted to PAC. Various studies demonstrate an increased risk of rehospitalization and falls. A recent study used the Minimum Data Set (MDS) admission assessments, specifically the CAM, to identify the rate of delirium at PAC admission. Delirium was identified in 4.3% of new PAC admissions, which they felt was an underestimate. Study outcomes found that PAC patients with delirium had increased mortality within 30 days of PAC admission, increased length of stay, and were less likely to improve
in physical function at discharge. At least 50% of delirium cases go unrecognized by the interdisciplinary team (IDT) if formal delirium screening tests are not performed. The objective of this QI project was to improve the detection of delirium and dementia in patients admitted to PAC and determine how well the hospital communicated a diagnosis of delirium on transfer.

Methods: 1. Skilled facility staff received a 2 hour education session on delirium, including education on CAM and Mini-Cog administration. 2. Baseline descriptive data collected included hospital transfer diagnosis and if the patient had a history of delirium or dementia. 3. 47 patients admitted and discharged from PAC (August - October 2017) were screened with a CAM on admission and a mini-cog. All patients with a + CAM or mini-cog continued to be screened with a CAM 3 days weekly

Conclusion: Delirium is very common on admission to PAC and associated with worse outcomes. The medical community needs to improve delirium recognition in both the hospital and PAC to ensure timely delivery of appropriate care. If delirium or dementia is identified in the hospital, that diagnosis needs to be communicated on transfer to PAC to optimize plan of care and patient outcomes.

C96 Implementation of a Volunteer-Based Hospital Visitation Program for Older Adults
E. Collins, K. Swartz. Family Medicine, Div of Geriatrics, Thomas Jefferson University Hospital, Philadelphia, PA.

Background: A multi-faceted, volunteer-led, hospital-based program has been shown to reduce the incidence of delirium, decrease length of stay, and reduce hospital costs\(^1\). Implementation of such a program requires upfront investment. It is our hope that a smaller, volunteer-based visitation program for older adults will provide support for the allocation of more hospital resources in delirium prevention. This research aims to investigate if the implementation of a visitation program is feasible and to evaluate participant experience with the program.

Methods: This pilot program took place on a surgical floor in a large, urban academic medical center. Volunteers were recruited and trained to complete structured activities based on the Hospital Elder Life Program with patients referred by nursing staff. Volunteers completed a questionnaire about their visit with each patient. Data from the questionnaires over the pilot period were compiled, including quantitative and qualitative measures.

Results: 19 volunteers were trained over three sessions. 30 patient visits with 21 patients were conducted during the pilot period. Each volunteer saw 2.5 patients on average during a 3 hour session. 64% spent fewer than 30 minutes with each patient. 9.5% of patients declined a visit with volunteers. 86% of patients were seen once during the pilot period. Puzzles and orienting conversations were the most common activities done with patients. Comments from volunteers included concerns about patient well-being and suggested other possible activities to incorporate into the program.

Conclusion: There was robust interest in the volunteer training among the hospital’s volunteer staff. The majority of patients was seen for fewer than 30 minutes and only once throughout their stay. Because of this, volunteer training will be focused at directing volunteers to maintain continuity with patients and engage them more fully during the visit. Further research is needed to determine the program’s impact on delirium rates. This research provides evidence that it is feasible to implement a volunteer-based visitation program.


C97 Quality Improvement: medications during care transition to the nursing home
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Background: Medication errors are errors in the prescribing, dispensing, administration, and monitoring of medications. These errors have the potential to cause an adverse drug event. Medication errors are prevalent in nursing homes and at times of care transitions across settings. In this project we aimed to measure and reduce the frequency of medication errors on transition to post-acute care, with a focus on antibiotics.

Methods: We conducted a retrospective chart review of patients transferred to a single post-acute care facility on a service run by academic geriatricians. We reviewed all consecutive patients admitted to our service over a seven week period from 1/30/17- 3/16/17. We included patients that were both new admissions and re-admissions to our service, and that were transferred from any inpatient hospital setting. We collected data on the hospital length of stay, date and time of discharge, and medications on the discharge list. Additional information was collected on antibiotics, including the route of administration, date/time of last dose received, date/time of first administered dose of antibiotics at the facility, and the calculated time of delay to antibiotic administration. We also collected data on any additional medications with delayed administration.

Results: Of 23 patients transferred during this time, 7 (30.4%) were discharged on at least one antibiotic. 100% of those patients had a delay in receiving their first dose of antibiotic at the nursing facility, with an average delay of 14.36 hours. 15 of 23 (65.2%) missed doses of other non-antibiotic medications, an average of 3 medication doses per patient. The most common cause identified for this delay was not having the medication available the evening of admission.

Discussion: CMS mandates that facilities should be free of medication error at a rate of 5% or greater, and that residents should be free of any significant medication error. We found that missed or delayed doses of antibiotics during the time of transfer to the nursing facility were very common at our facility. This should be a focus of further quality improvement efforts to identify specific factors leading to missed dosing, and instituting interventions to prevent such errors. Possible interventions include utilizing pre-discharge communication with the facility, investigating stocked medications available in the facility, providing nursing education to staff, and directly transmitting medications to the pharmacy.

C98 Nursing Home Calls: What To Do When the Sugars Are Too High or Too Low?
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Background: Many older adults with diabetes cared for in nursing homes (NH) are treated with sliding scale insulin (SSI) and oral hypoglycemic medications. A standardized approach to the management of abnormal blood glucose (BG) levels in the NH is lacking. We describe the frequency of calls for hyperglycemic and hypoglycemic episodes at two large academic NHs; the types of interventions implemented, and the proportion of residents with hypoglycemia on SSI.
Methods: Geriatric medicine fellows take nursing home call between 6pm-7am on weekdays and from 1 pm-7 am on weekends/holidays. Calls are documented in standardized medical sign-outs. Calls from 08/2017-10/2017 were reviewed and information from all calls related to BG was collected (age, sex, location, time of call, reported BG, symptoms, current diabetes medication, management of BG, frequency for calls, frequency of repeat events). Hypoglycemia was defined as a BG level of <70 and hyperglycemia was defined as a BG level >400.

Results: There were 51 calls regarding BG levels (37 hyperglycemic, 12 hypoglycemic, and 2 calls requesting scheduled insulin be held). 26 calls were from post-acute care, and 25 were from long term care. For 30 of the 37 hyperglycemia calls, the call resulted in no change in management. In 5 calls, SSI was added or increased, in 1 call the timing was changed, and in 1 call, the patient declined the SSI. In 2 cases, the timing of the repeat finger stick was changed. In 4 cases (3 patients) there was a repeat call for hyperglycemia within 24 hours during the fellows’ nursing home call coverage; two of these patients did not have SSI and one patient did. Two patients had their long acting insulin. Six of the 12 hypoglycemic events were symptomatic; the interventions tended to be either insulin reduction, skipping the next insulin dose and/or orange juice with glucagon or dextrose. Eight of these patients had short acting insulin scheduled for meal times.

Conclusion: Given the extreme variability regarding management of abnormal BG levels in both post-acute and long-term care settings, it is important to standardize the approach to managing hyperglycemic and hypoglycemic events in the nursing home setting. Our findings of frequent calls for hyperglycemia will inform an evidence based, standardized approach to managing abnormal blood sugars in this setting.

C99
Home Health Care Nurses’ Perceptions of Health Information Exchange and Medication Management at Hospital Discharge
E. Sarzynski, M. Ensberg, L. Houdeshell, C. Given, K. Brooks. Michigan State University, East Lansing, MI.

Background: The lack of inter-operability among electronic health record (EHR) systems between hospitals and home health care agencies create gaps in care coordination and medication safety. Despite patient safety initiatives to improve medication management during care transitions, prior research largely neglects older adults in home care settings.

Methods: We conducted focus groups with home health care nurses employed by a single healthcare system that uses two different EHR vendors – Epic in the hospital and McKesson in home care. We assessed nurses’ education, experience in home care, and confidence using EHRs at baseline. We analyzed interview transcripts using standard qualitative methods to identify themes and subthemes.

Results: Nineteen home health care nurses participated in one of four focus groups in 2017. On average, participants were female nurses in their mid-50s with an Associate’s Degree in Nursing and 15 years of experience in home health care. Nearly 25% reported lacking confidence in using EHRs. Nurses reported medication management as a critical challenge to safe hospital-to-home-health-care transitions. Additional themes included incomplete communication, issues with technology, obstacles during weekends, and patient-related factors (e.g., limited health literacy, unreliable family caregiver). Regarding medication safety, nurses identified five key barriers to medication management in home care: 1) discordant EHR-generated medication lists, 2) issues clarifying regimens, 3) barriers to filling medications, 4) complexity of medication self-management, and 5) side effects affecting quality of life (e.g., diuretic dosing schedule and urinary incontinence).

Conclusions: Our interviews with home health care nurses identified poor medication management as a critical safety concern resulting from lack of inter-operability between hospital and home health care EHRs. Future work will systematically address each of the five barriers to safe medication management in home care.

C100
Quality Improvement: Increasing Diabetes Knowledge in Geriatric Patients at a Safety Net Hospital
E. S. Maurer, M. Hamaoui, M. Rau, S. Ajmal, A. Segoshi. Medicine/Geriatrics, NYU School of Medicine, New York, NY.

Background: In 2015 there were 30.3 million diabetics in the US, 25% over age 65. Diabetes self-management training (DSMT) is a proven education method. In prior surveys, 69% of diabetic patients in our clinic identified lack of diabetes education as a barrier. The objective of our QI project was to increase diabetes mellitus (DM) knowledge by 25% in adults aged ≥65 in the Geriatrics Clinic by delivering 30-min DM education conferences.

Methods: Our target population was diabetics aged ≥65 from the Geriatrics Clinic at Bellevue Hospital Center, a safety net hospital in NYC. Selection was based on diagnosis of DM irrespective of HbA1c level. DSMT intervention consisted of 30-min interactive conferences with content obtained from validated resources. Sessions were conducted in English and Spanish; patients were provided a self-management booklet. Evaluation consisted of a pre- and post-test conducted before and after each session to assess knowledge as well as qualitative measures of living with DM. Demographics and HbA1c were collected by chart review. Our study was observational and the primary outcome was the post-test result.

Results: Five conferences were held with a total attendance of 12 patients and 11 completed evaluations. Mean age was 77, all patients had a baseline HbA1c <8%, and 18% completed the activity in Spanish. Average score was 42% correct for the pre-test and 73% for the post-test. All tested domains of DM knowledge improved (Table 1). Endpoint to increase knowledge by 25% was exceeded. 63% of participants “agreed” living with DM was stressful while 18% “strongly agreed”.

Conclusions: Our intervention was made easily available with material tailored to the special needs of our targeted geriatric patients. Results showed that DM knowledge improved after an interactive education activity. This can potentially improve patient satisfaction in our population as well. A limitation is that all participants are considered controlled according to target HbA1c for age. Next step is to target poorly controlled patients.

Table 1: Proportion of correct responses in pre- and post-tests

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<tr>
<th>Question Content</th>
<th>Pre-test Correct</th>
<th>Post-test Correct</th>
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<tr>
<td>Concept of DM</td>
<td>27%</td>
<td>64%</td>
<td>37%</td>
</tr>
<tr>
<td>Concept of HbA1c</td>
<td>55%</td>
<td>82%</td>
<td>27%</td>
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<tr>
<td>Symptoms of hypoglycemia</td>
<td>45%</td>
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<td>28%</td>
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<td>Choosing appropriate plate proportion for DM</td>
<td>36%</td>
<td>64%</td>
<td>28%</td>
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<tr>
<td>Choosing appropriate beverage for DM</td>
<td>45%</td>
<td>82%</td>
<td>37%</td>
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</table>

C101
What is a medication-related problem?: Patient and physician perspectives
F. Nicosia,1 M. J. Spar,1 M. Steinman.1,2 1. UCSF, San Francisco, CA; 2. SF VA Med Ctr, San Francisco, CA.

Background: Older adults often take multiple medications, leading to a myriad of medication-related problems. Yet there is limited information on how patients and physicians define and experience these problems. We conducted a qualitative study to understand the attitudes and opinions of older adults and physicians about medication-related problems.

Methods: We conducted semi-structured interviews with 20 patients age ≥65 years, recruited from an academic medical center and community senior center, who reported having a medication problem. We also conducted 3 focus groups with 14 primary care physicians from an academic medical center. Interviews and focus groups
focused on understanding patients’ medication-related concerns and efforts to address concerns in primary care. We analyzed transcripts iteratively using thematic analysis.

Results: Three themes emerged, often with differing views between patients and physicians. First, patients focused on problems such as current and potential long-term side effects, uncertainty about effectiveness, and the impact of medications on day-to-day life, while physicians focused primarily on their own challenges with ensuring proper use of prescribed medications such as managing patient adherence and medication reconciliation. Second, patients conceptualized the scope of medication-related problems more broadly than physicians, including that medication taking is inseparable from the larger social and emotional context of life. Third, a common theme underlying many responses by both patients and physicians was breakdowns in communication. Patients’ communication-related concerns often focused on information gaps exacerbated by difficulty discussing concerns with primary care providers, while physicians expressed frustration communicating with patients as well as with multiple prescribers and pharmacies.

Conclusions: Patients and physicians expressed discordant views about the definition and scope of medication-related problems. These problems were exacerbated by communication challenges at multiple points along the healthcare continuum. Patient-centered interventions to address medication concerns for older adults must broaden the scope of problems to account for the social and emotional context of patients’ medication-related problems and focus on improving communication between patients and physicians and across the healthcare system.

C102
Addressing Falls in Older Adults in a Primary Care Practice: Comprehensive Primary Care Plus Initiative

Background: Falls are a leading cause of morbidity and mortality in older adults. Efforts to systematically screen for fall risk in primary care practices is critical for improving patient safety. Falls risk is one of the reporting requirements of the Centers for Medicare and Medicaid Services (CMS) Comprehensive Primary Care Plus (CPC+) initiative.

Methods: We describe the process of developing a program to assess falls risk in older adults at a university-based primary care practice as part of the CPC+ initiative and present initial results. Data results were extracted from the electronic medical record (EMR) identifying all patients 65 years and older who had an office or home visit between 1/1/2016 and 12/31/2016.

Results: An interdisciplinary project team was formed to examine different ways of fall screening, review potential work flows, and develop an EMR discoverable field capture form to extract data. Falls screening questions were asked during the rooming process. Of those positive, a get up and go test was performed and a falls prevention office visit was scheduled. Prior to the initiation of the program, there was no process in place. Of the 1673 patients 65 years and older, 4.48% were asked the falls screening questions. An additional 4.24% were identified after May 1, 2017 based on clinician qualitative risk assessment. Furthermore, we saw that the length of stay was also slightly reduced (about 1 day on average)

Conclusions: These preliminary findings suggest that by targeting high-risk older adults and engaging an interprofessional team reduces healthcare utilization.

C104
Avoiding the hospital: Preventing Readmissions
G. Fujikami, A. Smith, C. Lee, N. Gopalan. Geriatrics, Santa Clara Valley Medical Center, San Jose, CA.

BACKGROUND: Concern over hospital readmissions has been increasing recently, especially in the elderly population, which tends to be the sickest and most medically complex. This is due not only to financial concerns but also increases in medical complications for which the elderly are at risk, including delirium and worsening functional status. Due to multiple reasons, including difficulty with compliance and lack of support, the elderly are at increased risk for readmissions soon after discharge. As a result, many hospitals and insurance systems have been implementing innovative ways to address this issue. We present one such way in an outpatient Geriatrics clinic that is part of a diverse county medical system.

METHODS: We designed a team-based intervention for patients who were recently admitted to our county hospital and discharged home. Members included physicians, registered nurse, pharmacist, and social worker. Once notified of a hospital discharge for one of the clinic’s patients, the nurse would call the patient to set up a close follow-up appointment, usually within 2 weeks and review the discharge instructions, including medications, labs, and specialty appointments. Medical social worker and pharmacist would be

C103
Reducing Healthcare Utilization in High Risk Older Adults: The Impact of an Interprofessional Care Team
G. Hennawi, O. Courtin, E. Crowley, N. Brandt. 1. Center for Successful Aging, Good Samaritan, Baltimore, MD; 2. Pharmacy Practice and Science, Lamy Center on Drug Therapy and Aging, Baltimore, MD.

The Center for Successful Aging (CSA) is an ambulatory geriatrics practice, which has approximately 1,000 active patients. The Center specializes in the care of older adults with complex medical and psychosocial needs by providing interdisciplinary, person-centered care and using a hybrid model for risk assessment. A primary focus of the CSA is the provision of risk-stratified care coordination in the form of outbound telephone calls, remote monitoring, and home visits to proactively address minor changes in health status before the patient’s condition becomes unstable. The Center hypothesizes that providing appropriately scaled interventions in the outpatient setting, can reduce the overall cost of care for its patients. The objective is to describe the preliminary impact of the team based approach on healthcare utilization for high risk older adults.

Methods: This is a retrospective review of patients who have been identified after May 1, 2017 based on clinician qualitative risk screening as well as quantitative data based on healthcare utilization. This is a 3 month pre and post study design to evaluate the impact of the team based approach on healthcare utilization within the MedStar Health System.

Results: There was a total of 44 patients who met the criteria and had complete data for this time period. The patients had a median age of 82.5 years and 77% were female. It was a diverse group noted by 57% black, 41% white and 2% Asian and 41% were widowed. Comorbidity was described by the presence of CHF (43%), Diabetes (43%), Dementia (39%) and COPD (18%) with 84% have one or more of these illnesses. On average, patients were taking about 11 medications per person. When looking at hospitalizations, there was a reduction from 29 to 13 which was a 33% difference since enrollment. Additionally, there were less ED visits and no impact noted on observations. Furthermore, we saw that the length of stay was also slightly reduced (about 1 day on average)

Conclusions: These preliminary findings suggest that by targeting high risk older adults and engaging an interprofessional team reduces healthcare utilization.
available as needed to assist with medical education, polypharmacy, insurance issues, as well as complex care planning and providing psychosocial support. We obtained data looking at our readmission rate compared to the general internal medicine clinics. We also administered a verbal questionnaire to those recently hospitalized, assessing for knowledge and compliance with changes in medications, follow up blood tests, and appointments.

RESULTS: Our 30-day readmission rate in the Geriatrics clinic was 11.48%, compared to 15.33% in the general internal medicine clinics. Over 9 months, 22 Geriatrics patients completed our questionnaire. Of the 22, 14 were seen by their physician within 2 weeks and only 2 were readmitted to the hospital. A few patients were confused about their hospital discharge plan, which our team addressed.

CONCLUSIONS: Our current hospital readmission protocol which involves close follow-up and education with a multi-disciplinary Geriatrics team helps decrease hospital readmission rate in a Geriatrics clinic compared to general Internal Medicine clinic. This intervention can be implemented in other settings.

C105
Transmittal of advance care planning information across the continuum using an Epic-based electronic medical record (EMR) for skilled nursing facility patients (SNF) at high risk for readmission and mortality
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Approximately 20% of patients discharged from the hospital will go to a SNF for rehabilitation. Many are at high risk for readmission and death. SNF providers should ensure advance care planning discussions occur and information is transferred across the continuum. The objective of this study is to identify how well advance care planning information is transferred across the continuum of care. An audit was performed on 65 patients discharged from the University of Michigan Subacute Rehabilitation Services in the month of June 2017. We conducted chart reviews on 26 patients with a LACE (a validated risk assessment tool based on length of stay, acuity, comorbidities, and emergency department visits) score of 13 or greater. Those with a LACE score 13 or greater have a potential readmission rate of 20.6% and a 5.8% mortality within 30 days of discharge from the hospital. We abstracted the following: code status documented in hospital discharge summary, advance care planning information in the advance directive tab in the Epic-based EMR. We abstracted the following: code status documented in hospital discharge summary, advance care planning information in the advance directive tab in the Epic-based EMR. 37% patients had a LACE score 13 or greater. 15% of high risk patients had no code status documented in the discharge summary to the SNF. 58% of the high risk patients desired Full Code status. 27% desired Do Not Attemp Resuscitation status. Only 38% of high risk patients had Durable Power of Attorney information filed under the Advance Directive tab in the EMR. 62% had no information in the Advance Directive tab.

The Advance Directive tab in the Epic-based EMR was created to communicate information regarding advance care planning in an efficient manner across the inpatient and ambulatory settings. A minority patients had Durable Power of Attorney information filed under the Advance Directive tab, and the majority of high risk patients had no information in the Advance Directive tab.

To effectively care for complex patients across the continuum, providers in the SNF should ensure the completion of advance care planning for those at highest risk for readmission and mortality in the 30 days post-discharge. The rehabilitation stay is an opportune time for patients and caregivers to participate in these discussions. The transmittal of advance care planning information ensures that the patients will receive appropriate patient-centered care across the continuum.

C106
Geriatric Resource Team Training: Engaging Primary Care Practices in Improving Care of Older Adults


Background: The Duke Geriatric Workforce Enhancement Program aims to improve care of older adults with partnerships among geriatricians, community organizations and primary care practices (PCP). A key strategy was the formation of Geriatric Resource Teams (GRTs) that would address the geriatric workforce shortage by cultivating expertise in care of older adults and quality improvement (QI) methods.

Methods: We recruited PCP to form GRTs that participated in training on interprofessional (IP) collaborative practice, geriatric best practices, community agencies, and QI methods. Each GRT carried out a QI project. The program evaluation used a mixed-methods approach including (1) engagement in program activities, (2) perceptions of IP “teamness” (ACE-15) (3) Self-efficacy and qualitative feedback, (4) QI Knowledge Application Test (QIKAT), and (5) QI project evaluation.

Results: Four practices included a PACE, a FQHC, a home-based primary care practice, and an ambulatory practice site for Internal Medicine Residents. Among these practices we had 21 unique participants representing 8 professions. Between 1 and 8 people per GRT participated in each activity. There was significant improvement overall (p<.001) and on 12 of 15 items of the ACE-15 (p<.05). Almost all (83%) of participants were satisfied with the training. QIKAT data were incomplete, but revealed a trend towards improvement. Challenges to participation included staff shortages, clinical workload, and a need for data support. Despite the challenges each team successfully completed a QI project.

Conclusions: Participation in the GRT Training improved perceptions of “teamness” and facilitated the successful completion of QI projects. PCP valued being a part of the collaborative learning community but cited challenges in finding time and resources to participate. Results of the first cohort of GRTs has informed program revisions for training a second cohort.

C107
Evaluating Impact of Direct Interdisciplinary Team Hours of Care Among Hospice-enrolled Older Adults with Terminal Illness

Background: Hospice improves quality of care for terminally ill patients and their families. Medicare hospice benefit is associated with fewer hospital based services at the end-of-life therefore reducing Medicare expenditures. Hospice revocation/disenrollment increases health care use and Medicare spending. Determining the services that decrease revocation/disenrollment may improve care and cost-effectiveness. The study objective is to assess if an increase in total service hours will reduce the rate of revocations of hospital admissions and determine if an increase in a type of service will reduce the rate of revocations.
Methods: We collected data from VITAS Hospice San Antonio through a retrospective chart review of patients aged 65 and older between 2016 and early 2017 who were discharged alive, transferred, revoked or died. Terminally-ill patients who received routine home care, inpatient respite or skilled nursing facility care were evaluated. Variables included home health, nursing, respiratory therapy, social work and chaplain services comparing service hours and revocations.

Results: A total of 238 subjects identified (105 male and 133 female). Patients revoked accounted for 18.91%. Subjects who revoked/disenrolled from hospice had significantly fewer total chaplain service hours (p-value=0.0135), nursing hours/week (p-value=0.0068) and chaplain hours/week (p=0.0067). There was no significance with social work and respiratory therapy hours. Patients revoked had an average total service hours/week of 6.02±4.94, while the standard group showed an average total service hours/week of 9.33±14.41 and statistically significant with p-value=0.0004.

Conclusion: A slight increase in total interdisciplinary team service hours per week reduced the rate of revocations and hospital readmissions. The increase in hours per week of nursing, home health care, and chaplain services also reduced the rate of revocations.

By increasing the number of total service hours, the number of hospice revocations can potentially be reduced saving Medicare expenditures.

C108
Older Adult Perspectives on Use of Electronic Health Record Advance Care Planning Tools
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Background: Only 33.4% of US adults have completed legal documents to appoint a medical durable power of attorney (MDPOA). In our healthcare system, MDPOA completion is ~16% for primary care patients. We implemented online patient portal tools for advance care planning (ACP), including an electronic MDPOA form. This project evaluates use, feasibility and perspectives of older adults for the patient portal ACP tools.

Methods: We used mixed methods to evaluate the first 5 months of use of ACP tools (e.g. webpage, online messages, and MDPOA form). There was no promotion of the tools but they are available to ~290,000 patients with a patient portal account. Among older adults (age 60+), we assessed patient characteristics, type of ACP interaction, and details related to healthcare decision maker documentation. We conducted telephone interviews with older adults who used the online ACP tools, focusing on usability, experiences, and reasons for use. Thematic analysis used a mixed inductive and deductive approach to identify key patient perspectives.

Results: 936 patients used the ACP tools through the patient portal, including 197 (21%) age 60 and older (range, 18 to 98 years). Older adults were mostly female (56%). 157 (80%) older adults completed a MDPOA, 12 (6%) called in or sent messages, and 26 (13%) patients viewed the MDPOA form but did not complete it. Of those who completed a MDPOA, 54% had no prior documentation of a decision maker, 31% had only an orally appointed decision maker, and 15% had an MDPOA on file. We conducted 14 interviews with older patients. Patients described the tools as accessible and time efficient to use, including completing an MDPOA. Patients described multiple reasons for completing an MDPOA, including: prior experiences relating to decision making at end-of-life; living with chronic illness; wanting to simplify plans for family; and wanting to prepare for unexpected situations for their peace of mind.

Conclusions: Older adults used online ACP tools without promotion and described the tools as user-friendly and efficient for completion of an MDPOA form. Patients were motivated to complete MDPOA forms based on personal experiences and desires to plan for future situations using the accessible patient portal-based tools. Next steps include evaluating outreach and potential clinical impact.

C109
Prevalence of Psychotropic Use in Older Adults and Efforts at DePrescribing: A Quality Improvement Project in Acute and Post-acute/Long term site
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Background: Polypharmacy is a concern in the old. Multiple consultants involved in the elder care and comorbidities are contributory. DePrescribing (DeP), the safe, appropriate discontinuing or reduction in dosage of medications may be beneficial in reducing adverse drug outcomes and cost. In the old, dementia, associated behavioral problems and depression are common, requiring the use of psychotropics. We attempted DeP of psychotropics in settings of acute care/long-term/community while observing for adverse effects on discontinuation.

Methods: Data from 353 patients at 2 PA/LTC sites, hospital and geriatric clinic, as a QI project in our geriatrics fellowship program under faculty supervision. Data collected: age, gender, setting, use of psychotropics. Total 353 patients; 87 community (50 females), 14 in-hospital (9 females), and 249 long-term care (155 females). Depression alone identified in 37 patients (25 females); dementia alone in 115 patients (74 females); depression and dementia combined in 82 patients (54 females).

Results: Table attached depicts our results
Conclusions: Antidepressant use was most prevalent in the group (50% of psychotropics). DeP was successful in antipsychotics more than antidepressants, females (55%) more than males (44%), age group >76 years (55%). Favorable factors: physician-driven medication review at each patient encounter.

Limitation: behavioral manifestations in advanced dementia are prompting psychotropic use by physician and non-physician care providers.


C110
Impact of a Fall Prevention Clinic: Veterans’ Motivation and Behaviors
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Background: At the Fall Assessment Clinic (FAC), Veterans undergo comprehensive interdisciplinary evaluation and are given recommendations to reduce their fall risks. Our objective was to evaluate the primary impact of an outpatient fall prevention clinic with a focus on Veterans’ motivation and behaviors.

Methods: Data was collected during the initial and follow-up visits to FAC (2014-2016). We collected data on demographics, health status, Mini-Cog, PHQ2, ADLs, fear of falling (Fall Efficacy Score: FES), conviction (motivation to do the recommendations) and confidence (belief that they will adhere to the recommendations), physical therapy tests (30 Second Sit-to-Stand, Timed Up and Go, and Gait...
C110 The Effectiveness of a Transitions of Care Model in a Home Visit program
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1. Family and Community Medicine, Christiana Care Health System, Newark, DE; 2. Value Institute, Christiana Care Health System, Media, PA; 3. Family and Community Medicine, City of Dreams Health System, Cleveland, OH.

Methods: This is a retrospective study of patients receiving home visiting services, comparing healthcare utilization prior to ToC (pre-ToC) implementation (8/1/15-7/31/16) to the post (post-ToC) implementation period (8/1/16-9/30/17). As patients could be enrolled in home visiting services multiple times across the pre- and post-TOC periods, data were considered at the visit level. Patient demographics and utilization data were collected from electronic health records. Frequencies and distributions for all covariates were derived using SAS 9.4 (SAS Institute Inc., Cary, NC).

Results: The total study population (pre -and post-ToC) is 682 patients. The majority of patients were female (72%) and white (66%). The Comorbidity Index was similar between the two groups. For the pre-ToC period, 20% of all inpatient admissions were 30-day readmissions. For the post-ToC period, 28.7% of all inpatient admissions were 30-day readmissions. Eighty-three percent of the population did not have any 30-day readmissions during the pre- and post-periods.

Conclusion: The ToC program was ineffective in reducing the 30-day readmission rate. In fact, the 30-day readmission rate was lower in the pre-ToC year when there was no ToC program. One factor is that there was a higher representation of Medicaid patients in the post-ToC group than the pre-ToC group. For the future, a separate program for the Medicaid cohort should be considered as they may need different resources to address socioeconomic factors that are unique to this population.

Insurance Status for 30-day readmission visits:

<table>
<thead>
<tr>
<th>Insurance Status</th>
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<th>Post-ToC</th>
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<td>78</td>
</tr>
<tr>
<td>Medicaid Only</td>
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<td>12</td>
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</tbody>
</table>

C111 Non-Clinical Senior Housing Staff Can Identify Geriatric Syndromes
J. w. Campbell, P. DeGolia, D. Wank.1 1. Geriatrics, MetroHealth, Cleveland, OH; 2. Case Western Reserve University, Cleveland, OH; 3. McGregor PACE, Cleveland, OH.

Background: Congregate housing offers supportive services that help seniors maximize independence. However, subtle changes in physiologic conditions can go unnoticed. Food service workers, custodians and housekeepers who regularly interact with residents are ideally positioned to notice these changes. Geriatricians, with support from the McGregor foundation and The Alzheimers Association...
designed and piloted a curriculum for informal caregivers (N=32) at 2 senior housing sites (total seniors N=474) to help recognize common issues and refer residents for needed services. Methods: The curriculum was created to engage, empower and educate staff to better care for adults by developing distinct 30 minute workshops on: 1. Memory-dementia, 2. Mood - depression, anxiety and/or substance abuse, 3. Mobility- sensory impairment/function 4. Medication issues. A "toolbox" of resources and a referral process were developed in the subject areas so staff could connect residents to appropriate services. The curriculum was evaluated to gauge knowledge and attitudes of participants. Modules were delivered with 15 min didactics followed by a 15 min problem solving session facilitating attendance and avoiding service disruption. Each site came up with a unique action response to a person identified as having potential impairment in each of the 4 areas. Results: Participants were administered a pre-module survey and post-module survey of issues covered (Medication, Mood, Mobility and Memory.) Improvement was measured the increase in frequency of respondents selecting the answer option that signified the highest level of comfort/agreement with each particular question pertaining to the module ("strongly agree"). The mean of total improvement for all questions was calculated for each module individually as well as for all modules combined: Medication mean improvement 45% / Mood mean improvement 17% / Mobility mean improvement 48% / All Module mean improvement 35% When asked if the program was a worthwhile endeavor, 90% of the respondents selected “strongly agree” and 100% of the respondents selected “strongly agree” when asked if the program should be used to train future employees. Conclusion: Training of onsite nonclinical personnel in senior housing is a potential advancement in the case finding of persons with geriatric syndromes.

C114
Geriatric Principles Promote Cost Saving in ACO
I. w. Campbell, D. Wank, P. Campbell, P. Crider. 1. Geriatrics, Metrohealth, Cleveland, OH; 2. Case Western Reserve University, Cleveland, OH.

Background: The Red Carpet Care (RCC) Program is a comprehensive care management program derived from the Grace Model used to reduce utilization of patients at risk for inpatient and ED utilization in an accountable care organization(ACO). Patients were initially seen at home by a dyad consisting of a NP and an MSW who assessed mood, medication, memory, falls risk, home safety and advanced directives. An IDT inclusive of a geriatrician, NP, MSW, psych CNS, pharmacist, care manager and care navigator met to discuss all patients. Each patient had a personalized plan of care developed. Patients were then followed up either at home, in an RCC clinic, or in their primary care clinic with RCC care coordination support. Methods: Patients were identified as being in the top 5% of cost compared to all ACO participants. 335 patients were served. 119 were followed primarily at home, and 216 were primarily followed in an outpatient setting after their initial home evaluation. RCC patients average age was 67.8, 60.8%femala compared to ACO avg. age 68.42, 57.5% female. RCC did include high risk patient : RCC participants HCC risk score 2.1 Cost PBPY 29,880; total ACO participants HCC risk score 1.1 cost 10,391 PBPY. Patient individualized care plans were developed utilizing the GRACE care protocols. Care management follow-up was done on an acuity levelled approach: High-octane patients were in touch 3x a week: at least 1x in person, 2x by telephone by any member of the RCC Team and were given a clinical monthly review. Octane patients contact 2x a week- at least 1x in person and 1x by any member of the RCC team and were given a clinical monthly review. Regular contacted 1 x per week via phone had a clinic visit every 2 weeks and a monthly clinical review. Cruise control contacted 1x every other week- They had a clinic visit once per month and a clinical review every other month Analysis was done by comparing the patient’s utilization 12 months prior to their enrollment in the program with the patient’s utilization for the number of months post enrollment annualized to a full year. Results: RCC Participant reduced inpatient utilization by 17.4%, reduced emergency room utilization by 12.8%. During the same time frame the observation stays went up by 18.3. Total cost reduction was $1,955 PBPY. Conclusion: Systems developed by geriatricians are valuable tools for value-based care delivery. These systems can bend the Medicare cost curve.
elders in 3 inner city CHCs. One of the Quality Improvement (QI) initiatives is to increase AD education and improve documentation in the electronic medical record (EMR).

**Method:** Patients were identified by provider referral or from an Accountable Care Organization list, with higher priority to high utilizers of resources. Prior to a patient appointment, the registered nurse (RN) reviewed the EMR for a valid AD in the form of a Health Care Proxy (HCP) and/or Medical Order Life-Sustaining Treatment (MOLST). The RN informed the team of findings during the IPT meeting. A member of the IPT (geriatrician, two advanced practitioners, clinical licensed social worker, RN, medical assistant, and community health educator) was assigned to provide education and possibly complete an AD. Data collection on outcomes occurred at post-visit huddle and recorded in Redcap.

**Results:** Between March 1, 2017 and November 10, 2017, the IPT saw a total of 109 patients. More than half (51%; n=56) of these patients did not have a valid HCP in the EMR, and 84% (n=92) did not have a valid MOLST in the EMR. 68% (n=74) of patients received HCP and/or MOLST education during at least one of their visits.Valid AD of patients seen by the IPT increased from 46% to 72% as a result of IPT education outreach.

**Conclusion:** Funding from GWEP allowed for conversations about end-of-life care to start with encouragement and support of patients. Specifically, it allowed for AD education and completion within a CHC. Opportunity to provide education and/or obtain an AD exists by multiple members of a health care team. The IPT continues to devise an approach to patients about AD using Plan-Do-Study-Act cycles to develop a CHC wide system. QI measures will continue to identify opportunities to discuss what matters most to patients at end of life and identify barriers in obtaining AD.

C117

**Antipsychotic Reduction in Nursing Home**

J. Young, V. Kaushik. *Internal Medicine-Geriatrics, University of Texas Medical Branch Galveston, League City, TX.*

**Background:** The misuse and overuse of antipsychotic (AP) drugs in nursing homes (NH), especially with dementia patients, is a fundamental problem. CMS* established the goal to reduce inappropriate use of AP drugs in NH by 30% by the end of 2016, and focus on non-pharmacological interventions.

**Aim Statement:** We aim to reduce antipsychotic (AP) drug use among our NH residents with dementia to below state average over 6 months.

**Methods:** Quarterly AP medication review was performed by creating a registry of patients on AP drugs including the order, associated diagnosis, last prn use date, and last Gradual Drug Reduction (GDR) date. We then initiated GDR for all AP medications where appropriate. All orders from other prescribers, including the facility psychiatry team were screened by our team for appropriate use and completion within a CHC. Opportunity to provide education and/or obtain an AD exists by multiple members of a health care team. The IPT continues to devise an approach to patients about AD using Plan-Do-Study-Act cycles to develop a CHC wide system. QI measures will continue to identify opportunities to discuss what matters most to patients at end of life and identify barriers in obtaining AD.

C118 Encore Presentation

**Patient decision aid for older adults with obstructive sleep apnea: a pilot trial**

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**Background:** Obstructive sleep apnea (OSA) is common among older adults. OSA treatments such as positive airway pressure (PAP) and oral appliances require nightly self-management activities. Many patients do not use their treatment nightly, and some choose not to use their treatment at all. Furthermore, many patients are unaware of alternatives to PAP therapy. Patient decision aids (DA) provide information about treatment options (including the risks and benefits), increase congruence between decisions and personal values, and may promote adherence to the chosen treatment option. We evaluated the efficacy of an OSA DA for improving decisions about OSA treatment.

**Methods:** Patients aged 60 years or older who had newly-diagnosed OSA were recruited from a VA medical center and randomized to the OSA DA or a control condition. Those in the intervention group completed the DA during a single session prior to meeting with their sleep physician. Feasibility and decisional outcomes (e.g., Decisional Conflict Scale [DCS], possible range 0 [best]-100 [worst]) were collected post-intervention, and among those who chose PAP therapy, we assessed use of PAP (any use versus no use over a 30-day period) at 3-months follow-up. Differences were assessed with t-tests and two-proportion z tests.

**Results:** All participants (N=18 DA, N=19 control) had 65% white, 11% Hispanic; mean age 67 [SD 6]) competed the intervention, and 86% completed 3-month follow-up. DCS total score was better for DA than control 25.5 [19.1] vs 35.8 [18.2], effect size= .55. The proportion of patients who used PAP among those who chose it (N=21) was higher for DA than control (50% vs. 36%), but did not reach statistical significance (p=.63).

**Discussion:** A DA improves decisional outcomes in older adults with newly-diagnosed OSA. Evaluating this DA in a larger sample is needed to determine whether use of PAP therapy and health outcomes improve.

C119 Encore Presentation

**Use of Pimavanserin in Combination with Selective Serotonin Reuptake Inhibitors (SSRIs)**


**Background:** Psychosis is common in Parkinson’s disease (PD) and increases in frequency and severity with disease duration. It is associated with increased morbidity/mortality and complications of management of motor symptoms. Pimavanserin (PIM) is a selective 5-HT4 inverse agonist/antagonist approved for the treatment of hallucinations and delusions associated with Parkinson’s disease psychosis. Depression affects up to 60% of PD patients and is frequently
treated with SSRIs/SNRIs. Data suggest a potential synergistic effect between 5-HT₂A antagonists and SSRIs in patients with neuropsychiatric disease. This post-hoc analysis evaluated subjects from the pimavanserin clinical program to determine differences in antipsychotic response between the subjects receiving PIM in combination with an SSRI versus those without.

**Method**: A pooled analysis of two 6-week randomized, double-blind, placebo-controlled Phase 3 studies was conducted. The mITT population included 268 subjects; 135 in the PIM group. Of the 268 subjects in the mITT population, a total of 77 received concomitant therapy with SSRIs. A subgroup analysis was conducted to determine if there was any difference in response among the subjects receiving concomitant SSRIs.

**Results**: Overall, PIM demonstrated a 6.21-point improvement in psychosis at Week 6 as measured by the PD-adapted Scale for Assessment of Positive Symptoms (change from baseline analysis (MMRM)). The treatment difference was 2.87 points over placebo (p<0.001) and was clinically meaningful. Both subgroups (PIM +/- SSRI) demonstrated a statistically significant improvement over placebo. Among subjects taking concomitant SSRIs, the decrease in psychosis symptoms was more prominent for both PIM and placebo-treated subjects (-3.33 points and -4.01 points, respectively) compared to the 189 subjects not taking SSRIs (-5.36 points and -3.01 points, respectively); the treatment difference was of greater magnitude in the concomitant SSRI treated group (-4.32 vs. -2.34). A total of 10% (4/40) and 7.4% (12/162) of PIM treated subjects, with and without SSRIs, respectively, discontinued due to adverse reactions.

**Conclusions**: The results of this analysis further support findings that the combination of selective 5-HT₂A agonist/antagonists and SSRIs may have synergistic antipsychotic effects.

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**C120**

**The Duke Inter-Agency Care Team: A Bridge to Geriatric Community Resources**


**Background**: In 2009, the Healthy in Place (HIP) Seniors Report identified a strong preference among Durham seniors to remain in the community as they age. The report cited a need for better care coordination to link seniors, their caregivers, and primary care practices (PCPs) to the various community-based agencies offering needed services. The Duke Geriatric Workforce Enhancement Program (GWEP) aims to improve these linkages by developing an interdisciplinary, community-based team designed to consult with PCP’s in order to help identify resources that can help vulnerable seniors remain in place.

**Methods**: The Interagency Care Team (ICT) includes a nurse practitioner, a Community Resource Connections (CRC) coordinator from the Area Agency on Aging, a pharmacist and a community resource specialist from Senior PharmAssist (SPA), a geriatrician, geriatric fellows, and nurse practitioner fellows. PCPs refer seniors with complex care needs through the electronic medical record for virtual consultation by the ICT. In the consult, providers identify specific needs they would like addressed. Team members review medical records and call seniors and caregivers to gather information on medication issues, function, social factors, and preferences regarding community resources. The ICT meets to review each senior’s case and sends recommendations to the PCP and patient.

**Results**: The ICT has performed consultations for 21 seniors, with a mean age of 78. Approximately 75% of the participants were African American and 25% were Caucasian. 85% received a high school education or less. ICT identified needs of participants based on chart review, PCP referral, and participants’ concerns expressed during the telephone call. Frequently identified needs included cognitive/depression difficulties (86%), medication management (76%), food insecurity (57%), personal safety (52%), advanced care planning (52%), and disease management (52%).

**Conclusions**: The ICT has provided viable community connections for individual recipients and has connected PCP’s more tangibly to community resources. Ongoing evaluations will include feedback from PCP’s and seniors. Ultimately, this will allow us to measure practice readiness to self-refer and to measure the impact of referrals on clinical outcomes.

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**C121**

**Methodologic considerations in prolonging safe driving in mild Alzheimer’s disease**

**K. Freeman-Costin, P. Holland, R. Tappan.** 1. College of Medicine, Florida Atlantic University, Boca Raton, FL; 2. College of Nursing, Florida Atlantic University, Boca Raton, FL.

**Abstract**

**Background**: We conducted a double-blind randomized clinical trial (RCT) of memantine hydrochloride in subjects with mild Alzheimer’s disease (AD). 44% of subjects failed to complete this feasibility trial, which raised concern about potential bias. Our secondary analyses investigate strategies to reduce this bias.

**Methods**: Otherwise healthy subjects ≥ 60 years with mild AD (MMSE≥23) were screened from 2007 to 2013. Driving ability was measured using DriveABLE On-Road Evaluation (DORE) at baseline, 6 and 12 months. The outcome was DORE completion at month 12. Logistic regression assessed associations between completion and demographics, medical history and prior driving behaviors, accounting for treatment; odds ratios (OR) and 95% confidence intervals (CI) are presented.

**Results**: Of the 43 enrolled, the mean age was 79 (63-92 years); 63% were male. At 12 months, 24 (56%; 95% CI: 40%, 71%) completed DORE, with 13 of 22 (59%) in the memantine group and 11 of 21 (52%) in the placebo group (p=0.66). History of car crashes was associated with decreased chance of completion (OR=0.07, 95% CI: 0.1, 0.59). Cardiac history, more prevalent in male subjects, was associated with increased chance of completion (OR=7.20, 95% CI: 1.12, 46.32). The mean difference in completion rates between treatment groups was not significant (OR=0.36; 95% CI: 0.07, 1.86). There were no deaths; one subject was withdrawn due to vision impairment. Design enhancements include restricting inclusion criteria or stratifying by crash history, using more sensitive vision screens, incorporating in-vehicle daily monitoring devices, and documenting vehicle safety features and driving exposure.

**Conclusions**: This study provides the motivation and framework for designing and implementing a robust multi-site clinical trial of the effects of memantine use on driving capacity of older adults with mild AD. A key design feature to avoid selective dropout involves stratifying by history of vehicle crashes or restricting inclusion criteria. Since this trial, wireless communication technologies are now available and affordable to provide continuous and passive monitoring of driving behaviors. In addition to efficacy estimates, these findings further inform attrition rates for sample size. These design features will likely reduce bias and provide more valid data in future RCTs.

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**C122**

**Automated Perineal Hygiene (APH) Maintains Independence, Improves Quality of Life, Heals Dermatitis**

**R. Tilson.** SchwabCare, Lowell, MA.

**Background**: Incontinence and inability to self-toilet affects quality of life and drives subjects from independent to nursing home environments. Water-based toileting alone neither cleans the perineum, nor prevents incontinence associated dermatitis (IAD). Zinc oxide treats IAD but poor adherence results in relapse. We hypothesize that
automating perineal hygiene (APH) durably treats dermatitis, maintains lower levels of care and improves quality of life.

**Methods:** Set in 2 assisted living communities in Ohio and California, subjects were identified as transitioning from independent to full nursing home settings because of inability to maintain perineal hygiene. Subjects were provided a novel APH device that washes, dries, and applies zinc oxide barrier spray to the perineum after toileting. Quality of life, perineal hygiene, and IAD were evaluated using the Kennedy skin assessment tool at baseline and for 26 weeks.

**Results:** The mean age was 87. Over 50% had urinary, fecal, or mixed incontinence. 64% overestimated their independence, claiming capability to manage perineal hygiene when caregivers said they could not. 100% of subjects were unable to effectively clean themselves after bowel movements. 45% ineffectively cleaned themselves after urinating. At 26 weeks, none of the subjects transitioned to higher levels of nursing care.

At 1 week 50% of subjects were perfectly cleaned with the device. After 2 weeks all subjects were perfectly cleaned without caregiver assistance. 94% of participants had baseline IAD, average severity score 3.9, 28% with >4 IAD. IAD improved at 2 weeks, and resolved after 6 weeks with durable healing for 26 weeks. IAD rapidly recurred among those who discontinued APH, and resolved when APH was restarted. At baseline, 40% of subjects reported a poor overall quality of life, citing toileting as high impact. After 4 weeks, 2 subjects reported a poor quality of life. The remainder reported an overall high quality of life with 70% stating toileting strongly impacted quality of life. 47% of caregivers reported malodor at entry to the study. After 4 weeks, caregivers reported odor in 19% of subjects. 1 subject reported that they worried about odor. At 12 weeks, 3 caregivers reported persistent odor, and all of those subjects experienced constant urinary incontinence.

**Conclusions:** Patients in assisted living environments overestimate ability to maintain perineal hygiene. APH durably treats IAD, improves quality of life, and allows patients to live independently.

**C124**

**Prospective Association of Multi-morbidity Patterns with Physical Functioning in Post-Menopausal Women**

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**Background:** Multi-morbidity is common among mid age and older women and is associated with higher rates of mortality. The effect of multi-morbidity patterns on physical function, however, is less known. **Objective:** To examine the prospective association of multi-morbidity patterns on physical function among post-menopausal women. **Method:** A prospective cohort study of 161,808 postmenopausal women between the ages of 50-79 years from 40 clinical sites in the US from 1993 to 1998 were followed to 2015. Patterns of 27 chronic diseases among participants with at least three chronic conditions at the study baseline were identified with a hierarchical clustering approach. A stepwise procedure identified a homogeneous cluster(s) of diseases from the measure of individual diseases; tetra-choric correlations of the disease variables were utilized in the clustering process. Cox proportional hazards regression model was then used to analyze the association of multi-morbidity clusters and the physical and mental components scores of the Rand 36 item Health Survey between baseline and 2005. **Results:** Six clusters were identified: 1.) Respiratory/neurodegenerative (Alzheimer’s disease, peptic ulcer, liver disease, asthma, emphysema, lupus, and Parkinson’s disease), 2.) Cardiovascular (Heart failure, coronary heart disease, peripheral artery disease, cardiovascular disease, and pulmonary embolus/deep venous thrombosis), 3.) Arthritis (Rheumatoid and osteoarthritis), 4.) Metabolic (diabetes, hypertension, obesity, and osteoporosis), 5.) Cancer (skin cancer, breast/colon/lung cancer and depression), 6.) Bone (Bone fracture, high cholesterol, and thyroid). When comparing the six patterns of multi-morbidity to no multi-morbidity defined as less than 3 of the 27 chronic conditions adjusting for age, race/ethnicity, the six multi-morbidity patterns were associated with worse physical function, no difference in mental function, and no change over the short term. **Conclusions:** Multi-morbidity patterns among the postmenopausal women were associated with worse physical function and no difference in mental status. Understanding how these patterns change over time and their effect on functional decline, quality of life, recurrent hospitalizations as well as mortality is needed.

**C123**

**Self-Reported Improvement in Functioning Following Rehabilitation in a Hospital, Nursing Home, or Rehabilitation Facility**

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**Background:** Each year, millions of older adults receive rehabilitation services, which include physical, occupational, and speech therapy. Among older adults who received rehabilitation services in the hospital, nursing home, or rehabilitation facility, our study seeks to examine factors associated with self-reported improvement in functioning and ability to perform activities.

**Methods:** The National Health and Aging Trends Study (NHATS) examines the functional status and health of a nationally representative sample of Medicare beneficiaries aged 65 years and older. In 2015, NHATS added a rehabilitation module for which a total of 7,560 older adults have information. Our bivariate and logistic regression analyses were all associated with self-reported improvement in functioning and ability. In multivariable logistic regression analyses, higher levels of education, lower levels of ADL impairment, duration of rehabilitation services, and receipt of in-home rehabilitation services remained associated with self-reported improvement.

**Conclusions:** Among older adults receiving rehabilitation services in a hospital, nursing home, or rehab facility, our findings suggest that those with certain sociodemographic advantages and better health are more likely to perceive improvement in their functioning and ability to perform activities. Further investigation is warranted to examine why others may not perceive similar levels of benefit.
Trends of opioid analgesic dispensing for older adults in New York City

**Methods:** Retrospective cohort study in a not-for-profit, integrated delivery system. Participants were community-dwelling adults aged 65 and older (N=13,627) with MCI or dementia and at least 2 other chronic diseases. We calculated the Anticholinergic Cognitive Burden (ACB) score for each participant from pharmacy and electronic health record data. Among individuals with a mean 12 month ACB score ≥2, we used agglomerative hierarchical clustering to identify groups, or clusters, of individuals with similar anticholinergic prescription patterns.

**Results:** 3,257 (24%) had high anticholinergic burden, defined as an ACB score ≥2. Clinically meaningful clusters based upon anchoring medications or drug classes included: a cluster of cardiovascular medications (n = 1497; 46%); two clusters of antidepressant medications (n = 633; 20%); and a cluster based on use of bladder antimuscarinics (n = 431; 13%). Several clusters were comprised of multiple central nervous system-active drugs.

**Conclusion:** Common cardiovascular drugs and central nervous system-active medications comprised a substantial portion of anticholinergic burden in people with cognitive impairment. Antidepressants were highly prevalent despite weak evidence for effectiveness in this population. Clinical profiles elucidated by these clusters of anticholinergic medications can inform targeted approaches to care.

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C126

Trends of opioid analgesic dispensing for older adults in New York City

**Background:** Older adults are prescribed high rates of opioid analgesics (OAs) despite vulnerability to their adverse side effects. Since its implementation in August 2013, New York State’s (NYS) Prescription Monitoring Program (PMP) has mandated consultation of the statewide registry by providers before prescribing controlled drugs through enactment of I-STOP (Internet System for Over-prescribing Act). This study reports on changes in opioid dispensing among older adults in New York City (NYC) since the enactment of I-STOP.

**Methods:** Using NYS PMP data, estimates were calculated for the number of NYC residents who filled OA prescriptions from 2013 to 2016. Age-specific rates per 1,000 NYC residents were calculated using intercensal estimates. The age of an individual patient was determined by an average of their age for all their prescriptions throughout the year. Rates were compared between years for OAs filled and high dose OAs filled (>100 morphine milligram equivalents).

**Results:** In 2016, older adults age 65-84 had the highest rate of filling OA prescriptions (109 per 1,000) followed by adults age 45-64 (101.8 per 1,000), adults 85+ (100 per 1,000), adults age 25-44 (67.5 per 1,000), and individuals age 0-24 (15.9 per 1,000). Comparing 2013 to 2016, the percent change in rate was higher for younger age groups (-28.4% for age 0-24, -25.1% for age 25-44, -18.3% for age 45-64). The percent change for adults 85+ was a decrease of 18.7%, and for adults age 65-84 a decrease of 13.5%. In 2016, the rate of adults who filled high dose prescriptions was highest among adults age 45-64 (10.9 per 1,000), followed by adults age 85+ (10.5 per 1,000), adults 65-84 (8.3 per 1,000), adults age 25-44 (4.5 per 1,000), and individuals age 0-24 (0.4 per 1,000). Comparing 2013 to 2016, the percent change in rate was highest for younger age groups (-60% for age 0-24, -43.8% for age 25-44, -43.0 for adults 85+, -25.3% for age 45-64, and -21% for age 65-84).

**Conclusions:** Adults age 85 and older had larger decreases in filled OA compared to adults age 65-84 and 45-64, but lower decreases compared to individuals younger than 45 years of age. The implementation of I-STOP and the DOHMH’s issuance of judicious opioid prescribing guidelines may have had an impact in reducing these prescriptions among older adults in NYC. Future studies are needed to better understand changes in prescribing for older adults since 2013.

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C127

Falling and history of various types of elder abuse in Colombian elders

**Background:** Selected falls could be caused by physical abuse. However, other types of abuse have not been linked to falling in older adults. Our objective was to explore the association between falling and history of various types of elder abuse.

**Methods:** Data are from the SABE (Salud, Bienestar y Envejecimiento) Colombia Study, a cross-sectional survey conducted in 2016, in the country of Colombia, which included 19,004 community-dwelling adults aged 60 years and older. Falling was determined if a person had fallen down during the last 12 months. History of abuse was assessed by self-report during the past 3 months (emotional, physical, sexual, financial or neglect). Other variables evaluated included socio-demographic factors, comorbidity, functional status (Lawton and Barthel scales), depression (GDS), and cognitive status (MMSE and self-rated memory). Logistic regression analyses were used to assess the association between falling and elder abuse adjusting for confounders.

**Results:** Subjects had a mean age of 69.3±7.2; women were 56.1%; and any type of abuse was reported in 21.1%. Multivariate data analyses showed significantly higher odds of falling for past emotional (OR=2.02, 95% CI 1.86-2.19), physical (OR=1.89, 95% CI 1.62-2.22), sexual (OR=1.64, 95% CI 1.60-2.63), or financial abuse (OR=2.09, 95% CI 1.61-2.72), and neglect (OR=1.77, 95% CI 1.60-1.96). The percentage of participants falling increases as the number of abuse types increases (Figure, p<.001).

**Conclusion:** History of abuse (emotional, physical, sexual or financial) and neglect were strongly associated with falling. These findings are new contributions in the literature on factors associated with falls.

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C128

Racial/Ethnically Diverse Elderly patients Access Palliative Care & Hospice Services in Diverse Community Hospital

**Background:** National data show low use of palliative care (PC) & hospice by US ethnic minorities. This study examines access to PC
& hospice services in a large community teaching hospital in one of the most ethnically diverse areas in US.

**Methods:** Retrospective study of patients (pts) receiving inpatient PC consultations at NYPQ, in 2015-16, examining race/ethnic (R/E) access to PC consults in NYPQ admitted adult pts. Study examined proportion of PC pts discharged to hospice, by ethnicity. PC consults were provided by multi-cultural, interdisciplinary clinicians. Standard of care is to use face-to-face interpreters for patient-family meetings, promote trust, explain medical condition & prognosis, talk to families living in diverse areas in the world, & partner w referring MDs. Chi-square tests of independence was used.

**Results:** 2,222 pts received PC consults; 77% were aged 65 & older (range 19-104), 54% female. Pts had diverse diagnoses incl sepsis/infected (42%), respiratory (11.5%), GI (11%), neuro (7.5%), cardio/vascular (8.5%). About 23% have underlying cancer &/or dementia, 90% of PC consults were for goals of care. See Table 1 for R/E comparison. Compared to inpatient population, PC program served more pts who were Black & Caus, fewer Hispanic, and comparable number of Asian pts (p < 0.001). Hospice use was high among Hispanic and Black pts.

**Conclusion:** Existing literature shows mixed attitudes toward and use of PC/hospice in minority populations. In our diverse community with many elderly pts, pts of all ethnicities accessed PC. We found higher access of PC among Black and White pts, similar use among Asians, lower use in Hispanics. PC access provided a conduit to hospice benefits & services. Clinical & educational implications: when approached in culturally respectful & language-access settings, using a shared decision-making model, minority patients are very open to PC and hospice services.

### Table 1: Racial/ethnic comparison of admitted patients, Palliative Care Consult rate, and patients discharged with Hospice

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>All Patients, Including Pediatric</th>
<th>All Patients, Excluding Pediatric</th>
<th>% of PC Consults</th>
<th>Palliative Care Consult (R/E)</th>
<th>% Hospice Patients</th>
<th>Hospice per PC Case</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>16,997</td>
<td>20%</td>
<td>878</td>
<td>46%</td>
<td>195</td>
<td>22%</td>
</tr>
<tr>
<td>Asian</td>
<td>15,750</td>
<td>30%</td>
<td>690</td>
<td>31%</td>
<td>165</td>
<td>24%</td>
</tr>
<tr>
<td>Black</td>
<td>5,731</td>
<td>11%</td>
<td>906</td>
<td>17%</td>
<td>71</td>
<td>19%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>9,454</td>
<td>18%</td>
<td>275</td>
<td>13.3%</td>
<td>80</td>
<td>21%</td>
</tr>
<tr>
<td>Other</td>
<td>6,349</td>
<td>12%</td>
<td>28</td>
<td>1.2%</td>
<td>7</td>
<td>27%</td>
</tr>
<tr>
<td>Total</td>
<td>51,901</td>
<td>100%</td>
<td>2,222</td>
<td>496</td>
<td>22.3%</td>
<td></td>
</tr>
</tbody>
</table>

C129

**Sexuality & Aging**

D. E. Suinnino, 1 J. Schnitter, 1 P. Barbosa, 2 G. Hinrichsen, 1 N. Javier, 1 R. Leipzig, 1 J. Weiss. 1. Brookdale Department of Geriatrics and Palliative Medicine, Icahn School of Medicine at Mount Sinai, New York, NY; 2. New York College of Podiatric Medicine, New York, NY; 3. Department of Medicine: Division of General Internal Medicine, Icahn School of Medicine, New York, NY.

**Background:**

There are no quantitative data to our knowledge examining whether, and if so, how attitudes toward aging among males who identify as gay differ from heterosexual males. Some have speculated that compared to heterosexual males, gay males may perceive aging more negatively. Negative attitudes toward aging have been shown to increase risk for health problems and even mortality. Furthermore, negative attitudes toward aging are also tied to depression, which is associated with poorer health outcomes. The study objective is to assess if perceptions of aging among males differ with sexual orientation. The hypothesis is that gay males will have more negative attitudes toward aging than heterosexual males.

**Methods:**

Over five months, 164 English-speaking males, 50 years of age or older completed a survey that included the following scales: Image of Aging Scale and Attitudes toward Aging. Demographic and sexual orientation measures were obtained as well. Gay males who participated were open enough to self-identify as gay for this survey. Depression was measured with the 5-item Geriatric Depression Scale. Recruitment sites involved seven medical practices and two LGBT institutions in NYC. Analysis of covariance was done using SPSS.

**Results:**

Of the 164 subjects, age ranged from 50 to 97 years (mean=64.0±9.7). 42.1% identified as gay and 51.2% identified as heterosexual. 40.9% were white, non-Hispanic; 27.4 % black, non-Hispanic; 19.5% Hispanic. After controlling for age, depression and income, the gay and heterosexual males did not differ on any of the scales assessing attitudes toward aging. Depression was a significant predictor of poorer attitudes toward aging on three of the four measures.

**Conclusion:**

Contrary to our hypothesis and common assumptions, being a gay male did not confer a more negative perception of aging. Interventions aimed at changing perceptions of aging should focus on depression and other factors than sexual orientation.

### Table 1: Scales on Perceptions of Aging

<table>
<thead>
<tr>
<th>Scale</th>
<th>F value</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Image of Aging Scale</td>
<td>0.79</td>
<td>0.401</td>
</tr>
<tr>
<td>Attitudes toward Aging</td>
<td>1.80</td>
<td>0.182</td>
</tr>
<tr>
<td>Psychological Grief</td>
<td>0.00</td>
<td>0.993</td>
</tr>
<tr>
<td>Physical Change</td>
<td>0.22</td>
<td>0.637</td>
</tr>
</tbody>
</table>

C130

**Evidence-Based Falls Prevention Program Participant Outcomes: National Pre/Post Program Results**


**Background:**

Falls are a growing public health issue and the leading cause of injuries and injury deaths for people 65+. Evidence-based community falls prevention programs (EBFPs) have been proven to reduce older adult fall risks. The purpose of this study is to analyze the outcomes of EBFPs disseminated in 39 organizations that received federal grants to offer the programs in 2014-2017.

**Methods:** The U.S. Administration for Community Living awarded 2-3 year grants to a total of 39 state, local, and tribal organizations since 2014 to disseminate EBFPs to older adults. EBFPs are offered in organizations such as senior centers, hospitals, and fitness centers. Participants complete pre/post program data collection forms using U.S. Office of Management and Budget-approved documents. As a primary grant deliverable, grantees must log de-identified EBFP participant data in a secure national database. Results are analyzed from that database.

**Results:** Over 46,000 older adults participated in and completed data collection forms for EBFPs offered by grantees between September 1, 2014 and July 31, 2017. The average age of participants was 76, 81% were female, and 90% had a high school education or above. Approximately 87% of participants were white, 8% African American, 3% Asian, and 2% from other racial backgrounds. Thirty-six percent reported fearing falling “a lot” or “somewhat.” After participating in the EBFPs, 16% reported a decrease in the number of falls, 33% reported an improvement in their fear of falling, and 41% reported an improvement in how steady they felt on their feet (see Table 1 for more results).

**Conclusions:** With our country’s rapidly increasing aging population, older adult falls and associated health care costs will continue to increase. EBFPs are effective in reducing falls risks and strengthening clinical-community collaborations to address this escalating public health issue. Funding for EBFPs and clinical-community partnerships should be increased to promote the dissemination of the programs and enroll greater numbers of older adults at risk for falling.
Table 1

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Agree (%)</th>
<th>Agrees (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are more comfortable talking with their health care provider</td>
<td>47</td>
<td>30</td>
</tr>
<tr>
<td>Are more comfortable increasing activity</td>
<td>50</td>
<td>46</td>
</tr>
<tr>
<td>Plan to continue exercising</td>
<td>68</td>
<td>34</td>
</tr>
<tr>
<td>Feel more satisfied with life</td>
<td>46</td>
<td>51</td>
</tr>
</tbody>
</table>

C131
Effect of congestive heart failure and albuminuria on hospitalization trends over time in older adults: Data from National Health and Nutrition Examination Survey 2011-2016

E. Chakfeh, M. Raji, S. Al Snih. Internal Medicine - Geriatrics, UTMB, Galveston, TX.

Background: Congestive heart failure (CHF) is the top discharge diagnosis among recurrently hospitalized elders in the USA. We examined whether an easy-to-measure indicator of endothelial dysfunction (albuminuria) can independently predict CHF patients at highest risk of hospitalization. Given the 2012 Affordable Care Act-mandated Hospital Readmissions Reduction Program (HRRP) that financially punish hospitals for high readmission rate for CHF and other conditions, we also examined change in hospitalization rate from the 2011/12 cohort to the 2015/16 cohort.

Methods: Data were from 4797 adults (≥60 years, mean 69.5 years) from three cohorts of the National Health and Nutrition Examination Survey 2011/12-2015/16. CHF, comorbidities, and hospitalizations were obtained from self-reports. The urinary albumin-to-creatinine ratio (UACR) was calculated by dividing the urinary albumin value by the urinary creatinine concentration.

Results: Of 4797 subjects, 4% had CHF only and 2% had CHF with albuminuria. Albuminuric CHF patients were more likely to be less educated, Non-Hispanic white, have high BMI and have reported more hospitalizations in the prior year compared with those without CHF and albuminuria. In multivariate logistic regression analysis for hospitalization, there was a non-significant trend over time for increasing hospitalization (odds ratio (OR)=1.06, 95% Confidence Interval (CI)=0.46-1.48 for 2015/16 vs. 2011/12 cohorts), controlling for confounders. Elders with CHF and albuminuria are significantly more likely to be hospitalized (OR=2.17, 95% CI=1.41-3.35) when compared with those without albuminuria and CHF. Albuminuria, regardless of CHF status, is an independent predictor of hospitalization (OR=2.31, 95% CI=1.45-3.68). As expected, multimorbidity is associated with increased odds of hospitalization (OR=1.51 95% CI=1.38-1.66).

Conclusion: Albuminuria independently correlate with hospitalization in older adults, suggesting that the presence of albuminuria may amplify the association of endothelial dysfunction with increased risk of hospitalization in older CHF patients. Hospitalization rate for older Americans did not change from 2011/12 to 2015/16, despite the 2012 Hospital Readmissions Reduction Program. This suggests a need to monitor federal policy such as the HRRP for effectiveness.

C132
Association between Dehydration and Falls

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Background: Decreased thirst, antidiuretic hormone production, and apoptosis of long nephrons lead to greater fluid losses in older adults. Lower body water content adds to the risk of dehydration, but little is known about the prevalence of dehydration in older adults or the association between dehydration and falls. Understanding and preventing falls is important to primary care as physicians treat an aging population.

Objective: To determine whether there is an association between dehydration and falls in adults aged 65 years and older.

Design: Retrospective cross-sectional study.

Setting: A large Midwestern academic medical center in the United States.

Patients and Other Participants: Patients ≥65 years old without end stage renal failure, liver disease, seizure, or motor vehicle accident.

Intervention/Instrument: The electronic health record was used to identify patients ≥65 years old and indicators of dehydration: BUN/creatinine ratio >20, sodium level >145 mg/dL, urine specific gravity >1.030, or serum osmolality >295.

Outcome Measures: The primary outcome, fall occurrence within 3 years after baseline (2012-09-30), was studied using logistic regression controlling for dehydration, medications, age, sex, orthostatic hypotension and other risk factors. A secondary outcome, falls or death, was examined using the same methods as above.

Results: Of 30,634 patients, 37.9% were dehydrated, 11.4% had a fall during follow-up, and 11.7% died during follow-up. We found a strong positive association of falls with dehydration, odds ratio and 95% confidence interval (OR (CI)) 1.13 (1.05, 1.22). Falls or death were also associated with: dehydration OR 1.12 (1.06, 1.20), loop diuretics OR 1.72 (1.59, 1.86), and antipsychotic medications OR 2.49 (2.22, 2.80).

Conclusion: Over 1/3 of older adults are dehydrated with a strong association between falls and dehydration, as well as falls or death and dehydration, loop diuretics and antipsychotics. Understanding and addressing the risks associated with dehydration, including falls, can improve care and quality of life for patients as they age.

C133
What Do Older Adults in Colorado Think about Marijuana Use?

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2. University of Colorado, Colorado Springs, CO.

Background: Although individuals over 65 are the fastest growing population group in the state of Colorado, the extent to which older adults use marijuana for either recreational, medical or both purposes has not been documented, nor have any of the most relevant outcomes of using marijuana by this age group. This study is a description of the qualitative portion of a mixed methods study including self-report surveys and focus groups.

Methods:

- Focus groups (n = 19) were conducted in 15 cities across the state hosted by senior centers, health clinics, and marijuana dispensaries. Adults aged 65+ (including non-users, occasional and regular users) were invited to participate through flyers posted, phone calls, and emails. Data collection sessions included 141 participants (m = 7.42). Each focus group was audio recorded and transcribed.

Results:

- Five researchers collaborated on the development of the focus group codebook and subsequent coding. The code book was developed following the proposal model which was designed based on existing literature and past research. The initial book was expanded and refined based on results of two rounds of coding comparisons by the group of researchers with three focus groups. The final coding categories that emerged from the analyses, positive outcome, negative outcome, education, use methods, history, provider role, cohort/age, and alcohol/tobacco/drug. Focus group transcripts and notes from group facilitators reveal that the majority of older adults who participated in the discussions had a positive to neutral attitude about the use of marijuana when limited to use for medical reasons. There was more ambivalence about the use of marijuana for recreation.

Conclusions:

- Many participants knew at least one person who used medical marijuana. Some participants reported using marijuana for medical reasons either personally or in the care of another adult. However, the mechanism for access of marijuana (medical or recreational
was not always related to the actual way the substance was used. Very few older adults spoke about currently using marijuana and how age is associated with incident long-term opioid use following hospitalization. Methods: Using EMR data from a large urban academic medical system, we extracted demographic, encounter, and prescription data from 1/2016 to 7/2017. Patients included in the analysis were age 50 or older, had a hospitalization between 4/2016 and 9/2016, received no opioid prescriptions for at least 3 months prior to their hospitalization, and received at least one opioid prescription within 30 days following hospital discharge. Patterns of opioid prescription by age were analyzed for a 6 month period beginning 3 months after hospital discharge. Long-term opioid use was defined as 3 or more opioid prescriptions at least 21 days apart within this 6 month period. Results: Of 959 patients who met inclusion criteria, 197 (21%) received at least one opioid prescription in the period spanning 3 to 9 months after hospital discharge. Age was significantly associated with receipt of at least one opioid prescription during this time (p<0.01). Respectively, 17% of patients aged 50-64, 21% of patients aged 65-74, and 27% of patients aged 75 or older received at least one opioid prescription 3 to 9 months after hospital discharge. Only 44 (5%) of patients met criteria for incident long-term opioid use, and incident long-term opioid use did not differ significantly by age (p=0.58). Conclusions: One in 5 previously opioid-naïve older adults who received a new opioid prescription following hospital discharge received at least one opioid prescription 3 to 9 months later. Further, age was positively associated with receiving opioid prescriptions 3 to 9 months after hospital discharge. A limitation was inability to account for opioid prescriptions written outside the health system and opioids dispensed at nursing facilities. Future studies are needed to further examine the risks of opioid initiation following hospitalization in opioid-naïve older adults.

C135 Social, Functional and Medical Vulnerabilities of People with Severe Dementia at Home Versus Assisted Living Facilities: National Health and Aging Trends Study 2011-2016
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1. Division of Geriatrics, Department of Medicine, Montefiore Medical Center, Bronx, NY; 2. Division of General Internal Medicine, Department of Medicine, Montefiore Medical Center, Bronx, NY.

Background: Most of what we know about palliative care needs for people with severe dementia in the United States comes from nursing home settings. We aimed to address a gap in our understanding of community-dwelling people with severe dementia, comparing social, functional and medical vulnerabilities of those in traditional homes to those in assisted living facility (ALF) settings.

Methods: We used 2011-2016 data from the National Health and Aging Trends Study (NHATS), a nationally-representative in-person survey of community-dwelling Medicare beneficiaries age 65 and older (8,245 participants, response rate 71%). To identify people with severe dementia we used a validated algorithm (reported dementia diagnosis, proxy-reported AD8 score, or self-reported memory, orientation, or executive functioning impairment) combined with FAST stage 6C criteria (disability with dressing, bathing, and toileting). Residence in home or ALF was ascertained by self- or proxy-report. We used descriptive statistics to compare home and ALF-dwelling people by dichotomized social (race, immigrant status, educational attainment), functional (disability in activities of daily living [ADL]) and medical characteristics (self-rated health, multimorbidity).

Results: Between 2011-2016, 616 NHATS participants had severe dementia. Of these, 480 (78%) lived at home at baseline and 136 (22%) lived in ALFs. Comparing social vulnerabilities of home-dwelling vs ALF-dwelling people with severe dementia, a higher proportion were non-white (51% home vs 16% ALF p<0.001), born outside the United States (19% vs 9% p=0.025), and had less than high school education (49% vs 25% p<0.001). Home-dwelling people had greater functional and medical vulnerabilities compared to those in ALF: 4+ disabilities in ADLs (58% vs 39%, p<0.001), higher prevalence of ratings of fair or poor health (59% vs 29% p<0.001), and 3+ chronic conditions (72% vs 62% p=0.040).

Conclusion: Characteristics of community-dwelling persons with severe dementia differ by residence, where home-dwelling persons have multiple sources of sociodemographic, functional and clinical vulnerabilities.
Predictors of Long-Term Benzodiazepine Use Among Older Adults

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Background: Despite evidence for many potential risks, use of benzodiazepines (BZD) among older adults is common. Roughly one third of all BZD use is long-term (i.e., ≥120 days), with older adults accounting for the greatest proportion of patients with long-term use. Understanding the prescribing of BZD to older adults is of particular importance given the greater potential for polypharmacy and increased sensitivity to medication side effects among this population. In this study, we evaluated patient demographic and clinical characteristics that predict long-term BZD use among older adults prescribed a new BZD.

Methods: The study cohort was drawn from non-institutionalized older adults in Pennsylvania’s prescription assistance program for low-income older adults from 2008-2016. Persons that were newly prescribed a psychotropic medication were contacted for a clinical assessment by a telephone-based behavioral health service (N=576). The initial assessment included standardized mental health screening instruments and scales assessing depression, anxiety, sleep quality, and pain. Long-term BZD use was defined as a medication possession ratio greater than 30% in the year following the index prescription. Logistic regression was used to determine patient sociodemographic and clinical characteristics that predict long-term BZD use.

Results: At one year follow up, 26.4% of older adults newly prescribed a BZD had long-term use (32% male, 96.7% Caucasian, mean age 77.4, 28.3% married). In adjusted analyses, Caucasian race (OR 4.23, 95% CI 1.54-11.61), greater number of days supplied in the first prescription (OR 1.98, 95% CI 1.55-2.52), and patients with very good sleep quality (as compared to a reference of very bad sleep quality, OR 0.23, 95% CI 0.09-0.57) were significantly associated with long-term BZD use. High anxiety and depression did not predict long-term BZD use.

Conclusions: In this sample of older adults newly prescribed a BZD, conversion to long-term use was more strongly associated with non-clinical factors (patient race, supply of initial prescription) than patient clinical characteristics. To address BZD prescribing to older adults, further work is needed to understand the variety of factors that drive prescribing practices.

Medical Care Avoidance Due to Costs- Are There Underlying Reasons?


Background: Older adults are often challenged to make difficult decisions with respect to prioritizing healthcare with other essential need costs. Health status, whether it is realized or not, may also contribute to decisions to avoid medical care. We examined whether physical functioning or cognitive status, or both, are associated with avoidance of medical care, despite attributing it to costs.

Methods: Most recent visit data (2013-2015) from N=156 participants of the Fels Longitudinal Study were used. Participants were asked, “How many times in the past 3 years have you avoided medical care due to costs?” Eight specific avoided costs were queried ranging from provider visits to medical equipment purchases. Participants were categorized into physical and cognitive functioning groups (normal-normal, normal-low, low-normal, low-low) based on the SF-36 physical functioning subscale age specific norms and published cut points for three cognitive tests (MoCA, LNS, and HVLT). Covariates included age, gender, marital status, insurance status (have/ do not have) and household income. Logistic regression models were used to determine associations between medical care avoidance, functioning groups, and covariates.

Results: Participants were 60.8 ± 10.0 years, mostly female (62%), with 96% having health insurance, and a median household income of $85,000. Medical services with the highest prevalence of avoidance at least once in three years were dentist (16%), physician (14%), and vision care (12%). There was a consistent, significant association between having a low physical functioning and a normal cognitive score, compared to having a normal score for both domains, with avoidance of physician, vision, and specialist visits (Adjusted OR’s 5.1-9.2). These associations were independent of age, sex, marital status, income, and insurance status.

Conclusions: Our findings indicate that low physical functioning, even if not necessarily clinically evident, is a risk factor for avoiding essential medical care attributed to costs. This association persists independent of insurance status and income. Surprisingly, low cognition was not associated with avoidance. It is plausible that cognitive dysfunction triggers assistance with medical needs. Providers should be aware that while avoidance of care may be attributed to costs, underlying functional loss may be a contributing factor.

National Trends in Obesity in Nursing Homes, 2005-2015

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Background: The prevalence of obesity in nursing homes (NH) increased recently. However, there has been lack of the most contemporary trend of obesity prevalence in NHs. In addition, all existing studies focus on obesity prevalence among residents newly admitted to nursing homes. Hence, these results may not reveal the actual care burdens of obesity in the facility.

Methods: Minimum Data Set (MDS) 2.0 and MDS 3.0 were employed. All residents who stayed in a nursing facility at least 100 days were included in the study. Residents were underweight (BMI < 18.5), normal-to-overweight (18.5< BMI<30), or obese (BMI≥30). Obese residents were further categorized as Class I (30 BMI < 35), Class II (35 BMI < 40) and Class III (BMI > = 40) obesity. The annual prevalence of obesity was the ratio of the total number of obese NH residents divided by the total number of residents in a year. The prevalence of each weight categories had the similar definition. Information on demographic, medical and functional status were also included.
We evaluated prevalence of obesity, and all grades of obesity, in U.S. NH between 2005 and 2015. We then carefully described whether obese residents had special clinical, functional care needs, using the most recent data (2015). Finally, applying 2015 data, logistic regression models were used to assess the associations of age groups, categories of race/ethnicity, and gender. Models were further examined separately for men and women.

**Results:** Between 2005 and 2015, the obesity prevalence of nursing home residents increased from 22% to 28%. Female residents had higher prevalence of obesity than male residents, increasing from 4% to 7%. In 2015, Class III obese residents were younger than the others. In addition, Class III obese residents had more chronic conditions, while had lower prevalence of functional decline and cognitive impairment. From the logistic regression, residents with older age were less likely to be obese; Black residents were more likely to be obese.

**Conclusions:** Between 2005 and 2015, the prevalence of obesity increased. Compared to other residents, obese residents had special patterns of co-morbidities and functional status. This raises the question regarding how to prepare for providing good care to this increasing population in the nursing homes.

### C140 Characterizing Alzheimer’s Disease in a Medicare Advantage Population

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**Background:** With a rapidly growing population of older adults, Alzheimer’s disease (AD) is projected to affect over 13 million Americans by 2050. Monitoring AD trends over time can provide a better understanding of the expected future impact of AD. Hence, the objective of this study was to examine incidence and prevalence estimates of AD in a Medicare Advantage Prescription Drug (MAPD) population.

**Methods:** Using 2013–2016 claims and enrollment data from a nationally representative MAPD plan, people (ages 22-89) with an AD diagnosis (ICD-9-CM 331.0, ICD-10-CM G30.x) were identified within each calendar year for 2014, 2015, and 2016. Year-over-year incidence rates and point prevalence (on July 1) were calculated overall and by age groups (22-39, 40-54, 55-64, 65-69, 70-79, and 80-89). A disease-free 1 year period prior to the diagnosis date was required to be counted as an incident AD case. For point prevalence estimates, anyone with an AD diagnosis in a given year was counted as a case in that year. The adjusted incidence rate was calculated using NHATS subsequent rounds (2012-2015). The primary outcome evaluated frailty versus STEADI score’s ability to predict future falls after adjusting for age, race, gender, education, comorbidities, hearing and vision impairment and disability (robust–referent).

**Results:** Of the 7,392 participants (58.5% females) there were 3,545 (48.0%), 2,966 (40.1%), and 881 (11.9%) individuals classified as low, moderate and high fall risk, respectively. The adjusted odds of falling over the four subsequent years was HR 2.50 (95% CI: 2.16, 2.89) and 3.79 (2.76, 5.21) for moderate and high risk groups, respectively (low risk=referent). The risk of falling by frailty status was HR 1.22 (1.05, 1.41) and 1.12 (0.87, 1.44) for pre-frail and frail, respectively.

**Conclusions:** STEADI score is a strong predictor of future falls. Frailty does not improve ability to predict future falls above and beyond the STEADI measure.

### C141 Frailty versus STEADI Fall Risk Score: Ability to Predict Future Falls

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**Background:** Frailty is associated with an increase in falls in older adults. Evidence for its ability to predict future falls compared to community fall risk screening tools is limited. Clarifying the overlap between frailty and fall risk can help define future prevention interventions.

**Methods:** Participants ≥65 years old surveyed in the 2011 National Health and Aging Trend Study (NHATS) were identified. Fall risk was defined using the Stopping Elderly Accidents, Deaths and Injuries (STEADI) initiative. Frailty was defined by increased exhaustion, weight loss, low activity, slow gait speed and reduced grip strength. Robust, pre-frailty and frailty were categorized using zero, 1 or 2, and ≥3 criteria, respectively. Falls were self-reported and ascertained using NHATS subsequent rounds (2012-2015). The primary outcome evaluated frailty versus STEADI score’s ability to predict future falls after adjusting for age, race, gender, education, comorbidities, hearing and vision impairment and disability (robust–referent).

**Results:** Of the 7,392 participants (58.5% females) there were 3,545 (48.0%), 2,966 (40.1%), and 881 (11.9%) individuals classified as low, moderate and high fall risk, respectively. The adjusted odds of falling over the four subsequent years was HR 2.50 (95% CI: 2.16, 2.89) and 3.79 (2.76, 5.21) for moderate and high risk groups, respectively (low risk=referent). The risk of falling by frailty status was HR 1.22 (1.05, 1.41) and 1.12 (0.87, 1.44) for pre-frail and frail, respectively.

**Conclusions:** STEADI score is a strong predictor of future falls. Frailty does not improve ability to predict future falls above and beyond the STEADI measure.

### C142 Encore Presentation

**Contaminated Prefilled Saline Leads to Burkholderia Cepacia Outbreak in Long-Term Care Facilities.**

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**Background:** Burkholderia Cepacia, a gram negative bacilli, is a group or complex of bacteria that can be found in soil and water. It is more colonizing bacteria than infecting bacteria; however it may cause problem if found in people with weak immune system, cystic fibrosis, or if found in sterile body fluid. A recent multistate outbreak of Burkholderia Cepacia in blood was reported due to contaminated prefilled saline flush was reported. A majority of the cases are reported in long-term care facilities or rehabilitation facilities.

**Methods:** During the months of 2016 in which the contaminated saline was used in Long-Term Care Facilities, 1276 sets of blood cultures collected from the residents. Every set included two vials (aerobic and anaerobic) which were incubated in a Bactec instrument. Positive cultures were subcultured and then identified using Microscan96 Walkaway conventional panels. Data analyses were done for all the facilities and then isolating the facilities with positive isolate for Burkholderia Cepacia. Statistical analyses were done using Analyse-it.

**Results:** 15.4% of the total blood cultures were positive. Burkholderia Cepacia accounted for 12.8% of these positive cultures, and was found only in 7 facilities, accounting for 127 of the 1276 cultures tested. Of these 127 patients, 28% of them had a positive blood culture. Of those positive cultures 71.4% of the bloodstream...
infections were due to *Burkholderia Cepacia*. No deaths to our knowledge were reported due to *Burkholderia Cepacia* in the identified patients.

**Conclusions:** *Burkholderia Cepacia* is a threat if found in blood culture, especially in long-term care facilities where most of the residents are elderly, frail, disable, and are on multiple medications; in addition, *Burkholderia Cepacia* is resistant to common antibiotics. Early detection and appropriate treatment would benefit the patient. Also the awareness of the contaminated saline decreased the spread of the bacteria to other patients.

### Table

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<tr>
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**C143**

**Prescription drug burden and hip fracture risk in nursing home residents**


**Background:** Polypharmacy is associated with adverse outcomes. A new tool, the Drug Burden Index (DBI), estimating the cumulative sedative and anti-cholinergic effects from prescription drugs, has not been applied to U.S. NHs. The study objective was to examine the effects of DBI on hip fracture risk in NH residents, as compared to other drug burden measures.

**Methods:** Participants included all NH residents ≥65 years (2007-2008) followed from long-stay date (i.e. index) to a hip fracture (Medicare Part A), death, or 2 years. Resident characteristics were obtained from the Minimum Data Set. Total DBI (TDBI) for each resident was calculated based on drugs prescribed (Medicare Part D) during the 100-days before index. Multivariable competing risk models were used to examine the effects of TDBI on hip fracture risk adjusted for other factors. We repeated models characterizing drug burden based on Beers criteria and the total drug count.

**Results:** A total of 619,926 residents were included [mean age 83.9 years (SD 8.3); mean TDBI: 1.4; (SD 1.2)]. In total, 3.5% of the cohort had a hip fracture. All drug burden measures were associated with greater hip fracture risk (Table), but TDBI was most strongly associated.

**Conclusions:** The DBI had a stronger association with hip fracture risk than Beers criteria or total drug count in NH residents. Studies are needed to assess whether this could be a useful tool to target deprescribing efforts.

**C144**

**Burden Experienced by Informal Caregivers in Home Hospice Care**


**Background:** Hospice care is an integral part of End-of-Life (EoL) care for many older adults, with over 45% of all U.S. deaths occurring in this setting. Around 60% to 70% of hospice patients receive care at home. As a result, informal caregivers become an essential part of the care team, providing up to 66 hours of care per week to their loved ones. Caregiver burden in this setting can lead to negative physical, social and emotional sequelae, but also negatively impact the care of the patient. Yet, there is limited data describing burden experienced by informal caregivers in the home hospice setting.

**Methods:** A cross-sectional study is underway (with a target N=400). Caregiver, patient and hospice level data are being collected in collaboration with a non-profit hospice organization located in an urban setting. Data on caregiver burden (i.e., Burden Scale for Family Caregivers) is being collected from the patient’s informal caregiver in a phone interview conducted two weeks after the patient has been discharged from home hospice care.

**Results:** As of 11/30/17, data have been collected from 235 informal caregiver participants and reveal that caregivers spend a median of 16 hours per day caring for their loved ones during the last week on home hospice care. Caregivers (n=108, 46%) stated they either agreed or strongly agreed with the statement “My health was affected by the care situation,” while 147 (63%) stated they either agreed or strongly agreed with the statement “I often felt physically exhausted.” Of the 235 respondents, 82 (35%) caregivers either agreed or strongly agreed with the statement, “My life satisfaction suffered because of providing care.”

**Conclusion:** Our results show that caregiver burden is common among informal caregivers caring for their loved ones in home hospice care. Further studies are needed to better understand the needs of these informal caregivers and ways to optimally identify those at increased risk for high burden in order to target interventions aimed at supporting caregivers, improving patient care, and reducing poor outcomes that occur as a consequence of overburdened caregivers.

**C145**

**Disability prior to death among the oldest-old in China**

**Z. Liu, L. Han, X. Wang, Q. Feng, T. Gill, J. Yale University, New Haven, CT; 2. Fudan University, Shanghai, China; 3. National University of Singapore, Singapore, Singapore.**

**Background:** Whether and to what extent the oldest-old (≥80 years) can maintain independence (i.e., no disability) with essential activities of daily living (ADL) is an important issue. A rigorous evaluation of end-of-life disability in different countries is imperative not only for the oldest-old, their families, and caregivers, but also for policy makers. The aim of this study was to evaluate the prevalence of disability during the last three years prior to death among the oldest-old in China.

**Methods:** We used data from the Chinese Longitudinal Healthy Longevity Survey (CLHLS), a nationally representative study of the oldest-old in China. The analytic sample included 23934 decedents who died between 1998 and 2014 and had at least one interview within the last three years of life. Disability was defined as being incompetent or needing assistance in performing one or more of five other essential activities (bathing, transferring, dressing, eating, and toileting).

**Results:** About 57.8% (weighted, hereafter) of the study decedents were female. The mean (SD) age at the time of death was 86.0 (7.9) years for men and 87.0 (11.7) years for women. The prevalence of disability increased modestly from 36-months to 24-months prior
to death (20% to 23%), more rapidly from 24-months to 12-months before death (23% to 31%), and substantially from 12-months before death to the last month of life (31% to 48%). The disability rates were lowest for participants who died between 80 and 89 years, intermediate for those who died between 90 and 99 years, and highest for those who died at age 100 or older, although the patterns over the 3-year period were comparable for the three age groups. At each time point prior to death, a higher percentage of women was disabled than men.

Conclusions: In this large nationally representative sample of the oldest-old in China, the burden of disability during the three years prior to death is high and is greater in women than men and those who die at the oldest ages. Our findings raise concerns about the ability of China and other developing countries to manage the projected tsunami of late-life disability in the coming years.

C146
Optimizing Community Resource Use and Access Among Caregivers of Persons with Dementia

Background: Caregivers of African American (AA) community-residing persons with dementia (PWD) are more likely to be unpaid, live in higher poverty communities, and have higher rates of unmet needs than others. Evidence about barriers to and facilitators of community resource use is needed to support sustainable interventions that effectively promote caregiver and PWD health and well-being.

Methods: In-person, semi-structured qualitative interviews were conducted with informal caregivers of community-residing PWD. Participants were recruited from an urban ambulatory geriatric medical center. Measurements included caregiver characteristics and experiences and information about community resource use for self-care and caregiving activities. Caregivers were presented a printed “HealtheRx” with information about community resources indicated for PWD and asked to: describe their interest in the information, identify gaps, and provide insights to inform delivery of this information to caregivers in the health care setting. Caregivers were specifically asked about hospice care needs. Data were analyzed using content analysis until theme saturation was reached.

Results: Caregivers (N=15) ranged in age (44-83 years) and years of caregiving (2-25 years). Most were women (12/15) and AA (13/15). Caregivers identified a need for respite care in combination with social (e.g., dancing), entertainment (e.g., movie theater) and grooming self-care needs and a need for information about hospice earlier in the course of caregiving. Barriers to accessing community self-care resources for the caregiver included the PWD’s need for constant attention (13/15) and lack of interest or mobility (6/15). Facilitating factors included shared caregiving responsibility (13/15) and learning about resources by trusted word of mouth (10/15). Overall, the HealtheRx was well received; caregivers suggested adding detailed eligibility criteria and an indicator of whether personnel providing services have training in PWD needs.

Conclusions: This predominantly AA group of caregivers of urban-dwelling PWD indicated a need for a broader variety of community-based respite resources than identified in studies of other caregivers, and more detailed information and expertise about accessing community resources.

C147
‘A life saver:’ a Qualitative Investigation on How the House Calls Program Facilitates Resiliency in Family Caregivers of Home Bound Patients

Background: Home-based primary care (HBPC) provides interdisciplinary care for homebound patients who have difficulty accessing medical care in a clinic setting. Healthcare providers who deliver care to home bound patients may also provide social support and serve as a trusted resource for family caregivers, who often experience significant physical and emotional stress. The purpose of this qualitative study was to understand the impact of HBPC on the family caregiver within the Northwell HBPC program (known as House Calls).

Methods: Semi structured interviews were conducted with 19 family caregivers of patients within House Calls between May and July 2017 in Queens, Nassau and Suffolk counties in New York. Family caregivers were defined as children, spouses, siblings, and parents of patients in the House Calls program. Prior to interview, all participants gave consent. All interviews were audio recorded and professionally transcribed. Data was analyzed using thematic analysis with NVIVO software for data management. Results: Two primary themes emerged: 1) Burden of mobility for home bound patients and 2) Staff communication with family members. The burden of mobility for homebound patients theme describes the physical burden associated with moving patients out of the home for medical care. Within this theme, caregivers discussed 24/7 care of House Calls and how this alleviated burden by avoiding emergency department and doctor clinic visits (13 references). House Calls Staff communication theme described emotional support of staff to caregiver (18 codes). Specifically, instances of this theme include, staff increasing the confidence of family members, deepening their understanding of their family member’s condition and providing compassionate support. Multiple family members noted that the program not only had saved their loved one’s life, but had also metaphorically saved their own life. Conclusions: Family caregivers value the communication and accessibility of the Northwell HBPC program and feel that this program has a positive impact on their stress and mental health.

C148
Medical Students Opinions on Aging: An International Perspective

Background: With a dramatic increase in the elderly population, it is important to consider different perspectives on aging, especially the opinions of those who will provide some of the services for elderly in the near future.

Methods: We administered a qualitative survey on aging to a group of medical students in Karachi, Pakistan (n=101, 79 females, 22 males) and another group in Little Rock, Arkansas, United States (n=50, 30 males, 20 females). The survey asked questions about their feelings regarding the term “old”, thoughts on their own journey into old age, and whether they would consider taking care of the elderly.

Results: Approximately 25% of Pakistani students considered anyone over 50 years of age as old, whereas not a single U.S. student considered this age as old. However, nearly equal percentages of both Pakistani students (95%) and U.S. students (88%) was home. Out of 16 words associated with aging (equal mix of positive and negative), the top
choices selected by the Pakistani students were “Experience” (39%), “Weakness” (29%), and “Respect” (28%), whereas the U.S. students chose “Experience” (54%), “Retirement” (52%), and “Wisdom” (52%). The term “Memory loss” was associated with aging by 8% of Pakistani students vs. 38% of U.S. students. 54% of Pakistani students and 60% of U.S. students stated that they would not consider geriatrics as a medical specialty.

Conclusions: Cultural differences might influence perceptions of aging. Interestingly, memory loss appears to be underappreciated by Asian students as an age-related medical issue. This may be due to a reduced exposure of the Asian medical students to cognitive issues associated with aging. Although both U.S. and Asian students predominately selected positive descriptors of aging, neither group appeared interested in pursuing aging as a career choice. More work needs to be done to make the field of aging more appealing to the younger generations.

**C149 Are Older Silicon Valley Veterans ready for MyhealthVet use?**

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**Background:** MyhealtHyvet(MHV), technology based tool that enables veterans to securely message physicians and access their medical records. Little has been published about attitudes of veterans from Silicon Valley regarding (MHV) use. Hence, we sought to identify the factors that promote MHV’s use among older veterans using quantitative data. Our secondary objective was to identify the perceived barriers among elder veterans using qualitative analysis.

**Method:** We conducted 57 phone & written interviews with Veterans aged 60+ without dementia. 53 of 57 participants returned completed questionnaires about age, education, number of medical conditions, depressive symptoms (PHQ8) and Internet access at home. MHV use was coded as yes if a participant registered and had at least one MHV login. We conducted a logistic regression with following covariates: self reported medical conditions grouped into those with 0, 1-2 and ≥3 problems, age into two groups (<70 and >70), education into two groups with participants having <16 or 16+ years of education. Qualitative analysis was conducted to identify barriers to MHV use.

**Results:** Veterans had a mean age of 68.6; mean education of 15.9 years and 17.5% were female. Thirty-three (62.2%) Veterans used MHV. 51% of participants had 1-2 medical conditions, 24.5% had zero and rest had ≥3 conditions; 61.1% of participants had home Internet. Veterans with home internet were 8.98 (95% CI: 1.53, 52.66, p=.015) more likely to use MHV. Statistical significance was not achieved for other factors: age, education, depressive symptoms, and medical comorbidities, however strong association was seen for medical co-morbidities (p=.086). Those with 1-2 conditions had higher odds to use MHV opposed to those with ≥3 problems. Qualitative analyses confirmed that limited access to Internet was a barrier to MHV use. Difficulty with technology generally and specifically with MHV emerged as a barrier as well. Some veterans also expressed a preference for use of other VA systems (i.e., telephone system, in-person clinic visits, requesting paper medical records).

**Conclusion:** Access to Internet is significantly associated with MHV use. Patient education about technology and available MHV resources may address barriers to MHV use. Further research should investigate if other factors like number of medical conditions are associated with MHV use in a larger sample.
conducted through posting flyers in local community settings and via snowball sampling. Institutional Review Board approval was obtained prior to start of study. Qualitative data analysis was conducted using Dedoose Web-based Qualitative package. Emergent themes were extracted, transcribed and analyzed using thematic analysis.

Results
Caregivers elucidated perceived barriers, needs, and recommendations for implementing programs and services to improve caregiving. Among most prevalent perceived barriers was a lack of informational resources on caregiving. Regarding perceived unmet needs, caregiver support groups for learning about caregiving, medical information on elders’ ailments and alleviating caregivers’ emotional burden were most frequently cited. Caregivers’ recommended additional resources including caregiver support groups, legal and bereavement services.

Conclusions
To facilitate informal caregiving, increased informational resources on caregiving as well as easy access to these resources are needed. Emotional support for caregivers, e.g. support groups, could enhance caregivers’ well-being and thereby improve caring for loved ones. Implications include developing programs and services tailored to the needs of caregivers in medically underserved communities.

C152
The perceived experiences and unmet needs of Asian American dementia family caregivers

Background and aims: Caring for individuals with Alzheimer’s disease and related dementias impacts caregivers’ physical, psychological, emotional, social, and financial well-being. Asian American families of persons with dementia (PWD) often seek help in the later stages of the disease, or remain undiagnosed, thus prolonging and intensifying the burden for the family. The aim of this study is to describe underserved Asian-American families’ perceptions about caregiving experiences with PWD, their unmet needs, and barriers to seeking help. Methods: We conducted individual semi-structured interviews with 35 Vietnamese and Korean American family caregivers of PWD who were recruited from ethnic-specific community centers and by a snowball method. Interviews were audio-taped and translated/transcribed into English. Results: Caregivers who participated in caregiver support groups appeared to have more knowledge about dementia and caregiving skills compared to non-participating caregivers. All of the participants expressed feelings of sadness and depression related to providing care for PWD; some even cried while describing their challenges. The majority discussed their lack of freedom or private time due to 24-hour care responsibilities at home, resulting in declining health or interrupted sleep. Caregivers who had siblings or adult children living close by experienced less burden. Caregivers who had siblings or adult children living close by experienced less burden. Caregivers who had siblings or adult children living close by experienced less burden. Conclusions: These findings identify the challenges underserved Asian American families experience while caring for PWD. Our results will inform the design of community-based, culturally sensitive, and family-tailored interventions to support underserved Asian American dementia caregivers.

C153
Ideas for Implementing a Mammography Decision Aid for Women ≥75+
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Background: Implementation of decision aids in clinical practice is challenging. Our goal was to learn how to best implement a mammography decision aid (DA) for women ≥75 years.

Method: We developed and tested a paper-based DA on mammography screening for women ≥75 years. We approached staff from primary care and geriatrics clinics in two large academic medical centers (1 in Boston, 1 in North Carolina) and from 4 community-based primary care practices in Boston to participate in semi-structured qualitative interviews. Trained research staff conducted the interviews which were audiotaped and transcribed verbatim. Five investigators independently reviewed the first 6 transcripts to develop a codebook. Subsequent interviews were coded by at least 3 investigators. Coding discrepancies were resolved by consensus. We used thematic analysis to identify major themes from the codes.

Result: 32 staff members (7 administrators, 10 nurses, 15 practice assistants) participated; 69% were Boston based; 66% worked in academic practices; 87% were female; and 59% were non-Hispanic white. Nearly all staff felt existing supports could be accessed to implement the DA in their practice with minimal training of staff and clinicians. The majority felt the best process was for practice assistants to give the DA to women in the waiting or exam room to read before a visit so that women could ask their clinicians questions about the DA and mammography screening during the visit. Other suggested methods to implement the DA included: mailing it to women before a visit (i.e., before a Medicare Annual Wellness Visit); giving it to women at check-out; having a health educator or nurse provide the DA; scheduling group visits to discuss the DA; and/or making it available in a patient portal. Some barriers to implementing the DA included 1) both staff and provider issues with workflow; 2) possibly needing a champion for the DA in the clinic; 3) patients’ form fatigue and low health literacy; and 4) structural barriers such as the need to print it and track its use.

Conclusion: The best way to get a mammography DA to women ≥75 years may vary depending on practice characteristics. However, most staff felt it would be feasible to provide women ≥75 years a paper copy of the DA before a visit.

C154
Lessons Learned from Hurricane Irma: A Nursing home Experience
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Background: Twelve resident deaths of a Hollywood, Florida nursing home are attributed to Hurricane Irma, yet similar facilities saw no loss of life under comparable circumstances. What factors contributed to the wellbeing of these residents? Following the 2005 hurricane season, efforts on improving hurricane preparedness for long-term care facilities addressed emergency management, disaster planning, evacuation, resident tracking, and communication. Thus, all Florida nursing homes are required to have an emergency preparedness plan on file, but providing safe and effective care during a natural disaster requires human interaction. Interdisciplinary teamwork has improved outcomes in many areas of healthcare, however, little investigation has been concentrated on this or other human behaviors that protect nursing home residents during a natural disaster.

Methods: We employed a semi-structured interview of administrators at a 325-bed skilled nursing facility in Sunrise, Florida, which experienced a 3-day loss of power following Hurricane Irma, with no reported ill effects to its 170, mostly geriatric, residents. Editing and analysis of the responses was used to identify and interpret themes.
Results: Interdisciplinary cooperation was found to be the over-riding theme in protecting vulnerable patients during a hurricane, with four major subdivisions: Administrative involvement throughout the event provided staff with necessary support. Adequate planning, including staffing, education, and anticipation of patient needs supported a state of readiness. Communication among staff, and with patients, their families, the community, utility departments and government entities prevents confusion, and enhances timely restoration of services. An adaptable and flexible interdisciplinary staff, dedicated to a patient first philosophy and teamwork, can meet changing needs of patients.

Conclusions: A written emergency plan provides a framework for preparedness, but it cannot replace the hands-on requirements necessary to provide safety for vulnerable populations in real-time events, where both residents and staff are faced with stressful, and dangerous conditions. A weakness in this study was the lack of access to compare experiences of multiple facilities. Future emphasis in research and planning should be devoted to identifying human behaviors and interdisciplinary team actions that contribute to positive outcomes in this population during natural disasters.

C155
Aligning Care in Primary Care: Integration of an EMR Tool and Clinical Social Worker into Advanced Care Planning Discussions
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Background: The Care Alignment Tool (CAT) is an Electronic Medical Record (EMR) tool designed to enhance advance care planning conversations and documentation. The CAT guides providers through advance care planning by prompting questions regarding patient beliefs about their health, goals for future health states, and desires for end of life care. Providers can then document their conversation in real time, and the form is available as part of the patient’s EMR. Our goal was to increase utilization of the CAT at an academic family practice center.

Methods: Population: Included in the study were patients aged 65 and older and younger patients with severe chronic medical conditions that would qualify for Medicare coverage. Intervention. A brief educational session was delivered to providers from the family practice clinic, followed by a 1-month motivational follow-up session. A licensed clinical social worker (LCSW) was also deployed into the clinic to aid patients and providers in completing CATs. The LCSW was previously trained in Respecting Choices, a nationally-recognized curriculum for training ACP facilitators. Data: The model for quality improvement methodology was employed for this study. Regularly scheduled meetings were used to tally the number of CATs completed, and to monitor the clinical social worker’s integration into the clinic.

Results: A total of 10 CAT documents were completed over a 12 month pre-intervention period. Of these, 6 documents were completed by providers who were not involved in the study design or intervention. After 2 brief educational sessions and implementation of a clinical social worker, 22 CAT documents were completed over a 3 month post-intervention period. 17 documents were completed by providers not involved in the study design; the LCSW assisted with 10 of the 17 documents.

Conclusions: There was an observed increase in Care Alignment Tool utilization following our interventions as the number of CAT documents completed more than doubled. The results of this study indicate that inter-professional teams with shared goals may be key to increasing ACP documentation in a busy academic outpatient practice. Future work should focus on the sustainability and cost-effectiveness of implementing these interventions.

C156
‘Before I Die’: Common bucket list themes listed by older adults and how they differ from their younger counterparts.
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Background: In order to provide preference-sensitive care, we propose that clinicians might routinely inquire about their patients’ bucket-lists and discuss the impact (if any) of their medical treatments on their life goals.

Methods: This cross-sectional, mixed methods study explores the concept of the bucket list, identifies common bucket list themes and compares older adults to their younger counterparts. Data were collected in 2015-2016 through a online survey which was completed by a total of 3056 adults and older adults. Foursy participants who had a bucket list were identified and asked to fill out a development cohort; their responses were analyzed qualitatively using grounded theory methods to identify the six key bucket list themes. The responses of the remaining 3016 participants were used for the validation study. The codes identified from the development cohort were validated by analyses of responses from 50 randomly drawn subjects from the validation cohort. All the 3016 validation cohort transcripts were coded for presence or absence of each of the six bucket list themes and we compared adults to older adults.

Results: 91.2% participants had a bucket-list. Participants who reported that faith/religion/spirituality was important to them were most likely (95%) to have a bucket-list compared to those who reported it to be unimportant (68.2%), $\chi^2 =37.67$. Six primary themes identified were the desire to travel (78.5%), desire to accomplish a personal goal (78.3%), desire to achieve specific life milestones (51%), desire to spend quality time with friends and family (16.7%), desire to achieve financial stability (24.3%), and desire to do a daring activity (15%). Women ≤70 years of age, for whom faith/religion/spirituality was at least somewhat important, were most likely to have a bucket-list (94.9%). Participants ≥ 61 years of age, who were not married and for whom faith/religion/spirituality was not important were least likely (31.8%) to have a bucket list. Unmarried males ≥ 65 years were least likely to list travel (52.3%) on their bucket-list.

Conclusions: The bucket list concept can be used to effectively engage older adults about what-matters-most to them by using a framework that they can understand easily. Knowing what matters most to patients and their bucket lists can aid clinicians in relating each treatment option to its potential impact (if any) on the patient’s life to promote informed decision making.

C157
Exploring the Epigenetics of Pathological Aging
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Background: During advanced aging, tissues lose mechanical integrity and functional efficiency, resulting in increased frailty and susceptibility to disease. It has been shown that as a tissue ages its adult stem cell (ASC) reservoir becomes depleted giving rise to miniaturization and reduced organ function; this is believed to be due to ASC activation and differentiation followed by lineage infidelity (Ge, et al., 2017), and our present work investigates the method by which such ASC dysregulation occurs.

Methods: The hair follicle (HF) of mouse skin was used as a model organ to investigate the impact of aging on ASC homeostasis. Mouse epidermal cells (ECs) expressing mutually distinct transcription factors (TFs). We labeled the HF stem cells (HFSCs) and ECs of the back skin of old (30 months, n = 4) and young (2 months, n = 4) C57B6 mice in vitro with fluorescing markers, then used FACS to purify both cell populations. We compared chromatin accessibility patterns of super-enhancers between the
genomes of the old and young cells with ATAC-seq, and conducted comparative fluorescent imaging analysis of the skin, in +/- wound states in situ.

Results:
While the ECs and HFSCs maintained independent identities in the young mouse skin, the HFSCs of the old mouse skin exhibited lineage infidelity proximal to the epidermis, co-expressing EC markers. Moreover, the HF s of old mouse back skin had fewer HFSCs resulting in HF truncation and decreased hair production. Further, the HFSCs of younger mice were able to reconstitute HF s after wound healing, while those of the old mice were not. Characteristic differences in key identity and HFCS homeostasis super-enhancers were observed between old and young mice.

Conclusions:
As mouse HFSCs age, chromatin accessibility of key TFs involved in lineage identity and homeostasis undergo characteristic changes associating with depletion of the HFSC reservoir, and shrinkage and reduced function of the HFs. If analogous mechanisms can be identified in the ACSs of other organs, investigating the mechanisms underlying how these changes arise may yield potential therapeutic targets to reduce ACS reservoir depletion and preserve organ function during aging.

C158
Age-Related Adverse Inflammatory and Metabolic Changes Begin Early in Adulthood
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Background: Biological aging is characterized by deleterious immune and metabolic changes, many of which are associated with functional decline and increased morbidity and mortality in older adults. The purpose of this study was to characterize changes in biomarkers of immune and metabolic function across adulthood.

Methods: Concentrations of circulating immune and metabolic biomarkers were quantified from 961 community-dwelling adults ranging in age from 30 to over 90 years. Immune biomarkers included IL-2, IL-6, TNF-alpha, TNFR-I, TNFR-II, VCAM-I, G-CSF, MMP-3, RANTES, and d-dimer. Metabolic biomarkers included adiponectin, acylcarnitines, paraoxonase activity, and free amino acids.

Results: Concentrations of TNF-Alpha, IL-2, IL-6, TNFR-I, TNFR-II, MMP-3, VCAM-1, d-dimer, adiponectin, acylcarnitines, and amino acids were higher in older participants. Concentrations of RANTES, G-CSF, and paraoxonase activity were lower in older participants. BMI was associated with higher concentrations TNF-α, TNFR-I, TNFR-II, IL-6, D-Dimer, G-CSF, and AC Factor and lower concentrations of MMP-3, Adiponectin, and Glycine. Sex, and race were significant covariates for some biomarkers.

Conclusion: These cross-sectional data demonstrate the onset – as early as the fourth decade of age – of abnormalities of immune and metabolic biomarkers known to be associated with impaired physical function, morbidity, and mortality in older adults.

C159
A novel curriculum for primary care physicians on incorporating life expectancy in cancer screening recommendations
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Background: Cancer screening is a common and important preventive care in primary care. There is considerable lag time to benefit from cancer screening whereas the harms are short-term. Therefore, cancer screening in older adults with limited life expectancy (LE) exposes them to harm with little chance of benefit. Currently, many older adults with limited LE continue to receive screening while healthy older adults are under-screened for cancer due to age when they may still potentially benefit. One potential contributor may be that primary care physicians (PCP) are not trained on how to incorporate LE in their cancer screening recommendations. We describe the development of a novel curriculum to address this need.

Methods: We used 6-step method by Kern et al for our curriculum development process. To assess general needs, we performed literature search regarding the current approaches for teaching PCPs in assessing, discussing, and incorporating LE in cancer screening recommendations. To assess the needs of targeted learners in our institution, we surveyed a convenience sample of 14 practicing physicians and fellows working at the JH Bayview hospital on their knowledge, attitude and perceived barriers regarding assessing, discussing, and incorporating life expectancy when recommending cancer screening.

Results: Our literature search did not reveal any curriculum on incorporating LE in cancer screening. For our targeted needs assessment, all 14 physicians who completed the survey considered age and LE important factors in cancer screening recommendations. However, only 5/14 felt confident in predicting the LE and only 5/14 felt comfortable discussing it with patients. The most important barrier in assessing and discussing the LE was lack of knowledge (7/14), followed by lack of skills (4/14) and not enough time (3/14).

Conclusion: There is underutilization of the life expectancy as a tool to help PCP in cancer screening decision-making. Physicians who responded to our survey reported knowledge deficit and limited confidence in calculating and discussing LE, demonstrating the need for an educational intervention. We are in the process of creating an accessible and concise virtual curriculum to improve PCPs’ knowledge and skills on incorporating LE in their cancer screening recommendations.

C160
Meeting the Nursing Needs: An Interprofessional Team Education Approach to Enhance Care for Older Adults
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Background: Despite the aging population, the number of geriatric trained healthcare professionals is inadequate to meet the complex care needs of older adults. There has been a call for increased geriatric education to better equip healthcare providers to respond to this need.

Methods: The purpose of our intervention is to increase knowledge among non geriatric trained healthcare professionals. The interprofessional team provided lectures to nurses & allied health professionals at two hospitals: a comprehensive cancer center and an underserved community hospital. Lectures covered eight topics relevant to needs of older adults in the area: Cognitive impairment, Working with Interpreters, Physiological Changes of Aging, Frailty, Falls & Function, Nutrition Management, Breast Cancer Screening, Falls Prevention/Discharge Planning, and Caring for the Caregiver. Education included components of the Comprehensive Geriatric
Assessment (CGA) and recommended interventions. Pre and post surveys were conducted to assess for knowledge change.

**Results:** A total of 216 nurses & allied health professionals were educated from September 2016 to November 2017. Of these learners, 188 (87%) completed both pre and post knowledge tests. Median age was 42 years old and 90% were female. 39% of attendees were Asian and 38% were Black or African American. 50% of attendees were registered nurses and 34% were patient care technicians. Attendees spoke 11 different languages and came from 20 different countries. Frailty, Falls & Function and Working with Interpreters demonstrated the most significant change in knowledge (p<.01 and p<.001 respectively). Across all programs, knowledge increased significantly, t(188)=8.67, p<.001, between pre-training (M=.518, SD=.24) and post-training (M=.664, SD=.270). Participants also wrote how the education might influence daily practice.

**Conclusion:** Our educational program was very well received and overall successful in uptake of knowledge by nurses & allied health professionals. Empowering healthcare providers through geriatric education contributes to the understanding of geriatric syndromes and may improve outcomes.


**C161**

**Interprofessional Training in Long Term Care**

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**Background:** The Utah Geriatric Education Consortium, a Geriatric Workforce Enhancement Project (GWEP), seeks to enhance healthcare provider workforce capacity in order to improve primary care and geriatric outcomes in long term services and supports. One of the most critical obstacles to quality care is communication and teamwork among physicians, nursing home staff, residents, and families. Interprofessional education (IPE) is a recognized strategy to optimize communication, collaboration and teamwork among health professionals. Although most nursing home care is delivered by interprofessional (IP) teams, team skills and competencies are not integrated into most healthcare professional training. The opportunity to offer health science students an IPE experience in long term care (LTC) was seen as one way to achieve this unmet need. The purpose of this new IPE initiative was to familiarize students with IP teams in LTC settings.

**Methods:** In Fall 2017, graduate students from the health sciences campus were recruited and enrolled in an IPE LTC pilot. A skilled nursing facility partner volunteered to host the IPE LTC and helped plan the four-hour on-site training. Students were introduced to current issues in LTC, toured the facility, received an overview of senior engagement programs, the “Eden Alternative”, then joined lunch and a social activity with residents. A post-training satisfaction survey was completed at the end of the session.

**Results:** Seven students from four disciplines attended the training. All students reported that the training would improve the type of care they provide. There was consensus amongst students (86%) that the training was engaging, met their educational needs, and provided examples that would be useful to their education. Students indicated that this training session was better than similar IPE programs. They liked the “interactive activity with the residents” and requested “more interaction between students from different programs.”

**Conclusions:** This pilot session provides a framework for IPE collaboration within long term care facilities. Future sessions will include additional case studies that provide experience with IP teamwork and application. Lastly, the IPE in LTC session should allow time to debrief students on their experiences.

**C162**

**Training Community Providers in Geriatrics: A Case Study**

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**Background:** The Duke Geriatric Workforce Enhancement Program provides fellowship training in geriatric medicine, psychiatry, and advanced practice nursing. One goal of the program is to provide trainees with specific mentoring, clinical experiences in a variety of settings, and practical experiences in programs focused on community care of older adults. Dr. B, a board certified family physician and faculty member within Community and Family Medicine, was approached about this training opportunity. At the time, she directed a home based primary care program that provided co-management services for frail seniors. Discussions with her department leadership revealed it was not feasible to leave her position to pursue a full time fellowship. **Methods:** The Departments of Medicine and Community & Family Medicine agreed that Dr. B would spend an average of 75% of her time working and training as a geriatric medicine fellow. The remaining 25% of her time would be spent continuing part time work with the homecare program. Approval to extend her term of training from 12 to 17 months to become board eligible in geriatrics was obtained from the American Board of Family Medicine. **Results:** Dr. B constructed a custom curriculum to address her career goals and objectives. Within the prescribed rotations, she was given longitudinal flexibility to pursue interests and areas of increased focus. In June 2017, Dr. B completed the Duke Geriatrics Fellowship program. She then started a new position within the Department of Community and Family Medicine as Assistant Professor with a specific focus on helping build out their home visit and nursing home programs. Her time is split between administration, residency support, and direct patient care. She teaches residents, medical students and physician assistant students, as well as supervises staff providing care to geriatric patients in several community clinics that provide primary care to underserved and low income seniors. **Conclusions:** As graduate medical training continues to evolve to meet the growing demands of our aging patient population and health systems scramble to find ways to reduce spending in regards to Medicare patients, exploring innovative and flexible career development opportunities is of utmost importance. While Dr. B’s experience was not free from challenges, through collaboration, open communication, and frequent check-ins with stakeholders, this training approach was successful.

**C163**

**An Interactive Interprofessional Workshop for Preclinical Medical Students**


**Background:** Interprofessional (IP) education and collaboration have been shown to have a positive impact on patients, the community, and professional practice. IP Collaborative Practice Competencies have been developed comprising 4 domains: Values/Ethics for IP Practice, Roles/Responsibilities, IP Communication, and Teams and Teamwork.

**Methods:** We developed a required IP workshop for first-year medical students (MS1s) and medical scientist training program (MSTP) students to improve competency in the IP domain “Roles/Responsibilities.” This 2.5-hour IP workshop consisted of a 20-minute didactic, 5 small group sessions, and a large group debrief. During the small group sessions, students rotated between interactive sessions led by a physical therapist, pharmacist, speech language pathologist, nutritionist, and social worker. Students completed before and after surveys on their ability to perform the 9 IP competencies related to roles/responsibilities on a 5-point Likert scale (1=strongly disagree, 5=strongly agree that they are able to perform each competency). IP
providers completed after surveys. P-values were calculated using McNemar’s test.

Results: Student survey response rate was 75/99 (76%); IP provider response rate was 7/11 (64%). Students agreed that the IP workshop should be continued for future students (67/75, 89%). Students’ self-rated ability to perform the IP competencies showed statistically significant improvement for 8 of the 9 competencies. The two competencies with the greatest improvement in self-rated ability were, “Engage diverse healthcare professionals who complement one’s own professional expertise, as well as associated resources, to develop strategies to meet specific patient care needs,” (agreement before 16%, after 79%, p<0.0001), and “explain the roles and responsibilities of other care providers and how the team works together to provide care,” (agreement before 12%, after 87%, p<0.0001). All 7 IP providers who responded agreed/strongly agreed that the session was valuable, it gave medical students a better understanding of their profession, and they would be interested in participating again in the future.

Conclusions: An IP workshop for medical students can significantly improve students’ self-rated ability in IP competencies related to roles/responsibilities. Both students and IP providers felt the workshop was valuable and should be continued in the future.

C164 Encore Presentation
The Development of a Communication Instrument for Long Term Care Providers and Staff
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BACKGROUND: Effective, person-centered communication in long term care settings is needed to avoid adverse outcomes such as hospital readmissions. However, information transfer among providers, staff, residents, and family caregivers is often fragmented. We developed a communication instrument in order to assess confidence among providers and staff of long term care (LTC) facilities in communicating health information with residents and family caregivers. The communication instrument also identifies areas for additional training.

METHODS: An interdisciplinary Geriatrics Workforce Enhancement Program (GWEIP) faculty panel identified key domains most relevant to effective communication in LTC settings. Using an iterative process, the panel revised the survey questions to fit these domains as well as related concepts and definitions. A separate group of LTC experts rated the relevance of each concept (11 questions total) using an online survey. In addition, the experts’ qualitative comments were assessed in two stages in order to incorporate changes based on faculty panel consensus.

RESULTS: Four key concepts were identified as most relevant to communication among providers and staff in LTC settings, including mutual respect, confidence in recognizing and responding to sensory deficits, confidence with health literacy (including the teach-back method), and confidence in communication with health care team members (including responding to changes in condition). Content validity was achieved for all 11 questions (p = 0.05) based on analysis of 10 completed expert surveys. Minor revisions were made to 4 of 11 questions based on the experts’ scoring and qualitative feedback.

CONCLUSION: We developed an instrument to assess confidence among LTC providers and staff in communicating health information and to identify additional training needs in communicating about sensory deficits, health literacy, and changes in condition. Additional research is needed to pilot the survey in LTC settings in order to establish the validity of the instrument.

C165
Changing Healthcare Provider Perceptions of Older Adults
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BACKGROUND: Ageism defined as systematic stereotyping and discrimination against people because they are old is widespread and frequent. This occurs in healthcare and impacts both the healthcare workforce and older adult patients. Older adults and their caregivers impacted by ageism may be misled into accepting the symptoms associated with common geriatrics syndrome are part of natural aging for which nothing can be done. As a component of the Indiana Geriatrics Workforce Enhancement Program (GWEIP), our objective was to develop and implement professional development education and learning activity at 8 community health centers (CHCs) of the Eskenazi Health Center FQHC in Indianapolis, IN.

METHODS: Applying Mezirow’s transformative learning theory principles, we created a didactic session on healthy aging for primary care teams at all 8 CHC sites. The session explored the framework for successful aging, challenged common myths and posed questions to the participants to trigger self-reflection. The final segment included 3 healthy and active older adults drawn from the local community, ages 79, 84 and 96, who told the CHC staff and providers about their active lives and what they wanted most from healthcare providers. Objectives of the session included achieving perspective transformation among the participants specific to ageism. Outcomes were evaluated with a brief pre- and post- surveys that asked participants to list three words that came to mind when they thought about older adults.

RESULTS: Surveys completed pre-intervention totaled 145, surveys completed post-intervention totaled 130. Total number of words reported in each of the following categories decreased post-at each of the 8 CHCs post-intervention: 1) Forgetfulness; 2) Fragile; and 3) Health, a decrease of 50% to 400% per site. Total number of words reported in each of the following categories increased post-intervention across all CHCs: 1) Wisdom; 2) Mobility; and 3) Experience, an increase of 50% to 300% per site.

CONCLUSION: Healthcare provider exposure to and experience with healthy older adults can change provider perceptions of the abilities and qualities of older adults as a population.

C166
Guide to Patient-centered Education Sessions (GPES): Innovative Tool for Healthcare providers
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BACKGROUND: Geriatric care management can be complex. This situation is further exacerbated by low levels of patients’ health literacy and engagement. Patient’s knowledge and ability to manage their own health can be improved with interventions tailored to their particular needs. Our objective is to create a simple guide for healthcare providers to conduct patient centered goal-oriented education aimed at enhancing engagement and improving outcomes. Methods: A 6-step guide for clinical education and decision making was created by applying relevant adult learning and teaching principles and incorporating the concept of co-production of healthcare services. The guide was designed to promote consideration of patient’s preferences, collaborative medical decision making, accountability and evaluation of outcomes. This guide was made available to an interprofessional group of healthcare providers who participated in a didactic presentation on teaching moments and care planning. Following the presentation, participants were divided into small groups and instructed to role play different clinical scenarios involving clinical encounters between patients and healthcare teams. The teams were tasked with providing
C167 Pharmacy Students and an Intergenerational Service-Learning Experience
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Background: Second year pharmacy students at a private University participated in “intergenerational service-learning” with older adults at a care facility. Service-learning is defined as, “a pedagogy that integrates meaningful community-engaged service with instruction and reflection” (Kleinhesselink et al., 2015, p. xi). The course objectives included providing companionship and forming relationships with older adults; understanding social justice and aging issues; articulating strategies for effective communication and advocacy for older adults, and promoting the importance of health, disease prevention/management, and medication adherence. Students were required to complete ten hours within a care facility during the semester.

Methods: Students completed a pre and post reflection of their experiences in the care facility in order to process their perceptions about older adults, care facilities, and possible benefits for themselves and the older adults. Approximately seventy students completed the pre and post reflections in both oral and written forms in class.

Results: Students were challenged to think of their experiences through the following lens: 1) a greater awareness of self; 2) a greater awareness of others; 3) a greater awareness of social issues, and 4) a greater potential to make change (Cipolle, 2010). Pre and post reflections in oral and written forms showed that students had increased levels of awareness in all four areas. Students also reported increased knowledge related to the healthcare needs of older adults living in care facilities, effective communication and advocacy, as well as justice issues related to aging.

Conclusions: These experiences made the lives of older adults in care facilities real for students and allowed them to overcome fears and misconceptions related to working with and on behalf of older adults. More importantly, pharmacy students were able to put human faces on issues, challenges, and suffering which fosters care, empathy, and compassion for older adults, their future patients in pharmacy practice (Cipolle, 2010).

References:
therapy completed OALIG modules. At the heart of our online program are engaging training videos using an innovative style of “narrated” stories putting the learning into context and connecting the content to the learner, “demonstrated” concepts using animation and “related” to the learner with case study patient interviews. Mixed methods post-program evaluation examined the types of learners, responses to the style of programming and learners’ proficiency.

Results: Online multidisciplinary learners completed over 2,000 OALIG modules over 10 months. Descriptive data indicate learners included a broad audience of 30% clinicians, 23% faculty, 4% residents, 33% students and 10% other. Online modules were taken by U.S. learners (95%) from 45 different states with 59% urban, 13% rural and 28% suburban. 88% of learners rated themselves with “improved proficiency” following completion of the learning modules. Qualitative data indicated learners valued the three film styles: Narrate, Demonstrate, and Relate:

“I think the narrator was very engaging and charismatic, the social worker spoke extremely well and shed a lot of light and compassion on this topic and I learned a great deal listening to the caregiver and her journey!”

Conclusion: The OALIG program supports new online learning experiences that are engaging and accessible and improve proficiency.


C170

Background: Work hour restrictions and an emphasis on hospital medicine provide little opportunity to impart outpatient skills from subspecialties like Geriatrics to housestaff. Though there is limited time to impart didactics during working hours, the down time during travel to and from clinical responsibilities gives opportunities to use audio podcasts as a learning tool. We checked what podcasts were available to teach Geriatric skills and surveyed housestaff regarding their desire to learn Geriatrics and which topics to cover.

Methods: We checked Google and major podcast portals for the term “geriatrics,” listened to two sample episodes, and read topic descriptions for the remaining episodes in each podcast. Following IRB approval, we sent a needs-assessment survey through Qualtrix to the internal medicine residency, all internal medical subspecialty fellowships, and the orthopedic surgery residency at the University of Pittsburgh Medical Center Presbyterian. Respondents rated interest in Geriatric issues and were asked to identify other topics of interest.

Results: We identified 11 Geriatrics-themed podcasts. Podcasts varied in host’s profession (MDs, nursing, physical therapy, and law), target audience (specific providers, general providers, lay audience), and length (20 minutes to one hour). No podcast was developed for housestaff, and none focused on teaching patient care skills. Our housestaff survey (N = 378) had 52 responses (14% response rate), with 19% PGY-1, 21% PGY-2, 15% PGY-3, 44% ≥PGY-4. A majority (63%) were not interested in further Geriatrics training, while the remainder were (one wished to train in Geriatrics). Housestaff specifically asked for help with polypharmacy, delirium management, availability of home services, falls, sexuality, and ethical guidelines in elder care.

Conclusion: Although many podcasts for Geriatric enrichment are available, none are geared towards housestaff specifically, and none are designed to pass along patient care skills. Though most trainees are not interested in enrichment, they do identify a set of skills to improve. To fill this need, we will create ~10 minute podcasts covering skills pertaining to specific Geriatric topics. These podcasts will act as learning supplements to help teach Geriatric principles to trainees in medicine and surgery.

C171
Reduction in Futile Interventions in Trauma ICU Patients Receiving Palliative Care Consultation 1. T. Wangjam,2 J. Healy,4 P. Datta,2 S. Sanchez-Reilly,4 1. Geriatrics, University of Texas Health Science Center, SAN ANTONIO, TX; 2. Oncology, University of Texas Health Science Center, San Antonio, TX; 3. Audie Murphy VA, San Antonio, TX; 4. Palliative Care, University of Texas Health Science Center San Antonio, San Antonio, TX.

Background: Despite data supporting integration of palliative care, the number of available cancer therapeutics creates challenges in determining timing for referrals. As a result, palliative care services are under-utilized and referral to hospice occurs late for many cancer patients. Veterans however are a unique population in that palliative and hospice services can be provided concurrently with active care consultation a more timely administration of palliative care consultation in the PCC group. In the MCG group there was a 31 total FI performed (7.5%) with 11 TCH placements (3.3%) and 14 PEG tube placements (4.2%); however, only one FI (a PEG Tube) was performed after PCC was administered (0.3%). The average time to PCC in PCC group was 4.8 days. In the MCG there were significantly more FI performed when compared to the amount of FI that occurred after palliative care consultation in the PCC group. In the MCG group there was a 31 total FI (9.3% in MCG vs 0.3% in PCC, p<0.001) including 10 TCH placements (3.0% in MCG vs 0.0% in PCC) and 21 PEG tube placements (6.3% in MCG vs 0.3% in PCC).

Conclusion: The amounts of both FI were significantly reduced by a factor of 10 in PCC patients after palliative care consultation. Since the majority of FI in PCC patients occurred prior to palliative care consultation a more timely administration of palliative care consultation is recommended.

C172 Encore Presentation
Impact on Patient Outcomes of Concurrent Supportive Care and Oncology Services on Geriatric vs Standard Adult Patients at VA Hospital A. H. Vasquez,1 S. Rauenzahn Cervantes,2 S. Lee,3 P. Iruku,2 T. Wangjam,4 J. Healy,4 P. Datta,2 S. Sanchez-Reilly4 1. Geriatrics, University of Texas Health Science Center, SAN ANTONIO, TX; 2. Oncology, University of Texas Health Science Center, San Antonio, TX; 3. Audie Murphy VA, San Antonio, TX; 4. Palliative Care, University of Texas Health Science Center San Antonio, San Antonio, TX.

Background: Despite data supporting integration of palliative care, the number of available cancer therapeutics creates challenges in determining timing for referrals. As a result, palliative care services are under-utilized and referral to hospice occurs late for many cancer patients. Veterans however are a unique population in that palliative and hospice services can be provided concurrently with active care consultation a more timely administration of palliative care consultation in the PCC group. In the MCG group there was a 31 total FI (9.3% in MCG vs 0.3% in PCC, p<0.001) including 10 TCH placements (3.0% in MCG vs 0.0% in PCC) and 21 PEG tube placements (6.3% in MCG vs 0.3% in PCC).

Conclusion: The amounts of both FI were significantly reduced by a factor of 10 in PCC patients after palliative care consultation. Since the majority of FI in PCC patients occurred prior to palliative care consultation a more timely administration of palliative care consultation is recommended.
oncologic care. The objective of this project was to describe differences among geriatric and non-geriatric patients in regards to referral practices to palliative/hospice services and healthcare utilization.

**Methods:** In this retrospective chart review of consecutive medical oncology consults from July 01,2010-June 30,2011, data including demographics, cancer/treatment history and utilization information were collected and censored on July 1,2016.

**Results:** A total of 490 patients were included with 277 (56.5%) patients age ≥65 and 213 (43.5%) patients age < 65. Geriatric patients were more likely to be male (97.1% vs 87.3%, p<0.01), have a faculty primary oncologist (43.9% vs 22.8%, p<0.01) and have a lung (28.9% vs 16.9%, p<0.01) or genitourinary (25.6% vs 17.8, p=0.04) cancer than non-geriatric patients. There were no differences in cancer stage, metastatic disease, number of lines of chemotherapy, referral practices (palliative care, hospice, psychiatry, nutrition, or physical/occupation therapy); emergency room visits; or hospitalizations. However, non-geriatric patients were more likely to have active cancer (90.3% vs 82.8%, p=0.02) and die during their ultimate admission (56.7% vs 43.3%, p=0.02).

**Conclusions:** The results showed similar oncologic management between geriatric and non-geriatric populations except during the ultimate admission where younger patients were more likely to die. Additional research is required to determine if this difference is related to patient or provider factors.

**C173**

**Long-Term Care Patients with Percutaneous Endoscopic Gastrostomy (PEG) Tube: Reasons for Rehospitalizations**

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**Background:** Over 160,000 PEG placement procedures are performed each year in the US and 8.1% of all long-term care residents receive feeding via PEG tube. The objective of the study was to explore reasons for hospital readmissions of long-term care residents with a PEG-tube.

**Methods:** A one-year retrospective study of long-term care PEG-fed residents over the age of 18 in two facilities. Data included: demographics, reasons for PEG placement, number of hospital readmissions, reason for readmission and presence of associated PEG-tube complications or adverse events.

**Results:** The average age of the 36 residents who fit our inclusion criteria was 79.9 years (range 54-93), and 63.9% were female. The majority were white (69.4%), African American (16.7%) and Asian (2.8%). Most were married (47.2%) or widowed (22.2%). Reasons for PEG placement included: stroke (27.8%), cancer (11.1%), failure to thrive (11.1%), Parkinson’s disease (8.3%), dementia (5.6%), traumatic brain injury (2.8%) and other (33.3%). Only 9.4% had normal cognitive function while over a third (37.5%) had severe cognitive impairment and 31.3% had mild impairment. The overwhelming majority (93.1%) had albumin level <3.5 mg/dl. With regard to rehospitalizations in the one-year study period, 88.4% had more than one, 44.1% more than two, 29.7% three, and 16.2% had four readmissions. Reasons for rehospitalizations associated with the presence of PEG included: tube dysfunction (dislodged, clogged and peritube leakage, 48.3%), pneumonia (44.8%), GI bleeding (13.9%), and abdominal wall abscess (2.8%). Other reasons included: sepsis (27.8%), respiratory distress (25.0%), anemia (2.8%), altered mental status (11.1%), infected decubitus ulcer (8.3%), infected wound (5.6%) and other (22.2%). Overall one-year mortality was 11.1% (n=4).

**Conclusions:** These findings suggest that most long-term care residents with a PEG tube are rehospitalized at least once within a one-year period after the PEG placement due to complications related to the PEG. Healthcare professionals, family members and caregivers need to be educated with regard to the risk/benefit ratio of PEG procedures.

**C174 Encore Presentation**

**Vision Impairment in Older Adults after Head and Neck Cancer Treatment**

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**Background:** Vision impairment in the the growing number of older adults is becoming major public health concerns. Head and neck cancer (HNC) treatment involves the anatomical area of vision function and ocular structure. We found 43% of HNC patients complained of vision changes after treatment. The purpose of the study was to (1) explore the relationships of vision function (VF) and ocular symptoms (OS) with quality of life (QOL), and (2) test the interactions of cancer treatment variables with these relationships while controlling for the age.

**Methods:** An one-time Internet questionnaire was sent to 485 HNC patients after their cancer treatment. The National Eye Institute Visual Functioning Questionnaire, Ocular Symptom Scale, and Functional Assessment of Chronic Illness Therapy – Head and Neck (FACT-H&N) were administered. Descriptive statistics and multiple regression models were performed.

**Results:** Twenty-five percent of patients (N=120) responded to the survey (mean age: 64.69±9.89). Both VF and OS were significant predictors of physical well-being (R²=0.23). VF was the only significant predictor of functional well-being (R²=0.31), emotional well-being (R²=0.23), social well-being (R²=0.06), general QOL (R²=0.32), HNC QOL (R²=0.20), and total FACT-H&N (R²=0.30). In the test of interactions while controlling for age, surgically treated patients had better QOL (functional well-being [p=0.03], emotional well-being [p=0.01], general QOL [p=0.03]) than non-surgical patients at the same unit of VF. Patients who received corticosteroids had better social well-being (p=0.05) and better emotional well-being (p=0.001) at the same unit of VF but had worse social well-being (p=0.03) at the same unit of OS. Patients with surgery had worse emotional well-being (p=0.02) at the same unit of OS.

**Conclusions/Clinical Implications:** Findings suggest the importance of VF and OS in QOL after HNC treatment in aging adults. Better VF is related to better QOL after HNC treatment, especially in those who had surgery. Better VF is also related to better social and emotional well-being in HNC patients who had corticosteroids. However, HNC patients, who have worse OS after surgery and corticosteroids, may experience poorer social and emotional well-being. Regular vision screening is vital after HNC treatment.

**C175**

**Clinical & Socio-Demographic Characteristics of Older Adults with Multiple Chronic Conditions & Food Insecurity**


**Background:** Food insecurity, defined as uncertain or limited access to nutritionally adequate and safe foods, has implications in the care of older adults with multiple chronic conditions (MCC). The extent of food insecurity among older adults with MCC is not well described.

**Methods:** We conducted a telephone survey of older adults age 60+ that speak English, Spanish or Chinese with 2+ concurrent chronic conditions from an urban primary care practice. We recruited participants by clinic population-based sampling stratified by race/ethnicity. Survey included the 10-item US Adult Food Security Survey Module (PFSSM), medication insecurity and socio-demographic characteristics unavailable from the electronic health record (EHR). Additional characteristics were obtained from the EHR. Food insecurity status was
assigned based on the sum of affirmative answers to the FSSM (n=0-2; yes=3+). We conducted bivariate analysis and compared characteristics of participants by food insecurity using chi-square tests for categorical variables and Mann-Whitney tests for continuous variables.

Results: The prevalence of food insecurity in this sample (n=475) with MCC was 8.2%. Table 1 shows the significant (p<0.05) clinical and socio-demographic characteristics of older adults with MCC by food insecurity status.

Conclusions: Food insecurity among older adults with MCC is associated with being a racial/ethnic minority and lower socio-economic status as well as polypharmacy, medication insecurity and higher primary care utilization. Clinicians should consider screening for food insecurity and addressing it in the comprehensive care of older adults with MCC.

<table>
<thead>
<tr>
<th>Table 1. Clinical and socio-demographic characteristics of older adults with MCC by food insecurity status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not Food Insecure (n=429)</td>
</tr>
<tr>
<td>Age (mean ± SD)</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td>Asian, Black, Latino or American Indian</td>
</tr>
<tr>
<td>&lt; High school education</td>
</tr>
<tr>
<td>Disabled</td>
</tr>
<tr>
<td>Private insurance</td>
</tr>
<tr>
<td>≤ $40,000 annual income (≤ $5333/month)</td>
</tr>
<tr>
<td># of medications (mean ± SD)</td>
</tr>
<tr>
<td># of hospitalizations (mean ± SD)</td>
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<tr>
<td>Body mass index (mean ± SD)</td>
</tr>
<tr>
<td>Medicare</td>
</tr>
<tr>
<td>Medicaid</td>
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<tr>
<td># of primary care visits in last 12 months (mean ± SD)</td>
</tr>
</tbody>
</table>

C176
Geriatric Trauma and Palliative Care: Predictors of Consultation
1. Internal Medicine, Summa Health, Akron, OH; 2. Hospice and Palliative Care, Summa Health, Akron, OH; 3. Trauma Program, Summa Health, Akron, OH; 4. Geriatric Medicine, Summa Health, Akron, OH.

Background: Low velocity falls are the most significant cause of injury and death in older adults and are among the most common reasons a geriatric trauma patient (GTP) is admitted to a trauma service. Falls in older adults are a symptom in a cascade of events leading to functional decline and debility. While studies have identified risk factors for mortality in GTP, little information exists regarding who receives palliative care consultation (PCC). The objective of this study is to identify admission characteristics in GTP associated with hospital PCC. Methods: A retrospective observational study was completed using trauma registry and hospital administrative data at a MidWest, ACS verified, Level 1 Trauma Center. Patients aged ≥65 admitted to the trauma service between January 2013 and December 2015 for >24 hours were included. Variables included demographic, comorbidities, and severity of injury indexes. Bivariate analyses using χ2 and t-tests were used to identify covariates associated with having PCC. Covariates with p=0.25 were included in a mixed-effects logistic regression model. Results: There were 1,343 patients who met inclusion criteria; 151 (11.2%) received PCC with an average age of 84 and 91 (60.3%) were female, 144 (95.4%) were white, and 111 (73.5%) were admitted to the ICU. In-hospital case fatality rate was 24 (OR 3.32, p<0.001), ISS≥25 (OR 13.15, p<0.001), ICU admission (OR 1.75, p=0.022), and spinal injury (OR 2.52, p<0.001). The only comorbidity indicator to remain significant in the adjusted model was the Alzheimer’s/dementia variable (OR 2.32, p=0.001).

Conclusion: This study identified characteristics of GTP associated with PCC. Factors previously associated with mortality including age and ISS were associated with PCC, however only the presence of Alzheimers or dementia was found to be a risk factor for receiving PCC. In older adults, the presence of Alzheimer’s or dementia may be a hallmark geriatric syndrome associated with morbidity following a trauma, particularly low velocity falls. Those with Alzheimer’s or dementia may benefit from PCC while on the hospital trauma service.

C177
Does medical record documentation of mobility correlate with objective measure of mobility in hospitalized older adults at risk for venous thromboembolism (VTE) occurrence?

Background: Mobility influences clinical decisions about pharmacological VTE prophylaxis, and hospital providers often look to chart documentation for record of walking activity. This study describes the availability of chart-based walking data and explores how chart documentation correlates with objective accelerometer-derived mobility data.

Methods: Prospective observational data from a sample of community-dwelling older adults aged ≥ 60 years, admitted to an academic hospital’s general medicine service. Documentation of mobility activity was manually abstracted from nursing, physical therapy (PT), and occupational therapy (OT) notes in the medical record within 72 hours of admission. Inpatient mobility was objectively measured using ankle-mounted accelerometers. Pearson’s correlation was used to determine the correlation of accelerometer-based daily step count with documented distance.

Results: Among hospitalized older adults in this sample (N=65), 31% had any documentation of walking in nursing notes, 40% in PT/OT notes, and 35% had recorded walking distance. Only 54% of patients had a PT or OT session within the first 3 days of admission. Mean daily steps recorded via accelerometer was 1879 steps (SD 1408), and the correlation with walking distance recorded in PT/OT notes (n=23, mean 65 feet/day (SD 87)) was R2=0.63 (p=0.001). When a single highly influential outlier was removed (6134 steps/day), there was no correlation (R2=0.14, p=0.84).

Conclusions: There is limited documented mobility data available early in the hospital course to help guide providers’ VTE prophylaxis decisions, and the documentation available is only reporting a fraction of all walking activity. Further study is needed to understand barriers and facilitators to capturing hospital mobility data, and the role that objective mobility data may have on influencing VTE prophylaxis use in hospitalized older adults.

C178
A novel tablet-based application for cancer care coordination in older adults

Background: Older patients (pts) with cancer have complex healthcare needs. Pt/Caregiver (cg) use of a care coordination app (track-and-alert) may address these needs, improve cancer-related symptoms and reduce healthcare utilization. This study evaluates the feasibility of a tablet-based care coordination app (TouchStream) for older pts receiving systemic cancer treatment and their cgs.

Methods: In single site pilot study, we included pts aged ≥65 years on systemic cancer treatment, were able to provide informed consent and had life expectancy >6 months, and/or their cgs. TouchStream helps pts/cgs manage medications, appointments, and daily activities and monitors symptoms and exercise activities. Activities are entered and monitored through a web-portal by the healthcare team/cg. At baseline, pts underwent geriatric assessment
A tablet preloaded with the app was then provided for use at home for 4 weeks. Feasibility metrics included recruitment and retention rates, no. of days subjects used the app and system usability scale (SUS) score (>68 is above average). Barriers to use were elicited by pt and cg interviews. Pt symptoms were assessed at pre- and post-intervention. Clinic calls and hospitalizations during the intervention and following 4 weeks were recorded.

Results: Study recruitment rate was 67% and retention rate was 80%. Mean age of the 16 pts and 11 cgs were 77 (SD 5.4) and 70 (13.5), respectively; 83% of pts were males and 92% of cgs were females, 61% had leukemias. GA showed 17% fit (1 GA impairment), 33% vulnerable (2-4) and 50% frail (>=4). Mean no. of days TouchStream was used was 22 (SD 7.3); 94% used the app >50% of the study duration. The mean SUS score for pts and cgs were 74 (SD 14.5) and 72 (22.2). Key barriers identified included touchscreen design, information consistency and system flexibility. Mean symptom score was 4.8 (SD 2.7) at pre- and 3.1 (2.4) post-intervention. Mean no. of clinic calls was 2.9 (SD 3.0) during the intervention and 1.8 (1.7) following 4 weeks. Two pts were hospitalized during the intervention and 3 pts following 4 weeks.

Conclusions: TouchStream is feasible in older pts on cancer treatment and their cgs. Future studies should evaluate the effects of TouchStream on symptoms and healthcare utilization.

C179
How might older age predict differential patterns of palliative care and health disparities outcomes in supportive oncology cohort?
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Introduction: With the increase in the aging population, more elderly adults are treated for cancer and are prime candidates for supportive care. In order to optimally serve this population, a better understanding of the elders’ characteristics will equip supportive oncology providers to fully meet these patients’ needs. Comparing elders to non-elder populations will highlight the unique consideration needed to treat this population. Disparities in healthcare system usage maybe associated in this population to a dynamic interplay between dual insurance enrollment, comorbidities, and environmental factors. We aimed to illuminate several relationships by utilizing various analyses of existing data to provide a subtler picture of the state of the science.

Methods: We conducted a secondary analysis of data from a cancer cohort of adults (n=1512) who received palliative care consultation in an urban Southern academic medical center. We performed t-tests and chi squared analyses to compare age groups (>= 65 years old versus < 65 years old) on number of comorbidities including cardiovascular disease history, diabetes mellitus, and hypertension, length of stay (LOS), insurance status, patterns of care including radiation and chemotherapy treatment, and discharge disposition using SAS version 9.4 (Cary, NC).

Results: There were significant results for the older 65 year olds compared to the patients less than 65 year old (p <0.05). Those >= 65 were more likely to have dual insurance enrollment/eligible (Medicare/ Medicaid) which is a surrogate for lower SES; reported longer hospital stays, more comorbidities, and more likely to report discharge to hospice. Therefore, there is a significant association between older age and the other main effects.

Conclusion: Investigating factors that influence negative outcomes may lead to greater understanding of the way elders in a cancer cohort report treatment preferences and may explain disparities in morbidity and mortality. Tailoring programs to support elders in supportive oncology programs that understand how to leverage the resources of dual eligible patients would be a good use of resources. Also, interventions in supportive oncology that focus on early transition to hospice that may result in positive effects on length of stay and quality of life should be a focus as well.

C180 Encore Presentation
Geriatric Assessment in Older Cancer Patients and its Potential Impact on Surgical Treatment Decisions
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Background: Older cancer patients are a heterogeneous group. The Comprehensive Geriatric Assessment (CGA) is an important risk stratification tool in oncogeriatrics. This study aims to assess the impact of CGA on the decision to treat the cancer surgically, and the characteristics of patients that underwent surgery as opposed to those in whom the procedure was cancelled.

Methods: This is a retrospective analysis of a cohort of 1767 patients ≥ 75 years with diagnosis of cancer, scheduled for surgery, who presented to the Geriatrics clinic at Memorial Sloan Kettering Cancer Center between 01/2015 and 12/2016 for a pre-operative assessment. Sociodemographic characteristics and CGA parameters were collected and analyzed. For continuous and categorical variables, t-test and Chi-square test were applied respectively. Patients whose surgery was cancelled were categorized into three groups based on patient-rated Karnofsky Performance Status (KPS) score. Fit patients were those who had KPS of 80 or higher, vulnerable patients had KPS of 60 or 70, and frail patients had a KPS of 30 to 50. We compared reasons for not proceeding with surgery within the 3 groups. Frailty based on CGA was defined as ≥ 3 abnormal geriatric assessment domains.

Results: Of the 1767 patients (median age 80) who were evaluated with preoperative GA, 114 (6.5%) did not proceed with surgery. Significant differences between the group of patients that did not vs. the group that did proceed to surgery, include: median age (82.5, 80; p<0.05), KPS (70, 85; p<0.05), ADL (9.6, 12.3; p<0.05), iADL (10.4, 13.7; p<0.05), MiniCog (3, 4; p<0.05), distress thermometer (5, 4.2; p<0.05), social activity limitation score (9.7, 8.2; p<0.05). The differences were also significant in their use of assistive devices for ambulation, history of falls in the past year and their performance on Timed Up and Go Test (p<0.05). The most common reasons for surgery cancellation were comorbidities followed by frailty based on GA and cognitive impairment.

Conclusions: Preoperative CGA helped identify a subset of frail older cancer patients highlighting the need for this assessment. These patients were then offered alternative treatment approaches.

C181 Disability after an ICU versus Non-ICU Hospitalization among Older Adults: a Matched Cohort Study
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Background: Little is known about the effect of critical illness relative to less severe insults such as non-ICU hospitalization.

Methods: From an ongoing cohort study of 754 initially nondisabled adults, we matched 337 non-ICU hospitalizations (controls) to 173 ICU hospitalizations (cases) in a 2:1 ratio based on sex, age (+ 4 y), year of admission (+ 4 y), and pre-hospital function (+ 1 disability). Participants were evaluated monthly for disability in 13 activities. We evaluated the effect of ICU hospitalization, compared with non-ICU hospitalization, on the disability count over...
Poster Abstracts

6 months after hospital discharge using a multivariable Poisson regression model.

Results: The characteristics of the two groups prior to ICU/hospital admission were comparable. The disability count was considerably higher in the month after an ICU than non-ICU hospitalization (Figure), although this difference diminished over time. In the multivariable analysis, ICU hospitalization was associated with a 33% greater burden of disability over the 6 months after hospital discharge (relative risk [RR] 1.33, 95% CI 1.21-1.46).

Conclusions: Although the burden of disability increases after any hospitalization, the increase is considerably greater immediately after an ICU than non-ICU hospitalization. Given the disabling effects of an ICU hospitalization, additional rehabilitative efforts are warranted for the growing population of older ICU survivors.

Figure. Adjusted disability count over 6 months after hospital discharge

C182
The Role of Do-Not-Resuscitate Orders in Palliative Care Consultations in Geriatric Trauma Patients
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1. Trauma, Delray Medical Center, Delray Beach, FL; 2. College of Medicine, Florida Atlantic University, Boca Raton, FL; 3. Trauma, Broward Health Medical Center, Fort Lauderdale, FL; 4. Palliative Care, TrustBridge, Delray Beach, FL.

Background: The effect of the Do-Not-Resuscitate (DNR) order on the implementation of palliative care consultations (PCC) in trauma patients has yet to be described. The goal was to analyze the DNR status in the cohort of Trauma ICU (TICU) patients who received PCC. We hypothesize that the existence of DNR will influence the initiation of PCC.

Methods: In this IRB approved retrospective-cohort study, 331 TICU patients who received a PCC over 4.5 years were identified through the database of a state certified Level-1 trauma center. DNR forms were abstracted from the patients’ charts. The timing of the DNR was then compared to the date of initiation of the PCC. The patients were divided into three groups based on DNR timing: PADNR (do-not-resuscitate order prior to PCC), IHDNR (in-hospital DNR), and No-DNR (NODNR). The patient’s age, Injury Severity Score (ISS), pre-Admission DNR (PADNR), In-Hospital DNR (IHDNR), and No-DNR (NODNR) were managed independently. At the time of this abstract, 91% of OTRs were managed clinically normal and required no treatment. Other causative etiologies for falls identified included Benign Paroxysmal Positional Vertigo (5.3%), orthostatic hypotension (11.7%), Medications (8.8%), coexisting visual (38%) and musculoskeletal (67.6%) pathologies. Thirty two patients had diabetes mellitus in 32% with 82% diabetics having neuropathy. Sixty five percent had dizziness as a symptom and 64% were noted to be using assistive devices (cane/walker). Fourteen patients (41%) underwent CDF and was abnormal in 10 (28.4%). A total of 19 VNG have been requested with 14 done at this time, of which, 5 (14.7%) revealed vestibular weakness. Other etiologies are falls identified included Benign Paroxysmal Positional Vertigo (5.3%), orthostatic hypotension (11.7%), Medications (8.8%), coexisting visual (38%) and musculoskeletal (67.6%) pathologies. Thirty two patients (94.2%) were referred for muscle strengthening with 13 (38%) needing further vestibular rehabilitation. Two patients (5.8%) were deemed as clinically normal and required no treatment. Other causative etiologies were managed independently. At the time of this abstract, 91% patients reported significant improvement in symptoms.

Conclusions: A multidisciplinary collaboration is beneficial for patients and is more likely to identify specific etiologies for falls, thus allowing for more specific and focused treatment.

C184 Dialysis decision-making and advance care planning among older Veterans with incident ESRD
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Background
For older adults with end-stage renal disease (ESRD) and poor prognosis, guidelines recommend shared-decision making about...
C186
GAP-ED Project: Improving Care for Older ED Patients

Background: Older adults in the ED setting are a vulnerable patient population who frequently present with complex conditions and are at an increased risk of return visits, unnecessary hospitalization, prolonged suffering, and death. A review of ED data at Long Island Jewish Medical Center (LIJMC) identified a large older adult population with multiple revisits for non-emergent medical care. The Geriatric and Palliative (GAP) Division and ED at LIJMC initiated a multidisciplinary GAP-ED Team, delivering geriatric and palliative expertise to the ED with the goal of decreasing revisits and hospitalizations and improving patient satisfaction.

Methods: The GAP-ED Specialist, a geriatric social worker, identified patients in the ED who met inclusion criteria. Criteria included patients who were ≥65 years old, community-dwelling, discharged home with high risk of recidivism due to medical or social comorbidities. The GAP-ED Specialist provided assessments focusing on medical conditions, medication reconciliation, psychosocial needs, and Goals of Care. The Specialist connected patients to community-based resources that fit their needs. Patients received follow-up phone calls regarding their ED visit and satisfaction surveys were administered to patients or family members.

Results: From November 2015-August 2017, 550 patients met inclusion criteria. Advanced directives were established for 96% of patients. Hospitalization rates reduced from 53% to 32% and 30-day revisit rates reduced to 22%. Of those surveyed, 92% responded that the Specialist was helpful in providing support and resources. 90% responded that all ED’s should have the GAP-ED initiative. Patients and families have been appreciative of the focus on their specific needs and have used the GAP-ED Specialist as a resource post-discharge, improving the delivery of services to patients.

Conclusions: The reduction in 30-day ED revisit and hospitalization rates suggests the GAP-ED Team improved the quality of care and post-discharge outcomes for these patients. Reduction non-emergent ED use concurrently reduces the complications often experienced by older adults while in the hospital. Decreased non-emergency patient volume also decompresses the ED and plausibly has downstream effects to improve care for all ED patients. Furthermore, the emotional support provided to patients and caregivers leaves a lasting impact and improves the healthcare experience.

C185
Effect of Functional and cognitive impairment on readmissions in geriatric renal transplant recipients
T. Uemura,1 V. Rodriguez,1 G. Rosen,2 S. Lerner,2 O. Apoeso.1
1. Brookdale Department of Geriatrics and Palliative Medicine, Icahn School of Medicine at Mount Sinai, New York, NY; 2. Recanati/Miller Transplant Institute, Icahn School of Medicine at Mount Sinai, New York, NY.

Background: Renal transplantation has become increasingly more prevalent in geriatric populations. To optimize outcomes, renal transplant patients must be compliant with post-operative medication use and clinic follow up. Older adult transplant recipients may face compliance challenges that can potentially lead to hospital readmission. As part of a co-management pilot program between geriatrics and renal transplant teams, this study examined whether geriatric syndromes such as functional impairment or memory problem affect the risk of readmission after renal transplantation.

Methods: Retrospective chart review was conducted on ninety-nine patients aged 65 or older who underwent renal transplantation in the period of 7/30/2013 to 8/10/2016 at a major academic hospital in New York. Extracted data included general demographics, ED visits and readmissions within one year after the transplant, readmission diagnoses, need for ADL assistance at the time of transplantation, notation of any memory problem in their medical records, in-hospital occurrences of delirium.

Results: The average recipient age was 69.8. 1-year-postoperative survival rate was 95.8%. Graft failure occurred in 1 case within one year. Among the 99 patients, 94 had formal ADL assessments, with 12 requiring ADL assistance. Eight of 99 patients had notations of memory problems in their medical record. All 20 patients with either functional dependence or memory issues were readmitted to the hospital within one year of transplantation. The most common admitting diagnoses were urinary tract infection for the functionally dependent group and hyperkalemia for the patients with memory problems. In-hospital episodes of delirium occurred more frequently in the eight patients with documented memory problems. (RR 3.1, p=0.048)

Conclusion: Functional impairment and cognitive dysfunction in geriatric renal transplant recipients were associated with significantly increased risk of at least one hospital readmission within one year of transplantation (RR 1.86, p<0.01 and RR 1.86, p=0.01, respectively). Further investigation by the co-management team will examine how to prevent readmissions in functionally or cognitively impaired geriatric renal transplantation patients.

C185
Effect of Functional and cognitive impairment on readmissions in geriatric renal transplant recipients
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Background: Renal transplantation has become increasingly more prevalent in geriatric populations. To optimize outcomes, renal transplant patients must be compliant with post-operative medication use and clinic follow up. Older adult transplant recipients may face compliance challenges that can potentially lead to hospital readmission. As part of a co-management pilot program between geriatrics and renal transplant teams, this study examined whether geriatric syndromes such as functional impairment or memory problem affect the risk of readmission after renal transplantation.

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Results: The average recipient age was 69.8. 1-year-postoperative survival rate was 95.8%. Graft failure occurred in 1 case within one year. Among the 99 patients, 94 had formal ADL assessments, with 12 requiring ADL assistance. Eight of 99 patients had notations of memory problems in their medical record. All 20 patients with either functional dependence or memory issues were readmitted to the hospital within one year of transplantation. The most common admitting diagnoses were urinary tract infection for the functionally dependent group and hyperkalemia for the patients with memory problems. In-hospital episodes of delirium occurred more frequently in the eight patients with documented memory problems. (RR 3.1, p=0.048)

Conclusion: Functional impairment and cognitive dysfunction in geriatric renal transplant recipients were associated with significantly increased risk of at least one hospital readmission within one year of transplantation (RR 1.86, p<0.01 and RR 1.86, p=0.01, respectively). Further investigation by the co-management team will examine how to prevent readmissions in functionally or cognitively impaired geriatric renal transplantation patients.

C185
Effect of Functional and cognitive impairment on readmissions in geriatric renal transplant recipients
T. Uemura,1 V. Rodriguez,1 G. Rosen,2 S. Lerner,2 O. Apoeso.1
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C187
Pre-operative advance care planning documentation among older adults undergoing high risk surgery


Background Older adults with multiple comorbid conditions (MCC) undergoing high-risk surgery are likely to suffer life-altering complications, which often lead to functional and/or cognitive decline and loss of independence. Experts strongly recommend advance care planning (ACP) in the pre-operative setting. It is unknown whether ACP discussions happened prior to high-risk surgery or if they are documented in the Electronic Health Record (EHR).

Methods Data were from a multispecialty group practice extracted from January 2013 to December 2014. Patients included were ≥ 65, had ≥1 office visit, a Charlson index score ≥ 2, and underwent high-risk surgery defined by CPT codes associated with ≥1% post-operative 30-day or in-hospitalization mortality rate. Pre-operative documentation of ACP was defined as a Physician Order for Life-Sustaining Treatment (POLST) or Advance Directive in the EHR’s problem list. Logistic regression was performed to test associations between ACP documentation and patient characteristics.

Results 393 patients were identified with high-risk surgery. Their mean age was 79, 45% were female, 26% were non-white, and 26% had ACP documented prior to surgery. The following patient characteristics were associated with higher odds of pre-operative ACP documentation: age 85+ (p=0.040), being white (p=0.047), ≥4 office visits in the year prior to surgery (p < 0.001), and having dementia/mild cognitive impairment (p=0.010).

Conclusion Only a quarter of older patients with multi-morbidity undergoing high risk surgery had ACP documentation in the EHR. White, older, those with multiple office visits within the past year, and those with cognitive impairment were more likely to have ACP documentation. Given the higher risk of mortality among older adults with multi-morbidity, ACP documentation should be incorporated into the pre-operative workflow.

C188
Advance Directives and Frailty Status

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Introduction Frailty is a state of vulnerability to stressors resulting in higher morbidity, mortality and healthcare utilization. The value of advance care planning (ACP) and advance directives (AD) may be greater among frail older Veterans as they are more likely to have a shorter life expectancy. The process of AD completion may foster goals of care discussions. The purpose of the study was to assess the relationship between frailty and AD completion in a group of community dwelling older Veterans.

Methods Retrospective chart review of 566 Veterans, 65 years and older receiving care at the Miami VAMC. We collected data on socio-demographics, medical problems, hospitalizations for the year preceding frailty screening, FRAIL Scale (frail(F) ≥ 3; pre-frail(PF) 1-2; robust(R)=0 points) and documentation of AD/ACP discussions: living will (LW), durable power of attorney for healthcare (DPOAH), do not resuscitate orders (DNR) and designated surrogate (HCS). We used one-way ANOVA for continuous and Chi square for categorical variables. Logistic regression was performed to study the cross-sectional association between AD completion and frailty. We dichotomized AD completion as any AD versus none.

Results Patients were 97.7% male, 63.8% White, 75.2% non-Hispanic, mean age 77.11 (SD=8.23) years. 314 (55.5%) patients had an ACP discussion, 137 (24.2%), completed a LW, 136 (24%) a DPOAH, 8.7% had a DNR order, and 138 (24.4%) had a HCS. There were no racial, or ethnic differences. Percentage comparisons show evidence of an ACP discussion (R:45.1%, PF:62.8%, F:70.3%; p<.0005), LW (R:14.1%, PF:31.4%,FR:38.6%; p<.0005), DPOAH (R:14.1%,PF:30.3%,F:39.6%; p<.0005), and a HCS (R:14.4%,PF:30.9%,F:39.6%; p<.0005). Frail patients were more likely to have a DNR discussion than robust (R:5.4%,PF:9%;FR:16.8%; p<.0005). In logistic regression, frailty (OR=1.729, 95% CI=1.045–2.858) and hospitalizations (OR=4.118, 95%CI=2.523-6.721) were significantly associated with AD completion.

Conclusions Frailty was associated with higher completion of advance directives but the overall completion in this study was low. Strategies that foster advance directives completion are needed in this population.

C189
Biopsychosocial Profiles and Functional Correlates in Older Adults with Chronic Low Back Pain: A Pilot Study

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Background Older people suffer from chronic low back pain (CLBP, i.e., back pain that has been present for ≥ half the days of the week for the past ≥ 6 months) in vast numbers and at great costs, including physical, emotional, and financial. Despite high costs, there is no evidence that treatments have improved function. Our objective was to describe the clinical profile of older adults with CLBP and examine the association of their individual peripheral and CNS conditions with pain severity as well as self-reported and performance-based physical function.

Design Cross-sectional

Setting Outpatient VA clinics

Subjects Forty-seven community dwelling Veterans with CLBP (age 68.0 ± 6.5 [60-88], 12.8% female, 66% white) participated.

Methods: Data were collected on peripheral pain generators - body mass index, American College of Rheumatology hip osteoarthritis criteria, neurogenic claudication; and central nervous system (CNS) pain generators – anxiety (GAD-7), depression (PHQ-9), insomnia (Insomnia Severity Index), maladaptive coping (Fear Avoidance Beliefs Questionnaire, Cognitive Strategies Questionnaire), fibromyalgia (fibromyalgia survey). Outcomes were: pain severity (0 to 10 scale, 7 day average and worst), self-reported pain interference [Roland Morris (RM) questionnaire], and gait speed.

Results: Approximately 96% had at least one peripheral CLBP contributor, 83% had at least one CNS contributor, and 89% had both peripheral and CNS contributors. None of the peripheral conditions were associated with any of the outcomes. Each of the CNS conditions were related to RM score. Only depression and/or anxiety were associated with gait speed.

Conclusions In this sample of older Veterans, CLBP was a multifaceted condition with both peripheral and CNS conditions. Only CNS conditions were significantly associated with both self-reported and performance-based function. Additional investigation is required to determine the impact of treating these conditions on patient outcomes and healthcare utilization.
C190
Risk Factors for Delirium in Hospitalized Older Adults with Heart Failure: A Systematic Review.
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Background: Delirium is common in older patients admitted to the hospital with heart failure (HF) and its association with high mortality and morbidity is well-documented. Multicomponent interventions targeted at patients who are at high risk for delirium have shown to reduce incidence. This systematic review aimed to summarize the reported risk factors for delirium in older patients admitted for HF.

Methods: A search strategy for delirium in HF patients was performed using electronic databases Ovid MEDLINE, CINAHL, the Cochrane Database of Systematic Reviews, EMBASE and PsychINFO. The quality of the selected studies was assessed using the Newcastle-Ottawa Scale (NOS). Results for meta-analysis were not pooled due to the lack of reported variables on each study. Ultimately, the overall mean ranges were only reported for each study.

Results: A total of 394 articles were identified from the initial literature search and 4 studies met our specific inclusion criteria, with NOS ranging from 4-7 (out of 10). The overall mean prevalence of delirium was 17-38%. Incidence was reported by one study at 11.9%. The average age ranged from 75.2 to 85.5 years. New York Heart Association (NYHA) class 3/4 heart failure was present in 70-89% of patients. Average systolic blood pressure was noted to be 131 mmHg to 139 mmHg. Average ejection fraction (EF) was reported in two studies to be 38% and 40.6%. A total of thirty-two risk factors were reported in the univariate analysis with the most common variables being age, brain natriuretic peptide (BNP), serum albumin, and serum urea nitrogen. In the multivariate analysis of two studies, a total of fourteen predictive variables were reported. Overall, age, BNP, serum albumin, atrial fibrillation, reduced EF, NYHA class 4/3 were associated with delirium. Use of angiotensin-converting enzyme inhibitors was protective of delirium.

Conclusion: This limited systematic review has provided initial information regarding the most frequently reported risk factors for delirium in hospitalized older patients with HF. There is a need to consider common predictive variables such as function and cognition in future HF research. We call attention to the need for further research on the association between these two health conditions.

C191
Geriatric conditions among middle-aged and older adults on methadone maintenance treatment
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Background: The number of older adults on methadone use is growing, but little is known about the characteristics and healthcare needs of this aging treatment population. This population may experience accelerated frailty and have high rates of geriatric conditions for their age due to comorbidities and health behaviors. We present pilot data from an ongoing study of middle-aged and older adults enrolled in two opioid treatment programs (OTPs).

Methods: We performed a geriatric assessment on a cross-sectional sample adults aged ≥50 years currently on MMT at Bellevue Hospital’s OTP in New York City and at CODAC Inc, an OTP located in East Providence, Rhode Island. Self-reported data on geriatric conditions, healthcare utilization, chronic medical conditions, medications, physical and cognitive function, substance use, walking speed, and grip strength were collected.

Results: The study sample included 44 adults (30 from Bellevue and 14 from CODAC). The mean age of participants was 59.0 years (range 50-76, sd 6.0), 25% were female, 23% Hispanic, 52% white, 23% black, and 1% other. Of the participants, 61% reported a past year household income of <$15,000 and 50% reported current smoking. For geriatric conditions, 61% reported more than 1 fall in the previous 2 years, 20% urinary incontinence in the past year, 27% visual impairment, 11% hearing impairment, and 27% met the Fried Criteria for frailty. 68% of the participants self-reported 2 or more chronic medical conditions with a mean of 4.6 currently prescribed medications. For function, 11% reported a disability in the instrumental activities of daily living. In terms of healthcare utilization, 61% reported emergency room use in the past year, 40% were hospitalized in the past year, and 82% reported having a primary care physician.

Conclusions: Older adults on MMT in two large opioid treatment programs have high rates of geriatric conditions, frailty, and acute healthcare utilization. An interdisciplinary, geriatric-based approach to clinical care that focuses on function, quality of life, and addresses geriatric conditions is needed to improve the health of this vulnerable and growing population.

C192
Impact of educational level on the performance of the Clock Draw Test: A preliminary study
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Background: A number of simple tests have been introduced to quickly screen patients for cognitive status.

Among these, the Clock Draw Test is frequently cited as a rapid sensitive screen for cognitive impairment. Yet, little is known regarding how patient educational levels might affect the patient performance on this test. This poster presents a preliminary study examining this issue.

Methods: A retrospective chart audit was performed on patients who received annual wellness exams or screening for memory disorders at a Community Health Center. Patient educational level was defined as less or greater than eighth grade level. Data was also collected regarding patient age, gender, ethnicity, and language fluency. Patients who were unable to successfully perform the clock draw test were further screened using word recall. This poster presents a descriptive analysis of this data.

Results: One hundred sixty five patients were seen during the study period. Of these, 112 patients were asked to perform clock draw tests. Fifty four patients had documentation of their educational level. Eleven had had eighth grade or greater education and 43 had less than an eighth grade education. Forty patients were unable to perform the clock draw test. Of these four patients had greater than an eighth grade education (36%) and thirty six had less than an eighth grade educational level education (84%). Among the four patients with greater than eighth grade education who failed the clock draw test 3 also failed the word recall test. Among the thirty six patients with less than an eighth grade education who failed the clock draw test only 20 patients also failed the word recall test.

Discussion: This preliminary study suggests that educational level may significantly impact patient’s ability to successfully perform a clock draw test. Other factors such as cultural background and language fluency might play a role as well. This area warrants further study.
C193
Recurrent falls: a problem in post-acute care
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Falls and fall injury can impact rehabilitation in post-acute care (PAC) units. Yet, published data about falls in this setting are limited. Given the PAC focus on increasing independence over a longer length of stay (LOS), there is concern about recurrent falls, especially how potential recurrent fallers can be identified with plans of care to further reduce fall risk.

We reviewed all falls in the VA Ann Arbor Community Living Center (2012–7), using the Electronic Patient Incident Reporting (ePIR) and electronic medical record. Variables included: demographic, fall and PAC stay characteristics, and Morse Fall Scale (MFS) scores and physician/nurse interventions just prior to the fall. We performed descriptive (Chi square, Fisher’s exact test) and survival (Kaplan-Meier) analyses.

The average monthly fall rate was 5.8/1000 bed days. 290 patients had 413 falls; 80 patients (28%) had ≥2 falls (n=203, 49% of falls). Single and recurrent fallers did not differ by age (mean 69), rehab category, LOS (mean 61 days), or MFS score (mean 57, suggesting high risk). However, days to first fall differed substantially between single and recurrent fallers: 26 vs. 17, p<0.03, as also shown in survival curve analyses (p=0.01) (Figure). Other fall characteristics (e.g., fall injury types/rates) and physician/nurse interventions did not differ. Falls occur often in PAC: over 25% of fallers are recurrent. Recurrent fallers have their first fall earlier in the PAC stay, but do not differ in other characteristics, including physician/nurse interventions. This may represent a missed opportunity to develop customized strategies so that an early faller does not become a recurrent faller.

![Kaplan-Meier survival estimates](image)

C194
Patient Activation: A Key Component of Advanced Care Planning
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BACKGROUND: Meaningful participation in advance care planning (ACP) by older adults is often low. Patient activation, a validated construct measured by the Patient Activation Measure (PAM), is defined as knowledge, confidence, and skill to manage one’s overall health. Activation is associated with engagement in general health behaviors, such as exercise, and disease management; however, it is unknown whether activation affects ACP. Therefore, the goal of this study was to determine whether patient activation is associated with ACP engagement.

METHODS: This cross-sectional study utilized baseline survey data from 414 veterans enrolled in an ACP trial from multiple primary care clinics at the San Francisco VA. Veterans were included if they were ≥60 years of age and had ≥2 chronic/serious conditions, ≥2 primary care visits, and ≥2 additional clinic, hospital, or ER visits in the last year. PAM assesses general activation with 5-point Likert responses reflecting the level of agreement to health-related statements (e.g. “I am responsible for my health”). Summary scores are categorized into 4 levels (e.g. Level 1, “disengaged and overwhelmed” & Level 4 – “maintaining behaviors and pushing further”). The validated ACP Engagement Survey includes scores for behavior change “Processes” such as ACP-specific knowledge, self-efficacy, and readiness (57 items, average 5-point Likert scale) and “Actions,” such as surrogate designation (yes/no items on a 25-point scale). We examined associations between PAM and ACP Engagement scores using linear regression.

RESULTS: Participants were 71.1 (±7.8) years of age, 43% were non-white, 81% were men, and 20% had limited literacy. Higher PAM levels were associated with younger age and lower comorbidity, p<0.02. Participants with higher levels of activation (PAM Level 4 vs. 1) had significantly higher ACP engagement (ACP Process scores, 3.8 vs. 2.8, p<0.001 and Action scores, 15.1 vs. 9.7, p<0.001). After controlling for participant characteristics and co-morbidity, PAM scores accounted for 13.7% of the variance of ACP Process scores and 8.9% of Action scores.

CONCLUSIONS: Higher patient activation to manage one’s overall healthcare is associated with higher engagement in ACP. Interventions designed to foster general patient activation and self-efficacy to engage in health behaviors and disease management may also improve engagement in the ACP process.
respectively; average number of unintentional discrepancies was 0.4, 0.3 and 0.3, respectively. There were no significant differences among transitions for unintentional discrepancies.

CONCLUSIONS: While BPMH is now becoming the gold standard for medication reconciliation, the complexity of medication management for older adults remains challenging throughout the continuum of care.

C196 Utilizing frailty index to predict discharge location of post acute care patients
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Background: Predicting the discharge location and developing a treatment plan early in a post-acute care (PAC) program facilitates patient and family education and sets realistic expectations. The purpose of this study was to evaluate the efficacy of tracking frailty to predict discharge location outcomes and 30-day hospital readmission.

Methods: Twenty-three consecutive patients admitted to a skilled nursing facility (SNF) affiliated with the University of Utah Hospital were included from 1/1/2017 to 2/28/2017. A frailty index (FI) consisting of a frailty phenotype, geriatric functional assessment, and cognitive assessment was conducted on admission (FIAD) and discharge (FIAD_c). The FI was created by dividing the sum of deficits present by a total of 42 measured factors. Higher FI indicates greater degree of frailty, and an FI > 0.21 has been used to define frailty. A chart review was performed to record 30-day hospital readmissions and discharge location, categorized as: home, home health, assisted living facility (with and without additional home health), SNF, or a hospital.

Results: FI was high on admission (FIAD 0.54±0.16; mean±SD) and while improved overall, remained high at discharge (FIAD_c 0.49±0.17, p<0.001). Greater age and FIAD predicted discharge location requirements a higher level of assistance (p<0.009). Those with greatest improvement in FI were more likely to require less assistance after SNF discharge (p=0.005). Younger age and lower FIAD were associated with improvement in FI at discharge. No measure of frailty nor age, gender or length of stay provided useful prediction of 30-day hospital readmission.

Conclusions: Frailty is extremely high in patients discharged to a SNF, but can be improved during a SNF stay. The effects are less robust with higher age and degree of frailty. No relationship between frailty measures or length of SNF stay and 30-day readmission was observed. Together these data indicate that tracking the change in FI from admission through discharge with the consideration of the patient’s age may predict the level of assistance needed at the time of discharge.

C197 Increasing Health-Related Internet Use in a Culturally and Ethnically Diverse Community
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Background: The Culturally-Informed Healthy Aging Model Project was implemented in two phases over a two-year period with a mixed methodology where a nurse practitioner partnered with underserved, ethnically diverse older adults in a Housing and Urban Development (HUD) community. This presentation describes the results of a culturally-tailored intervention making Internet-connected computers available in common areas of the community as part of an overall effort to provide services that respond to community-identified needs and facilitate older adults remaining in place.

Methods
Study Design. Using an embedded mixed methods approach, qualitative data were collected to determine the most significant health issues for community residents and quantitative data were collected through surveys to evaluate interventions for those issues.

Setting and Population. The setting was a community of four HUD apartment complexes providing independent living for the elderly in the Deep South. The community included 262 low-income, ethnically and racially diverse older adults 62 years or older housed in one-bedroom units.

Measures. Qualitative measures included open-ended interviews (n = 91), focus groups (n = 2), and participant observations (225 hours). Computer usage questions from the National Health and Aging Trends Study were asked pre-intervention and post-intervention.

Analysis. Content analysis was conducted with the qualitative data to identify resident-reported health issues. T-tests and chi-square tests were used to test for change over time in continuous and nominal quantitative measures, respectively.

Results: The qualitative data analysis indicated that limited Internet access was a significant health issue in the community. Visits to the common areas where the computers are located increased over a two-month period between 30-50%, depending on the building. At follow-up, there were statistically significant increases in the percentage reporting access to a computer from 40% to 65% (p = .013) and the percentage reporting access to more than one computer (from 0% to 19%; p = .003). Also, the odds of using the Internet for at least one health-related purpose increased substantially (O.R. = 2.5, p = .039).

Conclusions: A resident-requested intervention making Internet-connected computers available can increase access to the Internet and use of the Internet for health-related purposes.

C198 Is PTSD Associated with Frailty in Older Veterans?
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Introduction: Frailty is a state of vulnerability to stressors resulting in higher morbidity, mortality and healthcare utilization in older adults which is common in older veterans. PTSD is also prevalent in older veterans and has a relationship with exposure to trauma. There is an association between PTSD and other mental/physical conditions that may contribute to frailty. As the number of older veterans increases, a significant proportion will experience simultaneous PTSD and frailty. The aim of this study was to investigate the cross-sectional association between PTSD and the frailty syndrome in older Veterans.

Methods: This was a cross-sectional study of Veterans 65 years and older at the Miami VAMC. We collected socio-demographic information and administered the 5-item (1 point/item) FRAIL Scale. Frail patients were defined as 3 points or greater; pre-frail as 1 or 2 points; robust as no points. We extracted data from the VA electronic health record (EHR) regarding medical and psychiatric conditions. We reported descriptive statistics and compared prevalence of PTSD between robust, pre-frail and frail groups. We used one-way ANOVA for continuous and Chi square for categorical variables. A binomial logistic regression was performed to study the cross-sectional association between PTSD and the frailty syndrome. We dichotomized the variables into frail and not-frail, robust and prefrail individuals.

Results: 566 patients over age 65 were part of the study: 97.7% male, % 63.8 White, 75.2% non-Hispanic. The mean age was 77.11 (SD=8.23) years. The proportion of robust, pre-frail and frail patients was 48.9% (n=277), 33.2% (n=188) and 17.8% (n=101) respectively; 17.8% (n=101) of the total also had PTSD. There were no differences
in the prevalence of PTSD between the groups (p=.583): robust (n=46, 16.6%), prefrail (n=38, 20.2%) and frail (n=17, 16.8%) groups. In binomial logistic regression, PTSD was not significantly associated with frailty (OR=9.06, 95% CI=4.16–1.971).

Conclusions: In our study, PTSD is not associated with the frailty syndrome in older Veterans. Prospective studies are needed to confirm this finding.

C199
The Postal Version of the FRAIL Scale: A Comparison with the INTER-FRAIL Postal Questionnaire.
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Background: Frailty is a state of vulnerability to stressors which may result in higher morbidity, mortality and healthcare utilization in older adults. Multiple instruments are used to measure frailty; some need to be administered, most are time-consuming. To evaluate the FRAIL scale as a postal screening for frailty in older Veterans compared to the INTER-FRAIL questionnaire.

Methods: This is a cross-sectional study of community-dwelling Veterans 65 years and older who use the Miami VAMC for healthcare. From January 4th through 14th, 2017, we mailed 1413 Veterans the FRAIL scale and the INTER-FRAIL questionnaire. The FRAIL scale is a validated, 5-item questionnaire that categorizes patients into robust (0 points), prefrail (1-2 points) and frail (3-5 points); the INTER-FRAIL is a 10-item validated postal questionnaire developed by expert consensus. A Pearson correlation was used to assess the relationship between the two tools. We compared the means using one-way ANOVA. We only used completed survey responses for comparisons and correlations.

Results: The response rate for the mailed instruments was 32% (n=450). These Veterans mean age was 73.05 (SD=6.64) and they were 98.2% male, 61.2% White, and 79.2% non-Hispanic. We obtained 404 complete responses (90%). Results from the FRAIL scale showed: 172 (42.6%) robust, 135 (33.4%) prefrail, and 97 (24.0%) frail. We found a large positive correlation between the FRAIL and INTER-FRAIL scales (r=0.729, p<0.001). The INTER-FRAIL questionnaire was statistically significantly different between the 3 groups (Welch’s F(2, 226.213)=222.003, p<.0005). The INTER-FRAIL score increased was statistically significantly different between the 3 groups (Welch’s F(2, 226.213)=222.003, p<.0005). The INTER-FRAIL questionnaire

Conclusion: The automatically generated CAN score is a potential screening tool for frailty among older adults. A CAN score of 55 will reduce the population of those who may need further frailty screening but geriatric resources may be needed to identify and eliminate those defined as false positives. At the 95 percentile, the CAN score provides acceptable diagnostic accuracy to proceed with frailty interventions but some patients with frailty will escape early recognition.

C201
Constipation Management in Older Hospitalized Patients
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Background: The annual cost of hospitalizations for patients with a primary discharge diagnosis of constipation is now over $851 million in the US.

Methodology: An anonymous survey was distributed to physicians via either paper or email to study constipation management in older hospitalized patients. Chi-square or Fisher’s exact, as appropriate, was used to explore associations between demographics and survey answers. T-test was used to compare groups on continuous measures, and Spearman’s correlation was used to measure the relationship between ordinal variables.

Results: Of 104 responders, 75% had practiced ≤10 years, 53% were female, 40% general internists, and 21% geriatricians/palliative. Almost all (92%) reported that treating constipation was very/extremely important, and 71% reported being very/extremely comfortable treating constipation. Over half (52%) reported that more than 60% of their older (65+) hospitalized patients do experience symptomatic constipation, and 69% assessed their patient’s bowel movements daily. Diagnostic tests included physical exam (41%), and X-ray (29%), though 20% selected none. Preferred constipation regimens included Senna (33%), docusate (31%) and polyethylene glycol (28%). For fecal impaction, 61% selected manual disimpaction as treatment of choice, with 56% stating that physicians are responsible for performing disimpaction. Yet, 64% had treated patients in the last year who should have been previously disimpacted, but were not. Furthermore, 48% reported not having disimpacted a patient in the past year, and 63% felt that disimpaction training was needed despite experience with the procedure.

C200
Using the Care Assessment Needs (CAN) Score for Frailty Screening
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Introduction: Frailty is a state of vulnerability to stressors resulting in higher morbidity, mortality and healthcare utilization. Multiple instruments are used to measure frailty but are time-consuming. The VHA developed and implemented the Care Assessments Needs (CAN) score as a predictive analytic tool, automatically generated from electronic health record data using a statistical model and expressed as a percentile, ranging from 0 to 99. At a percentile ≥ 95, the CAN score predicts hospitalization and mortality at one year with good areas under the receiver operating characteristic (ROC) curve. The purpose of the study was to validate the CAN score as a screening tool for frailty among older adults in clinical practice.

Methods: This cross-sectional study compared the CAN score with a reference standard, a 40-item Frailty Index, generated using retrospective data collected during a Comprehensive Geriatric Assessment (CGA). To assess the ability of the CAN score to screen for frailty, we calculated the sensitivity, specificity, positive predictive value (PPV), negative predictive value (NPV) and diagnostic accuracy (assessed by the area under the ROC curve) at two percentile scores: 95 and 55 (a score that provides a sensitivity over 90% to identify frailty).

Results: 184 patients over age 65 were included in the study: 98% male, 61% White, 80% non-Hispanic. Our CGA-based Frailty Index defined 13% as robust, 55% as prefrail and 32% as frail. At the 95 percentile, the CAN score provides sensitivity, specificity, PPV and NPV of 43%, 89%, 63% and 78% respectively; at the 55 percentile, the sensitivity, specificity, PPV and NPV are 92%, 40%, 43%, and 91%, respectively. Area under the ROC curve was 0.736 (SE=0.038, p<0.0005, 95% CI=0.661-0.811).

Conclusions: The automatically generated CAN score is a potential screening tool for frailty among older adults. A CAN score of 55 will reduce the population of those who may need further frailty screening but geriatric resources may be needed to identify and eliminate those defined as false positives. At the 95 percentile, the CAN score provides acceptable diagnostic accuracy to proceed with frailty interventions but some patients with frailty will escape early recognition.
A. Shim, 1 S. Andes, 1 K. Grady, 1 S. Quale. 2
A Comparative Retrospective Analysis of Disease Burden, Parkinson’s Disease Psychosis in the Nursing Home Setting: patients with nOH. is suggestive of long-term durability and tolerability of droxidopa in insurance coverage issues. The persistency rate observed in this analysis on droxidopa between day 1 and day 31 is likely associated with insurance coverage from September 1, 2014, to March 31, 2017 (inclusive) who received a prescription for droxidopa and had continuous insurance from September 1, 2014, to March 31, 2017 (inclusive) were included. Because access to droxidopa is highly restricted by some payers, persistency was based upon the single longest episode of care.

Results: A total of 2735 patients were included in the analysis. The mean ± SD duration of treatment with droxidopa was 245.6±244.2 days, with a median duration of 150 days. There was a considerable drop-off of utilization after 30 days, with 26% of patients ending treatment. At 90 days (~3 months) and 180 days (~6 months), 64% and 47% of patients remained on droxidopa. Of those who remained on therapy at day 31, 86% and 64% remained on therapy at 90 and 180 days, respectively.

Conclusions: Overall rates of treatment persistence with droxidopa were high. The observed 26% drop-off in the number of patients on droxidopa between day 1 and day 31 is likely associated with insurance coverage issues. The persistency rate observed in this analysis is suggestive of long-term durability and tolerability of droxidopa in patients with nOH.

C203 Encore Presentation
Persistence of Droxidopa Treatment in Patients With Neurogenic Orthostatic Hypotension
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Background: Aging is associated with increased prevalence of orthostatic hypotension (OH), which is defined as a sustained decrease of ≥20 mmHg in systolic blood pressure (SBP) or ≥10 mmHg diastolic BP (DBP) within 3 minutes after standing. In the elderly, this condition is associated with an increased incidence of falls. Neurogenic OH results from autonomic impairment in which there is inadequate noradrenergic response to postural change. Droxidopa was approved in the United States based on data from 3 randomized controlled trials with treatment periods ranging from 1–8 weeks. In a long-term, open-label extension study of droxidopa (mean duration of exposure, 363 days), 17% and 12% of the study population discontinued due to adverse events and lack of efficacy, respectively. There have been no additional reports regarding the persistency of patients on droxidopa. We sought to assess the persistence of droxidopa treatment in a real-world setting for patients with nOH.

Methods: A retrospective analysis of patients who were prescribed droxidopa was performed using Symphony Health Solutions Database (Symphony Health; Conshohocken, PA). Patients who received a prescription for droxidopa and had continuous insurance coverage from September 1, 2014, to March 31, 2017 (inclusive) were included. Because access to droxidopa is highly restricted by some payers, persistency was based upon the single longest episode of care.

Results: A total of 2735 patients were included in the analysis. The mean ± SD duration of treatment with droxidopa was 245.6±244.2 days, with a median duration of 150 days. There was a considerable drop-off of utilization after 30 days, with 26% of patients ending treatment. At 90 days (~3 months) and 180 days (~6 months), 64% and 47% of patients remained on droxidopa. Of those who remained on therapy at day 31, 86% and 64% remained on therapy at 90 and 180 days, respectively.

Conclusions: Overall rates of treatment persistence with droxidopa were high. The observed 26% drop-off in the number of patients on droxidopa between day 1 and day 31 is likely associated with insurance coverage issues. The persistency rate observed in this analysis is suggestive of long-term durability and tolerability of droxidopa in patients with nOH.

C204 The use of medical cannabis among older adults
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Background: Few researchers have examined the increasing use of cannabis for medical purposes among older adults, particularly as a substitute or complement to other prescriptions medications including benzodiazepines and opioids. Using survey data collected from 186 respondents mainly reported either no change or positive change as differences were statistically significant at the p < .05 level. Overall, across a range of outcomes (health, symptoms, cognition, accidents), respondents mainly reported either no change or positive change as a result of using cannabis. Among those cannabis users who also were taking opioids, 47% reported a reduction in prescription use or
a complete cessation of opioids. No cannabis user also taking opioids reported an increase in opioid use. **Conclusions:** The use of cannabis only for medical purposes constitutes a substantial portion of the growing number of older persons who reported taking cannabis in the past year. These individuals differ from those who take cannabis only for recreational reasons, and a large portion of those who take medical cannabis reported a number positive benefits including a reduction or cessation in opioid use.

**C205**

**A research agenda for goals-directed healthcare for adults with multiple chronic conditions is not specialty-specific**

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**Background:** Adults with multiple chronic conditions receive care that is fragmented, burdensome, lacks evidence and not focused on what matters most to them. Over an 18 month planning phase we gained perspectives of 100+ stakeholders, representing national organizations, including patients, families, payers, clinicians and health systems on barriers and solutions to improved care. Planning led to Patient Priorities Care (PPC), a new approach to care which aligns all care with patients’ health outcome goals and care preferences. We report on a two year initiative to develop a research agenda to support PPC.

**Methods:** In November 2016 and July 2017, we convened consensus conferences focused on Cardiology and Surgery specialties, respectively, to generate a research agenda. A total of 100+ stakeholders participated, representing the groups above. 178 research questions were generated through robust interactive meeting design and analyzed using Atlas.ti.

**Results:** Analysis revealed 6 highest density themes from each meeting are common to both Cardiology and Surgery research agendas: 1) Education, training and tools needed to implement PPC for patients, families, medical trainees and the care team; 2) Roles of care team; a recurrent question involved who is the best person to elicit patient priorities and whether this can be an existing member to support seamless integration of PPC into usual care; 3) Whether existing quality metrics can be aligned with or adapted to support PPC; and how to measure patient/caregiver outcomes, such as slowing functional decline, reducing care burden and attaining health outcomes goals; 4) How PPC can be adapted for different groups including those with cognitive impairment, and people with diverse cultural, ethnic and socioeconomic backgrounds; 5) The data needed to support PPC, and whether existing and big data can be of assistance; and 6) Research questions aimed at developing incentives, and building a business case.

**Conclusions:** A research agenda for PPC was replicated in two conferences despite focus on different specialties. This supports the importance, accuracy, and translational nature of the research agenda and suggests appropriate research will lead to a foundation of evidence for implementation of PPC across multiple specialties.

**C206**

**“Well, I Could Use a Lot More But That’s All I Get”: Multiple Sclerosis Patients’ Experiences With Home and Community Based Services**

**E. Gadbois,1 R. Shield,1 S. Campbell,1 K. Haubruck,1 T. Zhang,1 T. I. Shireman.2**

1. Center for Gerontology & Healthcare Research, Brown University, Providence, RI; 2. Center for Gerontology, Brown University School of Public Health, Providence, RI.

**Background:** Multiple sclerosis (MS) is a chronic central nervous system disease that affects over 2.3 million people worldwide. Due to MS’s impact on function, many with MS require long term services and supports as the disease progresses. Home and community based services (HCBS) are designed to reduce caregiver burden and the need for more expensive nursing facility placement, improve patient quality of life, and maximize patient independence, but research has yet to examine the lived experiences of people with MS in accessing and using HCBS.

**Methods:** Five focus groups were conducted with 46 community-dwelling adults with MS in one Northeastern state. Focus group participants were asked about informal and formal assistance they receive that helps them remain in the community. They were also asked how they learn about and pay for services, among other topics. Focus groups were audio recorded, transcribed, and qualitatively coded to understand overarching themes.

**Results:** While participants noted receiving some informal services in the home and community, they reported minimal formal HCBS. Participants described a mismatch between the services they felt they needed and what they actually received. Participants described difficulty negotiating the complexities of the healthcare system and noted extensive problems with learning about, qualifying for, and paying for the services they need. Participants also discussed going without services or other necessities due to cost. In addition, assistance from family and friends impacted their personal relationships.

**Conclusions:** Numerous participants receive informal HCBS, often because they are unable to access formal services. Medicaid is the largest provider of long term services and supports in the US, and states have significant flexibility in how they construct eligibility requirements and designate the range of HCBS services they provide. Study participants reported that while they did not qualify for Medicaid, they were unable to afford to pay for needed services privately. Insights from focus groups along with quantitative analyses should inform how long term care benefits are developed to maximize independence, reduce adverse health outcomes, and efficiently use health care dollars.

**C207**

**“A Leap of Faith”: Multiple Sclerosis Patients’ Experiences Balancing the Need for Disease Modifying Therapies with Concerns about Efficacy**

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Center for Gerontology & Healthcare Research, Brown University, Providence, RI.

**Background:** Multiple sclerosis (MS) is a chronic central nervous system disease that affects over 2.3 million people worldwide. Although there are disease modifying therapies (DMTs) designed to prevent relapses, these medications have neither been proven to slow disease progression nor provide a cure, so MS patients generally face inexorable functional deterioration. This research was designed to understand how MS patients decide to start, stop, and switch DMTs and whether they are concerned with the financial impact of these medications.

**Methods:** Five focus groups were conducted with 46 community-dwelling adults with MS in one Northeastern state. Participants were asked to describe being diagnosed with MS and starting treatments. They were also asked about access to and payment for DMTs, and their reasons for stopping or switching DMTs. Focus groups were audio recorded, transcribed, and qualitatively coded to understand overarching themes.

**Results:** Participants described concerns regarding whether their MS drugs were working. They noted that DMTs work differently for people because of individual heterogeneity of MS symptoms. Participants reported that while DMTs might impact the lesions in their brains, DMTs may not improve the symptoms of MS or improve lived experiences. Participants also discussed attempts to balance the benefits of improved MS symptomatology with the desire to retain function. They described difficult individual trajectories in arriving at the MS diagnosis and considered their personal resistance to accepting...
the MS diagnosis as a barrier to using DMTs. They described fears associated with starting, switching, and stopping DMTs, as well as difficulties with insurers, drug companies, and physicians.

Conclusions: Results indicate that participants have complicated relationships with DMTs: although they describe benefits, these are often compromised by side effects, overall disease progression, costs, and challenges in working with insurers, drug companies, and providers. Focus groups with persons with MS provide data that illuminate patients’ perspectives on using DMTs and can guide researchers and clinicians toward improved policy and pharmaceutical solutions.

C208
A Cross-Sectional Study of Cognitive Impairment and Falls Using MSSP-ACO Data
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Background: Data has shown a relationship between cognitive impairment and mobility disability. Both are associated with increased health care utilization and cost. Persons with cognitive impairment also are at increased risk for falls, the consequences of which are a major source of increased complications, utilization and costs. Primary care practices, now mandated through the Medicare Annual Wellness Visit (MAWV) to identify older adults with cognitive and physical functional impairment, may also be able to use this information to detect fall risk and identify a subset of older adults at very high risk for fall related injury. However, data is lacking on the linkage of cognition to fall risk in the electronic health record.

Methods: This cross-sectional study incorporates data from older adults enrolled in the Medicare Shared Savings Program/Accountable Care Organization (MSSP-ACO) affiliated with Wake Forest Baptist Medical Center (WFBMC). Data on demographics, health status, diagnosis of dementia or cognitive impairment, and the result of a falls risk assessment were extracted from the Electronic Health Record. Logistic regression was used to model the association between a diagnosis of dementia or cognitive impairment, and the result of the falls risk assessment, adjusting for age, sex, race, and self-reported health status.

Results: 4,360 adults completed a MAWV between 7/2015 and 9/2017. Mean age was 77.3 years; A majority were female (59.4%) and White (87.7%). 282 (6.6%) patients were identified as having a diagnosis of dementia or cognitive impairment, while 438 (11.3%) screened positive for the falls risk assessment. Adjusting for age, sex, race, and self-reported health status, the odds of screening positive for falls risk were increased for those older adults with a diagnosis of dementia or cognitive impairment (OR 2.22 95% CI (1.64 to 3.01); p<0.0001).

Conclusion: Persons with cognitive impairment were more likely to be at risk for falls in a MAWV. By identifying this subset of patients, measures could be put in place to attempt the prevention of falls and thus the downstream effects such as hospital admissions and disability.

C209
Family Caregivers’ Perceptions and Experiences with Medical and Community Services
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Background: There are roughly 43.5 million unpaid family caregivers in the US, and they provide much of the care for their charges ranging from activities of daily living to nursing tasks. Caregivers should feel confident to turn to the health system for support when they are stressed or overwhelmed with caring for their loved one. Understanding caregivers’ views and interactions with the healthcare system is a first step in identifying the gaps in support of family caregivers and their care recipient. Methods: Data were from a sample of US adults aged 30 to 89 years from the AmeriSpeak® panel, which is a probability-based representative panel of civilian noninstitutionalized adults living in the US. The final sample was made nationally representative by weighting the data. Results: Of the 3026 people who completed the survey, 1379 (46%) reported a history of caregiving. Compared to non-caregivers, caregivers were more likely to be older, female, have a lower education level, and lower income. Those age 65 or older were almost twice as likely to have a history of caregiving than those younger than 65 (OR = 1.93, p< 0.001). In multivariate analysis, caregivers had a greater number of total morbidities (β=0.3, p < 0.001) and a greater percent reported having health conditions or physical disabilities that impacted their daily life (OR=1.46, p< 0.001). Caregivers thought it more important to have a professional whose job it is to coordinate all aspects of care (β=0.15, p=0.006) compared to non-caregivers. Caregivers believed it would be more helpful, than non-caregivers, to have access to house calls (OR=1.42, p=0.0004), telemedicine (OR=1.23, p=0.034), web portals (OR=1.22, p=0.046), and delivery of medications (OR=1.57, p< 0.001). Compared to non-caregivers, caregivers thought America was doing a worse overall job addressing the needs of seniors (β= -0.09, p=0.006). Caregivers also felt, based on their personal healthcare experience, that it was harder to access care (β=0.18, p < 0.0001) than non-caregivers.

Conclusions: Family caregivers are a vulnerable population relative to non-caregivers and are more pessimistic about healthcare in the US. They report more difficulties accessing care and believed innovative approaches such as in-home care and telemedicine would be helpful. Application of these innovations in the health system could provide needed support to family caregivers.

C210
Perspectives of community partners in successful academic-community collaboration
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Background: HRSA’s Geriatrics Workplace Enhancement Program (GWEP) encouraged academic institutions to partner with work with medical and social services organizations to enhance inter-professional care for older adults. Because such partnerships are believed to be essential to improving care for older adults, five California GWEPs teamed-up to study the kinds of partnerships that exist and learn what attributes contribute to successful collaboration. Methods: A representative from each partnering organization (n=38) completed an online survey assessing elements of their partnership with their respective academic institution. The survey measured five attributes of effective partnerships (governance, administration, autonomy, mutuality, and norms/trust) using a 17-item instrument. It also measured perceived success of the collaboration using an 8-item instrument. Partnerships were characterized and the relationships between attributes and perceived success (defined as at least 8 out of 10 points) were tested. Results: Partners reported high levels of successful collaboration (a mean score of 8.2± 0.9 on a 10-point scale). Reported attributes of partnerships were somewhat variable with scores ranging from 5.9 (on a 7-point scale) for administration to 6.4 for autonomy. Four of the five attributes were highly correlated with successful collaboration, though to varying degrees. Attributes of mutuality (odds ratio of 8.1, p=0.002) and norms/trust (odds ratio=19.0, p=0.019) were most highly correlated with success, and autonomy was not, or borderline, correlated (odds ratio=1.9, p=0.052). These results were also supported in multivariable analysis. Conclusions: High-quality partnerships are essential to meeting the goals of the national GWEP initiative to improve inter-professional care for older adults. Across
five common GWEPs, the attributes of partnerships were not uniform, but the perception of successful collaboration was high. The attributes that appeared to contribute the most to perceived success were aspects of mutuality (e.g., all partners benefit from the collaboration) and norms/trust (e.g., organizations can count on each other), and could be prioritized as features of future HRSA-funded collaborations.

C211
Understanding perspectives on discussing life expectancy among older adults with low health literacy

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Background: Life expectancy is important to inform a number of preventative care decisions in older adults, such as cancer screening. Previous studies on whether older adults want to discuss life expectancy showed conflicting results and have focused on older adults with low health literacy. We conducted an in-person survey to understand how older adults with low health literacy prefer to discuss life expectancy.

Methods: Older adults (≥65 years) with low health literacy were recruited from the Baltimore Metropolitan area through senior centers, assisted living communities, outreach events, referrals from other participants, and a research registry. The survey describes a hypothetical older adult with several health conditions and functional limitations, and asked participants whether or not they would like to discuss life expectancy with the doctor if they were the hypothetical patient. We also asked whether it was appropriate for the doctor to offer to discuss life expectancy and whether the participant would want the doctor to discuss their life expectancy with family and friends. Additionally, participants were asked to consider whether they would want to discuss life expectancy in the specific decision-making context of cancer screenings.

Results: Participants included 113 older adults (average age of 76.3 years). Most of the participants (n=80, 70.8%) did not wish to discuss life expectancy in the presented hypothetical situation. Among these individuals, 47 also thought the doctor should not offer to discuss life expectancy, and 57 also did not want their doctor to discuss their life expectancy with their family and friends. When considering life expectancy in the context of a decision about continuing or stopping cancer screenings, 25 (31.2%) participants initially opposed to discussing life expectancy changed to being willing to discuss life expectancy.

Conclusion: While there was a large number of older adults who were unwilling to discuss life expectancy in general, some older adults might consider discussing life expectancy in the context of a specific clinical decision, such as cancer screenings. Our results also highlight a challenge for clinicians on how to identify patient preferences in this area since a significant subset of older adults did not wish to discuss life expectancy nor wanted the clinician to offer discussion.

C212 Encore Presentation
Withdrawn

C213
Factors Associated with Post-hospital SNF Discharge for Patients with Surrogates

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Background: Over the next two decades the lifetime risk of nursing home use for older patients is approximately 56%. For hospitalized patients with cognitive impairment, surrogate decision makers participate in deciding patients’ discharge destination. We examined the characteristics of patients, surrogates, their relationship, and the healthcare system issues associated with a higher likelihood of being discharged to a skilled nursing facility (SNF) from the hospital.

Methods: This is a secondary data analysis from an observational study of surrogate decision-making for patients 65 and older hospitalized at one of three Midwest hospitals. Eligible patients lacked decision-making capacity as judged by both physician and caregiver report, had a legal surrogate, and were community-dwelling prior to hospital admission. The cohort was divided into those who went home versus those who did not. Logistic regression was performed to determine which variables were associated with a higher risk of SNF discharge.

Results: Out of 370 patients enrolled into the study, 184 were community-dwelling prior to hospital admission. Of these 135 discharged to a SNF and 49 patients went home. There were no significant differences in surrogate or patients demographics (age, race, gender) between those discharged to home versus SNF. In univariate analyses, the following marked a higher likelihood of nursing facility discharge destination with respective p-values: inpatient physical therapist (PT) recommendations for SNF (<0.0001), lack of pre-hospital home care (0.0383), lower comorbidity score (0.0016), and surrogate preference for full code (0.0138). A logistic regression model revealed that PT recommendations (Adjusted Odds Ratio (aOR): 72.01, CI: 17.56-295.27) and lower comorbidity score (aOR: 0.86, CI: 0.77-0.95) were the strongest indicators of SNF discharge. Non-significant independent variables include insurance status, surrogate distrust of the healthcare system, and whether the patient lives with surrogate.

Conclusion: Therapist recommendations are the strongest predictors of SNF discharge for patients with cognitive impairment followed by lower comorbidity scores. Early communication with therapists and assessment of patient health status may help to facilitate SNF discharges and prepare surrogates and patients for this transition.
lost six or more teeth (47.5%; CI=42.8-52.2; n=344). Finally, older adults making less than $15,000 were most likely to have lost all of their natural teeth (40.7%; CI=31.3-50.1; n=112) and six or more teeth (72.5%; CI=64.9-80.1; n=191).

Discussion: Arkansas’ 2014 oral health outcomes for tooth loss are worse than the national average. Edentulous individuals are at risk of infection by periodontal pathogens that may cause systemic health outcomes such as aspiration pneumonia, COPD, stroke, and diabetes. This is a concern due to the fact that oral health care is deficient among long term care facilities.

C215
A Composite Measure of Caregiver Burden in Dementia
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Background: Caregiving for dementia patients can produce strain and depressive symptoms. We created a composite measure to assess caregiver burden from 3 existing measures.

Methods: Candidate measures for inclusion in the composite were caregiver strain (measured by the Modified Caregiver Strain Index), distress experienced due to patient neuropsychiatric symptoms (Neuropsychiatric Inventory Questionnaire Distress Scale), and caregiver depressive symptoms (PHQ-9). Measures were assessed among 1091 caregivers of dementia patients in UCLA’s Alzheimer’s and Dementia Care Program at program entry and 1 year later. Different measure structures were compared with confirmatory factor analysis (CFA) models: 1) a bifactor model; 2) a 2nd order model; and 3) a correlated factor model. Good model fit was defined as a Root Mean Square Error of Approximation (RMSEA) value of < 0.06 and comparative fit index (CFI) values of ≥0.95. Reliability was estimated with Mosier’s formula. Minimally important differences (MIDs) were estimated by anchoring the magnitude of score change to change in ADLs, living situation, and amount of home help needed.

Results: The correlated factor CFA model excluding the CSDD fit best with RMSEA=0.040 and CFI=0.949. Based on this model, a total Dementia Caregiver Burden (DCB) scale was created that ranges from 0-100, with higher scores indicating higher burden. The mean score was 48 (SD 18). The reliability of the DCB was measured by the Modified Caregiver Strain Index, with a Cronbach’s α of 0.84. MIDs ranged from 4-5 points. (Table)

Conclusions: This study provides support for the reliability and validity of the DCB, which can be used as an outcome measure to assess the impact of interventions on individuals with dementia.

C216
A Composite Measure of Patient Burden in Dementia
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Background: Dementia is associated with cognitive impairment, functional limitations, and psychological symptoms. We created a composite measure to assess patient burden from 3 existing measures.

Methods: We assessed cognitive ability [measured with the Mini Mental State Exam (MMSE)], functional status [Functional Activities Questionnaire (FAQ)], depressive symptoms [Cornell Scale for Depression in Dementia (CSDD)], and neuropsychiatric symptom severity [Neuropsychiatric Inventory Questionnaire Severity Scale (NPIQ-S)] with 1091 patients in UCLA’s Alzheimer’s and Dementia Care Program at baseline and 1 year. Different measure structures were compared with confirmatory factor analysis (CFA) models: 1) a bifactor model; 2) a 2nd order model; and 3) a correlated factor model. Good model fit was defined as a Root Mean Square Error of Approximation (RMSEA) value of < 0.06 and comparative fit index (CFI) values of ≥0.95. Reliability was estimated with Mosier’s formula. Minimally important differences (MIDs) were estimated by anchoring the magnitude of score change to change in ADLs, living situation, and amount of home help needed.

Results: The correlated factor CFA model excluding the CSDD fit best with RMSEA=0.040 and CFI=0.949. Based on this model, a total Dementia Patient Burden (DPB) scale was created that ranges from 0-100, with higher scores indicating higher burden. The mean score was 48 (SD 18). The reliability of the DPB was 0.94. MIDs ranged from 4-5 points. (Table)

Conclusions: This study provides support for the reliability and validity of the DPB, which can be used as an outcome measure to assess the impact of interventions on individuals with dementia.

C217
Results of Implementation of a Payment Model for Nursing Facilities: The OPTIMISTIC Project
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Background: OPTIMISTIC is an ongoing 2 phase $30.3 million Centers for Medicare and Medicaid Services Center for Innovations demonstration project designed to reduce avoidable hospital transfers of long stay nursing facility residents, active until 2020. Building on successful outcomes from the clinical model developed in Phase 1, CMS funded Phase 2 projects to test the impact on reducing hospital transfers of novel Medicare Part B billing codes for facilities and providers to provide acute care in place. The daily reimbursement rate for participating facilities is $218. We describe the implementation of this large demonstration project and present results of the first 9 months of Phase 2 of use of billing codes for the 6 target conditions: pneumonia, heart failure, COPD, dehydration, cellulitis and UTI.
Methods: 44 nursing facilities in Indiana with 6,194 certified beds. Facilities submit data including acute care episodes of residents to a secure REDCap system monthly and facility leaders are interviewed regularly to identify and navigate challenges to implementation. Descriptive statistics are presented for the first 9 months of Phase 2: use of the codes for each of the 6 target conditions including number of episodes billed, number of days per episode, and whether the episode ended in transfer to the hospital.

Results: There was a large range of use of the billing codes across facilities (0-138 episodes billed). UTI was the most commonly billed, with a total of 445 episodes. Average length of acute episodes of UTI was 5.96 days (2.25 SD). Dehydration was least billed with a total of 44 episodes. Average length of acute episodes that ended in hospital transfer was 8.5 days (3.41 SD).

Conclusions: Nearly all participating facilities have received significant revenue from CMS for enhanced care provided to residents. Challenges identified by facilities in implementing these billing codes, and the patterns of use of the codes, have important implications if the reimbursement model is expanded nationwide, including the need for hands on implementation support and the limit availability of medical providers may place on the ability to provide acute care in this setting.

C218 Palliative Care for Dementia Varies by Setting of Consultation
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Background: Dementia is progressive, debilitating and terminal, affecting 5+ million Americans annually. Palliative care is considered appropriate for dementia, yet we know little about how people with dementia are currently utilizing palliative care services, or how services vary by setting of care. This study aimed to compare characteristics of persons with dementia by palliative care consult location.

Methods: We conducted a cross-sectional study of 575 individuals with a primary diagnosis of dementia receiving a first palliative care consultation between September 2014 and February 2017 from Four Seasons, a community-based nonprofit. We distinguish between long term care (LTC), hospital, and home consultation settings. Data sources include the electronic health record and Quality Data Assessment Collection Tool (QDACT). Demographic and clinical characteristics are compared by setting using descriptive statistics.

Results: This cohort was 69% female, 81% white, with mean age 84, and mean of 3.5 palliative care consultations. The majority had a palliative performance scale (PPS) score below 50 (86%), a prognosis of less than 6 months (56%), a documented advanced directive (51%), and a DNR/DNI order (70%). Consultations occurred in LTC (57%), home (15%), and hospital (21%) settings. LTC-based consultations had the highest prevalence of documented advanced directives (63% vs. 40% home, 31% hospital, p<0.001) and lowest prevalence of full-code status before consult (17% vs. 35% home, 41% hospital, p<0.001). People with dementia in the home/clinic setting had higher prevalence of documented advanced directives (63% vs. 40% home, 31% hospital, p<0.001) and lowest prevalence of full-code status before consult (17% vs. 35% home, 41% hospital, p<0.001). People with dementia in the home/clinic setting had higher prevalence of PPS scores greater than 50 (28% vs. 5% LTC, 13% hospital, p<0.001) and prognosis <6 months (73% vs. 68% LTC, 43% hospital, p<0.001). People in home settings had the highest proportion able to self-report symptoms (78% vs. 34-38%), typically reporting 0-3 levels of pain and dyspnea.

Conclusion: Characteristics of people with dementia differ by the setting of their first palliative consult. Persons in the home/clinic setting had higher functional scores but a poorer prognosis than those in other settings. To date, this is the largest cohort of persons with dementia receiving community-based palliative care in the US.
with short life-expectancy discharged from a palliative care unit. We hypothesized that patients able to be discharged to home would have a higher rate of hospice enrollment than patients discharged to a facility.

Methods: Retrospective review of patient characteristics and discharge data on all patients 65 and older with a life-expectancy of less than 6 months admitted to the palliative care unit at an urban, academic medical center and discharged alive from 2012-2017.

Results: There were 822 patients who met the study criteria. Of these patients 649 (80%) were discharged with hospice. Of the total, 338 (41%) were able to be discharged home, while the rest required facility placement at discharge. Patients discharged home had a significantly higher rate of hospice enrollment than patients discharged to a facility—92% vs. 71%, p < 0.0001. Using a multivariate logistic regression analysis to control for patient factors and illness severity (sex, age, race, marital status, reason for palliative care consult, functional status, life expectancy, life limiting diagnosis), discharge to home vs. facility remained a strong predictor of hospice enrollment, with an odds ratio for hospice enrollment of 6.99 (95% CI 4.14, 11.81), p<0.001.

Conclusion: These results suggest that need for post-discharge facility placement represents a major barrier for hospice enrollment among older patients who are otherwise hospice appropriate. The structure of the hospice benefit may require modification so that these hospice appropriate patients can utilize the benefit.

C221
Characteristics of Adults Aged 65 and Older with Advanced Illness and Multimorbidity Seen in U.S. Subspecialty Clinics, NAMCS 2009-2011
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Background: Older adults seen in subspecialty clinics often have substantial symptom burden and complex care needs that may benefit from palliative care. Early integration of palliative care can be beneficial for this population to assist with care coordination and shared decision making to weigh the risk benefit of treatment. However, limited data exist to identify older adults with advanced illness and multimorbidity in U.S. subspecialty practice to guide planning and care.

Methods: We conducted a cross-sectional analysis of the National Ambulatory Medical Care Survey (2009-2011) to describe visits among individuals aged 65 and older with advanced illness and multimorbidity to U.S. oncology, neurology, and cardiovascular clinics. Advanced end-stage illness was defined by the ICD-9 codes from the NCQA Palliative and End-of-Life Care Physician Performance Measurement Set. Multimorbidity was defined as having three or more chronic conditions from a section in the survey of a list of fourteen possible current chronic conditions.

Results: From 2009 to 2011, multimorbidity was reported in 47% of U.S. subspecialty clinics visits among older adults with advanced illness. Among those 65-75 years of age, more visits were to oncology (24.0%) vs. neurology (18.2%) and cardiovascular clinics (9.1%) (P<0.001). Among those 75 years of age and older, more visits were to neurology (22.7%) vs. oncology (19.4%) and cardiovascular clinics (16.0%) (P<0.001). Of interest, depression was reported more often in visits to neurology (16.8%) vs. oncology (7.6%) vs. cardiovascular clinics (6.0%) (P<0.005).

Conclusion: In the United States, multimorbidity was present in almost one-half of visits to oncology, neurology, and cardiovascular clinics among adults aged 65 years and older with advanced illness. Primary and specialty palliative care focused on care coordination and shared decision making could offer additional support for this multimorbid population with serious illness. Care coordination should include screening and treatment for depression.
in both – 16-59 years age group (n = 3704) and ≥60 years age group (n = 1777). Number of patients receiving ASD closure was higher in the 16-59 years age group (n = 6,064) than the ≥60 years age group (n = 3,059). Mean age for open repair and closed repair in ≥60 years age group was similar. Unadjusted analyses revealed significant difference in mortality (0.57% vs 1.42%; p<0.05), length of stay (2.78 days vs 8.18 days; p < 0.001), and discharge to a skilled nursing facility (4.08% vs 67.14%; p<0.001) between closed technique and open technique. Risk factors for mortality in closed as well as open technique included vascular complications, previous myocardial infarction and acute kidney injury. Risk factors associated with skilled nursing facility admission included, male gender, higher Elixhauser index, need for intra-aortic balloon pump.

Conclusions: Procedure volume of both – open technique and closed technique have on an average increased since 2000. Mortality and length of stay are higher in the older adults. Unique risk factors were associated with mortality and admission to SNF.

C224
“That’s a win/win for everybody”: Reciprocity in Academic-Community Collaborations
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Background: As part of HRSA’s Geriatrics Workplace Enhancement Program (GWEP), academic institutions are encouraged to partner with community organizations and/or primary care centers to positively impact the care of older adults. In 2016, evaluators from 5 CA GWEPs joined together to better understand academic-community partnerships shared common, broad goals with their academic collaborators. These differences, when unrecognized by either the community partner or the academic institution, lead to negative collaborative interprofessionalism—more local, applied goals for the collaboration differ substantially. Failure to explicitly disclose local needs can lead to a perceived asymmetrical relationship, in which the return exchange is perceived of as delayed or even negative. Academic institutions participating in GWEP collaborations may share similar themes was reciprocity, meaning the exchange of resources and/or services to pilot the Mobile Acute Care Team (MACT) hospital at home program. MACT provides hospital-level services at home for patients with select diagnoses, including patients at the end-of-life who may otherwise have ended up in inpatient settings.

This study seeks to understand whether patients admitted to the MACT program in the last 180 days of life spend more days at home versus a control cohort. Additional measures include readmissions and cost of care.

Methods: Retrospective chart review and Medicare claims data analysis was performed for patients enrolled in MACT and control groups who died within the 180 days of the initial encounter.

Results: Of 27 patients who met criteria, 13 were admitted to MACT and 14 were in the control group. The MACT cohort mean age was 90 year vs. 86 years for controls. The MACT cohort included 11 female and 2 male patients; the control group included 6 female and 8 male patients. 12 of 13 MACT patients and 12 of 14 control patients were hospice eligible at the time of admission, respectively. Patients enrolled in MACT in their last 6 months of life spent 148.4 days at home vs. 146.2 days in the control population. By removing one extreme outlier from the MACT group, this number increases to 160.9 days at home. The MACT cohort had only one readmission within 30 days of initial encounter, versus 4 readmissions for control patients. Additionally, MACT resulted in approximately $2,300 in cost savings versus traditional inpatient admission.

Conclusion: This study demonstrates an opportunity to increase days spent at home at the end of life. When excepting one significant outlier, the MACT intervention allowed the study group to spend greater than two weeks more at home than the control group (160.9 vs. 146.2 days, respectively). In addition, patients benefitting from MACT had fewer readmissions and a decreased cost of care.

C226
Geriatric Emergency Department Assessments and Association with Hospitalization
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Background: Geriatric Emergency Department Innovations (GEDIs) have use assessments validated outside of the emergency department (ED) to identify patients at high risk for hospitalization and repeat ED visit. The objective of this study was to measure the association of assessments for delirium, dementia, potentially inappropriate medications, functional status, fall risk, and overall risk of functional decline as measured in the ED with hospitalization.

Methods: This was a cross sectional study from of patients age 65 and older who were seen by a geriatric nurse liaison (GNL) in the emergency department from January 2014 to June 2017. GNLs perform assessments using the identification of seniors at risk (ISAR), Beers Criteria for potentially inappropriate medications (PIMs),
Timed Up and Go (TUG), Katz Activities of Daily Living (ADL), Confusion Assessment Method (CAM) and short portable mental status questionnaire (SPMSQ). Patients were excluded if they had an Emergency Severity Index (ESI) triage score of 1 (critically ill) or 5 (non-emergent). Data were recorded in the electronic medical record as a part of usual care.

Results: 4,037 patients were evaluated by the GNL over the study period. 1462 were discharged from the ED, 2575 were admitted. Patients with abnormal SPMSQ score (67.4% vs 59.4% p<0.001), CAM 95.5% vs. 84.3% p=0.02), ADLs (68.3% vs. 56.3%, p<0.001), TUG, 43.1% vs 31.0%, p<0.001), PIMs 69.3% vs 54.2%, and ISAR (49.6% vs 48.8%, p<0.001) were all more likely to be admitted than patients with normal assessments.

Conclusions: ED based assessments performed by GNLs identify a group of geriatric ED patients who are more likely to be hospitalized and may benefit from additional care coordination in the ED to prevent unnecessary hospitalization.

C227
Using Pain Medication Intensity to Stratify Back Pain Among Older Adults
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Background: Approximately one-third of community-dwelling older adults experience some type of back pain each year. Back pain reduces quality of life and is a leading cause of disability among older adults.

Objective: To examine the prevalence of musculoskeletal back pain among older adults, stratified by pain medication intensity for the purpose of 1) reviewing back pain treatment patterns and 2) considering a targeted back pain prevention intervention.

Methods: A 25% random sample of older adults was utilized to identify new and recurring back pain patients. Prescription pain medications were stratified by intensity levels to five unique categories. Characteristics associated with pain medication intensity levels were determined using regression models.

Results: Among eligible insureds about 10% were classified as having musculoskeletal back pain. Of these, 54% (N=20,645) had new back pain and 46% (N=17,252) had recurring back pain. Overall, about 35% of new and recurring back pain patients received physical therapy with a median of 6 sessions; about 40% received ≥10 sessions. New and recurring back pain patients were stratified to the following pain medication subgroups: no prescription pain medications; NSAIDs, muscle relaxants, low dose opioids and high dose opioids: (new: 39%, 10%, 6%, 23% and 23%, respectively; recurring: 32%, 9%, 4%, 17% and 38%, respectively). NSAID and muscle relaxant users were more likely to be younger, healthier and receive physical therapy. Low and high dose opioid users were more likely to be younger, in poorer health, use sleep medication and receive physical therapy.

Conclusion: New and recurring back pain patients can be stratified by pain medication intensity, for the purpose of reviewing treatment patterns and targeting back pain prevention programs. Those with back pain but taking no prescription pain medications may benefit from back pain prevention programs customized for older adults.

C228
Characteristics of New Onset Sleep Medication Users Among Older Adults
S. Musich,1 S. S. Wang,1 L. Slindee,1 L. Saphire,2 E. Wicker,3

Background: Access to a usual source of care (USOC) is associated with better preventive health and chronic disease treatment. Although more than 95% of older adults have a USOC, more than 1 in 20 report a change in USOC within the last year. In younger adults, change in USOC is associated with unmet health needs. Little is known about factors that affect losing or gaining a USOC in older adults. Therefore, we sought to describe the factors associated with a loss and with a gain of USOC amongst adults age 65 and older in the United States.

Methods: We followed 7,609 participants of the National Health and Aging Trends Study annually for up to five years (2011-2015). Discrete time-to-event techniques and pooled logistic regression were used to identify demographic, clinical and social factors associated with loss or gain in USOC.

Results: Ninety-five percent of older adults reported having a USOC in 2011, of whom 5% subsequently did not. Odds of losing a USOC were higher amongst older adults with unmet transportation needs (aOR 1.63; 95% CI 1.12-2.38) and who were Hispanic (versus white, aOR 1.79; 95% CI 1.12-2.86). Odds of losing a USOC were lower for those who had ≥4 chronic conditions (versus 0-1; aOR 0.47; 95% CI 0.32-0.68) and with supplemental (aOR 0.60; 95%
**C230**

**Effectiveness of Medicaid’s Home- and Community-Based Services for Persons with Multiple Sclerosis**

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**Background:** One-fourth of people with multiple sclerosis (PwMS) will face a decline in physical function severe enough to require long-term care support services, including nearly a third who will require personal assistance in the home. We hypothesized that PwMS who accessed home-and community-based services (HCBS) available to those enrolled in Medicaid would have fewer hospitalizations and 30-day readmissions, lower nursing home (NH) placement, and lower health care costs than their peers who did not have access to HCBS.

**Methods:** We conducted a national, retrospective cohort study of dually eligible (Medicare & Medicaid) PwMS with MS identified using the Medicare Chronic Condition Warehouse. We identified new users of Medicaid HCBS services based on a 6-month washout period and matched to non-HCBS users with MS using propensity-scores. Six-month outcomes were ascertained from Medicare and Medicaid claims (NH admission, hospital admission and 30-day readmission, and total expenditures) and modeled using generalized linear models.

**Results:** The propensity-matched subjects (n = 454 per group) came from 29 states and were 74.7% female, 68.1% non-Hispanic Caucasian, 23.3% black non-Hispanic, and 54.4 ± 12.2 years old. There were no significant differences between HCBS users and non-users in NH admission (10.8% vs. 10.1%, p = 0.745) or 30-day readmission rates (14.0% vs. 18.6%, p = 0.4914). HCBS users were more likely to have a hospital admission (18.9% vs. 9.5%, p = 0.0001) and had higher expenditures ($17,215 vs. $9,675, p < 0.0001). There was no difference in mortality (3.3% vs. 2.0%, p = 0.2145).

**Conclusions:** HCBS for PwMS appears to be directed, perhaps appropriately, to individuals who have higher health needs (higher cost and more hospital admissions). These needs appear to be beyond those measurable with administrative claims. Future work should examine the differences in outcomes between those who do enter the NH as compared to those who initiate HCBS, a more direct test of HCBS impact, as well as evaluate longer term outcomes.

**C231**

**Temporal trends in age and physical function upon long-stay nursing home admission for residents with multiple sclerosis**


**Background:** People with multiple sclerosis (PwMS) are a distinct subpopulation in nursing homes (NH). They are nearly 20 years younger, disproportionately more physically disabled for their age, and more cognitively intact than other NH residents. The growth of long-term support services delivered outside NHs may enable PwMS to receive assistance with activities of daily living (ADLs) and delay NH entry. We investigated whether patients’ age and disability status upon long-term NH admission have changed over time for PwMS.

**Methods:** In this retrospective cohort study using national Minimum Data Set assessments, we identified new long-stay (>90 days) NH residents with MS, after a one-year washout, between 2000 and 2012. MS was ascertained from the admission MDS. MDS measures included demographics, activities of daily living (ADLs), and self-transfer status (require extensive assistance or total dependence). Descriptive statistics were used to examine temporal trends in age and physical function within and between groups with/without MS over time.

**Results:** For residents with MS (n = 76,970), mean age at the LS admission increased significantly from 59.4 [standard deviation (SD): 14.7] in 2000 to 64.8 years (SD: 14.2) in 2012, a 5.4-year increase. ADL score remained stable over time (median 20.0; interquartile range (IQR): 14.0-25.0). The proportion of immobile residents with MS changed slightly from 72.3% in 2000 to 74.4% in 2012. In contrast, for residents without MS (n = 7,564,951), mean age at index remained unchanged from 78.9 years (SD 13.2) in 2000 to 79.7 years (SD 12.9) in 2012. Their median ADL increased significantly from 13.0 (IQR 6-19) to 18.0 (IQR 13-20) between 2000 & 2012, and the proportion of immobile residents increased substantially from 42.6% in 2000 to 64.7% in 2012.

**Conclusions:** PwMS are entering the NH as long-stay residents at older ages, but their physical function at admission has not changed over time. In general, PwMS are substantially more disabled physically than other NH residents even though they are roughly 15 years younger. Future research should attempt to disentangle the potential benefits to physical and cognitive function associated with remaining in the home longer for PwMS.

**C232**

**Life Expectancy in Cancer Screening Decisions - A Survey of Geriatricians**


**Background:** The AGS Choosing Wisely Workgroup recommends incorporating life expectancy in cancer screening decisions. Previous studies indicate that non-geriatricians consider prognosis important to their clinical decisions, but often do not use prognostic tools. Moreover, they rarely discuss prognosis with patients. Little is known about how geriatricians include life expectancy in cancer screening decisions or whether prognosis is discussed.

**Methods:** We surveyed attending geriatricians and fellows who care for community-dwelling older adults in academic clinics in New York City. We inquired whether these physicians incorporate prognosis in cancer screening decisions and discuss prognosis with patients, and how they estimate prognosis; we measured their confidence in estimating and discussing prognosis (5 point Likert scale: 0 = “not confident at all” to 4 = “extremely confident”). We also examined barriers to use of 2 common prognostic tools (ePrognosis and Gait speed) and having these discussions.

**Results:** Twelve attendings and six fellows completed surveys (72% response rate). All respondents incorporated prognosis in cancer screening decisions and discussed prognosis with patients. Respondents estimated prognosis based on clinical impression (n = 16), life table (n = 5), ePrognosis (n = 6) and gait speed (n = 2). Confidence in estimating and discussing prognosis with patients was neutral (median: 2; range 1-3). Attending physicians were more confident in 1) estimating and 2) discussing prognosis with patients than were fellows (median: 2 versus 1, p = 0.001; median: 3 versus 1.5, p = 0.01, respectively). “Lack of time” was the most frequently reported barrier to prognostic tool use and prognosis discussion with patients followed...
by “unfamiliarity”, “lack of resources” and “uncertainty about prognosis estimates”, respectively (see table).

**Conclusions:** Geriatricians identify considerable barriers to discussing prognosis when making cancer-screening decisions. Addressing these barriers may improve confidence in estimating and discussing prognosis.

### Reported Barriers

<table>
<thead>
<tr>
<th>Barriers to use of e (%)</th>
<th>Time</th>
<th>Unfamiliarity</th>
<th>Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>11(0%)</td>
<td>8(44%)</td>
<td>1(0%)</td>
</tr>
<tr>
<td>Gastroparesis</td>
<td>3(17%)</td>
<td>3(17%)</td>
<td>7(39%)</td>
</tr>
</tbody>
</table>

### Conclusions

Addressing these barriers may improve confidence in estimating and discussing prognosis.

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**C233**  
**A Comprehensive Review of Programs Developed to Combat Elder Mistreatment**

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**Background:** Elder mistreatment is common and has serious social and medical consequences for victims. Though programs to combat this mistreatment have been developed and implemented for more than three decades, previous systematic literature reviews have found very few successful ones. We sought to conduct a more comprehensive examination of all programs to improve elder mistreatment identification, intervention, or prevention, including those that had not undergone evaluation as well as those not published in the peer-reviewed literature.

**Methods:** We used two strategies to identify programs combatting elder mistreatment: (1) a systematic literature review through April 19, 2017 in a broad range of databases and (2) snowball sampling using key informants for unpublished programs. We abstracted key information about each program and categorized programs into 14 types and 9 sub-types. We also systematically examined the potential for programs to work in low-resource environments. For programs that reported an impact evaluation, we systematically assessed the study quality.

**Results:** We found 119 articles describing 102 programs in the comprehensive systematic literature review and 16 additional programs from key informants. 45% of programs focused on improving identification, 90% on intervention, and 40% on prevention, with 58% having multiple focuses. The most common types of programs were: educational (48%), multi-disciplinary team (20%), psycho-education/therapy/counseling (11%), and home visitation (11%), with 14% of programs having components in multiple categories. 16% of programs integrated an acute-care hospital in the intervention. 54% had high potential to work in low-resource environments. 50% reported an attempt to evaluate program impact, but only 2% used a high-quality study design.

**Conclusion:** Many programs to combat elder mistreatment have been developed and implemented, with the majority focusing on education and multi-disciplinary team development. Many have the potential to work in low-resource environments. Though half report evaluation of program impact, very few use high-quality study design, suggesting existing challenges and potential for future research.

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**C234**  
**APOE genotype influences blood to brain glucose ratio after high fat feeding**

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**Background:** Glucose hypometabolism is a diagnostic feature of Alzheimer’s disease (AD), and occurs earlier in individuals with the risk gene APOE E4 (E4+). Post-prandial glucose metabolism differs by E4 status; little is known about how this influences brain glucose levels. We examined the relationship between blood and cerebrospinal fluid (CSF) glucose in an ongoing meal intervention in E4+ and E4- older adults.

**Methods:** Healthy older adults (age 65.6 +/- 6.9, 54% E4+) ingested a 700 calorie high fat meal (HFM) or high carbohydrate meal (HCM) after an overnight fast in a random crossover design. Each meal was 20% protein; HCM was 25% total fat (5% saturated), 55% carb, glycemic index <= 55 and HFM was 50% total fat (25% saturated), 30% carb, glycemic index >70. Blood samples were taken at 7 time points (0, 15 min, 30 min, 1 hour, 2h, 3h, 4h). CSF was collected at 4h post-meal. Data were analyzed using t tests and Pearson correlation.

**Results:** CSF glucose was higher after HCM compared to HFM (63.1 +/- 5.8 vs 61.6 +/- 4.8 mg/dl, p=0.029). For the entire group, CSF glucose did not significantly correlate with blood glucose at any of the 7 time points; the highest correlation coefficient was noted with 2h blood glucose for both meals (HFM r=0.48, p=0.1, HCM r=0.35, p=0.3). There was a trend toward higher 2h blood glucose after the HCM, but the CSF:blood ratio did not differ by meal (Table). When stratified by E4 status, findings did not differ by E4 for the HCM. For the HFM, the E4+ group had higher 2h blood glucose (p=0.03) but an 11 percentage point lower CSF:blood glucose average ratio (p=0.0006).

**Conclusions:** Meals with varying macronutrients can acutely affect CSF glucose, and the relationship between blood and CSF glucose differs by E4 status after high fat feeding. Whether this reflects decreased transport or increased utilization is unknown.

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**C235**  
**Melatonin for Prevention of Postoperative Delirium in Older Adults: A Systematic Review and Meta-Analysis**

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**Background:** Melatonin, a natural hormone produced by the pineal gland, is known to be involved in the regulation of circadian rhythm. Recent studies suggest that serum melatonin levels may be correlated to delirium risk following surgical procedures, and that melatonin may play a role in delirium prevention in patients on general medicine and intensive care units. Few pharmacologic interventions are available to prevent delirium. This systematic review and meta-analysis aimed to assess whether perioperative melatonin has an effect on the incidence of delirium in older adults undergoing surgical procedures.

**Methods:** A systematic search of PubMed, Embase, PsychINFO, CINAHL, and the references of the identified articles was conducted independently by two authors. Primary studies published in English between January 1990 and October 2017 were included if: a) at least one group received melatonin or ramelteon during the perioperative period, b) study participants had a mean age of ≥50 years, and c) a delirium incidence outcome was reported. Dual extraction was conducted with consensus generation and bias assessment. A random
effects model was used to generate a forest plot and obtain a summary odds ratio for the outcome of delirium incidence.

**Results:** Of 335 unique records identified in the initial search, six studies were included in the meta-analysis (n=1,155), with one additional article included in the systematic review (n=1,156). The mean age in studies ranged from 59-84 years. Patients in intervention groups received melatonin or ramelteon at daily doses of 2-5mg or 8mg, respectively, around cardiothoracic, orthopedic, or hepatic surgeries. One study used high-dose melatonin (50mg/kg). Duration of therapy ranged from 2-9 days, with the first dose administered on the evening before or the day of surgery. The incidence of delirium ranged from 0-30% in the intervention groups versus 4-33% in the comparator groups, and the summary effect of the meta-analysis yielded an odds ratio of 0.42 (95% CI, 0.18-1.00; p=0.05). Heterogeneity was assessed, with an I² value of 72.1%.

**Conclusions:** Perioperative melatonin use trended towards decreasing the incidence of delirium. Because melatonin is relatively safe and inexpensive, it may be reasonable to use in older adults undergoing surgical procedures to reduce the incidence of delirium.

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C236

**Team Based Approach to Fall Prevention in Elderly Population: A Four Year Review**

_B. Schwartz,^2 A. Yaple,^2 J. Gaul,^2 J. Ferguson,^2 K. Hougham,^3 F. Chang,^3 1. Neurology, Indiana University School of Medicine, Fort Wayne, IN; 2. Parkview Center on Aging and Health, Fort Wayne, IN; 3. Aging and In Home Services, Fort Wayne, IN.

Introduction: Falls in population aged 65 and above cause major morbidity and even mortality. Fall is number one cause of fracture and head injury.

Methods: We initiated a Fall Prevention Clinic 4 years ago in a community hospital. There are two visits for each patient. The first visit is composed of evaluation by an inter-professional team including a physical therapist, occupational therapist, social worker, pharmacist and a neurologist. The second visit provides recommendations to patient from the team. Five hundred and ninety patients aged 65 or above were included. Follow up visits occurred every 6 months.

Results: The percentages of patients with undiagnosed neurological conditions were high: neuropathy (77.8%), Parkinsonism (70.3%) and neurogenic orthostatic hypotension (15.2%). Polypharmacy was common with average medication of 12.1±5.7 and the highest 38.

Outcome evaluation showed a fall rate of 1.39±0.21 for the period 6-12 months prior to the fall clinic visit, increased to 2.97±0.32 within 6 months prior to clinic visit, and dropped to 0.8±0.12 (compared with 6 months prior, p<0.01) within 6 months after the visit, and 0.6±0.11 within 6 to 12 months after.

Conclusions: The contributors for our significant fall reduction include a multi-disciplinary teamwork, identification and management of previously undiagnosed neurological/medical conditions, personalized fall prevention rules, and attention to psychosocial issues to improve compliance. Neurological diagnosis helps to define additional treatment options. Examples include vitamin B12 supplement for deficiency, which may worsen neuropathy, and treatment for orthostatic hypotension. It helps to answer questions such as “why am I falling” and improves compliance of fall prevention strategies. Consistent messaging by team members reinforces patient compliance further. Neurological/medical evaluation also helps to stratify patients into those amenable to functional enhancement through PT/OT vs. someone with significant cognitive impairment, neuropathy, or stroke who may only benefit from protection/adaptation. From population health standpoint, an unexplained fall should be treated as a red flag for a timely Fall Prevention Clinic evaluation and intervention.

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C237

**Examining the relationship between cognitive impairment and caregiver burden using practical clinical tools**

_L. Esteban,^1 R. Chalmer,^1 E. F. Weiss,^2 R. Malik,^3 H. M. Blumen,^3 J. Cohen,^1 J. Santos,^3 J. Zwerling.^3 1. Geriatrics, Montefiore Medical Center, Bronx, NY; 2. Medicine, Montefiore Medical Center/Albert Einstein College of Medicine, Bronx, NY; 3. Neurology, Montefiore Medical Center, Bronx, NY.

Background: Caregiver burden (CB) is common among informal caregivers of individuals with cognitive impairment and dementia (CID), and is associated with worse health outcomes, including depression and chronic illness in caregivers, and earlier institutionalizations in CID patients. Studies have shown positive correlations between a patient’s degree of neuropsychiatric disturbance and disability and CB, but results are mixed regarding the relationship between cognitive impairment (CI) and CB. Prior studies have used time-consuming instruments to assess CI and CB. This study aimed to clarify the relationship between CI and CB utilizing shorter, clinical practice-friendly tools including the Picture Memory Impairment Screen (PMIS) and the American Medical Association Caregiver Self-Assessment Questionnaire (CSAQ).

Methods: Retrospective chart review was performed on patient-caregiver pairs seen at a multidisciplinary memory disorder clinic in New York over a two-year period. Caregivers voluntarily completed CSAQ, and patients were administered the PMIS and the Blessed Information Memory Concentration (BIMC) test as part of their standard of care. Pairs were excluded if any assessment was incomplete.

Results: Among 112 patient-caregiver pairs, BIMC and PMIS were negatively correlated (Pearson’s r = -0.61, p=0.00001). Chi-square analysis between PMIS (dichotomized at ≤5) and CSAQ (dichotomized at ≥9) was not statistically significant (p=0.18). A t-test examining the relationship between CSAQ (dichotomized at >9) and BIMC was trending towards statistical significance (p=0.09).

Conclusions: While the PMIS previously indicated sensitivity for detecting CID (68%), there was no significant relationship of PMIS scores with CB. Similarly, no significant relationship was quantified between BIMC and CB, but a larger sample may prove more conclusive. Future analysis by dementia type and global severity using Functional Assessment Staging of Alzheimer’s Disease, as well as by caregiver demographics, may also help to establish a relationship between CI and CB.

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C238

**Encore Presentation**

Withdrown

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C239

**The Reversible Dementias: Do They Exist?**

_P. Pourmalek,^1,3 V. Verma,^2,3 B. Lubinski,^4 J. Blumenthal,^1,3 1. Gerontology and geriatrics, University of Maryland, Baltimore, MD; 2. Armed Health Medical Center, Anderson, SC; 3. VA Maryland Health Care System, Baltimore, MD; 4. School of Medicine, University of Maryland, Baltimore, MD.

In the evaluation of dementia, tests for thyroid disease, B12 deficiency and syphilis are frequently obtained to search for “reversible” causes of dementia. We investigated the clinical utility of these tests. From 2013 to 2015, 526 patients underwent interdisciplinary evaluations of dementia at the Geriatrics/Dementia Clinic of the Baltimore VAMC. Of the 491 patients who had measurements of TSH, 10 (2%) were found to have abnormal values; 2 with TSH > 10 mIU/L and 8 with TSH < 0.5 mIU/L. Four of these patients were treated, 3 of whom had normal values on repeat testing and one who had persistently high values attributed to non-adherence. Of the remaining patients, one had central hypothyroidism and another had a normal TSH on repeat testing. Of the 481 patients who were tested for B12 deficiency, 25
(5.2%) had low levels (< 250 pmol/L). Seventeen were supplemented with B12 or had normal levels on repeat testing; 6 patients were not treated and 2 were lost to follow-up. Of the 428 patients whose syphilis serology was obtained, 10 had a positive RPR. One had a negative anti-syphilis EIA, another had a negative CSF VDRL and negative repeat RPR; one died shortly after evaluation. Five patients completed a repeat RPR; one died shortly after evaluation. Five patients completed an anti-syphilis EIA, another had a negative CSF VDRL and negative repeat RPR; one died shortly after evaluation. Fifteen patients were treated for thyroid disease, B12 deficiency and had normal levels on repeat testing; 6 patients were not treated and 2 were lost to follow-up. Of the 428 patients whose syphilis serology was obtained, 10 had a positive RPR. One had a negative anti-syphilis EIA, another had a negative CSF VDRL and negative repeat RPR; one died shortly after evaluation. Fifteen patients were treated for thyroid disease, B12 deficiency and had normal levels on repeat testing; 6 patients were not treated and 2 were lost to follow-up.

METHODS: Hip fracture patients were enrolled prior to surgery and CSF samples were collected during spinal anesthesia. CSF biomarkers were grouped into normal and abnormal values based on previously established cut-offs. We fit piecewise longitudinal linear mixed effects regression models (adjusted for age, sex, BMI, education, Charlson Comorbidity Index and ApoE4 status) with random intercepts and spline knots at 1 and 6 months for ADL and IADL scores following fracture.

RESULTS: 170 patients with mean age 82 years old were included. 74% were women and 10% had dementia. The Aβ-normal group declined in ADLs between baseline and 1 month (β= -0.045/ day, p<0.001), but then improved between 1 and 6 months (β= 0.047/ day, p<0.001). There was no significant ADL change beyond 6 months. The Aβ-abnormal group did not differ from the Aβ-normal group in the ADL values at each time point or in the rate of change between the time points. Similar findings were seen with IADLs. T- and p-tau abnormal groups also did not show association with ADL/IADLs. Increasing age was associated with decline in ADLs (β= -0.06, p=0.001) and IADLs (β= -0.12, p=0.001).

CONCLUSIONS: These results indicate that preoperative CSF levels of Aβ, t-tau, and p-tau are not associated with the trajectory of ADL and IADL recovery over 12 months following hip fracture repair. The next steps will be to incorporate other risk factors including intraoperative and in-hospital data, such as delirium.

C243
Testing a Self-Determination Theory Perspective on Family Caregiving
R. A. Barry,1 C. L. McKibbin,2 C. P. Carrico,3 A. E. Slosser,4 M. E. Longstreth,2 K. A. Richardson.1 1. Department of Psychology, University of Wyoming, Laramie, WY; 2. Psychology, University of Wyoming, Laramie, WY; 3. Center on Aging, University of Wyoming, Laramie, WY; 4. Psychology, University of Wyoming, Laramie, WY; 5. Psychology, University of Wyoming, Laramie, WY.

Background: Almost 44 million Americans provide unpaid care for a chronically ill or elderly family member or friend. Informal caregivers improve quality of life and reduce costs associated with care for care recipients. Although caregiving may provide benefit, many caregivers experience negative consequences of their role such as mental health symptoms (Family Caregiver Alliance, 2016). Balancing personal costs of caregiving with desires or needs to provide care, is necessary to promote caregiver and recipient well-being. Based on self-determination theory (SDT), caregivers who are more autonomously motivated to give care (versus controlled) should have better mental health. Moreover, caregiving motivation should be more autonomous when caregivers’ innate psychological needs for relatedness, autonomy and competence are met within the caregiving context. This study tested whether caregiving motivation explained associations between caregivers’ psychological need fulfillment within caregiving and mental health (caregiver burden and depressive symptoms).

Method: Participants were 113 informal caregivers with a mean age of 46 years; mostly female (74%), white, non-Hispanic (59%), and caring for a parent (27%). Most care recipients had Alzheimer’s (28%) and were moderately dependent on others for instrumental and functional activities of daily living (Ms=3.6 and 4.8, SDs=1.7 and 2.1, respectively).

Results: On average, participants’ psychological needs were met within caregiving (M=4.3 SD=1; 1=not at all, 7=extremely); were mid-way between controlled and autonomous caregiving motivation (M=11.1, SD=4.6); experienced low depressive symptoms (M=9, SD=7) and burden (M=1.1, SD=7). Mediation analyses showed that, controlling for recipient functioning, caregivers with greater need fulfillment were more autonomously motivated to provide care (β=2.3, SE=.4, p=.04, CI=.2, -.04; and β=-1, SE=.05, CI=-.2, -.04; and β=-1, SE=.04, CI=-.2, -.01), linked with lower burden and depressive symptoms, respectively. Conclusion: Study supports a SDT perspective of caregiving.

C242
Constant Observation for Hospitalized Older Adults with Cognitive Impairment: A Survey of Health Care Professionals
L. Sinvani,2 S. Shah,1 A. Strunk,1 C. Mulvany,1 G. Wolf-Klein.1 1. Northwell Health- North Shore University Hospital, Manhasset, NY; 2. Medicine, Northwell Health, Manhasset, NY; 3. Northwell Health- North Shore University Hospital, Manhasset, NY.

Background: For patients with cognitive impairment, the unfamiliar and stressful hospital environment often requires constant observation (CO) to ensure patient safety. The use of constant observation (CO) in the hospital setting, while originating in psychiatric patients, is increasingly being used to solve other clinical challenges. Our study aimed to assess hospital providers’ perceptions and practices with regard to the use of CO for hospitalized older adults with cognitive impairment.

Methods: We conducted an IRB-approved, multi-center, cross-sectional, anonymous survey with registered nurses (RNs), nurse practitioners (NPs), and physicians (MDs) in a large, metropolitan area. Survey items were evaluated by a multidisciplinary panel of experts including geriatricians, hospitalists, biostatisticians and researchers.
Results: Of the 543 surveys distributed, 231 were completed (42. 5% response rate). Nurses constituted the largest group of participants (49%), followed by physicians (36%). Most respondents worked on medical units (68%), and 84% reported at least 1 patient per week requiring CO, while 24% reported at least 2 CO cases per week. Most frequent indications for CO were dementia with agitation (61%) and suicidal ideation (59%); and 77% reported most frequent CO use was in patients over 60 years old, while 62% reported most frequent CO use in patients over 70. Most (60%) continued CO at least ‘over a few days’. CO was most commonly performed by a nurse assistant (94%). While 76% of participants felt that CO was beneficial for patient care, almost half (47%) reported that they felt pressured to decrease CO use. Most commonly reported methods for decreasing CO use were: enhanced supervision (93%), family members (36%), and cohorting (33%). Most participants (78%) perceived those who perform CO to lack training, and 51% felt that more resources are required to improve CO in the hospital.

Conclusions: Our study highlights the widespread use of CO for hospitalized patients with dementia who display behavioral disturbances. Given the high cost of CO as well as the lack of national guidelines, there is an urgent need to develop cost-effective, sustainable models that ensure quality care, dignity and respect for this vulnerable population and their caregivers.

POSTER SESSION D (STUDENTS & RESIDENTS)
Friday, May 4
2:45 pm – 3:45 pm

D1 Resident Presentation
Clot or Not? A Case of Upper Extremity DVT Secondary to CRT-D Placement
A. M. Pervaiz. Medicine, UMMS-Baystate, Springfield, MA.

Introduction: Upper extremity (UE) deep venous thrombosis (DVT) has become common in recent years, possibly due the rise of implanted pacemakers. We present a case where left upper extremity DVT was found to be secondary to permanent placement of cardiac resynchronization therapy-defibrillator (CRT-D).

Case Description: A 68 year-old woman with past medical history of nonischemic cardiomyopathy, HTN, COPD, hyperlipidemia and LBBB s/p CRT-D in 2006 presented with acute onset left arm swelling of several hours with discoloration. Patient denied pain in affected extremity, paresthesia, loss of sensation or strength, angina, palpitations, nausea or vomiting, and endorsed baseline shortness of breath due to COPD. There was no prior history of DVT/PE, recent surgery, cancer, hormone replacement therapy, travel or immobilization, however family history was positive for varicose vein with DVT. In the ED, patient was afebrile with stable vital signs, and coagulation studies were within normal limits. Left UE vascular ultrasound with Doppler was obtained and demonstrated extensive DVT in the left internal jugular vein with inability to assess inferior extent of clot given technical difficulty in evaluating subclavian vein. CT angiography of left UE confirmed persistent thrombus within inferior left jugular vein with inadequate visualization of adjacent inferior veins streak artifact from left chest wall multilead pacemaker. Left subclavian vein and left axillary vein appeared diminitive albeit patent with superior and mid aspects of left internal jugular vein and remaining veins of left upper extremity also being patent. The DVT was determined to be most likely secondary to CRT-D implantation and the patient was started on a heparin drip and transitioned to coumadin prior to discharge.

Discussion: Permanent pacemakers can elicit a foreign body response by disrupting venous flow, increasing turbulence, and causing platelet aggregation with fibrin deposition resulting in partial or complete occlusion of vessels several days to about a decade following implantation. Indeed, the incidence of UE DVT secondary to pacemaker implantation ranges from 2- 22%, and must be recognized as an important etiology of UE DVT in patients without traditional risk factors.


D2 Student Presentation
Atypical Alzheimer’s Disease with Visual Agnosia
A. Das, J. Drost.1 1. Northeast Ohio Medical University, Rootstown, OH, 2. Geriatric Medicine, Summa Health, Akron, OH.

Background: Though rare, atypical presentations of Alzheimer’s disease (AD) can occur with focal, non-classic symptoms. Visuospatial symptoms such as agnosia are indicative of posterior cortical atrophy (PCA). Though PCA symptoms may be associated with atypical AD presentation, they may also stem from separate neuropathological processes [1,2].

Case Presentation: A 72 year-old male patient presents with visual agnosia and anxiety subsequent to a diagnosis of AD 6 years prior. He maintained verbal fluency. The agnosia was demonstrated by a score of 1/15 on a modified version of the Boston Naming Test (ex: calling an octopus a “duck” and a stethoscope “a race track”) and inability to recognize his wife, calling her, “one of the nice ladies,” though he knew he had a wife. His visual acuity was preserved. He retained insight into his condition, expressing fear for his future prognosis. At later visits, he exhibited worsening anxiety due to his insight that further restricted his ability to function independently. Treatment consisted of continuation on maximal cognitive enhancing medications with sertraline and quetiapine for anxiety palliation. Socializing with a strong support system was also shown to reduce insight-related anxiety, though his cognitive decline progressed.

Discussion: As in this case, atypical AD may spare classically affected functions like memory and language early in the disease process. Clinicians working with patients with AD and their caregivers should maintain an index of suspicion for atypical symptomologies, such as agnosia or apraxia, particularly in the earlier stages [2]. Differentiation between visual hallucinations and visual agnosia may be difficult, but early recognition and explanation of symptoms can reduce anxiety among AD patients and caregivers. Distinction may also aid in treatment and appropriately prescribing medications. Enhanced imaging and screening modalities may prove useful in differentiating among AD and other causes of atypical symptoms, generating treatment plans that better preserve function and delay cognitive decline.


D3 Student Presentation
Fall in a geriatric patient: a harbinger for malignancy
A. Peesapati, M. Sehgal. Florida Atlantic University Charles E Schmidt College of Medicine, Weston, FL.

A fall may be the first symptom of underlying impairment. A comprehensive workup in patients who present after a fall is critical.

The patient is a 67-year-old with no documented PMH except for a fall 2 years ago, presenting to the ED after sustaining an unwitnessed fall 4 days prior. It took him 4 days to crawl to his phone to call a friend who brought him to the ED. Upon arrival, he was jaundiced, cachectic, delirious, and was found to have a painful LLQ abdominal
mass. He had not seen a doctor “in years”. He did not experience any chest pain, palpitations, dizziness, or LOC prior to falling.

ED physical exam revealed a painful, palpable LUQ abdominal mass, distended abdomen, scrotal swelling, and 3+ pitting edema bilaterally in his lower extremities. CT C/A/P revealed a splenic rupture with a large (23.6 cm) subcapsular hematoma & bilateral pleural effusions. CBC revealed plts 51K, Hgb 5.8, Hct 18.4. He was transfused with 4 units of PRBCs, FFP, and cryoprecipitate. Further workup revealed AKI, hyperbilirubinemia, coagulopathy, and atrial fibrillation. He was admitted to the ICU for 7 days. IM, surgery, ID, heme/onc, GI, cardiology, nephrology, ICU, geriatrics, and IR managed him. A bone marrow biopsy ultimately diagnosed CD20+ diffuse large B cell lymphoma (DLBCL).

This case highlights many principles of geriatric medicine. First, complex illnesses require an interdisciplinary, interprofessional approach to care. Communication between all healthcare professionals and the patient is crucial; sadly, our patient did not understand the daily care plan throughout the hospitalization due to failure of communication. Next, obtaining a thorough social and functional history is critical in understanding a patient’s needs in the context of their illness. Our patient has not had follow up with a physician in years, had a fall history, requires a cane to ambulate, and lives alone; his history reveals a desperate need for one physician to coordinate the care he requires. Finally, ethical issues and palliative care are critical aspects of geriatric medicine. Patients diagnosed with DLBCL are known to have a very poor prognosis, so a referral to palliative care was appropriately chosen at the end of the hospitalization to ensure that he dies with dignity and grace.

D4 Student Presentation
Bullous Pemphigoid Predilection in the Elderly
A. Azab,2 K. Fesen,2 C. Soriano,2 M. Yacur,2 R. Jain.1,2 1. American Geriatrics Society, New York, NY; 2. Internal Medicine, Penn State Hershey Medical Center, Hershey, PA.

Case Presentation:
63 year old male with a history of psoriasis, vasculitis, and colon cancer status post resection presented to the emergency department with a worsening diffuse rash. A month prior he presented to his PCP with 2 weeks of generalized excoriated rash over the arms, back, chest, and abdomen. He was started on a prednisone 10mg and Keflex 500mg daily. His rash continued to worsen and prednisone was increased to 20mg with taper. Doxycycline 100mg was added the day before presenting to the ED. He described the lesion as beginning with a scaly patch on the arms, spreading to the entire body becoming itchy, painful red and yellow blisters with clear discharge. On presentation he was found to have oral mucosal involvement and leukocytosis with eosinophilic predominance. Nikolsky’s sign negative. Dermatology performed skin shave biopsy that showed findings of strong linear C3 and focal linear IgG immunofluorescence staining at the basement membrane zone is consistent with those seen in the setting of bullous pemphigoid. The patient was started on 100mg of prednisone daily and wet wrap with triamcinolone 0.1% and petroleum jelly. There was significant improvement over the next 5 days.

Discussion:
Bullous pemphigoid is an uncommon autoimmune disease with a disproportionate predilection for the elderly population. Studies determine that bullous pemphigoid predominantly manifests above the age of 70 with a peak in age 90, with an incidence of 22 cases per million inhabitants per year. The process is thought to be an autoantibody-mediated damage to epithelial basement membrane, targeting the hemidesmosomes creating a separation of the dermis and epidermis in both skin and mucosal surfaces. Genetic, environmental, pharmacologic, and infectious factors are also thought to play a role. Renal cancer, laryngeal cancer, and lymphoid leukemia have been attributed to increase the risk of bullous pemphigoid. This case suggests further investigation in the significance of colon cancer as a risk factor for increasing incidence of bullous pemphigoid in the elderly population less than 70 years of age.

D5 Resident Presentation
Dermatomyositis in an Older Adult
V. Broderick,1 J. F. Fogel,2,1 A. E. Duzenli,2 H. Fischer.1 1. Internal Medicine, Mount Sinai Beth Israel, New York, NY; 2. Geriatrics and Palliative Medicine, Icahn School of Medicine at Mount Sinai, New York, NY.

Background: Dermatomyositis is a rare inflammatory myopathic disease that leads to skin changes and symmetrical proximal muscle weakness with a strong correlation to various malignancies. The incidence of dermatomyositis is 8/100,000 commonly among adults 40 to 60 years old. An initial presentation of dermatomyositis in the older adult is unusual and risk stratification is important to decide appropriate cancer screening for this age group.

Case: A 76-year-old woman with past medical history of peptic ulcer disease, bronchiectasis and lung nodules presented to Mount Sinai Doctors Senior Health with complaint of itchy rash of her bilateral neck, shoulders, hands for the past two months. The rash first appeared at the lower scalp during frequent hot tub use; she was treated with a topical steroid for contact dermatitis by dermatology. The rash spread and she developed fatigue, joint pains, bilateral shoulder weakness. There were no fevers, nights sweats, weight loss, dyspnea, dysphagia or paresthesias. The skin exam showed a violaceous rash over the posterior neck, bilateral shoulders, and dorsal aspects of the MCP, PIP, DIP joints. The neuro exam was normal except for 4/5 strength of bilateral neck flexors, deltoids, spinati muscles. There was concern for dermatomyositis given the shawl sign, Gottron’s papules, and proximal upper extremity weakness. Lab results were notable for CK 5567 U/L, ESR 39 mm/hr, ANA 1:2560, Aldolase 21 U/L, AST 251 U/L, ALT 61 U/L, MI-2 antibody. EMG was consistent with an inflammatory myopathy. The posterior neck skin biopsy confirmed dermatomyositis. She was started on oral prednisone then admitted for IVIG and muscle biopsy which showed focal perifascicular atrophy. Breast, colon and cervical cancer screenings were up-to-date and unremarkable. She was sent for repeat CT chest/abdomen/pelvis with no significant findings.

Discussion: The likelihood of developing cancer among patients with dermatomyositis is 6-fold. Known risk factors for malignancy among dermatomyositis cases include older age, male sex, dysphagia, cutaneous necrosis, rapid onset of disease, and elevated CK, ESR, CRP. The onset of this disease in the older adult who is beyond the age of routine cancer screening poses a challenge regarding malignancy work-up.

D6 Resident Presentation
Management Roadblock in Dementia
A. G. Bhat,1 W. Colon-Cartagena.2 1. Internal Medicine, Baystate Medical Center, Broad Brook, CT; 2. Geriatrics, Baystate Medical Center, Springfield, MA.

Neuropsychiatric symptoms in Alzheimer’s dementia (AZD) are very common and frequently associated with increased sufferings for the patients and their families. Comorbidities like mood disorders are common in this population. More so, there is increased risk of side effects from medications in this group. We present a case of a previously diagnosed AZD patient with behavioral disturbances and depression that presented with side effects from therapy.

A 74 year old women, resident of an assisting living facility, with moderate AZD, hypertension and depression presented to the office with her son for routine follow up. Visit was only remarkable for new bradycardia of 55 beats per minute and with EKG significant for prolonged QTc of 502ms. Collateral history showed that psychiatry diagnosed her with AZD and depression 4 years ago when she presented with a years of progressive forgetfulness, worsening
judgment skills, disinhibition, anxiousness and depression. After several adjustments in her regimen she improved on donepezil 10mg, memantine 10mg and citalopram 30mg. Family was reluctant to make changes in the medications fearing those behaviors will resurface. Workup was negative for electrolyte abnormalities. After discussing it with the psychiatrist citalopram dose was decreased to 20 mg daily. A month after that her mood remained stable and her EKG slightly improved (QTC was 459 ms).

Discussion: Citalopram is one of the prime selective serotonin reuptake inhibitors used to manage the behavioral manifestations in AZD. There are scarce studies to establish efficacy of using citalopram in AZD\(^1\). One study showed reduction in agitation and caregiver stress when citalopram 30 mg was compared to placebo which showed a concerning incidence of QT prolongation of 26% in the treatent group\(^2\). Providers commonly treat with combination SSRIs and donepezil but there is no evidence showing effectiveness or safety to help guide these changes. In conclusion, further research is warranted to explore safety of this combination therapy and long term monitoring to control neuropsychiatric symptoms in patients with AZD.

References

D7 Resident Presentation
There is no fear if you PAP smear
A. Sridhar, S. Samanani, W. Colon-Cartagena. Internal Medicine, Baystate Medical Center, Springfield, MA.

Cervical cancer (CC) remains prevalent in females above the age of 65 years. Screening (SCR) guidelines for CC beyond this age are dependent on their prior SCR history. We present the case of an elderly patient with stage IV CC at the time of diagnosis and aim to better understand the SCR guidelines in similar patients.

An independent 68-year-old female presented to the hospital with dysuria and was diagnosed with a UTI. Labs showed an AKI with creatinine of 1.6mg/dl. Per her last outpatient visit, she reported 3-months of fatigue and 10lb weight loss. Despite treatment with antibiotics and fluids her AKI continued to worsen. Renal ultrasound showed a 7.8cm intraluminal bladder mass causing hydronephrosis. A CT scan confirmed a pelvic mass. Biopsies showed stage AIV CC with bladder invasion. She was started on radiation therapy and cisplatin followed by brachytherapy. On further review, it was found that the she had a PAP smear positive for LSIL in 2008 followed by colposcopy significant for VAIN I and VAIN II. Her PAP smear in 2009 was negative for cytology and HPV was not checked. In 2010, her pap smear was again negative for cytology but positive for HPV and a follow-up in one year was warranted. However, the patient was lost to follow up for many years and on return, CC SCR was stopped as the patient was above 65 years of age.

CC in elderly patients remains common and the incidence in women above 65 years is 1.2 times higher than during the prior two decades. It is suspected that this is due to underutilization of pap smears in this age group. Current USPTF guidelines recommend against CC SCR in women older than 65 years who have had adequate prior SCR and are not at a high risk for CC (no recent history of abnormal SCR or prior HPV related diseases). The joint ACS/ASCCP/ASCP guidelines define adequate prior SCR as having three consecutive negative cytology results or two consecutive negative co-testing results within ten years prior to cessation with the most recent within 5 years. They also recommend continued routine SCR for at least 20 years (even if this extends beyond age 65) for anyone with prior HSIL. The discontinuation of our patient’s routine SCR after the age of 65, along with her loss to follow up, likely contributed to progression of her carcinoma. In elderly women above the age of 65, a thorough history is necessary prior to deciding whether or not to discontinue routine CC SCR.

D8 Resident Presentation, Encore Presentation
Giant Non-Traumatic Abdominal Wall Hematoma in an Anticoagulated Patient
B. F. Woodman,1 D. Morris,2 T. Becker,3 J. Arena,2 R. Jain.1,2
1. American Geriatrics Society, New York, NY; 2. Internal Medicine, Penn State Health/Milton S Hershey Medical Center, Hershey, PA; 3. Family and Community Medicine, Penn State Health/Milton S Hershey Medical Center, Hershey, PA.

The non-traumatic abdominal wall hematoma is a rare cause of acute abdominal pain. An 82 year old woman with COPD and AFib on apixaban was admitted for a COPD exacerbation. On day 5 the patient complained of mild left sided abdominal pain, but her exam was benign. The next day her hgb fell from 11.7 to 8.4 g/dL, and her abdomen was swollen, echomotic, and tender. A CT Abd/Pelvis revealed a 22.6 x 8.7 x 7.3 cm hematoma along the left ventral abdominal wall (Figure 1). Her apixaban was held and she was treated with analgesics and warm compresses. The next day her hgb fell to 7.1 g/dL so she received 1 unit of pRBCs. Her hgb then remained stable for days prior to discharge. Clinicians should consider hematoma when evaluating acute abdominal pain in geriatric patients on anticoagulation. A CT scan is the preferred diagnostic test, and stable patients are managed conservatively [1]. Many can eventually resume anticoagulation, as recurrence rates are low [2].


Figure 1. CT Abd/Pelvis revealed a large abdominal wall hematoma.
Acute Confusion Masking a Heart Attack

D9 Resident Presentation


Introduction

Delirium in elderly is typically a combination of underlying risk factors and precipitating medical or environmental conditions. Identifying the trigger is of utmost importance in management of this confusional state. Here we present a case of an elderly patient who suffered delay in recognition of acute coronary syndrome due to this unusual presentation.

Case

A 93-year-old female with known mild cognitive impairment was admitted for elective cervical C5-C6 decompression. She had an uneventful surgical course. On the first post-operative night she suddenly became very confused and combative. She was not able to communicate if she was having pain anywhere. Her vitals remained unchanged except elevated heart rate of 100. Assuming that she may not have adequate pain control, she was given morphine 1mg IV. Within an hour, she became bradycardic and her mean arterial pressure dropped to 50. She was given 3 liters of fluids. Concomitantly an EKG was obtained which showed junctional rhythm at 50 beats per minute and ST elevations in leads II, III and avF. Neurosurgery and interventional cardiology discussed risks of bleeding from dual anti-platelet therapy if a stent needed to be placed, which the son (health-care proxy) accepted. She was given aspirin load and taken for urgent cardiac catheterization.

She was found to have total occlusion of her right coronary artery which was opened with bare metal stent. She was transitioned to clopidogrel after completing cangrelor.

She was found to have dilated right ventricle with reduced function and akinetic inferior wall in a follow up echocardiogram.

The patient so far has not had any bleeding complications from her spinal surgery on dual antiplatelets. At the time of this manuscript, patient has been transferred out of cardiac critical unit to step down unit. Her mental status is back to baseline per family’s report.

Discussion

This case highlights the importance of a thorough clinical assessment to identify trigger for delirium. Underlying conditions such as age, cognitive impairment, recent surgery, use of narcotics are few of the numerous risk factors which may predispose patients to delirium. However, as in our case, it is vital to ensure that life threatening causes such as acute coronary syndrome amongst others are not being overlooked due to the ubiquitous presentation of delirium in elderly patients.

D11 Resident Presentation

Neurocognitive disorder veiled as Acute Psychosis in the Elderly

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Acute psychosis is an atypical presentation for Alzheimer’s dementia, especially delusions of reference.

A 79 year old woman presented with a chief complaint that “the TV was talking to her,” and an episode where she threatened to stab her husband to due to delusions of an extra-marital affair. The patient was evaluated by gerontology, psychiatry, and neurology to investigate her 1 week history of visual and auditory hallucinations, delusions of reference and grandeur, aggression, and paranoia. Prior to admission, the patient was only taking amloidpine for Raynau’d syndrome and had no history of substance abuse. Her presentation was abnormal because she has no history of a psychiatric disorder or confounded by mood disturbances or delirium. Medical evaluation including brain CT/MRI, CSF studies, EEG, and labs were negative. The patient scored 16/30 on the Montreal-Cognitive Assessment (MoCA), scoring poorly on the visuospatial and executive functions, language, abstract thought, and memory. The patient’s symptoms persisted throughout her hospitalization and she was started on risperidone, which improved her aggression but not her abnormal thoughts. She was eventually discharged home after deemed to not be a safety risk to herself or her family members.

Psychotic symptoms affect only 1% of the non-demented elderly population and schizophrenia has a 0.3% lifetime prevalence in patients over the age of 65. There is no clear diagnostic criteria to distinguish primary and secondary psychotic disorders, but studies have reported that some signs, such as an unusual age of onset, absence of family history of mental illness, absence of past psychiatric history, poor response to psychiatric treatment, and abnormalities of cognition should suggest a secondary cause of psychosis, including dementia. The prevalence of psychosis in Alzheimer’s disease has been reported as high as 41.1%, varying with the severity of disease. In this case, it was thought that the patient was suffering from probable mild neurocognitive disorder, Alzheimer’s type, with behavioral disturbances.
This case illustrates a rare presentation of first episode psychosis in a patient with cognitive impairment.

**D12 Resident Presentation**

Unintentional Weight Loss in an Older Gentleman with Significant History of Smoking

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**Introduction:** Unintentional weight loss in older adults constitutes a common problem. The leading causes are malignancies, benign gastrointestinal diseases, depression, and dementia. Other causes are cardiopulmonary or systemic inflammatory disorders and medications. Yet no cause can be identified in up to 25% of the cases. In clinical settings, chronic gastrointestinal ischemia due to partial or complete obstruction in the intestinal blood supply is one of the most common and well known causes of weight loss.

**Case presentation:** Mr. White is an 85 years old gentleman with past medical history of COPD, essential hypertension and GERD complained of progressive weight loss of 40 lbs over 2 years duration. Due to severe burning epigastric pain that he experienced a few minutes after eating he developed sitophobia. He has a 70 Pack Year history of smoking. He denied a cough, fever, shortness of breath or chest pain. Physical examination revealed cachectic man with BMI<19 and diminished breath sounds bilateral. The rest of exam was normal. Initial workup including laboratory studies and endoscopies was unremarkable. CT of the chest and abdomen revealed bilateral calcified pleural plaques and emphysematous changes in the lungs. The CT angiogram showed mild stenosis of the superior mesenteric artery. He was admitted to the hospital in acute hypercapnic, hypoxic respiratory failure. Shortly after discharge, before perusing any further management, he died peacefully at his home.

**Discussion:** Celiac artery (CA) or superior mesenteric artery (SMA) stenosis is common in the elderly with incidence of 17.5% on autopsy studies. Isolated CA or SMA is asymptomatic and is usually an incidental finding. A good predictor of abdominal angina is presence of other atherosclerotic diseases. Advanced imaging modalities have assisted in the diagnosis. The cornerstone of management is early and correct diagnosis. Treatment includes pain management and improving dietary status. Surgical or endovascular revascularization and stenting remain the main line of treatment to avoid progression of the disease or serious complications.

**Conclusion:** SMA should be suspected in any patient with unintentional weight loss and classical triad of symptoms: weight loss, abdominal pain related to eating and fear of eating. Postprandial abdominal pain associated with severe mesenteric artery stenosis leads to poor prognosis.

**D13 Resident Presentation**

Pulmonary and Cerebral Hyperleukocytic Syndrome Fatima Ali MD, Wanda Colon-Cartagena MD Baystate Medical Center F. Ali; 1 W. Colon-Cartagena; 2 1. Internal Medicine, Baystate Medical Center, Springfield, MA; 2. Geriatric Medicine, Baystate Medical Center, Springfield, MA.

71-year-old man with history of DM2 presented to another hospital with two weeks of high fevers, lethargy, night sweats, and sore throat. He had no gastrointestinal syndromes and was living independently with his fiancée. Initial workup revealed a WCC of 111,000 with 70% blasts. Oncologic workup with bone marrow biopsy and subsequent flow cytometry was consistent with Acute Myelomonocytic Leukemia. He was transferred to Baystate to initiate systemic chemotherapy. Repeat testing showed WBC of 134,000 with 37% blasts with evidence of ongoing tumor lysis syndrome for which he received hydroxyurea, rasburicase and allopurinol to counter hyperuricemia.

Soon after admission, he was noted to develop delirium and progressive dyspnea with ABG demonstrating severe hypoxia (pO2 44) and O2 Saturation of 92% on 4 L high flow nasal cannula. The acute hypoxic respiratory failure progressed quickly; ultimately the patient had to be mechanically ventilated. He expired that day from complications of TPA after he was treated for suspected pulmonary embolism.

In this patient with a blast crisis, his delirium was a manifestation of cerebral and pulmonary hyperleukocytic syndrome.

**Discussion**

AML with HL carries a grim prognosis in the elderly. Adverse prognostic factors in older patients include chemoresistance, frequent involvement of more immature leukemic precursor clones and a higher incidence of unfavorable cytogenetic findings.[1] Despite appropriate intervention in this patient, rapid deterioration occurred. The initiation of leukapheresis could have been considered, however, its use in HL patients is questionable. First, the majority of leukemic burden is located in the bone marrow.[2] These cells are rapidly mobilized into the peripheral blood shortly after a successful leukapheresis.[3] Secondly, a beneficial clinical effect on early clinical outcomes could not be shown consistently in clinical trials. Clinical trials employing leukapheresis show that long-term prognosis cannot be changed (higher relapse risk).[1]

**References**


**D14 Resident Presentation**

Upsetting Dr. Beers: Why We Gave Lorazepam to a Geriatric Patient

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**Case:** An 81 year-old female presented with 2 months of weakness, 30 lb weight loss, and behavioral changes. She was admitted after refusing to eat for 2 days. She denied infectious symptoms. She had been started on citalopram 2 weeks prior after stating she was a burden to her family. Other medications included diphenhydramine, meclizine, and oxazepam.

On exam, she was thin, but without muscle atrophy. She had dry mucus membranes but no skin tenting. Strength was intact, and reflexes were 2+ throughout. Tone was normal but with initial resistance to passive movement. She was inattentive but oriented. She scored 8/30 on the Mini-Mental Status Exam. She denied pain, fever, cough, or any symptoms suggestive of an infection. She was unable to speak minimally, resist physical exam maneuvers, and close her eyes to passive movement. She had no past medical history of psychiatric illness. She was started on citalopram and lorazepam.

**Discussion:** The acute hypoxic respiratory failure progressed quickly; ultimately the patient had to be mechanically ventilated. He expired that day from complications of TPA after he was treated for suspected pulmonary embolism.

**Case Conclusion:** There was initial concern for delirium in the setting of acute hypoxanemia and delirigenic medications, however, when symptoms persisted after addressing these precipitants, catatonia was suspected given recent depressive symptoms. She received IV hydroxyurea, rasburicase and allopurinol to counter hyperuricemia.
lorazepam and one hour later, she conversed spontaneously, reporting feelings of overwhelming sadness. She described events that occurred at times when she appeared altered. She was started on scheduled benzodiazepines with initial positive response. Unfortunately, she later regressed and required transfer to psychiatry for possible electroconvulsive therapy.

D15 Resident Presentation

Paraneoplastic polymyositis and myasthenia gravis.

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Introduction: Thymomas are mediastinal tumors they are often associated with paraneoplastic autoimmune disorders, most common being myasthenia gravis (MG) and rarely polymyositis (PM). Clinicians should familiarize themselves with these syndromes as they are found rarely in the geriatric population, but carry significant morbidity and mortality.

Case: A 72-year-old female presented with 2-week history of generalized weakness. She reported increasing difficulty in activities of daily living (ADLs) including transfers, ambulation and overhead arm movements. Prior to this she was living independently. Associated symptoms included dysphagia to liquids and tenderness in limb muscles. Medical history was notable for hypothyroidism and hyperlipidemia for which she was on levothyroxine and simvastatin, respectively. Exam did not reveal ptosis or lid fatigability, but symmetrically decreased power in all muscle groups was present; most prominent in proximal muscles. Labwork showed elevated creatine kinase (CK) of 3440, TSH 4.87 and free T4 0.96. Despite discontinuing statin and aggressive IV hydration, no improvement was noted. EMG recorded low amplitude, polyphasic motor unit action potentials consistent with myopathy. An extensive workup ruled out infectious, endocrine or rheumatologic etiologies. CT scan of the chest revealed a 3.5x3cm anterior mediastinal mass and biopsy revealed TdT-positive cells of T-cell origin consistent with a thymoma. Acetylcholine receptor antibody was positive. Muscle biopsy showed endomyal inflammation consistent with PM. Given her risk of operative complications, medical therapy was preferred to improve strength prior to thymectomy. Unfortunately, despite prednisone and IVIG, her weakness progressed eventually leading to fatal respiratory failure.

Discussion: Thymomas have a reported incidence of 0.15 cases per 100,000. These are frequently associated with autoimmune diseases such as MG. Other disorders such as PM are encountered rarely. To the best of our knowledge only 24 cases of thymoma-associated PM have been reported since 1944; majority with coexisting MG. This would be the 5th such case reported in patients aged 65 or above. Given the significant impact of thymomas and paraneoplastic syndromes on ADLs, it is important for clinicians to recognize this relatively rare syndrome in geriatric patients in order for prompt diagnosis, treatment and preservation of quality of life.

D16 Student Presentation

Discovering the keys to caregiver needs and support in the outpatient medical encounter


Background: The US geriatric population is projected to rise from 43 million to 84 million over the next 30 years.1 The need for caregivers to provide support to older patients is also expected to dramatically increase. Caregiving is often difficult and associated with feelings of depression.2-3 Caregivers come in regular contact with healthcare providers, but often their needs are not addressed. This case study explores the experiences of a woman caring for her elderly aunt to gain insight into how primary care physicians can better support caregivers.

Methods: Case study.

Results: An 88-year-old female with a history of osteoarthritis, impairment of balance, and generalized anxiety disorder presented to a primary care practice in New York City for a routine checkup. The patient is independent with the exception of cleaning the apartment and doing laundry. During the last month, the patient’s niece has provided an increasing number of services. The niece indicated the patient had increasing anxiety and needed more assistance with daily activities. She tearfully described her sense of obligation to the patient, as the patient cared for her when she struggled with cancer. The niece lives in Virginia, and travels frequently to stay with the patient in NYC.

Discussion: In this case, the caregiver feels immense obligation to care for her aging aunt. As the patient becomes less independent, providing care will become more difficult. Studies have shown that obligation and attachment play important roles in the caregiving experience, and can be positively associated with caregiver burden.4 In this case, a physician must assess the niece’s well-being because she has significant health and psychosocial needs that directly impact caregiving. As a next step, it is paramount for the physician to consult with the niece in an effort to improve both caregiver and patient quality of life.

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D17 Student Presentation

You stole my what? An interesting case of probable Alzheimer’s disease with delusions as the presenting symptom

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INTRODUCTION: Alzheimer’s disease (AD) is a devastating neurodegenerative condition affecting 5.4 million Americans. Although psychotic symptoms like hallucinations and delusions are commonly seen in AD, they are rare early in the disease. When present early they are associated with worse survival and greater functional impairment.

CASE PRESENTATION AND DISCUSSION: Ms. S. is a previously healthy, functionally independent 75 y.o. AAF with a Doctorate degree. She presented describing episodes where her money, jewelry, keys, and social security card had been stolen and a gun and ammunition had appeared in her locker against her will. She involved law enforcement several times despite repeated investigations revealing no wrong-doing. She had vague subjective memory problems and wanted to rule out that her memory was causing these occurrences.

On initial neuropsychological testing (NPT) she had impairment in memory domain. She scored 25/30, and 27/30 on MMSE and MoCA, respectively. She was independent in performing ADLs. The NPT findings were replicated on comprehensive NPT, so our initial clinical diagnosis was amnestic mild cognitive impairment (MCI).

However, the case remained challenging as the link between psychotic symptoms and MCI is not well-established. Formal geriatric psychiatric evaluation found no underlying psychiatric illness that could account for the delusions which interestingly became more bizarre over time.

Brain MRI was unremarkable and hippocampal volume in 11th percentile for her age. As the latter was potentially consistent with AD brain amyloid imaging was obtained (F18-Frlobetapir PET-CT) which demonstrated significant cortical amyloid neuritic plaques. This further pointed towards AD. Indeed, through preliminary work this
imaging has been found to have over 87% sensitivity and specificity for AD. Also possible but less likely is Lewy body dementia, but the patient lacks features of Parkinsonism and hallucinations.

**CONCLUSION:** This is an interesting case where the initial presentation of probable Alzheimer’s may be delusions at a very early stage, MCI. It highlights the value of amyloid imaging in cases of diagnostic uncertainty. A closer look into the significance of neuropsychiatric symptoms such as delusions in the setting of MCI and a greater recognition of non-classical presentations of Alzheimer’s disease may allow for earlier diagnosis and treatment promoting increased quality of life.

**D18 Resident Presentation**

**Malignant Colonic Stricture presenting as Diverticulitis**

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Colon cancer can present as strictures of colon mimicking diverticulitis. In such cases biopsy and endoscopy findings are frequently inconclusive. It is critical to distinguish a diverticular stricture from a malignant stricture as it affects management. Even though goals of care discussions have been shown to improve outcome in the elderly, physicians often shy away from these discussions.

A 91-year-old highly functioning female with past medical history of coronary artery disease presented with two-day history of worsening abdominal pain, distention, and vomiting. Review of systems was positive for anorexia and weight loss in months prior to presentation. She was hemodynamically stable, labs revealed leukocytosis, CT abdomen findings were suggestive of acute colitis and obstruction of sigmoid colon. Sigmoidoscopy was performed which revealed a 4cm sigmoid stricture with pus in mucosa highly suspicious for diverticular stricture. Biopsy showed colitis consistent with diverticulitis. A higher false negative rate for biopsies suggesting a possibility of malignancy was discussed with patient and the family. She received a course of IV antibiotics for diverticulitis but her symptoms progressively worsened. CT was repeated which once again showed colonic obstruction. A repeat sigmoidoscopy was performed for dilation of the stricture. Thereafter, her symptoms improved but repeat biopsies from most recent sigmoidoscopy revealed adenocarcinoma of the colon. After a goals of care discussion with the patient and family it was decided to avoid any further invasive testing or treatment. Patient had a palliative stent placed in sigmoid colon for impending obstructions. She was discharged to a rehabilitation facility after staying in the hospital for 2 weeks.

Malignancy should be high in our differential for elderly patients presenting with colonic strictures. In cases of colonic strictures presenting as diverticulitis, patient and family should be prepared early on for a possibility of malignancy. Also Goals of care discussion should be initiated early as the diagnosis of malignant strictures in such cases greatly affects the quality of life. Treatment options available for malignant stricture are palliative stenting and surgery with stoma creation. Furthermore, recently it has been shown that palliative stenting improves the benefits from quality of life and the efficiency in caring for elderly when compared with stoma creation.

**D19 Resident Presentation**

**A Case of a Spontaneous Cholecystocutaneous Fistula: Balancing Anchoring Bias with an Atypical Presentation of Biliary Disease**

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**INTRODUCTION:** Risk factors for spontaneous cholecystocutaneous fistulas include neglected episodes of cholecystitis or cholelithiasis, malignancy, diabetes, institutionalized elderly and the female sex. Elderly patients with cholecystitis are more likely to have an atypical presentation and may progress rapidly to complicated cholecystitis without warning.

**CASE:** A 90-year-old female with Parkinson’s disease and Alzheimer’s dementia presents to the ER in February 2016 with a mechanical fall in the nursing home. She only reports back pain but on exam is noted to have right upper quadrant (RUQ) tenderness. She undergoes a CT of the abdomen and the preliminary report shows a RUQ hematoma. The final read shows cholecystitis with an associated abscess vs possible infected hematoma. Given her fall and absence of typical symptoms, the team anchors toward the findings being secondary to a traumatic hematoma and the cholecystitis is not addressed. In May 2016, the patient develops a RUQ open wound with purulent discharge. A CT abdomen shows a sinus tract in the abdominal wall consistent with a cholecystocutaneous fistula secondary to an untreated cholecystitis. Because of her comorbidities, the patient is treated conservatively with an ostomy bag and home wound care services. In August 2017, the patient develops an intraabdominal abscess requiring a third hospitalization. As of October 2017, the ostomy remains functional under home ostomy care.

**DISCUSSION:** Unrelieved bile obstruction in missed cholecystitis can lead to gallbladder perforation, abscess formation, or even peritonitis and is associated with significant morbidity and mortality. Biliary tract disease and development of cholecystocutaneous fistulas are more prevalent in females and the institutionalized elderly who are also more likely to present without the classic symptoms. Hence, concerning imaging results should incite a detailed investigation in this high-risk population. In this case, a knowledge gap about atypical presentations of biliary disease in the elderly and the patient’s trauma led to an anchoring bias and a dismissal of the CT findings. Fortunately for this patient, a spontaneous external fistula formed, leading to safe drainage of the infected bilious fluid and subsequent appropriate medical management.

**D20 Resident Presentation**

**Chilaiditi’s sign as a rare cause of gas under diaphragm in elderly: A case report and review of literature**

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**Introduction:** Intestinal interposition between two organs is uncommon. If the interposition is between liver and diaphragm, it is termed as Chilaiditi sign. It is an incidental imaging finding mostly seen in elderly male patients with an incidence of 0.3% on plain radiography. We report a case of elderly male who had Chilaiditi sign as an incidental finding.

**Case report:** A seventy-four-year-old man presented with complaints fever, chills, generalized weakness and confusion for few days. Systemic review was negative for headache, cough, chest pain, shortness of breath. Patient was started on hemodialysis through tunnel catheter few months ago. On exam he was slightly confused but could to be reoriented. He was hypotensive with BP of 70/50 mm of Hg and was tachycardic to HR of 110/min. Chest and abdominal exam were normal. WBC count was elevated to 26 thousand, procalcitonin was elevated to 12 and lactate was elevated to 4.1. Basic metabolic panel was normal except elevated BUN and creatinine due to ESRD. Flu was negative. Blood cultures were sent. Chest X ray showed signs of interstitial infiltrates with possible RUL pneumonia and there was concern for air under diaphragm (figure 1). As per radiology formal reading, it was a bowel loop interspersed between liver and right hemidiaphragm. His blood culture came positive for group C streptococcus. He improved with intravenous antibiotics.

**Discussion:** Gas under diaphragm can be caused by pneumoperitoneum, sub-phrenic abscesses, diaphragmatic hernias and retroperitoneal masses. Rarely can it be due to interposition of bowel between diaphragm and abdominal organs. No intervention is required for an asymptomatic patient with Chilaiditi sign. Misdiagnosis of bowel perforation might result in unnecessary surgical intervention.
D21 Resident Presentation
Dieulafoy’s lesion as an uncommon cause of massive gastrointestinal bleeding in elderly: A case report and review of literature
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Introduction:
Dieulafoy’s lesion (DL), an arterial lesion is an uncommon but important cause of massive gastrointestinal (GI) bleeding. We report a case of life threatening upper GI bleeding from DL in duodenum in an elderly male.

Case report:
A 72-year-old male presented with altered mental status (AMS), anemia and hypotension. Hemoglobin was 7.4gm/dl from his baseline of 11-12gm/dl. He developed melena and his Hb further dropped from 7.4 to 3.6 gm/dl in 1 day. Upper GI endoscopy (EGD) showed a Dieulafoy lesion in the 2nd portion of the duodenum that was not actively bleeding. (Fig 1) The dieulafoy lesion was clipped and coagulated. But he continued have melena. He underwent 2 additional EGDs that revealed no bleeding source. He underwent CT angiograms at 4 different occasions, a bleeding scan, a Meckel’s diverticulum scan, and a colonoscopy all without identifying any active bleeding. Capsule endoscopy showed a small amount of blood in the duodenum and a large amount in the ileum. He required total 30 units of packed red cells over 2 weeks. Finally, in the operating room active bleeding was identified from the previously clipped Dieulafoy lesion. He underwent an exploratory laparotomy, duodenotomy, over sewing of the duodenal lesion. No postoperative transfusion was required, and he was discharged home after 6 days.

Discussion:
Most of the DLs are found within 6 centimeters of the gastro-esophageal junction. In a large series of 900 patients in India, DL accounted for only 0.67% of GI bleeding. DL is difficult to diagnose and needs to be considered in unexplained, recurrent, massive GI bleeding. Our patient with DL had massive recurrent GI bleeding with no cause identified on recurrent testing. Like in our case, surgical intervention may be needed for pinpointing DL as cause of recurrent massive GI bleed specially if the other non-operative investigations are negative.

D22 Resident Presentation
Not Twice as Nice: A Rare Case of Dual Primary Malignancy
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Background: Multiple primary malignancies have long piqued our interests and challenged us to provide better patient care. While some combinations of cancers seem to be more common, due to organ proximity and/or shared epithelial surfaces, others remain anomalies, documented once in a case study and not to be found again. The following patient presented with the rare, and unfortunate, combination of symptoms concerning for gynecologic malignancy complicated by laboratory findings concerning for a hematologic malignancy.

Case Presentation: 68 year old female with hypertension and type 2 diabetes mellitus presents with complaints of acute on chronic left lower quadrant pain, abdominal fullness, and weakness of 2 weeks duration. Chart review notable for complaints of reflux and an unintentional 20 pound weight loss over the previous 5 months. Workup included a KUB demonstrating early bowel obstruction and pelvic lytic lesions, later quantified through bone survey; abnormal SPEP and kappa/lambda light chain ratio; and bone marrow biopsy demonstrating “plasma cell myeloma.” These findings were consistent with a multiple myeloma diagnosis. As for her initial presenting complaint of abdominal pain, CT abdomen and TVUS were performed. A large pelvic mass was visualized and was later identified by pathology as metastatic high grade malignant ovarian carcinosarcoma. The patient was ultimately diagnosed with 2 unrelated stage 4 cancers: multiple myeloma and ovarian carcinosarcoma. The patient elected for hospice and was discharged home.

Conclusion: Multiple primary malignant tumors are uncommon and typically involve the gastrointestinal, urogenital, and/or respiratory systems. This patient had dual primaries from two different organ systems, with one of her malignancies being hematologic. It is undoubtedly a unique combination but, looking towards the future, may not always be such rarity. Time allows for mutations and oncogenesis, supporting the medical school adage that everyone will develop cancer if he/she lives long enough. Therefore, as life expectancy and the geriatric population increases, more cases of unrelated primary malignancies, like this patient’s, may be observed.

References:
scalp, chest, and back were identified. Given her immunocompromised state and widespread vesicular lesions, presentation was concerning for disseminated cutaneous herpes zoster. Patient was admitted for IV antiviral therapy with acyclovir and both etanercept and hydroxychloroquine were discontinued. She responded well to antiviral treatment, however, developed acute renal failure with creatinine spiking to 2.6 mg/dL from baseline 0.8 mg/dL, secondary to acyclovir. She was transitioned to renally dosed PO famciclovir and aggressively hydrated with IV fluids. Her lesions had crusted over throughout days 5-6 of admission without further complication and was continued on famciclovir for a total of 10 days. At discharge, her renal function had normalized and she was to address continuation of her immunosuppressive therapy with her rheumatologist that likely contributed to the severity of infection.

**Conclusion:** Among patients with rheumatoid arthritis, in addition to the underlying autoimmune condition, DMARDs and corticosteroids are associated with an increased risk of developing herpes zoster and disseminated cutaneous and visceral involvement. Our case demonstrated the importance of understanding risk factors and recognizing atypical presentations of herpes zoster to make an early diagnosis and prevent further complications.

**D24 Resident Presentation**

**DIET AND COGNITION: ARE WE WHAT WE EAT?**

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**Background:** The prevalence of cognitive decline continues to increase as the population ages, underscoring the importance of identifying modifiable factors that may prevent or slow cognitive decline. Our study examines whether compliance with a Mediterranean diet (MeDi) is associated with cognitive function as measured by the Mini-Mental State Examination (MMSE) among healthy, community-dwelling individuals ≥65.

**Methods:** This cross-sectional study was conducted from a larger longitudinal study of healthy aging (Longevity Study: Learning from our Elders). Analysis included 1,014 participants (mean age 82, 66% female). Participants completed a self-reported diet screen and demographic questionnaire prior to in-person interview. Baseline data limited to age ≥65, MMSE ≥24 was analyzed. Linear regression analysis was used to assess association between MeDi compliance and MMSE score. Age, education, and gender were included as covariates. All statistical analysis was completed with IBM SPSS Statistics.

**Results:** Linear regression showed no interaction between MeDi compliance and MMSE score, even after accounting for age, education, and gender. ANOVA - female gender and higher education level were associated with higher MeDi compliance (female β=1.255 ±0.204, p<0.001; education β=0.163 ±0.061, p<0.008). Younger age (β=-0.048 ± 0.104, p =0.001), female gender (β=x-0.465 ±0.104, p<0.001), and higher education (β = 0.107 ± 0.031, p<0.001) were associated with higher MMSE score.

**Conclusions:** In a sample of community-dwelling subjects age ≥65 with MMSE ≥24, we found no correlation between MMSE score and MeDi compliance, even after adjusting for age, gender, and education. Female gender and higher education level correlated with higher MeDi compliance. Future analysis of the longitudinal data available from the Longevity Study may reveal an association between cognitive impairment and MeDi compliance, particularly in the initial stages of cognitive decline. The comprehensive data, including the Montreal Cognitive Assessment, will allow for examination of subtle cognitive changes as well as the impact of factors such as exercise, depression, and social support.

**D25 Resident Presentation**

**A Case of the Missing Pill**

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**Introduction:** *Clostridium difficile* infection (CDI) has a higher incidence in older adults. Without a careful history and clinical evaluation the most beneficial treatment modality could be delayed and result in a worsening clinical course in an already vulnerable patient population.

**Case:** A 63-year-old woman with anal squamous cell carcinoma complicated by rectovaginal fistula requiring diverting loop colostomy and stoma was diagnosed with mild *C. difficile* infection for which oral metronidazole was prescribed. Despite this standard treatment, she continued to deteriorate and presented with weakness, abdominal pain, and profuse watery diarrhea. She was hemodynamically stable and physical exam revealed dry mucous membranes, scaphoid abdomen and an ostomy with watery green stool. Metronidazole was continued as her presentation was consistent with mild to moderate CDI. However, on exam the next morning, the patient continued to have copious output and whole pills were observed in her colostomy bag. Given her high output state, it was postulated that metronidazole was poorly absorbed leading to treatment failure. Treatment was subsequently modified to a liquid oral suspension of vancomycin along with a bulking diet. With this change in therapy the patient had significant clinical improvement and resolution of her infection.

**Discussion:** This case illustrates the importance of recognizing a vulnerable patient with multiple co-morbidities and the significance of a systematic history and mindful clinical exam to deliver the best treatment in advance of a worsening clinical course. Specifically in our patient, the high output colostomy likely hindered absorption and effectiveness of oral metronidazole. A change in the delivery mode of antibiotic was the most efficacious treatment albeit it differed from the guidelines and while the patient lacked signs of severe CDI, oral vancomycin was initiated. Additionally, geriatric patients are at a higher risk for CDI as they often have multiple risk factors including prior gastrointestinal surgery including colostomies, use of an acid suppressant and chemotherapy. In patients with high output diarrhea or ostomies, it is essential to evaluate for medication absorption prior to diagnosing treatment failure. In doing so, alternative therapies can be avoided and instead medication modality can be amended to prevent morbidity and mortality in this vulnerable patient population.

**D26 Resident Presentation**

**Hurricanes and Healthcare: The Impact of Maria**

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**Introduction:** Hurricane Maria exposed a vulnerable Puerto Rican healthcare system, where more than 60% of people are on Medicare or Medicaid, to a health infrastructure crisis. Burdened families opted to relocate their loved ones to obtain access to medical care, social support and safe housing in the wake of Maria, which decimated infrastructure, the electrical grid, water supply and access to healthcare. As a result, Baystate and other medical centers saw an increased demand for assistance with care coordination for this vulnerable population.

**Cases:** Each of the following patients came to the mainland with a need for medical treatment and care coordination: an 86-year-old man and 82-year-old woman with advanced dementia, an 83-year-old woman with gastric adenocarcinoma and a 70-year-old with hypertrophic dextrurn. All had a major change in environment, caregivers and daily routine. Advanced age, multimorbidity and cognitive and functional impairment increased their risk for new or worsening geriatric syndromes. Each required a goals of care discussion, appointment of a healthcare proxy, discussion of code status, assistance with obtaining insurance and placement into a long-term care facility.
As such, multidisciplinary teams including Geriatrics, social work and case management worked diligently to provide complete and compassionate care for these older adults during this complicated transition. Hospital length of stay was protracted due to the complexity and high care needs of this frail population.

Discussion: Biopsychosocial determinants of health greatly impact patient outcomes. For these vulnerable older adults, language and cultural barriers, new environments, caregivers and routines, strained family dynamics, and lack of access to insurance and transportation coexist and can adversely impact outcomes and increase caregiver burden. Culturally sensitive communication in the patient’s native language is essential to address all determinants and medical decision-making. For those fortunate enough to have survived Hurricane Maria, despite significant health issues, many are seeking relocation to access healthcare and services. The influx of this complex patient group has just begun, and health systems would benefit from proactive multidisciplinary community outreach programs to educate patients and families, assist with insurance applications and coordinate care to mitigate unnecessary hospital admissions.

D27 Resident Presentation
Apixaban in Heparin-Induced Thrombocytopenia (HIT)
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Background: Few oral anticoagulants are available for the management of HIT, a devastating immune-mediated drug reaction caused by emergence of antibodies that leads to platelet aggregation in the presence of heparin. Hospitalization can be prolonged due to need for overlap of parenteral and oral therapy to prevent venous or arterial thromboembolism.

Methods: This case report describes apixaban use in venous thromboembolism (VTE) prophylaxis after HIT development in a post-surgical patient unable to take warfarin. A 72-year-old white female presented to an outside emergency department three times following four days of neck swelling, pain, and drainage. After being transferred to a larger hospital, she was emergently taken to the operating room for management of necrotizing fasciitis. Heparin 5,000 units every eight hours was initiated on hospital day two for VTE prophylaxis with a platelet count of 379 x10^9/L. The platelet count peaked at 540 x10^9/L on hospital day six. A right lateral tibial plateau fracture fixation was completed on hospital day 8 for a fracture from a previous fall. On hospital day 9, the platelet count decreased to 176 x10^9/L. Heparin was discontinued due to suspected HIT after a positive HIT rapid assay. The 4T score, a clinical scoring system to differentiate between HIT and other causes for thrombocytopenia, was 5, indicating an intermediate risk for development of HIT.

Results: Apixaban 2.5 mg by mouth twice daily for VTE prophylaxis post-surgery was started until a positive serotonin release assay returned four days later to confirm the diagnosis of HIT. Apixaban was continued throughout the hospitalization without any adverse events. Upon discharge on hospital day 15, the platelet count was 33 x10^9/L. Apixaban was to continue for two months post right tibial surgery. No bleeding or thrombosis was documented at subsequent outpatient clinic visits.

Conclusion: This case provides support for apixaban 2.5 mg by mouth twice daily as a potential option for HIT treatment in post-surgical patients that cannot take warfarin. Additional studies are needed to determine the optimal apixaban dose and duration for HIT treatment. Direct oral anticoagulants offer the advantage of a decreased hospital length of stay as patients can quickly transition to an oral anticoagulant without need for overlap with parenteral therapy.

D28 Resident Presentation
Urinary Tract Infection Complicated by Trueparella bernardiae Infection
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Case Report:
84 year old female with a five month history of chronic urinary tract infection with one day prior to presentation complained of headaches, fevers, chills, rigors, nausea and vomiting. Upon presentation she was afebrile with lactic acidosis and hypotension, required admission for pressor support. CT of the abdomen and pelvis showed new bladder mass with bilateral hydronephrosis and bladder diverticula. Bilateral nephrostomy tubes were placed on day of admission and high-flow nasal cannula was started for acute hypoxic respiratory failure. She subsequently required vasopressor and stress-dose steroids for septic shock and blood culture was obtained which showed bacteraemia with Trueparella bernardiae. Additional urine culture also showed over 100,000 colonies/mL of gram-positive rods characteristic of Trueparella bernardiae. A two-week course of intravenous ceftriaxone was started. The patient did well on intravenous ceftriaxone with subsequent cultures negative. The patient’s hospital course was further complicated by bladder neoplasm found on CT scan on admission. She underwent cystoscopy and transurethral resection of bladder tumor and pathology was still pending at time of discharge. The patient was set up with oncology and palliative care to discuss possible treatment options. Upon completion of pathology and culture of tumor resection, results showed trueparella bernardiae along with evidence of invasive high grade urothelial carcinoma with extensive squamous differentiation.

Discussion:
Trueparella bernardiae is a gram-positive, non-motile, facultative anaerobe. It is a rare cause of infection and to our knowledge this is the first reported case of sepsis secondary to a urinary tract infection complicated by Trueparella bernardiae. Early identification of the cause of sepsis and bacteremia are critical for reducing morbidity and mortality. Trueparella bernardiae may be an important cause to consider in urinary tract infections.

D29 Resident Presentation
A Case of Achromobacter Causing Infected Hardware and Septic Joint in a Dialysis Patient
N. Aboujamous,2 R. Jain.1 1. American Geriatrics Society, New York, NY; 2. Medicine, Hershey Medical Center, Hershey, PA.

Case:
84 year old female with a five month history of chronic urinary tract infection with one day prior to presentation complained of headaches, fevers, chills, rigors, nausea and vomiting. Upon presentation she was afebrile, alert, oriented and cardiopulmonary exam was normal. Both peritoneal catheter and R hip incision sites were c/d/i, with no evidence of infection. Labs showed WBC 12.9 K/uL, Hgb 10.1 g/dL, ESR 66 mm/hr, CRP 15 mg/dL and a PTH level 667 pg/ml. She underwent repeat I&D of the joint and these cultures are negative to date. Bilateral nephrostomy tubes were placed on day of admission and high-flow nasal cannula was started for acute hypoxic respiratory failure. She subsequently required vasopressor and stress-dose steroids for septic shock and blood culture was obtained which showed bacteraemia with Trueparella bernardiae. Additional urine culture also showed over 100,000 colonies/mL of gram-positive rods characteristic of Trueparella bernardiae. A two-week course of intravenous ceftriaxone was started. The patient did well on intravenous ceftriaxone with subsequent cultures negative. The patient’s hospital course was further complicated by bladder neoplasm found on CT scan on admission. She underwent cystoscopy and transurethral resection of bladder tumor and pathology was still pending at time of discharge. The patient was set up with oncology and palliative care to discuss possible treatment options. Upon completion of pathology and culture of tumor resection, results showed trueparella bernardiae along with evidence of invasive high grade urothelial carcinoma with extensive squamous differentiation.

Discussion:
Trueparella bernardiae is a gram-positive, non-motile, facultative anaerobe. It is a rare cause of infection and to our knowledge this is the first reported case of sepsis secondary to a urinary tract infection complicated by Trueparella bernardiae. Early identification of the cause of sepsis and bacteremia are critical for reducing morbidity and mortality. Trueparella bernardiae may be an important cause to consider in urinary tract infections.
Discussion: Achromobacter is a rare waterborne, aerobic, multi-drug resistant, gram-negative bacteria. Typically, it targets immunocompromised hosts and has been isolated in rivers, ponds, residential sinks, and hospital fluids i.e., dialysate fluid, disinfectant solutions. Our patient’s strain was susceptible to ciprofloxacin, cefepime, meropenem and piperacillin-tazobactam. Although the source was not isolated in our case, there is a high chance the culprit was the dialysate or peritoneal catheter. To date, there have been 13 cases of achromobacter causing infection in dialysis patients. In one case the source was isolated to tap water in the patient’s home. This particular patient was not adequately cleaning her hands before handling her peritoneal catheter. Our case however, is the first reported case of achromobacter causing infected hardware and a septic joint in a dialysis patient.

Conclusion: Next to cardiovascular disease, infection is the second most common cause of death in ESRD patients. Therefore, it is important to address any suspicion for infection, isolate the source, and quickly treat. This is emphasized in patients with suspected bone/joint infection since elevated PTH in ESRD patients causes increased bone turnover and leads to greater fall risk, longer healing time, and increased risk for nonunion when compared to the general population.

D30 Resident Presentation
A Downward Spiral: Dementia or Drugs?
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Introduction: Gabapentin is prescribed for numerous pain syndromes yet has been shown to have little benefit when compared to placebo in the treatment of chronic pain, and is associated with a wide range of adverse effects including cognitive impairment1. Case report: A 64 year old woman with a history of hypothyroidism, hypertension, and fibromyalgia presented with a 2 year history of progressive cognitive decline, limiting her ability to perform instrumental ADLs and ADLs. Significant deficits in attention and executive function by history resulted in the loss of employment as a social worker and driver’s license. Initial workup included CBC, CMP, B12, folate, RPR and vitamin D which were normal. EEG and brain MRI showed no abnormality. Exam was unremarkable except for a MoCA of 22/30. Depression screen was negative. Two months later, evaluation by a geriatric team demonstrated good recall of recent and distant events, no speech difficulty, pleasant affect and appropriate behavior. Neuro exam showed no focal deficits. MoCA was 25/30 with loss of points for naming, sentence repetition, and recall. Interviews with friends and family revealed a history of intermittent confusion, difficulty handling her affairs, and getting lost, missing appointments, and had significant gaps in memory pertaining to conversations and events. Medications were notable for gabapentin 300mg TID that she had been taking for 2 years for fibromyalgia. This was discontinued. At 2 week follow-up, MoCA was 29/30 and the patient reported resolution of impaired cognition and function. This was sustained at 2 month follow-up, and was endorsed by family.

Discussion: This case demonstrates the serious implications of adverse medication effects with gabapentin resulting in significant cognitive and functional impairment. A meta-analysis by Shanthanna et al evaluating the efficacy of gabapentinoids in chronic low back pain showed gabapentin had a number needed to harm of only 6 for cognitive difficulties and minimal improvement in pain1. This case highlights that the use of gabapentin for chronic pain in the geriatric population must be carefully considered relative to any potential harms, and patients should be monitored for adverse effects.


D31 Resident Presentation
Grandma’s got the biggest heart!

We present a case that exemplifies how focusing on “what matters most” to patients with multimorbidity can help reconcile conflicting optimal treatments.

An 86-year-old female, with multiple co-morbidities including COPD and hypertrophic cardiomyopathy (HCM), presented to clinic to establish care. She is independent at baseline and enjoys baking, knitting and spending time with family and friends. Recently, she had been experiencing progressive dyspnea hindering her ability to carry out these activities. She was referred to both cardiology and pulmonary for further evaluation. The pulmonologist prescribed an albuterol (beta-agonist) inhaler for her COPD after pulmonary function tests showed a brisk bronchodilator response. Cardiology ordered an echocardiogram, showing left ventricular outflow tract (LVOT) obstruction, and due to this, strongly recommended discontinuing her beta-agonist, as it could precipitate a life threatening event. They also recommended starting metoprolol (beta blocker) at a maximum tolerable dose, a medication that could worsen her pulmonary symptoms but prevent sudden cardiac death in HCM. Our patient reported significant improvement in her symptoms and her ability to carry out her daily living activities while on the albuterol, and was understandably hesitant to discontinue it. After much deliberation, the patient made an autonomous decision to continue the albuterol and discontinue the metoprolol.

Multimorbid geriatric patients frequently require therapies that antagonize each other. In this case, starting her on a beta blocker would reduce physiologic outflow obstruction and can prevent sudden cardiac death. On the other hand, the use of beta-agonists in preload dependent cardiac conditions like HCM are associated with episodes of tachycardia, which can be life threatening. Our patient prioritized her quality of life, continued to use albuterol and avoided metoprolol after understanding the risks and benefits associated with both. Shared decision making with elderly patients, wherever possible, is important to provide patient centered care to evaluate potential harm versus maintaining quality of life. The importance of autonomy and assessing a patient’s goals and life expectations is highlighted in this circumstance. It is our responsibility to educate, inform and most importantly allow our patients to make autonomous decisions regardless of age and support them through this decision making process.

D32 Student Presentation
Delirium in an acutely ill hospitalized patient
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Background
Delirium is a very common geriatric syndrome in acutely ill-hospitalized older adults. Geriatric in patient consult team adds value in helping co-manage delirium with multiple other specialties, as associated with adverse healthcare outcomes, including increased risk of institutionalization, readmissions and mortality. In the elderly patients, delirium and dementia can overlap complicating the differential diagnosis further.

Case report
A 66-year-old white male presented to the emergency department for agitation, confusion, and altered mental status. His past medical history was significant for multiple co-morbidities including stroke, three-vessel coronary artery disease, mild vascular dementia, heart failure, chronic kidney disease, resected colon cancer and diabetes. He had elevated troponins and was diagnosed with a type II myocardial infarction due to severe anemia. After transfusing with packed red blood cells, he was discharged home and readmitted, two days later.
D33 Student Presentation
Improving Transitions of Care and Clinical Outcomes in Patients with Multiple Comorbidities

R. Tobillo, M. Sehgal. Florida Atlantic University College of Medicine, Boca Raton, FL.

Billions of dollars are spent in the US on ineffective care transitions due to avoidable complications and unnecessary readmissions. Due to the economic burden and potential harm to patients, it is crucial for both healthcare professionals and administrators to recognize challenges faced in care transitions and to implement change based on best practice guidelines. This is especially critical in older adults, where transitions are often complicated by geriatric syndromes, declining functional ability, and increased caregiver burden. We present a case of a 90-year-old with multiple comorbidities, poor functional status, and repeat hospital admissions who expired upon readmission less than a week after a hospitalization involving an invasive procedure and discharge to a skilled nursing facility.

Using the terms “transitions of care” + “geriatrics”, a PubMed search sorted by “best match” yielded 519 results and served as a springboard to find similar articles. Guidelines from relevant articles and the results of randomized controlled trials were incorporated into a root cause analysis (RCA). Our RCA illustrates issues with identifying risk factors for complications during transitions, addressing unmet care needs in complex patients, and setting realistic expectations for patients and their families. The presence of frailty, cognitive impairment, incontinence, functional decline and poor prognosis in our patient should have been red flags indicating the need for thoughtful discharge planning. This case illustrates a multitude of common occurrences in care transitions; therefore the results of our RCA can be adapted to benefit other patients.

Various models for improving care transitions after hospitalization, such as the Care Transitions Intervention and the INTERACT Program, have been shown to reduce readmissions and average costs per patient. This case emphasizes the need to implement standardized transitions models and screening tools to improve clinical outcomes for older adults.

References

D34 Resident Presentation
A Stroke Misdiaognosed: A Case of Familial Creutzfeld-Jakob Disease Revealed

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Creutzfeld-Jakob Disease (CJD) is an infectious, neurodegenerative disease uncommon in the United States. The accumulation of the prion PrPSc, the misfolded form of protease-resistant protein (PrP), results in irreversible neuronal injury and death. Diagnosis of CJD is critical to ensure limited transmission.

A 68-year-old male with hypertension and bipolar disorder presented with a 3-week history of memory deficits, weight loss, and increasing irritability. Exam revealed disorientation, dysartria, and left sided weakness. MRI was suggestive of a right basal ganglia infarction. Patient was treated for a stroke and discharged. He was readmitted 30 days post-discharge with decreased responsiveness and concern for seizures. He was found to be nonverbal and immobile. Neurologic changes were attributed to an infectious etiology due to a leukocytosis. Despite antibiotic therapy, the patient became obtunded, dystonic, and hyperreflexic and developed a positive Babinski’s sign. Repeat brain MRI demonstrated restricted diffusion within the basal ganglia bilaterally and cortical ribboning of the bilateral frontal cortex. EEG showed generalized periodic sharp waves. Hence, CJD was diagnosed and the patient died on hospital day 15. Further history revealed that his sister died from tissue-confirmed CJD and the patient had eaten animal brains in the past. Tissue on autopsy was positive for PrP27-30, confirming CJD.

This case illustrates a classic presentation of CJD. Initial findings were consistent with CJD but were attributed to an atypical presentation of a cerebral infarct. This case demonstrates “availability bias,” which leads to increased diagnoses of diseases the provider is familiar with and under diagnosis of uncommon diseases such as CJD. There was also premature closure as his neurological decline was attributed to an infection (based on his leukocytosis) without consideration of further diagnoses. Here, premature closure, assigning a diagnosis prior to collecting all data, again resulted in delayed diagnosis. As providers, it is critical to be aware of our own biases and how they affect the care of our patients. While earlier diagnosis would not have changed the patient’s outcome in this case, it could have improved end-of-life care for the patient and his family.

D35 Student Presentation
Aliens, Snakes & Fish – Apocalyptic Omens or Just a Red Herring? A Case Report Demonstrating the Role of Imaging Biomarkers in the Diagnosis of Atypical Dementias

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BACKGROUND: Despite the development of consensus criteria for clinical diagnosis of dementias like Alzheimer’s disease (AD) and Dementia with Lewy Bodies (DLB), distinguishing between them can be a diagnostic challenge given the significant overlap in clinical presentation and presence of confounding pathology. In this case report, we demonstrate how imaging biomarkers aided in the determination of a patient’s diagnosis and management.

CASE DESCRIPTION: 71-year-old female presented with one year history of progressive memory loss, functional decline, fluctuating awareness, and visual hallucinations. Neuropsychological testing revealed impaired memory, executive function and visuospatial domains. She had a history of remote intraparenchymal hemorrhage without clinical sequelae. Physical exam showed mild tremor, bradykinesia, slow gait, and hypomimia. Laboratory results including prior electroencephalogram were unremarkable. Magnetic resonance imaging showed stable right temporo-occipital lobar encephalomalacia. Volumetric studies showed hippocampal volume of 2%.
DISCUSSION: Per clinical diagnostic criteria for DLB, our patient’s presentation was highly suggestive of probable DLB, however her DaT SCAN™ results were negative, showing normal uptake by dopaminergic neurons. Subsequent Amyloid-PET imaging showed cortical amyloid deposition. Her amnestic presentation, hippocampal atrophy and positive amyloid scan made a diagnosis of AD more likely. Given her negative DaT SCAN™, we believe her visual hallucinations may be explained by her temporoparietal encephalomalacia, rather than DLB. In the setting of confusing pathology such as localized brain injury, the established clinical diagnostic criteria lose specificity. In these cases, imaging biomarkers may have a role in clarifying the diagnosis. Furthermore, early differentiation between AD & DLB allows for accurate determination of pharmacologic management, disease course and prognosis.

REFERENCES:

D36 Resident Presentation
“Rapid Loss of Flesh” Raluca Milos, MD, Sara Majeed, MD, MBA, Richard Martin, MD
R. Milos, S. Majeed, R. Martin. FAMILY MEDICINE, SACRED HEART HOSPITAL, Allentown, PA.

Neuromuscular weakness is an occurrence in patients who are critically ill in intensive care unit (ICU) and ventilated for at least 7 days. Critical illness polyneuropathy (CIP) and critical illness myopathy (CIM) are complications of severe illness that involve sensorimotor axons and skeletal muscles, respectively. Critical illness polyneuropathy/myopathy in isolation or combination increases intensive care unit morbidity via the inability or difficulty in weaning these patients off mechanical ventilation, in addition to increased long term disability.

We are reporting an 87 year old male with generalized weakness status post ICU stay. He was admitted to the hospital with acute respiratory failure, hypotension and acute renal failure. He underwent hemodialysis and required mechanical ventilation. He was successfully extubated after 7 days; however he woke up with profound weakness in upper and lower extremities and had difficulty maintaining posture.

CT of the spine was done and did not show any lesion that could explain his symptoms. MRI could not be done as patient had a pacemaker in place. Blood work was done and ruled out metabolic and toxic neuropathies, and neuromopathies due to nutritional deficiencies. EMG and nerve conduction studies confirmed the diagnosis of mixed CIM and CIP.

Patient was discharged to rehab for 2 weeks with no improvement and then went to a nursing home facility with physical and occupational therapy.

Occupational therapy initially noted that patient had decreased extension and flexion of upper extremities which improved significantly in a period of six months.

Critical illness polyneuropathy or myopathy is a functional diagnosis, which is not related to a specific environment and they are not routinely assessed during ICU stay, therefore the diagnosis of CIP and CIM is limited and clinicians may need to treat these patients after ICU discharge. Thus far, there is no specific therapy. However both preventive and supportive therapies may be beneficial. Avoiding or limiting the use of neuromuscular blocking agents and corticosteroids, as well as early rehabilitation combining mobilization and physiotherapy is crucial to patients’ prognosis. Neuromuscular stimulation could also be beneficial but its effect has not been proven yet. A retrospective chart analysis in Mohr et al. suggested that early application of intravenous immunoglobulins may prevent or mitigate critical illness polyneuropathy.

D37 Resident Presentation
A Rare Case of an Extramedullary Plasmacytoma in an Elderly Patient
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Introduction:
Extramedullary plasmacytomas are plasma cell neoplasms affecting organs outside the bone marrow, usually seen secondary to multiple myeloma. There are limited reports about pancreatic plasmacytomas and only a few of those are in elderly patients. Here we present a rare case of a pancreatic plasmacytoma in an elderly patient.

Case:
A 66-year-old man with IgA-κ multiple myeloma post autologous bone marrow transplant now in remission presented to the hospital with 2 weeks of worsening postprandial epigastric pain. Exam was significant for epigastric and right upper quadrant tenderness. Laboratory testing was significant for new elevation in the liver function tests (LFTs): alkaline phosphatase of 351 units/L, lipase of 381 units/L, AST of 203 units/L, ALT of 452 units/L, total bilirubin of 4.2 mg/dL, and direct bilirubin of 4.7 mg/dL. Initial working diagnosis was gallstone pancreatitis given the obstructive pattern on LFTs. Right upper quadrant ultrasound was done without visualization of the pancreas. MRCP/MRI abdomen without contrast showed a 5.3cm x 3.8cm pancreatic head mass causing intra and extrapancreatic biliary ductal dilatation and pancreatic duct dilatation, consistent with a neoplasm. Biopsy confirmed the diagnosis of a pancreatic plasmacytoma.

Discussion:
Multiple myeloma is a plasma cell neoplasm with a median age of diagnosis of 65 years, making it prevalent among the geriatric population. In fact, 33% of multiple myeloma patients are 75 years or older. Extramedullary plasmacytomas are a rare complication of multiple myeloma and require a high clinical suspicion to diagnose. Extramedullary plasmacytomas usually involve the respiratory tract with only 10% involving the gastrointestinal tract. There are very limited case reports in the English literature on pancreatic plasmacytomas. The most common presentation of a pancreatic plasmacytoma is obstructive jaundice and histology and immunohistochemistry are needed for diagnosis. Given its rarity, it is important to have a high index of suspicion for a pancreatic plasmacytoma in an elderly patient with multiple myeloma presenting with signs and symptoms of obstructive jaundice.

D38 Resident Presentation
A Classic Presentation of An Uncommon Disease: Binswanger Disease
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Introduction: Binswanger Disease is a subtype of vascular dementia which is an underrecognized gradually progressive demyelinating disease resulting in subcortical arteriosclerotic encephalopathy. It affects the subcortical white matter in men & women equally beyond the sixth decade of life. It is important to recognize this entity as disease management will be different from other forms of dementia; a detailed history & imaging helps identify this underdiagnosed disease.

Case Presentation: An 89 year old woman with a past medical history of hypertension, hyperlipidemia & legal blindness, presents history of recent memory impairment as well as daily memory impairment in work setting. She also has had recent stepwise decline in cognitive function. Neuropsychiatric evaluation revealed deficits in multiple cognitive domains: executive function deficits (processing speed,
learning, retention, semantic fluency), sensory deficit (impaired visual acuity, bradykinesia, gait ataxia) & psychiatric findings (generalized anxiety & unspecified psychiatric disorder). CT Head without contrast demonstrated hypothalactuation in periventricular regions consistent with chronic microvascular ischemic changes of the white matter.

Discussion:Binswanger’s disease is a progressive form of cerebral small vessel disease, affecting the subcortical white matter. It results in a variety of clinical manifestations: progressive dementia, psychiatric disturbances, depression, neurogenic bladder, gait disturbance & rigidity. The disease is associated with hypertension (98% of cases) & lacunar infarctions. CT brain demonstrates periventricular lucencies (hypodense); MRI brain shows hypertensive white matter abnormalities from fronto-temporal region to the centrum semiovale. Histopathology displays demyelination with relative axonal sparing, arteriosclerosis, white matter artery/arteriole narrowing. Of note, the subcortical U-fibers are spared owing to the dual blood supply from cortical & medullary vessels. Treatment is primarily supportive: discussions on advanced directives such as goals of care, social support & antidepressant therapy, etc. Management of hypertension & aspirin prophylaxis may help slow progression.

D39 Resident Presentation
An Interesting Case of an Elderly Patient with Epigastric Pain & an Ultrasound Demonstrating Splenic Cyst
S. Thiyagalingam, R. Menezes, T. Redling. Medicine, Saint Barnabas Medical Center, Short Hills, NJ.

Introduction: Splenic cysts & tumors are a rare entity. Metastatic cancer to the spleen is a relatively uncommon phenomenon due to the sharp angle of splenic vessels, elevated antitumor activity in splenic lymphoid tissues, & lack of afferent lymphatics. Tumors which metastasize to the spleen are seen in 2-9% of untreated cancers. On radiological imaging malignant splenic mass appearance can be heterogeneous & often is described as being cystic or necrotic lesions. We report an interesting case of a 76 year-old woman with epigastric pain and ultrasound suggesting splenic cyst with further workup revealing pancreatic cancer metastasis to the spleen.

Case Presentation: A 76 year-old woman with a past medical history significant for COPD secondary to a 75 pack-year smoking history who presented to her geriatrician’s office with complaints of nausea, epigastric pain & an unintentional 15 lb weight loss over four months. An abdominal ultrasound revealed a splenic cyst measuring 5cm. Several days later she presented to the emergency department with sharp epigastric pain. Labs revealed CA 19-9 of 48,822U/mL & CEA of 92.3ng/mL. CT of the abdomen with IV and PO contrast revealed a 10x9cm low attenuation mass within the enlarged spleen inseparable from the stomach & pancreatic tail. The splenic cyst biopsy revealed metastatic adenocarcinoma; it was presumed to originate from the pancreas. The patient was subsequently started on neoadjuvant chemotherapy; however, her clinical condition continued to deteriorate & she passed away.

Discussion: Splenic cyst & tumors are a rare entity. They can be congenital or acquired & typically present in childhood or adolescents. Secondary cysts can be due to infectious, posttraumatic, inflammatory, vascular or neoplastic lesions. Only around 800 cases of splenic cysts were reported in the world literature. Tumor invasion can cause splenomegaly detectable on physical examination due to reactive hyperplasia. On CT imaging, metastatic disease to the spleen typically presents as well-circumscribed, low-attenuation solitary or multiple lesions. The radiological distinction between benign & malignant lesions of the spleen is not always clear, & histological confirmation is typically required to make a definitive diagnosis. It is imperative that patients undergo further workup when initial studies are suggestive of a splenic cyst especially in the elderly population.

D40 Resident Presentation
A Case of Severe HSV Gingivostomatitis in a Previously Immunocompetent Septic Shock Elderly Patient
S. Thiyagalingam, S. Sapru, G. Diamond. Medicine, Saint Barnabas Medical Center, Short Hills, NJ.

Intro: In patients with a hematologic malignancy or organ transplant, antiviral medication targeting herpesvirus is given as secondary prophylaxis if the host is seropositive for Herpes Simplex Virus (HSV) to reduce its frequency & severity. Geriatric patients with a history of HSV infection, who are in critically ill states, are vulnerable to reactivation with severe infection causing significant morbidity and perhaps increased mortality. There are a growing number of cases with morbidity and mortality from severe presentations of HSV in critically ill patients ranging from ARDS to tracheitis. This clinical state is underrecognized.

Case Presentation: An 80-year-old gentleman was admitted to the critical care unit with septic shock secondary to cholecystitis and respiratory failure requiring intubation, vasopressors and continuous renal replacement therapy. The patient was given stress dose steroids for nine days. Subsequently, he developed 2-3 small maculopapular blistering lesions on the vermilion border of the lips. After extubation the patient was transferred to the medical ward. The vesiculo-ulcerative lesions became extremely painful and hemorrhagic; it dramatically increased in number in the perioral cutaneous tissue, vermilion, buccal mucosa, gingiva, soft/hard palate, pharynx and tongue. Serum HSV-1 IgG antibody was >58 index and HSV-1 DNA level was 5043 copies/mL. The patient had a poor appetite due to excruciating pain in the oropharynx despite nasogastric tube placement; subsequently a gastrostomy tube feeding was required. After two weeks of IV acyclovir treatment the patient was discharged from hospital with clinical improvement.

Discussion: Severe HSV infection results in significant morbidity in critically ill immunocompetent patients including oral pain leading to poor appetite, extreme odynophagia, tracheitis, and even disseminated illness. In the ICU setting, stressors such as sepsis, Acute Respiratory Distress Syndrome (ARDS), and high dose steroid use, are associated with a risk for HSV reactivation. Elderly patients are at risk for malnutrition from inadequate caloric intake due to odynophagia. We suspect that an HSV seropositive elderly patient in a severely ill state on high dose of steroids for greater than a week are at risk for reactivation resulting in significant morbidity. We therefore suggest that an HSV titer be included in the initial workup to prevent this painful disease.

D41 Resident Presentation
A Stroke of Good Luck
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Introduction:
Anaplasmosis is a common but under diagnosed infection often requiring a high clinical suspicion to diagnose. In elders, its presentation can mimic other conditions and this population is at a higher risk of complications and mortality. Early recognition and treatment is imperative to prevent these.

Case Report:
An independent 76-year-old female, who lived in rural Connecticut, presented from an outside hospital with four days of nausea and emesis followed by ataxia leading to three falls. She had no prior history of falls. At the outside hospital a CT-head was unremarkable and she was transferred for further evaluation.

On arrival, examination showed ataxia and Neurology felt the patient had a posterior circulation stroke. TPA was not given due to duration and MRI brain was unremarkable. Over the next day the patient continued to decline with worsening symptoms and developed...
cyclical fevers. Labs now showed a WBC of 3.6k/mm$^3$, platelets of 18k/mm$^3$ and new bandemia of 44%. She also had a mild transaminitis, alkaline phosphatase of 176units/L and LDH of 850units/L.

Given her overall clinical picture her diagnosis was revisited and there was a concern for anaplasmosis, despite the absence of a known tick-bite. Anaplasma phagocytophilum PCR was ordered and empirical doxycycline was started leading to complete improvement within 48 hours. After discharge PCR results confirmed Human Granulocytic Anaplasmosis (HGA).

**Discussion:**

HGA is a rickettsial infection caused by Anaplasma phagocytophilum and transmitted by the ixodes tick. Presentation of anaplasmosis ranges from an asymptomatic disease to a potentially fatal one. Two-thirds of patients with symptoms will have a headache, fever, myalgias and malaise. Neurological symptoms are rare and are one of the potentially fatal complications. In the case of our patient, her neurological symptoms were mistaken for a stroke, delaying diagnosis. Elderly patients are at a higher risk of complications from HGA and have a higher mortality rate. Recognizing serological patterns that are typical for HGA can aid in obtaining an early diagnosis including thrombocytopenia (71%), leukopenia (49%), anemia (37%), and mild elevation in LFTs (71%). Mortality is estimated to be as high as 7-10% and is even higher in a geriatric population. It is recommended that all symptomatic patients be treated with doxycycline even prior to confirmation of the disease, to decrease potential complications.

**D42 Resident Presentation**

**Cease and De-Cyst: A Case of Symptomatic Polycystic Liver Disease**

S. J. Lorgunpai, H. Day, Boston University Medical Center, Boston, MA.

**Background:** Adults with polycystic kidney disease have greater risk for developing hepatic cysts as they age. These cysts have the potential to cause severe pain.

**Case:** A 73-year-old man with polycystic kidney disease, polycystic liver disease, chronic kidney disease, hypertension, and coronary artery disease presented with severe RUQ pain, worse with deep inspiration and movement. Exam revealed RUQ abdominal tenderness. Liver function tests were unremarkable. CT revealed multiple hepatic and renal cysts. He underwent u/s guided percutaneous drainage of the dominant liver cyst, measuring 18x14x10cm, with improvement in his pain. Surgery was consulted for definitive therapy but deferred further interventions given the patient’s comorbidities. Three months later, he re-presented with severe RUQ pain. Repeat CT revealed an interval increase in the dominant liver cyst to 19x17x13cm. He underwent successful laparoscopic fenestration of four hepatic cysts protruding from the capsule. One year later, his abdominal pain hadn’t recurred.

**Discussion:** Polycystic liver disease most often occurs concurrently with polycystic kidney disease. The prevalence and size of liver cysts increases with age; a case series found a prevalence of 58%, 85%, and 94% in patients with polycystic kidney disease aged 15-24, 25-34, and 35-46 years, respectively. The average liver cyst volume was 0.3, 5.8, and 22.8 mL in the sequential age groups. Cysts are usually asymptomatic, but a small proportion of patients develop pain when large cysts stretch the liver capsule. Decompression of the cysts is indicated with persistent, severe pain. Although simple percutaneous drainage of liver cysts can be done with local anesthesia, the cysts invariably recur. Laparoscopic fenestration of the cysts, a more extensive procedure requiring general anesthesia, provides longer relief and is dominated by bilateral leg weakness in multiple root distributions (typically L3-S1) and may be associated with bowel, bladder, and erectile dysfunction due to involvement of the S2-4 spinal nerve roots. Although the neurological exam in LSS is often normal, bilateral LE weakness and sensory loss is often found in CES. CES is a neurological emergency that requires urgent decompressive laminectomy.

**Conclusion:** Although CES is a rare complication of LSS, it should be considered when evaluating older adult patients presenting with falls, especially when bilateral leg weakness, pain, or bladder dysfunction is present, to avoid severe neurologic consequences that can greatly impact long-term function and quality of life.

**D44 Resident Presentation**

**The Forgotten Curse**

S. Penumarty, K. Shah, W. Colon-Cartagena. Internal medicine, Baystate Medical center, Springfield, MA.

Broken and retained guide wires are rare but serious complications of percutaneous procedures. Early recognition and removal of retained guide wires can avoid catastrophic complications like cardiac tamponade.

A highly functional 68-year-old male with hypertension, history of deep vein thrombosis and pulmonary embolism for which an inferior vena cava (IVC) filter was placed 26 years ago presented with sudden onset of shortness of breath and chest pain. Physical exam findings included tachycardia, tachypnea, pulsus paradoxus and distended neck veins. The chest X-ray showed an enlarged cardiac silhouette and a retained foreign body projecting from the superior vena cava (SVC) into the IVC. Echocardiogram showed large pericardial effusion. Subsequently, he developed obstructive shock secondary to pericardial tamponade, requiring vasopressors and transfer to the...
critical care unit. An emergent Computed tomography (CT) guided pericardiocentesis drained 320ml of bloody fluid. Post procedure he developed respiratory failure requiring intubation. Transesophageal echocardiogram revealed a guide wire lodged in the SVC with possible kinking in the right (R) ventricle. CT chest with contrast showed the retained guide wire extending from the R brachiocephalic vein into the SVC and R ventricle with a fragment piercing into the R ventricle myocardium. It is suspected that 26 years ago the guide wire got entangled in the IVC filter during placement and it was sutured to the R brachiocephalic vein and left in situ. Cardiothoracic surgery had to perform a cardio-pulmonary bypass surgery and removed the multiple fragments. Patient’s post op course was complicated by sternal wound cellulitis, for which he received antibiotics and had delayed wound healing.

These complications could have potentially been prevented if the IVC filter along with the guide wire was removed within six months of placement as per guidelines. Delayed complications of retained guide wires include: cardiac dysrhythmias, breakage of distal tip of guide wire with embolization, loss of the guide wires in the vascular system and perforation of vessels or myocardium wall. Due to this catastrophic complication patient’s functional status worsened causing him to be dependent for his daily activities.

D45 Resident Presentation

Never Ending Cellulitis

F. Ikalina, S. Penumarty, W. Colon-Cartagena. Baystate Medical Center, Easthampton, MA.

Misdiagnosis of chronic cellulitis is not uncommon and has been known to result in unnecessary risks and cost for patients. We describe the case of an elderly woman whose diagnosis of chronic recurrent cellulitis resulted in potentially unnecessary admissions, treatments and anxiety.

A 96-year-old female with a history of venous stasis ulcers and dermatitis, deep vein thrombosis (DVT), and recurrent left lower extremity (LLE) cellulitis presented to the ED with worsening LLE pain and swelling for two days. This being her fourth hospital admission this year with similar complaints, she was afraid to leave her house to avoid further infection. She was otherwise an independent woman with no known geriatric syndromes. Physical exam was notable for normal vitals and for tenderness, swelling, warmth and erythema of the LLE, with small amount of drainage from her chronic stasis ulcers. White count was 9.6 K/mm3 and other labs were unremarkable. Venous doppler ruled out DVT and X-ray ruled out osteomyelitis. Due to her recurrent cellulitis, she was considered to be resistant to cephalaxin, doxycycline, and clindamycin. Due to her poor response to cefazolin this hospital stay, she was switched to antibiotics and visiting nurse services for better wound care. Despite reassurance, the patient remained anxious about possible persistent infection and feared discharge.

Our case highlights the importance of a broad differential in an elderly patient diagnosed with chronic recurrent cellulitis. Each time her symptoms failed to resolve, providers unfortunately escalated her treatment instead of reconsidering her diagnosis. It was important to recognize how her underlying stasis dermatitis contributed to her lingering clinical appearance. Other differential diagnosis, such as lymphedema, DVT, gout, lipodermatosclerosis, noninfectious phlebitis and hypersensitivity reactions, could also be considered.

In this case, misdiagnosis led to over-medicalization, including escalating antibiotics, labeling antibiotics as resistant and an extended hospital length of stay. The recurrent hospitalizations and fear of reinfection caused unnecessary anxiety and affected the patient’s quality of life.

D46 Resident Presentation

Polycythemia Vera presenting as pseudohyperkalemia masquerading as polypharmacy

V. Chan, S. Lappin. SUNY Upstate Medical University, Syracuse, NY.

Our patient was a 78 year-old female with a history of essential hypertension without kidney disease who had multiple ED visits for hyperkalemia. Thought to be secondary to polypharmacy, multiple medications were therefore altered. Unfortunately, the alternation resulted in difficulties with managing her hypertension. This in turn has led to extra hours spent in emergency rooms with treatment including intravenous insulin, glucose and oral sodium polystyrene sulfonate. Despite these measures, her potassium levels have remained elevated in the range of 5.5-6.1 mmol/L. Lab work has revealed consistent thrombocytosis with levels ranging from the 700-800 10^3/uL. Upon checking a plasma potassium level though, the result was a mere 4.9 mmol/L; at which point she was diagnosed with pseudo-hyperkalemia. Found to have Polycythemia Vera with positive JAK-2 mutation in subsequent studies, she received treatments including Hydroxyurea resulting in the resolution of her thrombocytosis and normalization of her serum potassium.

Hyperkalemia is a frequently encountered emergency on a daily basis across the board in healthcare. Though having been well recognized in medical literature with the first case discovered in 1955, pseudo-hyperkalemia remains poorly diagnosed by physicians in clinical practice.

Pseudo-hyperkalemia is defined as serum potassium concentration being 0.4 mmol/L greater than that in plasma. Platelets are the smallest among all blood components, so they stay near the top of the blood tube, as a result, they are taken preferentially for downstream analysis. Also, degranulation of platelets during clotting in vitro releases potassium and calcium in the serum which falsely reports an elevated serum potassium level. Therefore, for patients with thrombocytosis, hyperkalemia is seen more prominently. In patients with mixed cell type disorders such as polycythemia vera, either one or more cell types increase in number, so these patients could have more pronounced hyperkalemia.

In conclusion, although thrombocytosis is well known as a cause of pseudo-hyperkalemia in the literature, it is often overlooked or poorly recognized by providers leading to multiple unnecessary ED visits, erroneous allergies, and needless treatment. We should re-emphasize the importance of checking plasma potassium in patients with uncontrolled potassium levels to gain insights into the true potassium levels.

D47 Resident Presentation

Cerebral Amyloid Angiopathy: A Case Report and Implications for Clinical Management

W. M. Johnstone, M. M. Prado, B. Pabbu. Family Medicine, The Brody School of Medicine at East Carolina University, Greenville, NC.

Cerebral amyloid angiopathy (CAA) is caused by beta-amyloid deposition in the cerebral vasculature and predisposes one to lobar intracerebral hemorrhage. The hemorrhages are oftentimes the radiologic hallmark seen on brain MRI that are recognized to suggest the presence of CAA. Brain imaging is spurred by presenting clinical neurologic symptoms known collectively as transient focal neurologic episodes (TFNEs). TFNEs are characterized by limb weakness, headache, dysphagia, visual disturbance, change in level of consciousness, seizure, or other focal neurologic changes. At autopsy, there is a high degree of CAA among patients with Alzheimer dementia and there is some evidence that severity of AD is affected by presence of CAA. In this case, we present a 65-year-old African American male that presented with an estimated 1-2 minute episode of unprovoked transient loss of consciousness with a similar event three years prior. MRI showed three chronic microhemorrhages (right caudate...
head, deep right matter of the parietal lobe, and cortical-juxta cortical interface in the right temporal lobe), most consistent with CAA. The patient did not exhibit any other neurological symptoms during his inpatient stay and it was felt that his transient loss of consciousness prior to presentation, was most likely due to his underlying CAA. On a previous MOCA administered 4 year prior to his recent presentation, he scored a 23/30, indicating mild cognitive impairment. This finding would be consistent with his CAA. We present this case because radiographic findings of CAA may have long-term clinical management implications for patients. First, patients with CAA may have a higher bleeding risk, thus treatment with anticoagulants or antiplatelet agents in these patients may need to be more closely examined. Secondly, it has been shown that patients with concurrent CAA and Alzheimer dementia, may have more severe disease. Clinical counseling may be affected if CAA is found on MRI in these patients. Lastly, MRI may reveal CAA in younger patients without diagnosed dementia. In these cases, should we begin the discussion of the possible development of cognitive impairment prior to its actual diagnosis. Regardless, even though research has progressed in this realm of geriatric medicine, more investigations are required to elucidate risks associated with this condition and its implications in clinical management.

D48 Resident Presentation
Developing and Piloting a Tool to Identify Food Insecurity in the Elderly
A. King, R. Roofe, C. Nouryan, M. Zhang, M. Carney.

Background: It is well known that Food Insecurity (FI) is associated with poor health status and negatively affects the trajectory of many chronic illnesses. These effects can be acutely severe for the elderly, but screening for FI is not regularly performed in the hospital setting. Our goal was to develop a tool to screen for FI upon hospital discharge to identify patients who may require food resources in the community. This is the first attempt to build a screening tool for FI in our health system.

Methods: A literature review was performed to identify studies regarding FI to create a “Food Insecurity Tool (FIT)” with 9 questions related to patterns associated with FI. The tool is scored on a binary of 1 or 0 points per question with a total maximum score of 9 points, indicating higher levels of FI. The tool was piloted in 3 inpatient locations: 2 university hospitals and 1 community hospital. Inclusion criteria include patients admitted to the medicine service, ≥65 years of age, and approaching discharge within 2 days. All patients screened were offered a list of contact information of available community resources.

Results: A total of 69 patients met criteria and all patients approached agreed to take the survey. Average patient age was 80.5 years old and consisted of 37 (54%) females. Average BMI was 27.57 and average albumin was 3.15 g/dL. Mean length of stay (LOS) was 7.3 days. Average median household income, based on zip code, was $81,041. A majority of subjects (56%) had ≥3 food insecurities. Patients with higher FI (a score ≥4) were associated with a longer LOS (p=0.01) compared to patients with low FI (<4). Female patients were more likely to have higher FI (p=0.02) than males.

Conclusions: The objective of this study was to develop a novel tool to screen for FI and align food insecure patients with resources. The majority of patients screened displayed some level of FI, a significant barrier for safe discharge and long-term recovery. Routine screening to combat FI is not performed in the hospital setting, as reliable detection of FI is challenging. This study has found that use of a tool to screen for FI can help to identify vulnerable patients and connect them to food resources. The FIT was easy to use, well tolerated, and time-efficient, leaving it poised for use in the busy environment of inpatient services.

D49 Student Presentation
Understanding the Psychosocial Needs of Caregivers for the Homebound Elderly: Survey Development and Pilot Study
A. Sun, K. Ouchida, E. Finkelstein. Medicine, Weill Cornell Medicine, New York, NY.

Background: Family and paid caregivers who care for functionally or cognitively impaired older adults often do so at the expense of their own physical and mental health. The caregivers of homebound elderly may have additional psychosocial issues, such as social isolation and loneliness, that are important to identify yet poorly addressed. As the first step towards designing caregiver-directed interventions, the Cornell Geriatrics House Call Program developed a comprehensive survey tool to identify and confirm the various psychosocial needs of caregivers of homebound elderly.

Methods: The survey is composed of validated instruments found in the literature that assess intensity of care, caregiver burden, social isolation, loneliness, and positive aspects of caregiving. The instruments were selected based on relevancy and feasibility. Open-ended questions were developed to assess the impact of caregiving on quality of life/personal health and what help the medical team might provide. An interprofessional panel of experts from the Division refined the survey content. We piloted the survey with a small convenience sample to evaluate its feasibility.

Results: Two caregivers participated in phone interviews: a daughter caring for her mother with Alzheimer’s and a wife caring for her husband with Parkinson’s. Each interview required about 1 hour. A third survey was self-administered by a daughter with a full-time job and toddler, caring for her mother with cognitive decline and alcohol use, and took 15 minutes. Caregiver burden scores of all three respondents were high while social isolation and loneliness scores varied.

Conclusions: The final survey tool is a unique comprehensive assessment of the caregiver experience for those caring for homebound older adults. It combines validated instruments for caregiver burden with novel assessment of social isolation and loneliness. Self-administration efficiently provides quantitative data, while phone interviews yield qualitative understanding of each caregiver’s experience. Conclusions cannot yet be made from the pilot responses. We plan to use this survey tool to perform a needs assessment of the caregivers of patients enrolled in a house call program, as well as on the medical and functional status of care recipients. This will allow the medical team to address the needs of our patients and caregivers with appropriate interventions.

D50 Student Presentation
Can We Identify Palliative Care Needs Among Older Adults in Non-Clinical Settings?

Background: Despite the growth of palliative care (PC) throughout the country, patients with advanced illness who could benefit from this service often do not receive it. PC needs are not currently screened for in community settings such as senior centers, which may be an appropriate setting to identify older adults with PC needs. As such, the purpose of this study was to 1) assess the efficacy of screening for PC needs in a non-clinical setting and 2) identify predictors of PC needs.

Methods: Data were collected through a New York City (NYC) program that integrates medical and social aspects of chronic illnesses into service delivery in senior centers. In this program, needs assessments are conducted with clients to identify unmet needs. Participants were adults aged 60 and above receiving services at five different senior centers in NYC. Data collected included demographics, medical
concomitant co-morbidities, and scores on a newly developed, 3-domain, 22-item PC screening tool.

Results: Of the 173 participants, 48 (27.7%) screened positive on the screening tool. Marital status and education level were significant predictors of a positive screen. Those more likely to screen positive were divorced (46.2% vs 30.9% overall, x²(4)=11.315, p=0.023) and reported less education (68.8% vs 32.8% overall, x²(2)=14.144, p=0.001). Age, gender, race, and living situation were not significant predictors of positive screens. Number of medical co-morbidities approached but did not achieve significance (p=0.054) as a predictor.

Conclusions: The screening tool effectively identified older adults in a non-clinical setting in need of PC. Our results show a substantial level of PC needs in older adults attending community senior centers, which suggests opportunity for PC services development in the outpatient setting to meet the needs of community-dwelling elders. Given the success of identifying PC needs through collaboration with pre-existing programs of the aging services network, there is value in exploring partnership between the aging services network and clinical systems in meeting older adults' palliative care needs.

D51 Student Presentation
Hospital Complications in Elderly Patients Seeking Elective Surgery
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Background: Despite availability of best practice guidelines for preoperative assessment of geriatric surgical patients (American College of Surgeons National Surgical Quality Improvement Program/AGS), many patients are not assessed to determine risks, nor is there clear guidance on decreasing surgical risks for those identified as high-risk. Our team of nurses and physicians from internal medicine, surgery, and anesthesia systematically implemented the guidelines to assess geriatric patients prior to surgery and identify strategies to improve health outcomes.

Methods: We present data from 110 preoperative patients (age ≥65 years) assessed using NSQUIP/AGS Best Practice Guidelines including AHA/ACC risk assessment, cognitive assessment (Mini-Cog), depression screen (PHQ-2), postoperative delirium risk, pulmonary risk (SPORC), alcohol/substance abuse screen (CAGE), functional status (Katz), nutritional risk, fall risk (TUGT), and frailty (Fried Frailty Index). Surgical and hospital complications were comparably by frailty status using chi-square tests and multiple logistic regression stratified by surgery risk.

Results: The cohort had 59 non-frail, 37 pre-frail, and 14 frail patients. Twenty of 67 (30%) patients with intermediate risk surgery had an in-hospital complication compared to 21 of 43 (49%) with high-risk surgery (p = .04). Frail vs non-frail patients with intermediate risk surgery had significantly higher risk of any complication occurring while inpatients (OR = 7.5 95% CI 1.3 - 42). However, frail patients did not have a significantly increased risk compared to non-frail patients undergoing high risk surgery (OR = 1.8 95% CI .18 – 19). Surgical complications were not significantly increased in any subgroup.

Conclusions: Based on our findings, frail older adults have increased risk for surgical or hospital complications when undergoing intermediate risk surgeries. The lack of a similar difference in high-risk surgery may be due to the higher risk of complications inherent within the surgery, for which all frail groups may have similar vulnerability. These data show the need for continued research into identifying the complications to which frail elders are prone with the ultimate goal of new insights into possible interventions to improve outcomes.

D52 Resident Presentation
Risk Factors for Delay to Surgery in Geriatric Hip Fracture Patients
L. Garbarino,1 Y. Heller,1 F. Mota,2 T. Walden,2 N. Fitterman,1 M. Carney,1 A. Goldman,1 1. Northwell Health, Bellersore, NY; 2. Barbara and Donald Zucker School of Medicine at Hofstra/Northwell, Hempstead, NY

Background: Hip fractures are a significant source of morbidity and mortality in the geriatric population, with a 30-day mortality of nearly 10%. The implementation of a Geriatric-Orthopedic Co-Management (GOCo) Program is an attempt to reduce delay to surgery, length of stay and mortality rates in these patients. Guidelines suggest surgical treatment of hip fractures within 24-48 hours. However, patients frequently are delayed beyond this time period, increasing morbidity and mortality. This study aims to identify the factors associated with delay to surgery prior to the implementation of a GOCo program in an effort to most effectively improve morbidity and mortality.

Methods: A retrospective chart review of operatively managed adult hip fracture patients by a fellowship-trained traumatologist between 2011 and 2013 at two tertiary care hospitals was performed. Variables measured were fracture type, ASA status, Charlson Comorbidity Index, admission service, cardiac clearance and associated tests, medical clearance, medical management and INR management. The primary outcome variable, time to surgery, was calculated as the difference between admission time to the Emergency Department and time of first incision.

Results: 324 patients met the inclusion criteria; 113 males and 211 females with a mean age of 80.5 ± 12.7 years. The mean time to surgery in this cohort was 42.9 ± 36.9 hours (range 1.2-336.9). The variables associated with an increased time to surgery were cardiac clearance, INR management, medical management, and preoperative ASA score.

Conclusions: Our results suggest that cardiac clearance, medical clearance, management of preoperative medical conditions, and management of INR are associated with longer times to surgery. Patients requiring cardiac consultation showed increased mean times to surgery and showed further delay with cardiac testing or intervention. These results will allow for a more efficient, directed, and effective implementation of a Geriatric-Orthopedic Co-Management Program by directly addressing factors increasing delay to surgery.

Health Service Variables- Time to Surgery (hrs)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean (SD)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiac Clearance</td>
<td>32.89 (54.03)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>INR Management</td>
<td>40.28 (63.14)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Extended Medical Management</td>
<td>33.42 (67.46)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

D53 Student Presentation
Contact Frequency and Older Adult Participation in Cardiac Rehabilitation
B. J. Cahill,1,2 K. Allsup,3 A. Althouse,2,1 D. Forman,2,1 1. University of Pittsburgh, Emwshot, PA; 2. VA Pittsburgh Healthcare System, Pittsburgh, PA

Background: While site-based cardiac rehabilitation (CR) provides unambiguous benefits to older adults (OA) with cardiovascular disease (CVD), few eligible candidates participate. New CR models are being developed in efforts to make CR more accessible and practical for an OA population. However, many of the new CR models entail less direct clinician contact frequency (CF). Efficacy of lower CF models of CR remains particularly uncertain for OA CVD patients.

The objective of this study is to compare outcomes among OA who completed CR at different CF. We hypothesized that a higher CF CR would correspond to greater improvement in outcomes.

Methods: Retrospective analysis of outcomes of patients aged ≥60 years who participated in on-site CR. Patient cohorts were...
delineated by frequency of on-site training sessions during the 12 weeks following initial evaluation. High CF was defined as >18 sessions and low CF was defined as 9-18 sessions. Outcomes included physical function, measured as gait speed, and self-confidence, measured as a cardiac self-efficacy (CSE) score.

**Results:** 64 patients were studied who met the requirements for the high CF cohort (median age 67.0, range 60.0-86.0) or low CF cohort (median age 69.0, range 60.0-92.0) and completed a final evaluation. The cohorts were predominantly male, as only two female participants met the inclusion criteria. The table shows differences between the high and low CF cohorts in gait speed and CSE. Gait speed improved significantly only in the high CF cohort, but the difference between groups post-CR was not significant. Both cohorts demonstrated marked improvements in CSE scores, with no significant difference between groups.

**Conclusions:** Among a predominantly male population, high and low CF cohorts both benefited from CR with indices suggesting improvements in physical function and self-confidence. These data bolster rationale for CR models with lower CF for OA with CVD. Nonetheless, more study is needed for older women and men CVD patients to evaluate each new model of CR.

**Table: Gate Speed (GS) and Cardiac Self Efficacy (CSE) Outcomes among High and Low Contact Frequency (CF) Cohorts.**

<table>
<thead>
<tr>
<th>Outcome Cohort</th>
<th>Patients completing final evaluation</th>
<th>Initial Evaluation</th>
<th>Final Evaluation</th>
<th>Change</th>
<th>P-Value (Pre vs. Post)</th>
<th>P-Value (Between Groups)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GS (n=28) Low CF</td>
<td>N=40</td>
<td>1.16±0.24</td>
<td>1.22±0.27</td>
<td>0.06±0.2</td>
<td>0.153</td>
<td>0.000</td>
</tr>
<tr>
<td>GS (n=28) High CF</td>
<td>N=40</td>
<td>1.08±0.29</td>
<td>1.26±0.33</td>
<td>0.18±0.2</td>
<td>0.005</td>
<td>0.000</td>
</tr>
<tr>
<td>CSE (n=28) Low CF</td>
<td>N=23</td>
<td>32.8±11.7</td>
<td>40.3±8.1</td>
<td>7.5±6.4</td>
<td>0.001</td>
<td>0.005</td>
</tr>
<tr>
<td>CSE (n=28) High CF</td>
<td>N=23</td>
<td>29.0±11.4</td>
<td>37.8±9.4</td>
<td>8.8±11.2</td>
<td>0.001</td>
<td>0.005</td>
</tr>
</tbody>
</table>

**D54 Resident Presentation**

**Hypernatremic Dehydration in the Elderly Nursing Home Population**

B. Colligan, J. Y. Lin, D. Hansen. Lake Erie College of Osteopathic Medicine, Erie, PA.

**Background:** Hypernatremia in the geriatric population is a common disorder associated with significant morbidity and mortality. Hypernatremia and dehydration occurring in nursing homes have long been considered indicators of neglect, therefore adequate water must be prescribed and given to these individuals.

**Methods:** This study focused on hypernatremia at the LECOM Senior Living Center, which is a community nursing home. The protocol is as follows:

Dietitian assesses residents for hydration adequacy quarterly or as indicated. Minimum fluid needs will be calculated and documented using current Standards of Practice. Physician orders to limit fluids will take priority over calculated fluid needs. Dietitian may refer calculated needs to physician if restrictions increase risk of dehydration. Dietitian will include resident preference in distribution of fluids. Dietitian will educate resident and family regarding fluid restriction. Nursing will assess for signs and symptoms of dehydration during daily care. Intake will be documented. If inadequate intake (<1200ml/day) and/or signs and symptoms of dehydration are observed, intake and output monitoring will be initiated and incorporated into care plan. Interdisciplinary Team will update care plan until dehydration factors are resolved. Diagnosis, individual preferences, habits, cognitive, and medical status will be considered in all interventions. Physician orders may be written for extra fluids with specific minimum amount included to be encouraged between meals and/or with medication passages. Medications that may worsen dehydration will be reviewed and held if medically appropriate. Laboratory tests may be ordered to assess hydration if intake and symptoms indicate possible dehydration. If results are consistent with dehydration, physician may initiate IV hydration and hospitalization may be suggested.

Data obtained from basic metabolic profiles of selected patients on hydration protocol from February 2016 to September 2016 was compared to prevalence of elderly hypernatremia in the current literature.

**Results:** With institution of the hydration protocol in the LECOM Senior Living Center, the prevalence of hypernatremic patients during the time period collected was 2.2% of the population. These events were limited to three individuals in a population that were at the highest risk.

**Conclusion:** When compared to studies on hypernatremia in the elderly, the prevalence of hypernatremia was lower than the literature.

**D55 Student Presentation**

**Objective Measurement of Behavioral and Psychological Symptoms of Dementia (BPSD) in a Program for All-Inclusive Care for the Elderly (PACE)**

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**Background:** Behavioral and psychological symptoms of dementia (BPSD) include depression, agitation, apathy, anxiety, aggression, and psychosis, and are associated with increased patient and caregiver distress. Antipsychotic medications (APM) have a boxed warning for increased risk of death in patients with dementia. However, inconsistency in clinical guidelines and lack of alternatives has led to their widespread use for BPSD. The objective of this study was to develop an initiative to reduce APM usage in patients with dementia by assessing BPSD and caregiver distress.

**Methods:** This quality initiative utilized the Neuropsychiatric Inventory Questionnaire (NPI-Q), a validated tool that measures BPSD severity and caregiver distress, to establish a baseline and assess change in BPSD over time. A team consisting of a social worker, occupational therapist, physical therapist, clinical pharmacist, nurse practitioner, and physician reviewed institutional policies and procedures, administered NPI-Q, and assessed patients being considered for APM taper. Inclusion criteria: >65 years of age, dementia diagnosis, currently prescribed APM. Exclusion criteria: no consistent caregiver, change in APM therapy within past 4 weeks, taking APM for less than 4 months.

**Results:** Chart review identified 43 patients with dementia to be screened with the NPI-Q and reviews were completed for 18 patients. Demographics: average age 86 years (71-102); 83% female; 44% resided in nursing facility, 33% assisted living, 23% home. Dementia diagnosis: mixed 67%, vascular 22%, other 11%; and APM currently prescribed APM. Exclusion criteria: no consistent caregiver, change in APM therapy within past 4 weeks, taking APM for less than 4 months.

**Conclusions:** An interprofessional approach should be utilized to evaluate APM therapy in patients with BPSD in a PACE setting. The initiative was approved by the quality improvement committee and will be incorporated into the 2018 institutional quality improvement measures. We anticipate that APMs can be routinely assessed and potentially tapered in patients with dementia.
social resources, but few studies have characterized primary care provider (PCP) identified resource needs in geriatric care within the health care safety-net. PCPs may overlook resource needs in clinic visits and lack systematic ways of referring patients to existing resources. We surveyed PCPs in a large municipal safety-net health care system: LA County Department of Health Services (DHS) and affiliated clinics. We asked PCPs to characterize their geriatric patient needs, and used these data to create a resource guide within our secure online clinical referral portal, eConsult.

Methods: PCPs at over 30 DHS clinics, hospitals or affiliates were asked to participate in a voluntary, anonymous online survey during a four-week period. The thirteen-question survey assessed specific clinical, social and community resource needs on a five-point Likert scale, from no need (1) to significant need (5). Averages were calculated for each item.

Results: The response rate across PCPs was 3.0% (269 of 8,869 non-validated email addresses). For a subgroup at Olive View-UCLA (OV), the response rate was 41% (41 of 100 validated email addresses). Both the DHS and OV subgroups indicated moderate or significant need for all clinical, social, and community resources – regardless of practice specialty or years in practice. Areas of most need: support to address advanced care planning and polypharmacy, and access to home-based care. Areas of least need: assistance with immigration, conservatorship and elder abuse. We used these data to develop a novel online toolkit – The Geriatrics Community Resource Guide – accessible to PCPs via eConsult.

Conclusions: Our survey suggests that diverse community resources are needed to improve the care of older patients in the large LA County health care safety-net. Improving awareness of and linkage to existing community resources may help PCPs address geriatric conditions and social determinants of health. The Geriatrics Community Resource Guide we created in eConsult is a systematic way for providers to access and link vulnerable geriatric patients to appropriate community services.

D57 Resident Presentation
Understanding medication discrepancies identified in a successful nurse-driven transitions of care program
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Background: Implemented of the Coordinated Transitions of Care Program (C-TraC) at VA Boston resulted in a 54% reduction in readmission risk. Detailed medication reconciliation (MR) by a nurse case manager (NCM) is a key program component. We assessed the quality of the MR and the nature and origin of the discrepancies.

Methods: Veterans admitted to the medical service were eligible if they were ≥ 65, had a history of CHF and/or COPD, were going to be discharged directly home, and one additional risk factor for readmission; the intensive phone-based intervention by the NCM included detailed MR 48-72 hours post-discharge and weekly calls for up to 30 days. Medication discrepancies were documented by the nurse at the time of the call in the medical record. A pharmacist reviewed the patient records to systematically detect medication discrepancies and their cause.

Results: Between March 1, 2016 and May 1, 2017, 273 patients with a mean age of 75 were enrolled and met entry criteria. The C-TraC nurse was able to perform a complete MR in 66% of veterans (n=181). The most common reasons for not completing MR were that it had been performed by another provider, patient refusal, and cognitive or hearing impairment. The nurse identified and rectified 150 discrepancies in 34.5% of patients (n=66). The NCM identified lack of time, inaccurate discharge medication lists, competing patient needs, and cognitive and hearing impairment as obstacles to MR. The pharmacist confirmed the 150 discrepancies and identified an additional 31. 83% of the discrepancies had their origin in the inpatient stay; due to improper inpatient MR in 51% and or patient factors in 25%. One-third of medication discrepancies identified had substantial potential for an adverse event; 75% of instances involved an incorrect dose or confusion about dosing and in 25% the patient did not receive a planned medication. 69 medications were potentially inappropriate based on renal function or the 2015 Beer’s Criteria Update.

Conclusions: Detailed phone-based post discharge MR is a core feature of this successful nurse-driven program. Integration of a clinical pharmacist who can do inpatient MR would likely enhance the positive outcomes.

D58 Resident Presentation
Reduction of Off-Label Use of Antipsychotics in a Long Term Care Facility
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Background: The Centers for Medicaid and Medicare Services (CMS) sets a goal for nursing homes that residents should not receive an antipsychotic medication unless absolutely necessary. One oft-cited number is that 15.5% of long-term nursing home residents are prescribed antipsychotics nationally. Our aim was to reduce antipsychotic use in a nursing home that consists of almost entirely Medicaid and dual-eligible residents, many of whom have underlying mental health diagnoses.

Methods: This project at a nursing facility in Fort Worth, TX. Chart review of all patients of one of the facility’s providers currently prescribed antipsychotic medication as of November 2017 was conducted. Charts were reviewed for medication prescribed, dosage, indication cited, and any gradual dose reduction attempts. If patients were found to have a prescription for an indication of Schizophrenia, Tourette syndrome, or Huntington’s Disease, they were excluded from the sample. A monthly, protocol-based review of all patients on antipsychotics was then implemented to identify candidates for dose reduction or discontinuation of antipsychotic medications. A first-pass root cause analysis for possible explanations of antipsychotic use was conducted.

Results: In our sample, 26.7% of residents (n=24/90) of one provider were currently prescribed an antipsychotic medication for an off-label indication. This was slightly lower than the overall rate for the facility of 30.86% (encompassing both short and long stay residents). However, both our sample and overall facility rate were significantly higher than state and federal rates for both short (3.0% and 2.2%, respectively) and long stayresidents (16.4% and 15.5%), demonstrating room for improvement. Root cause analysis revealed that many of the index patients had been transferred to this facility because of behavior issues at other facilities, some of the support staff lacked behavior redirection training, there was a lack of facility-wide behavior management protocols, and there were infrequent reassessments of patients on antipsychotics started at other facilities.

Conclusions: Our high-risk vulnerable nursing home population was prescribed antipsychotics at a rate greater than national norms. Underlying factors were identified to guide rapid cycle improvement plans.
D59 Student Presentation
Implementation of Geographic Information Systems to Improve Travel Efficiency in Home Based Primary Care


Background: Geographical Information System (GIS) mapping has been integrated in other industries for travel efficiency, but has been less utilized or studied in delivery of home care medicine. This study explores whether GIS utilization by a VA Home-Based Primary Care (HBPC) program can improve provider efficiency.

Methods: We compared clinical travel of 11 HBPC nurse practitioners (NPs) from before and after GIS-supported reorganization of patient assignments (March 2016 and March 2017). NPs were compared in 4 groups: Group 1 had patient assignment changes to improve clustering of visits (n=2), Group 2 had patient assignment changes for territory expansion (n=2), Group 3 was a comparison group without patient assignment changes (n=4), Group 4 was a comparison group with patient assignment changes but without expected changes of provider efficiency (n=3). A travel efficiency dashboard was pilot-tested that included 5 measures: caseloads, visits, miles, miles per caseload, and miles per visit.

Results: Changes in miles per caseload among the groups were noted. Group 1 decreased from 54.59 to 31.25, Group 2 increased from 13.15 to 34.83, Group 3 decreased from 20.23 to 17.65, and Group 4 increased from 33.37 to 36.47.

Conclusion: Results are suggestive that integration of GIS in HBPC can be helpful in improving travel efficiency. Further study of HBPC GIS travel efficiency dashboard data is planned with additional HBPC programs.

D60 Student Presentation
Frailty and Depression in Older Adults: A Cross Sectional Study


Frailty and depression present pervasive and burdensome decrements in health amongst older adults. Frailty reliably predicts poor health outcomes, and the Fried frailty phenotype has been shown to be associated with depression. The previously validated upper-extremity frailty (UEF) test, offers a robust objective clinical screening tool for diagnosing physical frailty as an alternative to the Fried phenotype. We investigated the relationship between physical frailty (UEF) and self-reported depression.

We performed the UEF and administered the Center for Epidemiologic Studies Depression Scale (CES-D) in the NIH-funded Arizona Frailty Cohort of community-dwelling adults aged ≥65 years. UEF involved 20 seconds of rapid elbow flexion while elbow angle was measured via two motion sensors applied to the wrist and upper-arm of the dominant arm. UEF continuous scores, based on slowness, weakness, flexibility, and exhaustion within the upper-extremity function, were generated (range: 0.0-1.0, <0.3: non-frail, 0.3-0.6: pre-frail, and >0.6: frail). A cut-off score of ≥16 (range: 0-60) from CES-D was used to identify depression as a dichotomous variable. Using the depression phenotype as the independent variable and UEF score as the dependent variable, a logistic regression was performed and adjusted for gender. Age was accounted for in the UEF scoring scale so it was not used in the analysis.

One hundred and two participants (mean age: 78.4±8.3, range: 65-92 years, 78% female) were assessed, among which 50 (49%, mean age: 78.8±6.7) were non-frail, and 52 were pre-frail/frail (51%, mean age: 84.5±8.2). Thirteen participants were screened as depressed (12.7%, mean age: 82.9±6.7). Of those, 4 were non-frail (31%, mean age: 78.8±7.0) and 9 were pre-frail/frail (69%, mean age: 84.8±6.0). UEF score was significantly different between non-depressed (mean: 0.34±0.26) and depressed groups (mean: 0.51±0.32, p<0.04).

UEF frailty score is significantly different in non-depressed and depressed groups thus UEF has potential to highlight the role of frailty in predicting depression. Frailty can help inform clinical screening practices, management, and interventions more effectively than age alone. Pre-frail and frail older adults are at increased risk of depression, and thus should be routinely screened for depression in primary care.

D61 Student Presentation
Why is Grandpa in the Emergency Department Again?


Background: The aging population is growing rapidly and placing an increased burden on the healthcare system, particularly Emergency Departments (ED). Goal of study: describe the characteristics of frequent flyers to the ED from the Geriatric Evaluation and Management (GEM) Clinic in the South Texas Veteran Health Care System and identify areas that can be improved to prevent unnecessary ED visits.

Methods: Retrospective chart review of GEM clinic patients who visited the ED between April 2016 – April 2017 using the ED log. Specifically looking at diagnosis (categorized into 10 body system groups), emergency acuity index (1-5 scale, 1 being the most urgent/dying and 5 being the least urgent), disposition, assignment of skilled home health services, and use of telecare 48 hours prior. Outcomes examined using Pearson’s Chi-Square test for discrete variable and analysis of variance for continuous variable following Tukey-Cramer method for multiple comparisons.

Results: A total of 1020 total ED encounters corresponding to 375 patients were identified. Among those 131 patients returned to the ED ≥ 3 (frequent flyers) making up 610 ED encounters (59.8% of total). Most common reason for ED visit: musculoskeletal pain (16.5%), respiratory (13.8%), cardiovascular (13.8%). Among non-urgent visits (emergency acuity index rating of 4 or 5) musculoskeletal pain was the most common reason (37.3%). Telecare use (48 hours prior) preceded < 1.0% of ED encounters. Skilled home health services did not significantly reduce likelihood of returning to the ED within 30 days (p-value= 0.1627). Hospital admissions resulted from 32.5% of ED encounters, the most common condition for admission was cardiovascular related (26%).

Conclusion: The leading cause of non-emergent ED visits was musculoskeletal pain, most of which did not lead to hospital admission. The use of the after-hours nursing advice line Telecare was rarely used prior to ED visits. Future interventions geared towards providing non-ED options for care, such as creating new opportunities for same day appointments and increasing usage of telecare, could decrease preventable visits to the ED.
D62 Resident Presentation
Implementing Falls Screening for Older Adults in Resident Physician Continuity Clinic


Introduction:
By 2050, the number of older US adults will double, increasing the importance of fall prevention. However, fall prevention education receives little attention in residency training. This resident-led project aimed to close the educational gap, improve workflow, and provide resources to support falls screening and prevention in resident clinic practice.

Methods:
To engage residents, build knowledge and implement practice, two 20-minute multimodal educational sessions were created: 1) A Flipped Classroom Session with a video depicting a real life patient fall scenario and aftermath, a competitive team exercise “Where’s the Fall Risk?”, and review of AGS Beers Criteria with discussion of MKSAP questions regarding polypharmacy and 2) Small Group Pre-Clinic Conference reviewing a CDC case study and resources (www.cdc.gov/steadi/index.html), physical exam maneuvers, and a home safety checklist for patients from Kaiser Permanente (KP). Faculty and resident feedback were solicited.

Results:
The first session occurred in the classroom, starting with a 5-minute KP video of an older couple whose travel plans were upended by a fall and how they learned to modify their home, wardrobe and lifestyle. In an interactive competition, trainee teams competed to identify common fall hazards (e.g. shoes, stairs, cords) in a sketch of a typical home. Next, Beers Criteria and related quiz questions were discussed to apply knowledge assessment to practice. The use of games, multimedia and test questions engaged residents 100% and was a highlight of their classroom experience. The second session occurred in the Resident Clinic and introduced the CDC STEADI program (case study, pocket guide) and KP patient resources, with faculty and residents discussing how to integrate screening and prevention into the clinic visit. Both trainees and faculty found this session helped cement workflows for fall risk assessment and intervention.

Conclusion:
Fall prevention is a national and regional priority and should also be one for residency curricula. This QI project developed an educational model that engaged learners with games, multimedia and interactive exercises, followed by faculty-facilitated implementation in the clinic setting using CDC and local resources. These short educational learning modules can be easily adapted to other clinical settings or learners.

D63 Resident Presentation
Appropriate Prescribing of Sulfamethoxazole/Trimethoprim in Geriatric Patients


Background: Sulfamethoxazole/Trimethoprim (SMZ/TMP) is an antibiotic frequently prescribed for respiratory, skin and soft tissue (SSTI), and urinary tract infections (UTI) due to ease of dosing and broad bacterial coverage. Although adverse renal effects have been reported, it remains widely prescribed in older adults. Most decreases in renal function are transient with resolution following discontinuation. Kidney injury may persist in a small portion of patients. Studies have also shown an increase in hospitalizations when SMZ/TMP is prescribed to patients on ACEi/ARBs and beta-blockers.

Methods: We conducted a quality improvement project to assess the appropriateness of current use of SMZ/TMP for older adults at the South Texas Veterans Health Care System. Inpatient and outpatient records from February 2017-August 2017 were pulled. Inclusion criteria were age ≥65 and ≥ 3 days of therapy. Exclusion criteria included initiation prior to 2/2017, prescriptions from non-VA providers, and duplicate orders. To control for confounders, variables such as pertinent concomitant medications, pre-existing health conditions, basic metabolic panel (BMP) and antibiotic indication were collected.

Results: A total of 115 outpatient and 49 inpatient prescriptions for SMZ/TMP were identified. Forty-eight were excluded. Of the 116 records included, 32 were initiated or completed inpatient and 84 were outpatient orders. Mean age was 73 years, 94% male, and 65% white/19% Hispanic. The top indications for SMZ/TMP were SSTI (37%), UTI (36%) and prophylaxis (15%). Only half of the patients had follow-up BMPs collected within 30 days of SMZ/TMP initiation. Renal function was not affected in 66% of patients. Three patients had a significant increase in SCr (≥ 0.5) and K+ rose by ≥ 0.5 in 22 patients. Renal function returned to baseline for all three patients. No patients were hospitalizations related to use of SMZ/TMP.

Conclusion: Although SMZ/TMP was found to increase SCr in a small number of the patients reviewed, persistent kidney injury did not affect the patient cohort. This was despite the presence of concomitant chronic diseases and medications known to affect kidney function. Based on the initial results of the study, we concluded that a larger sample would be needed to determine true effects.

D64 Resident Presentation
Systematic Review of Patient Decision Aids for Chronic Musculoskeletal Pain

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Background: Chronic musculoskeletal (MSK) pain is common and increases in prevalence with age. Most treatment decisions for chronic MSK pain are preference-sensitive. Patient decision aids (PDAs) are tools to help patients participate in their healthcare decisions. We performed a systematic review of PDAs for adults deciding about treatment for chronic MSK pain.

Methods: In March 2017, we searched Ovid MEDLINE, Ovid MEDLINE In-Process and Epub Ahead of Print, Ovid Embase, Ovid PsycINFO, EBSCO CINAHL, Cochrane CENTRAL, clinicaltrials.gov, and the International Clinical Trials Registry Platform. We included randomized controlled trials of PDAs in adults with chronic MSK pain. We evaluated outcomes related to decision making, pain, functional status, and surgery utilization.

Results: We reviewed 629 abstracts, and 12 met our inclusion criteria. 10 evaluated patients with knee and/or hip osteoarthritis (OA), and two with back pain. In 11 studies, patients were deciding between surgical and medical management using a video PDA. The effects of the PDAs on decision-related outcomes were mixed. Characteristics of included studies and selected outcomes are reported in the table.

Conclusions: PDAs may improve the decision making process and decision quality for patients deciding between operative and medical management of hip/knee OA and chronic back pain. Additional research is needed to evaluate the effect of PDAs on pain and function. Especially for older adults with multimorbidity and polypharmacy, who are often not surgical candidates, further research should develop PDAs for non-surgical treatment of chronic MSK pain.
Conclusion: Our intervention resulted in the inclusion of more less-injured patients (ISS 0-9), but did not affect mortality. It artificially decreased the average LOS. We therefore concluded that “limited” TTA for this indication over-utilizes resources without benefitting outcomes. We have since invested in a geriatric-specific trauma activation system, which helps expedite evaluation and discharge, while conserving resources for other indications.

D66 Student Presentation
Medication prescription in home visits by physicians
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Background: Physician-conducted home visits are increasingly considered crucial in providing medical needs for older adults with disabilities living in the community. Although such patients are prone to polypharmacy, a major risk factor for adverse drug events, there is a general lack of evidence regarding medication prescription patterns in home care medicine. We aimed to evaluate the occurrence of polypharmacy and assess its associated factors in home care medicine.

Methods: We retrospectively reviewed the medical charts of 82 older adults who were enrolled in home healthcare services during 2010 and 2016 at three clinics in Tokyo, which specialize in providing physician home visits to older adults who need them due to chronic illnesses including frailty and dementia. We collected data on the prescribed medications at the first home visit and at following visits in addition to demographics and medical information. Polypharmacy was defined as prescription of 5 or more medications.

Results: The mean age was 84.6 years (SD = 7.6) and 35.4% of patients were men. The mean number of prescribed medications was 4.4 (SD = 3.2) and polypharmacy was observed in 46.3% at the first home visit. Polypharmacy was negatively associated with the diagnosis of dementia after adjusted for age, sex and clinic. Those with polypharmacy were more likely to be young compared with those who received the same or decreased number of medications (82.7 vs. 85.9 years.)

Conclusions: Our results indicate that physicians try to avoid polypharmacy in patients with dementia or higher age and order home visits by pharmacists for those with polypharmacy, but polypharmacy is still prevalent. Further studies are required to guide appropriate strategy to prevent and reduce polypharmacy in home care medicine.

D67 Student Presentation
Successful Implementation of Gait Speed Assessment in a Cardiology Clinic
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Background: Gait speed is a useful screening tool for frailty that some consider the “sixth vital sign”, yet it remains underutilized clinically. We sought to implement routine gait speed assessment in a cardiology clinic and examine clinical outcomes for older veterans.

Methods: In January 2015, we introduced measurement of 4-meter gait speed for all patients >70 seen at the Boston VA
Preventive Cardiology clinic, held one morning a week. Gait speed was measured by the clinician while walking from the exam room to the waiting room and the clinic note template was updated to include gait speed. Gait speed >5 seconds (<0.8m/s) was considered a positive screen for frailty. In July 2017, charts were manually reviewed by ARO and JTL to extract data on gait speed, balance exercises, smoking status, falls, and walking aid use. Information on urgent care, ED visits, hospitalizations, geriatrics referrals, and mortality were obtained.

Results: Over 30 months, 120 unique patients aged ≥70 years had 518 visits. Two patients were excluded due to spinal cord injury. Gait speed was assessed at least once in 105 (89%) patients, and 51 (49%) were identified as slow walkers. The percentage of eligible patients who had gait speed assessed on a given clinic day increased from 41% to 59% from the first to last six months of the study and did not slow clinic flow. Slow walkers tended to be older (mean age 79 vs 76 p=0.006). Rates of smoking, hypertension, diabetes, hyperlipidemia, coronary artery disease, atrial fibrillation, heart failure, and arthritis were similar in both groups. Slow walkers were more likely to report falls (15% vs 6%; p-value=0.001). Slow walkers were also more likely to be seen at an urgent care or emergency room (66% vs 49%; p=0.001).

Conclusion: Gait speed assessment can be successfully implemented as a vital sign in a specialty clinic. While additional study is needed, subjects with gait speed <0.8 m/s should be closely followed for falls and other adverse outcomes.

D68 Student Presentation
Hearing Loss in Emergency Departments: A Pilot Study
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Background: Emergency departments (EDs) are often noisy environments where communication is challenging, especially for older adults with hearing loss. Hearing Assistance Devices (HADs) can be helpful for hearing in noisy environments, but acceptability and effectiveness have not been explored for older patients in the ED setting.

Methods: We conducted a 2-month pilot study at NYU Langone ED. We tested procedures for screening patients ≥60 years for hearing loss, and for those with positive screens, we provided a HAD. We examined whether the HAD was used, how well the patient felt s/he was helped, and whether s/he was prepared for discharge. Eligible patients had an Emergency Severity Index (ESI) score of 4 or 5 indicating a likelihood of home discharge. Consented patients received the Hearing Handicap Inventory for the Elderly Screen (HHIE-S) and those who scored ≥10 were offered a HAD (PocketTalker). Prior to discharge, HAD recipients completed a single item HAD use question indicating frequency of use (0=None of the time to 4=all of the time-Likert scale), the 6-item Hearing and Understanding Questionnaire (HUQ) (0=worst to 10=best) and the 3-item Care Transitions Measure (CTM-3) of communicating and understanding (1=strongly disagree to 4=strongly agree).

Results: Out of 62 eligible patients, 21 completed the HHIE-S, 20 completed the HUQ and 19 were discharged home. The average HHIE-S score was 10.8 (range: 0-26); average visit length was 2.4 hours. Nine participants scored ≥10 on the HHIE-S (4 out of 5 men versus 5 of 16 women; p=0.06) with no association between HHIE-S and age. One third of HHIE-S-positive patients left before follow-up or transitioned to higher acuity. Five of six who received HADs used the device during at least part of the visit. All (n=6) reported scores of 8-10 on all six HUQ items and high confidence in their preparedness for self-care after discharge.

Conclusions: Screening patients 60 years and older for self-reported hearing loss is feasible in the ED setting. Most patients with self-reported hearing loss will accept HADs and report good understanding and preparation for discharge. These findings support the feasibility and need for larger trials to assess the benefit of hearing screening and HAD use in ED settings.

D69 Student Presentation
Quality improvement of resident discharge documentation
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Introduction: Unplanned hospital readmission for Medicare patients continues to be a significant economic burden upwards of $17 billion annually.1 A 10-year longitudinal study has previously shown that hospital readmissions among Medicare seniors were related to level of preadmission functional impairment.2 Functional impairment assessment in the elderly population is seldom prioritized or documented at the time of discharge. Further, there is no system in place to compare pre and post hospitalization functional status. Our study aim is to assess improvement in geriatric documentation content through the updated 2017 Intern/Resident Handbook which outline ideal components of a geriatric discharge summary.

Methods: Through literature review we identified several components which define an ideal discharge summary.3-5 Patients were identified as eligible if the Geriatrics service was consulted and excluded if they expired during their hospital stay. Pre-intervention discharge summaries were analyzed from March-May 2017. No IRB approval was required.

Results: Of 74 patients that were originally followed on the geriatric service, sixty-seven patients were included in the pre-intervention analysis. Of the 67 discharge summaries, 29 (43.2%) documented mental status and 26 (38.8%) documented baseline functional level. Only 38/67 (56.7%) of discharge summaries documented disposition. Three of 67 (4.4%) discharge summaries provided contact information for outpatient providers. Physical exam was documented in 41/67 (61.1%) of discharge summaries. Notably, 60/67 (89.5%) included inpatient medication changes. Of note, 31/67 (46.2%) summaries clearly documented the important decision maker for the patient during hospitalization. Geriatrics was consulted 21/67 (31.3%) of the time for goals of care discussions. These discussions were documented by the geriatric service in 19/21 of these cases and 17/21 were documented by the residents in the discharge summaries. A total of 48/67 (71.6%) patients had resuscitation status documented. Of these 48 patients, 39 (81.2%) writers included the resuscitation status in the discharge summary.

Conclusions: This quality improvement project adds to growing evidence regarding improved documentation leading to fewer patient complications and maintenance of patient’s goals of care. This evidence from the data supports a need for an intervention for resident authors aimed at improving geriatric discharge summaries.

D70 Student Presentation
Hospitalist Perceptions of Fall Prevention: a Comparison of Two Healthcare Systems
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Background: Falls are the leading cause of injury among adults 65 and older in the U.S., with a mean of 1.4 falls per inpatient beds annually. There is a dearth of literature regarding the physician’s perceived role in hospital fall prevention. We aimed to assess hospitalists’ perceptions of inpatient fall prevention and if it differed in two healthcare systems.

Methods: Hospitalists were given surveys in a primarily 1-5 Likert scale format regarding their attitudes about fall prevention.
The surveys were completed voluntarily at the Veterans Affairs (VA) medical center as well as a 5-hospital community-based program (CBS). Ten of the VA hospitalists filled out a paper survey during their monthly meeting. All other responders filled out an emailed electronic survey via SurveyMonkey.

**Results:** 42 total responses were collected: 19 VA and 23 CBS hospitalists between April and May, 2017. For VA responders, the average age was 36.6, 47.1% female, with an average of 6.1 years worked as a hospitalist. For CBS responders, the average age was 41.8, 39.1% female, with an average of 8.7 years worked as a hospitalist. Hospitalists in both groups agreed that all admitted patients should be assessed for fall risk assessments (FRA) (mean 4.4 VA, 3.9 CBS).

Both groups disagreed that hospitalists are responsible for conducting FRAs (mean 2.3 VA, 2.4 CBS), and both agreed that other medical staff are responsible for conducting them (mean 4.3 VA, 3.9 CBS). At the VA, 79.0% of responders reported nursing, 58.0% physical therapy, and 42.1% occupational therapy as responsible for FRAs. In contrast, 95.7% of the CBS responders reported nursing, 100% physical therapists, and 82.6% occupational therapists as responsible for FRAs. Statistically significant results between these groups include agreement that hospitalists are responsible for conducting medication reviews for side effects related to falls (P<.03) and that non-physician medical staff are responsible for notifying the hospitalist about patients who are at high risk of falls (P<.05).

**Conclusions:** Hospitalists agree that patients should have fall risk assessments but do not necessarily view themselves as responsible for conducting them. Since the hospitalist role on inpatient multidisciplinary teams may be unclear, hospitalists likely view their roles differently depending on the culture of their institution.

**D71 Student Presentation**

A Cross-sectional Survey of Older Adults’ Tobacco and Electronic Nicotine Delivery System Use and Willingness to Use Tobacco Cessation Methods

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**Background:** Combustible tobacco use persists among older adults. This study sought to understand current tobacco and electronic nicotine delivery system (ENDS) product use and tobacco cessation attempts among older adults with a history of tobacco use.

**Methods:** Cross-sectional web-based survey conducted in 2016. Community-based panel of adults in the U.S. Convenience sample of 233 participants aged 65 and older who have used combustible tobacco in the past 30 days. Measurements included frequency of tobacco product and ENDS use, quit attempts, and willingness to use a variety of tobacco quit methods, including evidence-based quit medications, counseling support, complementary and alternative methods, ENDS or smokeless tobacco, and quitting on their own, including cutting back gradually.

**Results:** Of the 233 participants, 151 (65%) participants had used combustible tobacco-only, 54 (23%) had used tobacco products and ENDS (dual users), and 28 (12%) had only used ENDS in the past 30 days. On average, tobacco-only and dual users reported daily cigarette use in the past month. Of the 151 tobacco-only users, 121 (80%) had previously tried to quit, while 50 of the 54 (93%) dual users had a previous quit attempt. When comparing cessation methods, all participants’ willingness to try quitting on their own was significantly higher than for any of the evidence-based quit medications (p<0.001) or counseling support (p=0.001). Dual users were significantly more likely to try ENDS or smokeless tobacco than current tobacco-only users (p<0.001).

**Conclusions:** ENDS use was relatively common in our group of older adults with a history of tobacco use. Preferred quit methods differed between combustible tobacco-only and dual users. These results have implications for counseling, pharmacotherapy and self-help programs among older tobacco users.

**D72 Student Presentation**

Processes and Barriers Related to Medication Reconciliation in a Rural West Virginia Primary Care Clinic


**Adverse drug events following hospital discharge remains the most common post-discharge complication.** Timely follow-up with patients’ primary care physician is essential. Most attempts to address medication reconciliation take place in acute care centers while few focus on interventions in primary care, and virtually none take place in rural settings where burden is significant and resources are scarce.

Older adults with complex chronic care conditions are at higher risk for an adverse drug event following a hospital discharge. The purpose of this study was to assess the feasibility of implementing the Agency for Healthcare Research and Quality-endorsed Medications and Clinical Handoffs (MATCH) toolkit in a rural primary care center.

Our study population is all patients from a rural primary care clinic who were discharged from a local hospital within an 18-month period during 2015-2016. We assessed the demographic characteristics of these patients including age, diagnostic codes, payer status, and number of active medications. Once identified, we used this information to inform the MATCH process in the clinic. This process included assessing data quality, identifying a clinic leadership team, developing an audit tool, conducting chart and process audits, and collectively identifying solutions. Using the audit tool, we conducted pre- and post-assessments following implementation of the Med Manage tool created with the leadership team to improve medication reconciliation accuracy.

Examining the demographics of our study population, we find: 57% of patients are female, 50% are aged 65 and older, 66% are Medicare or Medicaid members, with an average of three diagnoses (range 1-15), and an average of 16 active medications (range 1-54). Using these criteria to identify high risk patients, we conducted 32 chart audits, finding 40% of patients with incomplete medication lists.

A significant number of medications were obtained using the Med Manage tool that were not previously reported to the intake nurse. As needed medications were the most commonly non-reported types. Omission of these medications may cause polypharmacy and adverse outcomes for the patients. Providers need information regarding all medications taken to provide adequate care for the patient.

**D73 Resident Presentation**

Improving Outcomes Using an Interprofessional Approach to Detect and Manage Delirium in Older Adults

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**Background:** Delirium, one of the most common complications in acutely hospitalized older adults, leads to increased costs, morbidity and mortality. Despite 1889 cases of delirium at Stony Brook University Hospital (SBUH) in the year 2016, a standardized protocol did not exist. Our interprofessional team designed a multi-step intervention to aid in detection and management of delirium in hospitalized older adults with the goal of improving patient outcomes.

**Methods:** This quality improvement study was implemented on four acute medical telemetry units at SBUH and included admitted patients ≥ 65 years old. Along with educational didactics, the intervention included four steps: Nursing Delirium Screening Scale (NDSS) built into the EHR; “Comfort Cart” filled with nonpharmacological strategies used by nursing assistants; EHR physician order set to standardize...
Urinary Tract Infection (SUTI) would be diagnosed and unnecessary treatment of asymptomatic bacteriuria in decreasing use of UA's in LTCF. With criteria in place, improperly diagnosed UTI's decreased in number. There was a decrease in the overall number of UA's ordered related to census, as well as percentage of UA's ordered and percentage of UA's collected by 38% and UTIs diagnosed as related to census. Implementation of criteria decreased the overall number of UA's collected by 38% and UTIs diagnosed as related to census. There was a significant difference pre- and post-intervention in the number of UA's collected compared to SLC Census: There was significant difference between pre- and post-numbers. T = 5.628, P = 0.002.

Conclusions: The significant increase in delirium cases could be an indicator of improved screening of this underrecognized clinical syndrome. The significant reduction in physical restraints has immense implications for improved patient quality and safety. Limited by current sample size, we anticipate a continued downward trend in use of SCAs, falls and LOS. An interprofessional approach to delirium screening and management can potentially minimize the associated negative patient outcomes.

Reference:

D74 Resident Presentation
LECOM Senior Living Center Urinalysis Protocol Study using the new McGeer Criteria
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Background: LECOM Health services opened a new 138 bed Senior Living Center (SLC) in June of 2015. In December 2015, McGeer Criteria for Long Term Care Facilities (LTCF) was implemented for diagnostic testing of SLC residents suspicious of urinary tract infection.

Methods: A total of 275 Urinalysis (UA) specimens were used in the study. All UA's for the study were collected from SLC residents. All UA's go through the same lab making collection of data in the study. All UA's for the study were collected from SLC residents. Sensitivity (C&S). Abnormal C&S is defined as growth of at least 100,000 bacteria of no more than two species of microorganisms. The prevalence of abnormalities in culture and sensitivity were calculated. Urinalysis was performed and the following were significant.

Pre- vs post-McGeer criteria: Percent of UA's Collected compared to SLC Census: There was significant difference between pre- and post-numbers. T = 5.628, P = 0.002.

Conclusions: Statistical data shows a difference in pre/post McGeer criteria for the number of UA's ordered related to census, as well as percentage of UTIs diagnosed as related to census. Implementation of criteria decreased the overall number of UA's collected by 38% and UTIs diagnosed decreased by 40%. Other analyses performed showed no statistical significance, and verified consistency in UA to C&S process used.

D75 Student Presentation
Palliative Care for Older Adults in a Community-Based Serious-Illness Care Program: The REACH Evaluation
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Background. Community-based serious-illness care (CBSIC) is an innovative model to provide coordinated home-based healthcare for older patients with multiple chronic conditions and functional limitations. Although this approach is growing, it is unclear how well these programs address palliative care needs. The aim of this study is to describe the frequency and outcomes of palliative care for older adults in a CBSIC program.

Methods. We conducted chart reviews of patients enrolled in the Reaching out to Enhance the Health of Adults in their Communities and Homes (REACH) Program in North Carolina to determine the severity of illness, identify palliative care needs—including pain and symptom management, and communication and decision-making domain—and report the frequency of services provided for both survivors and decedents.

Results. We included all REACH patients between August 2014 and March 2016 (n=159). Mean length of program engagement was 261.1 days (s.d. 180.6), and 43 (27%) died during follow-up vs. 56 (35%) in the control group. Mean age was 70 years (range 21-99), 56% female, 33% African-American, with a mean Charlson Comorbidity Index of 3.2. The most common comorbidities were dementia (32%), heart failure (32%), and renal disease (27%). REACH providers most frequently screened patients for psychosocial distress (48%), fatigue (34%), and dyspnea (33%). REACH providers most commonly treated patients for constipation (43%), psychosocial distress (40%), and dyspnea (39%). Compared to survivors, patients who died were more likely to have a primary goal of comfort (42% vs 13%, p<0.01) and advance care planning (35% vs 19%, p=0.04). Seventy-five percent of those who died were enrolled in hospice; five deaths occurred in-hospital (12% of decedents).

Conclusions. Community-based serious-illness care is an innovative clinical model that can provide palliative care to older patients with multiple chronic conditions.

D76 Student Presentation
Comparison of Patients Readmitted vs. Not Readmitted in 30 Days in a Care Transition Program for High Risk Older Adults
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Background: Hospital readmission within 30 days of discharge can be detrimental to the health of older patients and costly. The Safe Transitions for At-risk Patients (STAR) program aims to decrease 30-day readmissions among high-risk patients age 75 and older and combines multiple care transition interventions that have shown some effectiveness in previous research. The purpose of this study was to characterize the population of STAR patients readmitted vs. those not readmitted within 30 days of discharge.

Methods. Data were collected through geriatric evaluations and review of electronic medical records at a 400-bed community teaching hospital on history of present illness, age, gender, living situation prior to admission, marital status, and polypharmacy (nine or more prescribed medications). P-values were calculated using chi-squared tests with a significance level of a=0.05.
Results: Of the 219 patients enrolled in the program 17 moved from the area and 8 died. Of the 194 patients who received the intervention 36 (18.6%) were readmitted and 158 (81.4%) were not admitted within 30 days of discharge. Of the 36 readmitted patients, 11 (31%) were 75-84 while 25 (69%) were 85 and older (p=0.23). 21 (58%) were female and 15 (42%) were male (p=0.23). 13 (36%) were married and 23 (64%) were not (p=0.22). Only four (11%) were living in a skilled nursing facility prior to admission (p=0.09). Upon their first admission, 10 (28%) patients were prescribed nine or more medications (p=0.11). However, upon discharge the number of patients prescribed nine or more medications increased to 21 (58%) (p=0.028).

With a significant p-value of 0.028, a higher proportion of readmitted STAR patients were prescribed nine or more medications at discharge as compared to non-readmitted STAR patients.

Conclusion: Patients prescribed nine or more medications at discharge were readmitted within 30 days at a higher rate than those who were prescribed less than nine at a statistically significant rate. This finding can inform the future focus of the STAR program. Providing these more at-risk patients with added education and support could further reduce readmission rates.

D77 Student Presentation
Ambulatory Sensitive Condition (ASC) Acute Composite - A Quality Improvement Project
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Background: Hospital admissions for dehydration, diabetes control, COPD, heart failure and bacterial pneumonia, or urinary tract infection (ASC) can often be treated and addressed in an outpatient setting. Evidence suggests that these hospital admissions could potentially have been avoided through high-quality outpatient care. Timely receipt of outpatient treatment and follow-up monitoring of treatment effectiveness may reduce the rate of occurrence for this event, and thus hospital admissions. This measure is intended to provide high-quality, coordinated outpatient care that promotes smarter spending, healthier people, and higher-quality care.

Methods: A quality improvement project was done to look at current process in place for ambulatory care to prevent an emergency room visit or hospitalization. Root cause analysis performed to determine factors leading to preventable emergency room visits and hospital admissions for acute ambulatory conditions. Mapping process and understanding home health agency processes in place. Factors included limitations in staff response time, limited access to same day appointments,-limited assistance from home health agencies to assist with home assessments, patient fear and sense of urgency to address acute condition. Interventions included changing template, increasing access for same day appointments, increasing the number of nurse visits, and redefining the protocol for acute condition management for call center staff. Families were educated by distributing materials with information concerning ambulatory conditions and same day appointments.

Results: Data showed improved access for same day appointments for ambulatory conditions secondary to implementation of staff communication flowchart. Inpatient discharges for UTI and COPD declined by 50%, however pneumonia did not change as the measurements were during peak winter season.

Conclusions: Efficient and coordinated care management strategies that anticipate and respond to patient needs and preference helps to prevent avoidable emergency room visits and hospitalizations, improving population health, providing better care, and lowering health care costs. We will share our protocol and template changes to help improve ambulatory care for patients.

D78 Student Presentation
Association between skilled nursing facility quality ratings and outcomes after hospitalization for hip fracture
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Background: The association between the Centers for Medicare and Medicaid Skilled Nursing Facility (SNF) Five Star Quality Ratings and clinical outcomes is largely unknown. Defining this association could educate patients and physicians in their decision making, drive SNAP quality improvement, and minimize healthcare spending. Our aim was to study the association between one-year hip fracture outcomes and SNAP five star ratings.

Methods: We conducted a retrospective chart review of 245 patients 65 years or older treated at Rhode Island Hospital in 2012-2014 for hip fracture who were discharged to SNFs. We compared Nursing Home Compare Five Star Ratings to one-year morality, hospital readmission, and Emergency Department (ED) visits. Data was collected by chart review, from national databases, and from Rhode Island Department of Health death records.

Results: Of the patients, 122 were discharged to 1-3, and 123 to 4-5 overall star rating SNFs. Among these, 101 (61%) were cared for by the Geriatric Fracture Program versus usual care. The groups were homogenous with similar baseline demographic characteristics. The mean age was 84.4 years (p-value = 0.7608) and rate of male was 24.6% for 1-3 Star SNAP and 25.2% for 4-5 Star SNAP (p-value = 0.9116). Patients discharged to SNFs with 4-5 star staffing rating were 70% more likely to have at least one ED visit than 1-3 star SNFs. Among patients who received usual care only, readmission rates were 2.3 times higher if discharged to a 1-3 than a 4-5 overall star SNF (adjusted p-value = 0.0482). There was no significant difference between patients discharged to 4-5 and 1-3 overall SNAP for mortality (p-value = 0.3581), readmission (p-value = 0.1412) and ED visits (p-value = 0.4933).

Conclusions: CMS staffing rating was associated with an increase in ED visits in survivors of hip fracture treated at a single hospital and discharged to SNF. However, this study observed no significant association between overall five star rating and one year outcomes in patients who suffered from hip fracture. Future studies are necessary to further characterize the relationship between SNAP five star ratings and clinical outcomes.

D79 Resident Presentation
Retrospective Study of Video-Based Advance Care Planning Workflow in a Safety Net Resident Teaching Primary Care Clinic
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Background: To improve completion of advance care planning (ACP) in the outpatient setting, video-based ACP education tools are increasingly popular but unexamined in low-income patient populations and academic training settings. In the LA County Olive View-UCLA internal medicine residency primary care clinic, we studied the impact of a video-based ACP patient education workflow compared with usual care on documentation of ACP discussion and legal documentation with POLST or advance healthcare directive (AD).

Methods: We performed retrospective chart reviews on two cohorts of patients in the same resident clinic in summer 2017: study patients participated in the ACP video workflow and a comparison group received usual care without the video. We used a logistic regression to examine the change in odds of ACP discussion and legal documentation of ACP associated with the ACP video workflow, adjusted for patient age, gender, age-by-gender, race, language preference, number of ambulatory care sensitive conditions (ACSCs), and number
of inpatient and emergency department stays in the 6 months prior to the intervention.

In the video-based ACP workflow, nursing staff and resident providers identify eligible patients 65 years and older during a pre-clinic huddle. Nursing staff introduces and displays a 4-minute ACP video in either Spanish or English during downtimes in the patient’s clinic flow. The video is shown to every patient eligible by age criteria unless providers specify otherwise or the patient declines.

Results: Our sample consisted of 166 elderly patients with complete data. Most were Latino, female, and had two or more ACSs. Overall, half viewed the video, 25% completed an ACP discussion, and 9% completed a POLST or AD. For patients who viewed the video, the odds of having an ACP discussion was 2.4-fold higher (OR 95% CI 0.9-6.4, p=0.08) and odds of completing a POLST or AD was 4.8-fold higher (OR 95% CI 1.1-20.6, p=0.03) compared to concurrent controls, adjusted for covariates.

Conclusions: When compared to usual care, an ACP video intervention may increase ACP engagement and legal documentation of ACP in vulnerable older adult patients and in academic training clinics.

D80 Resident Presentation
Implementation of Problem Adaptation Therapy (PATH) for the Depressed, Biomarker-confirmed Cognitively Impaired Individual: An Illustrative Case Report

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Background: Psychiatric disorders such as depression can affect cognitive functioning and mask underlying dementia. Problem Adaptation Therapy (PATH) is a home-based, nonpharmacological intervention that has been implemented to address depression in patients with early cognitive impairment. We describe a case where PATH was implemented in an office practice. Case: A 77-year-old female with diabetes and hyperlipidemia presented with a 2-year history of worsening memory, insomnia, and paranoia, with functional decline. She was evaluated at the Center for the Aging Brain, where a multidisciplinary team provided comprehensive consultations. Neuropsychological testing revealed weaker than expected learning and recall within the context of significant depression and anxiety. Cognitive impairment due to Alzheimer’s disease was suspected, however, the strong psychiatric overlay made definitive diagnosis difficult. She was started on mirtazapine without significant improvement in mood. Repeat neuropsychological testing 10 months later showed decline across cognitive domains. She received an Amyloid PET scan which supported the diagnosis of Alzheimer disease. She was enrolled in a PATH pilot program, and received therapy in the office. After completion of the program, her Geriatric Depression Scale (short form) decreased from 13 to 6. She reported decreased paranoia and had identified strategies for problem solving appropriate for her level of cognitive impairment. Conclusion: This case illustrates the importance of incorporating Amyloid PET in the diagnosis of complex cases of neurodegenerative disease, as well as the utility of in-office PATH in the management of comorbid depression in cognitively impaired individuals. We are the first center to adapt the PATH program to an in-office setting. The effectiveness of this program and its expansion to the office setting should be further studied to hopefully allow for improved care of those with cognitive impairment.

D81 Student Presentation
Hospice for Assisted Living Residents, Can We Do Better?: The Challenges of Providing Hospice Care in Assisted Living Facilities

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Background: With the predicted impending surge in the population of elderly adults in the United States and the rise in patients with chronic health problems expected to occur with it, an increase can also be expected in the need for long term care services, including assisted living and hospice care. The aim of this study was to identify challenges, and solutions to identified challenges in the provision of hospice care to assisted living patients.

Methods: This study was conducted using surveys and individual interviews of staff members in hospice and assisted living facilities (ALFs) in Georgia from June to August 2017. A 19-question survey using the Likert scale, with one multiple choice question, was developed to allow staff members of hospice and ALFs to respond to statements regarding the provision of hospice care in ALFs. Individual interviews were conducted with willing survey respondents to allow them to expound on personal experiences providing hospice care to assisted living patients.

Results: A total of 77 surveys (36 from ALF staff members and 41 from hospice staff members) and 10 individual interviews (7 of ALF staff and 3 of hospice staff) were completed. Survey results demonstrated that overall staff members think that hospice and ALFs work well together (74% of respondents). Additionally, both the interview and survey results emphasized the need for effective communication between hospice and ALFs to ensure the best patient outcomes. Regarding medication management; pain management, communication on medication orders and narcotics are areas of concern for both hospice and ALF staff members. Interview participants stressed the importance of the development of trust between staff members of ALFs and hospice facilities to provide the best patient care.

Conclusion: It can be concluded that while staff of hospice and ALFs perceive hospice and ALFs as currently functioning well together, there are still areas that require improvement in the provision of hospice care in ALFs. Increased emphasis on interfacility relationships and effective communication between hospice and ALFs can help to improve the care given to hospice patients living in ALFs.

D82 Student Presentation
Comparison of Defense Automated Neurobehavioral Assessment (DANA) to the Mini-Mental Status Examination (MMSE) in elderly volunteers.

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Cognitive impairment and decline in the elderly can be difficult to assess and monitor over time. One of the most commonly used instruments to assess for cognitive impairment is the mini-mental status examination (MMSE). The Defense Automated Neurobehavioral Assessment (DANA) tool is an easy to administer tablet based measure of reaction time initially developed to evaluate traumatic brain injury in soldiers. DANA contains a battery of tests that is designed to examine cognitive performance, and test retest reliability have been documented. A pilot study in 2016 using DANA as a cognitive assessment tool in elderly patients showed promise. The current study is a comparison between MMSE and DANA scores in 46 female
and 18 male volunteers ages 55 to 89 to determine the validity of using DANA as a screening tool for cognitive impairment in this population.

Methods: Standard MSSE was administered. Four tests were administered with DANA: Simple Reaction Time (SRT1), Procedural Reaction Time (PRT), Go-No-Go (GNG), and a second Simple Reaction Time (SRT2).

Results: Using R studio statistical analysis software, P values: MSSE vs SRT1 = 0.009445; MSSE vs PRT = 0.045010; MSSE vs GNG = 0.058430; MSSE vs SRT2 = 0.02068. We have found a statistically significant correlation between MMSE and SRT1 and MMSE and PRT using p <= .05. There is a notable positive correlation between MMSE and SRT1, MMSE and GNG, and MMSE and SRT2. (see chart)

Conclusion: DANA correlates to MSSE when evaluating cognitive function in elderly volunteers and shows promise as a screening tool for cognitive impairment in this population.

D84 Student Presentation
Potential Drug-Drug Interactions Exposure on Admission and Discharge from an Acute Hospitalization in High-Risk Older Patients Enrolled in the STAR Program
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Background: The STAR program was implemented at Boca Raton Regional Hospital (BRRH) as a resource for interprofessional education on patient safety and quality. One goal is to decrease potential drug-drug interactions among high risk geriatric patients. This study explores the occurrence of potential drug-drug interactions (PDDI) in hospitalized geriatric patients identified as being at high-risk for hospital readmission.

Methods: The data were obtained from 216 STAR program patients that were admitted to BRRH from 2016 to 2017. The admission and discharge medication reconciliation for each patient was analyzed using the Lexi-Interact® database. The Lexi-Interact® database identifies potential drug-drug interactions (PDDI) and places them into five categories. The three clinically significant categories X, D, and C were used to measure the occurrence of potential drug-drug interactions. Topical and ophthalmic medications were excluded. Routine versus PRN was not taken into consideration.

Results: The study data include 216 participants with a mean age of 85.64 ± 6.1 years (range 71–101), with a larger female proportion (58%). The average number of medications prescribed at admission 5.75 ± 3.9 was lower than the number of medications prescribed at discharge 9.36 ± 3.6. Patients were admitted with an average of 3.29 clinically significant PDDI and were discharged with an average of 6.79. 142 (66%) had at least one clinically significant PDDI on admission and 187 (87%) had at least one clinically significant PDDI on discharge. 17 (7.9%) were found to have at least one X interaction on both admission and discharge. 14 were classified as having more X interactions on discharge (p < .000), 27 had more D interactions on discharge (p < .000), and 29 had more C interactions on discharge (p < .000).

Conclusions: The results of this study demonstrate a mildly high prevalence of PDDI in high-risk geriatric patients admitted to the hospital, with the number of PDDI increasing from admission to discharge. This data emphasize the need for clinicians to pay attention to PDDI, and for quality improvement interventions to reduce clinically significant PDDIs in older high-risk patients.
Methods: Patients ≥ 65 years old admitted at CUH and prescribed a PPI from 6/1/2016 to 8/19/2016 and 6/1/2017 to 8/19/2017 were analyzed by retrospective chart review for PPI dosage prior to admission (PTA), during admission, and at discharge on both the Geriatric and Hospitalist services. A PPI deprescription algorithm was implemented on 7/10/2017 and PPI prescription rates were compared before and after the intervention. Patients for whom PPI prescription was deemed appropriate (chronic NSAID use or diagnoses such as upper GI bleeds, Barrett’s Esophagus) were excluded from the data analysis. SAS software was used to perform descriptive statistics including Student’s t-test for age and chi-square contingency table analysis for race, gender, and discharge outcomes. A favorable outcome was represented by a decrease in PPI prescription from PTA to discharge. An unfavorable outcome was represented by an increase in PPI prescription from PTA to discharge.

Results: 306 total patients who received a potentially inappropriate PPI as an inpatient were identified. No statistically significant differences were seen in age, race, or gender across the Geriatric and Hospitalist Service patient groups in 2016 and 2017, making the groups comparable. The favorable outcomes for the Geriatric 2017 patient group increased from 10.00% (pre-intervention) to 15.79% (post-intervention), and the favorable outcomes for the Hospitalist 2017 patient group increased from 30.51% to 34.62%.

Conclusions: Although not statistically significant, PPI prescription rates decreased from the pre-intervention to the post-intervention period in both the Geriatric and Hospitalist service patient groups. The implications of this study demonstrate that inappropriate PPI prescription practices among geriatric patients is a growing issue, and other forms of intervention may be necessary to promote awareness among physicians and improve the quality of patient care.

D86 Student Presentation, Encore Presentation
Comparison of Dispositional Optimism and Symptom Burden in Geriatric Palliative Care Patients
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Background:
Dispositional optimism, a personality construct that indicates a person’s expectation of future events, has been positively associated with increased health outcomes and decreased pain in several conditions. We hypothesize that palliative care patients with higher dispositional optimism will have lower symptom burden.

Methods:
Optimism was measured with the revised “Life Orientation Test” (LOT-R) in palliative care patients age 60 or older. Symptom burden was measured with the Edmonton Symptom Assessment Scale (ESAS). PHQ-2 and ECOG were measured as covariates. Relationship between LOT-R and ESAS was measured using Spearman and Pearson correlation.

Results:
Cronbach alpha >0.72 for surveys used. N=29. 60-69 years old (69%), 70-79 (28%), >80 (3%). Hispanic or Latino (38%), non-Hispanic/Latino (62%). White (79%), Non-White (21%), 14 with cancer, 3 COPD, 2 CHF, 3 ESRD. Optimism was higher in cancer patients (p=0.03), patients receiving chemo (p=0.01) and nonwhite patients (p=0.008). ESAS and PHQ2 scores were not significantly different between these groups. There was a non-significant negative correlation between symptom burden and dispositional optimism in all 29 geriatric palliative care patients (r=-0.17, p=0.35). There was a strong positive correlation between symptom burden and depression (r=0.76, p=0.0001).

Conclusion
Our data suggests that there are external factors that can affect a person’s optimism. Non-white geriatric patients have more optimism than counterparts suggesting culture affects optimism. Being a geriatric cancer patient and receiving chemotherapy increases optimism. Despite having higher optimism than non-cancer patients, geriatric cancer patients receiving palliative chemotherapy do not have lower symptom burden or quality of life than counterparts. This suggests that palliative chemotherapy itself increases optimism. Since this does not translate to lower symptom burden, this suggests that more research needs to be done to see why geriatric cancer patients receiving palliative chemotherapy have more optimism and what the effects this has on them (positive and negative).

D87 Student Presentation
Describing Facilitators and Barriers to Quality Improvement in Palliative Care: Preliminary Results from Surveying Palliative Care Team Members
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Background: Quality measures are important in optimizing patient care but have not been well implemented in palliative care. This study serves to better understand the facilitators and barriers to quality measurement and improvement by surveying palliative care team members.

Methods: The Measuring and Improving Palliative Care Survey was administered to palliative care teams in 6 pilot sites in US and Canada. Survey items were rated on a 5-point Likert scale (1=strongly disagree, 5=strongly agree). Topics included attitudes on palliative care quality measurement and improvement and perceptions of relevant program characteristics and quality. Psychometrics were evaluated with the pilot results, including internal consistency reliability (Cronbach’s alpha) and usability (distribution of scores).

Results: 68 participants completed the survey: 41 physicians/PA/NPs, 8 nurses, 4 social workers, 15 other team members, 39% worked in hospital consultation; 31% in an outpatient clinic; 15% on an inpatient unit; 15% other. 97% reported direct contact with patients. Cronbach’s alpha for internal consistency reliability ranged from 0.63-0.98. Usability or the initial variation of Likert ratings ranged from SD=0.49-1.24. Mean Likert scores were lowest (1.34-2.05) in the constructs of Rewards for Measuring Palliative Care Quality, Rewards for Quality Improvement (QI), and Educational Support for Measuring Palliative Care Quality. Mean Likert scores were highest (4.03-4.42) in Focus on QI in Palliative Care, Perceptions of Teamwork, and Openness in Communication Among Team Members. Respondents also highly rated the quality of care patients received on several indicators (3.95-4.76).

Conclusions: In this pilot evaluation, rewards and educational support were key barriers to QI in palliative care. Respondents highly rated teamwork and focus on QI as strong facilitators. Insight on the current environment and attitudes surrounding the implementation of quality measurement and improvement will aid in the development of future programs unique to palliative care.
Cardiac rehabilitation (CR) benefits older adults with ischemic heart disease (IHD) but use remains low. mHealth-CR offers a potential alternative, but data are limited. Accordingly, we designed a pilot feasibility study to evaluate mHealth-CR initiated at the time of hospitalization for IHD.

Methods: Eligible patients with IHD (≥65 with AMI or elective PCI) were randomized in a 1:1 manner to intervention (mHealth-CR) or control (usual care) for 30 days. Both groups received passive activity monitoring (Fitbit). Our engagement outcome was mHealth-CR use over the study period. Our efficacy outcome was sedentary activity, classified as >10 sedentary minutes during waking hours.

Results: We enrolled 15 participants (8 intervention, 7 control). Mean age was 73 years (range 65 to 90), 27% were female, 20% African American, and 7% Hispanic. Most intervention participants (7/8) used mHealth-CR software at least once. Median number of logins was 15 (IQR 9-22). We used a mixed effects model to evaluate whether sedentary activity differed between study groups over time, and found no significant treatment effect (P value = 0.3) (Figure).

Conclusion: Most older adults with IHD were able to engage with mHealth-CR, at least once. We found no significant differences in mean sedentary activity between groups, although a larger study is necessary to be adequately powered for efficacy.

Mean Sedentary Activity

D89 Resident Presentation
DEFICIT-Direct Effect of Insulin on Cognitive Impairment Treatment

G. A. Jimenez, A. Barragán. Geriatrics, ITSEM, Monterrey, Mexico.

Background: In the past 15 years, a relationship between Diabetes Mellitus type 2 (DM2) and cognitive impairment has become evident. In Mexico, developing cognitive decline in DM2 patients is 2.08 times more frequent. Globally, the risk goes from 1.5 to 2.4. A cure for dementia with the actual treatments is not possible, efforts are aimed to enhance prevention. 35% of dementia are preventable. There’s a lack of studies and contradictory results, none has described the cognitive domains that could benefit with insulin therapy.

Methods: A descriptive - retrospective study using the database ENASEM (Encuesta Nacional de Salud y Envejecimiento en México). 157 diabetic geriatric participants that survived from 2001 to 2015 were followed. The Cross Cultural Cognitive Examination test (CCCE) of 80 points (pts) was applied. It has 99% sensitivity and 94% specificity dementia detection. The studied domains are verbal learning memory, verbal recall memory, visuospatial abilities (VA), visual memory and attention. Two groups were compared; group 1 - absence of insulin, and group 2 - presence of insulin. Independent sample t test were used to compare both groups; furthermore, since education affects neuropsychological tests, sub-analysis in patients with 1-6 school years was made. Non parametric test such as Mann Whitney and Wilcoxon were used as needed. Confidence interval was 95%.

Results: CCCE diminished 12 pts (38.49 to 25.51) in group 1, while 0.6 pts were lost (35.41 to 30.00) in group 2. Exposure to insulin lowered the CCCE decline, no cognitive domains were significant. When divided by education, CCCE decline was 12.97 in group 1 and 3.65 in group 2. Attention had a 9 pt change with insulin absence, while 0.6 pts if used; VA were performed better after 14 years.

Conclusions: Use of insulin as treatment in DM2 is associated with better scores in the cognitive tool CCCE, with attention and VA enhanced. A practical strategy in prevention of cognitive decline with insulin treatment could be applied.

Silvia MA. Diabetes mellitus como factor de riesgo de demencia en la población adulta mayor mexicana. Revista de neurologia. 2011

D90 Student Presentation
Frailty among older adults with recurrent UTIs presenting to an academic urology referral practice


Background: Urinary tract infections (UTIs) are commonly diagnosed conditions in older adults and the incidence of UTIs increases with age. We have previously shown that older adults with UTIs are more frail compared to older adults presenting to an academic urology referral practice for other benign urologic conditions. Patients with ≥2 UTIs per 6 months or ≥3 UTIs per year are a particularly vulnerable subset of older adults with UTIs and are given the diagnosis of recurrent UTIs (rUTIs). We aimed to characterize this subset of older adults with rUTIs in terms of frailty and other characteristics and to compare them to older adults with other non-recurrent UTI (non-rUTI) related benign urologic diagnoses.

Methods: This is a prospective study of individuals ages ≥65 presenting to an academic urology urology practice between December 2015 and November/2016. All individuals had a Timed Up and Go Test (TUGT), a parsimonious measure of frailty, on intake and were categorized as non-frail (≤10 seconds), pre-frail (11-14 seconds), or frail (≥15 seconds). Individuals with diagnosis codes related to rUTIs were abstracted from the database and chart reviews were performed to confirm the findings of ≥2 documented UTIs in 6 months or ≥3 documented UTIs in 12 months based on positive urine culture data. Additional data on age, race, gender and TUGT were abstracted from the database. We then compared the characteristics of the rUTI cohort with the non-rUTI cohort using χ^2 test.

Results: 81 individuals met the criteria for rUTIs and 1743 individuals had other non-rUTI related benign urologic diagnoses in our database during the study period. Older individuals with rUTIs were more likely to be female (75.3% vs 21.4%, p<0.01) and to have higher TUGT times (13.5 vs 11.3, p<0.01) compared to those with other non-rUTI related benign urologic conditions. Age and race were similar between groups.

Conclusions: Older adults with rUTIs tended to be more frail and were more likely to be female compared to those presenting for other non-rUTI related benign urologic conditions, while there were no statistically significant differences in race or age. These findings suggest that frailty, rather than simply age, may be associated with...
the diagnosis of rUTIs. Further work is warranted to explore this association.

D91 Student Presentation
Metformin for Preventing Frailty in Older Adults with Pre-Diabetes
T. Jergensen,3,4 B. Orsak,3,4 A. Conde,3,4 T. Romo,3,4 D. Bair-Kelps,3,4 V. Ganapathy,3,4 M. Moris,3,4 C. Kelly,3,4 R. Jiwani,3,4 C. Wang,3,4 B. Powers,3,4 N. Musi,3,4 S. Espinoza,3,4 1. UT Health San Antonio Long School of Medicine, San Antonio, TX; 2. UTHSCSA, San Antonio, TX; 3. Geriatrics Research, Education & Clinical Center, South Texas Veterans Health Care System, San Antonio, TX; 4. Barshop Institute for Longevity & Aging Studies, University of Texas Health Science Center, San Antonio, TX.

Background: Frailty is a geriatric syndrome that leads to poor health outcomes with aging. Previous studies have demonstrated a strong association between insulin resistance and inflammation with frailty. Metformin is a widely-used, well-tolerated drug that improves insulin sensitivity and displays anti-inflammatory properties. We are currently conducting a clinical trial of metformin for the prevention of frailty in older adults with pre-diabetes.

Methods: Older adults aged 65+ years are studied in this two-year, randomized, double-blinded, placebo-controlled clinical trial. Pre-diabetes, required for inclusion, is assessed by 2-hour oral glucose tolerance test (OGTT). Exclusion criteria are baseline frailty (Fried criteria), diabetes, dementia, untreated depression, active malignancy, or severe cardiovascular, pulmonary, and neurologic diseases. Primary outcome is the incidence of frailty; secondary outcomes are physical function (short physical performance battery), systemic and skeletal muscle tissue inflammation, muscle insulin signaling, insulin sensitivity (insulin clamp), glucose tolerance (OGTT), and body composition (dual-energy x-ray absorptiometry). Subjects are followed every 3 months for safety assessments and every 6 months for frailty assessment and OGTT.

Results: Currently, 18 participants (50% male) are actively participating in the study. Mean age is 74.9 ± 6.1 years, with ethnic background of Hispanic (33%) or Non-Hispanic White (67%). Mean body mass index is 29 ±5.1 kg/m² and Hemoglobin A1c is 5.8 ±0.3%.

Conclusion & Future Directions: Metformin is being examined as a potential therapeutic agent to prevent frailty in this clinical trial enrolling older adults with pre-diabetes. The study aims to enroll 120 participants over a five-year span. Findings from this trial may have future implications for the screening and potential treatment of pre-diabetes in older patients with metformin for the prevention of frailty.

D92 Student Presentation
Assessing the Relationship Between Telomere Length and Adipose Tissue Distribution
B. A. Bleiberg, C. Ayers, I. Neeland. University of Texas Southwestern Medical Center, Dallas, TX.

Background: A telomere is a region of repetitive nucleotide sequences at each end of a chromosome, which protects the end of the chromosome from deterioration. Telomere shortening, a surrogate marker of cellular aging, may accelerate from the inflammatory stressors of obesity. The association between adipose tissue depots and telomere length is unknown.

Methods: Data were analyzed from 2,551 participants in the Dallas Heart Study, a prospective multiethnic cohort. The sample composition was 41% male, 59% female, 48% African American, 35% Caucasian, 15% Hispanic and participants had a mean age of 51 years with 23.4% >60 years of age. Leukocyte telomere length (LTL) was determined using qPCR on DNA isolated from circulating leukocytes. Visceral (VAT) and subcutaneous (SAT) abdominal fat masses were measured by MRI, lower body fat (LBF) by dual x-ray absorptiometry, and liver fat by MR spectroscopy. Linear regression was used to evaluate the association between LTL and body fat depots.

Results: In univariate analysis, shorter LTL was associated with higher VAT (p<0.0002) and less LBF (p=0.02). Shorter telomeres were also associated with older age, male sex, hypertension, diabetes, smoking, decreased kidney function and decreased physical activity (p<0.05 for all). Adjustment for age and sex attenuated the relationships between LTL and VAT, SAT, LBF, and liver fat. No significant interactions were seen by stratification within age groups or by severity of obesity.

Conclusions: While LTL is associated with pathogenic patterns of adipose tissue, this association is confounded by the close relationship between LTL and temporal aging. These findings suggest that cellular aging is not independently linked to variation in adipose tissue distribution patterns.

Relationship Between Telomere Length and Key Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Beta unadjusted</th>
<th>p unadjusted</th>
<th>Beta adjusted</th>
<th>p adjusted</th>
</tr>
</thead>
<tbody>
<tr>
<td>VAT</td>
<td>-0.072</td>
<td>0.002</td>
<td>0.005</td>
<td>0.03</td>
</tr>
<tr>
<td>SAT</td>
<td>0.02</td>
<td>0.016</td>
<td>0.02</td>
<td>0.19</td>
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<tr>
<td>Lower Fat</td>
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<td>0.026</td>
<td>0.024</td>
<td>0.11</td>
</tr>
<tr>
<td>VAT + SAT</td>
<td>-0.053</td>
<td>0.005</td>
<td>-0.052</td>
<td>0.04</td>
</tr>
</tbody>
</table>

Model adjusted for age and gender * p <0.05

Standardized β coefficients = estimated unit change in 1-SD of the log-transformed variable for a 1-SD increase in the telomere parameter

D93 Student Presentation
Prevalence of frailty among community-dwelling older people: Preliminary data analysis
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Background: Frailty is conceptually regarded as increased vulnerability and reduced physiologic reserves and resilience to exogenous and endogenous stressors, leading to higher risk of negative health outcomes. Prevalence of frailty can be served as indicator for aging populations and health policy. However, population-based study on frailty was of paucity. This study aims to investigate the prevalence of frailty through a population-based study design.

Methods: The study employed cross-sectional design. According to Cochran’s sample size formula (with z = 1.96, p = 0.125, & d = 0.03), the optimum sample size was 470. Quota sampling was used to recruited community-dwelling older people in three different districts in terms of monthly domestic household income. Questionnaires consisted of demographic information and Groningen Frailty Indicator-Chinese version (GFI-C). GFI-C is a 15-item frailty screening instrument for older people embedded with multidimensional constructs including physical, psychological, social and cognitive domains. The score ranged from 0 (normal) to 15 (completely frail) with a cutoff of 4 (≥4 for frail). Since data collection is still in progress, the current abstract presents the preliminary results of 105 data.

Results: For inviting 163 older people in community, a total of 105 participants (response rate = 64%) responded (56% male, age range = 65-107 years old, & 30.5% living alone). The Prevalence of frailty was of paucity. This study aims to investigate the prevalence of frailty through a population-based study design.

Conclusions: The preliminary results indicated that more than one-third community-dwelling older people were frail, particularly poor in psychological and social domains. Findings pose implications for geriatrists and carer on the attention of psychological and social frailty among older people.
D94 Student Presentation, Encore Presentation
Asian American Older Adults and Social Isolation: Systematic Literature Review
C. Mo, S. Kwon
1. Eastern Virginia Medical School, Eastvale, CA; 2. New York University, New York, NY.

Background: Due to the increases in Asian American older adult population, there needs to be research dedicated to their health needs. Past studies have shown that social isolation and loneliness predict greater physical, mental, and cognitive decline and is correlated with mortality and suicidal ideation. This systematic literature review was conducted to address emerging needs to understand the scope of research on social isolation and Asian American older adults.

Methods: The PRISMA guidelines were used to guide this systematic literature review. Four interdisciplinary databases searched were: PubMed, CINAHL, PsychINFO, and AgeLine. Search terms included variations on the words social isolation, loneliness, Asian Americans, and older adults.

Results: The search yielded 203 articles from 4 databases. 154 study abstracts were reviewed and 34 met the eligibility criteria for full text review. Existing research has focused primarily on immigrant Chinese and Korean populations located in major gateway cities. Studies were largely observational studies conducted using small community-based samples which makes generalizability difficult. There were no interventional studies.

Conclusions: There are critical gaps in the literature on social isolation and loneliness in Asian immigrant populations. Future studies should prioritize health promotion intervention research and focus on diverse understudied Asian subgroups (e.g. South Asians).

D95 Resident Presentation
E. Boeung, M. J. Aliberti, W. Jacob-Filho. Geriatrics, University of São Paulo, São Paulo, Brazil.

Background: Due to the increases in Asian American older adult population, there needs to be research dedicated to their health needs. Past studies have shown that social isolation and loneliness predict greater physical, mental, and cognitive decline and is correlated with mortality and suicidal ideation. This systematic literature review was conducted to address emerging needs to understand the scope of research on social isolation and Asian American older adults.

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D96 Student Presentation
Risk factors associated with Perceived Insufficient Sleep in a community-based sample of Asian American Older Adults in New York City.
J. C. Hwang, L. Wyatt, S. Kwon
1. Eastern Virginia Medical School, Norfolk, VA; 2. Population Health, NYU School of Medicine, New York, NY.

Background: We aim to identify risk factors associated with perceived insufficient sleep among diverse subgroups of Asian American older adults.

Methods: Data from 2013-2016 Community Health Resources and Needs Assessments were analyzed. Individuals age ≥50 (n=684) of South Asian (n=268), East Asian (n=240), and Southeast Asian (n=176) ethnicity were included and compared. Descriptive statistics were run by Asian ethnic group, and the relationship between adverse sleep outcomes (≥14 days of inadequate sleep, use of sleeping aids or drugs/alcohol to help sleep, and any days of unintentionally falling asleep) and risk factors including sociodemographic variables, mental health, and sleep as a health concern were assessed using bivariate analysis and multivariable logistic regression models, while adjusting for Asian ethnic group. Significance was set at <0.05.

Results: Southeast Asians were significantly more likely to have ≥14 days of inadequate sleep (19.5% vs. 11.6% among South Asians and 11.1% among East Asians), and more likely to take sleeping aids or drugs/alcohol (27.7% vs. 6.4% among South Asians and 11.0% among East Asians). There was no significant group difference in days of unintentionally falling asleep. In adjusted analysis, younger individuals and individuals at risk for depression were significantly more likely to report inadequate sleep (p<0.01); Southeast Asians, individuals with less than a high school education, individuals living in the US for longer, and individuals reporting sleep as a health concern were significantly more likely to take sleeping pills or drugs/alcohol for sleep; and males, individuals with less than a high school education, individuals at risk for depression, and individuals reporting sleep as a health concern were significantly more likely to report any days of unintentionally falling asleep.

Conclusions: Findings showed Asian American ethnic subgroup, age, level of education, mental health, length of time in the US, and sleep as a health concern to be associated with differences in sleep outcomes. These results underscore the need for further ethnic subgroup targeted outreach.

Results:

D95 Resident Presentation
E. Boeung, M. J. Aliberti, W. Jacob-Filho. Geriatrics, University of São Paulo, São Paulo, Brazil.

Background: Analyze the relationship of adherence and therapeutic complexity with the risk of hospitalization in the elderly with acute condition.

Methods: Prospective cohort involving 489 participants aged 60 years or older with acute or chronic uncompensated disease admitted to hospital day. They are submitted to management evaluation with sociodemographic, clinical (multimedia, depression and cognition) and pharmacological data (drug dependence, pharmacological complexity index, and Morisky therapeutic adherence scale). There was a monthly telephone follow-up for a year to detect hospitalization. Cox model in hierarchical strategy analyzed whether the addition of pharmacological data to prevent hospitalization.

Results: Participants had a mean of 79.6 (± 8.3) years, the majority being female (64%), white (64%) and income lower than two minimum wages (82%). Worse therapeutic complexity was associated with greater multimorbidty (p <0.001), more depressive symptoms (p = 0.001) and better cognition (p = 0.002). Individuals with depression presented lower therapeutic adherence (OR 1.93; 95% confidence interval [CI] 1.35-2.78, p <0.001). In one year, 39% of the elderly admitted. The Wald test = 14.6; p = 0.005. The addition of non-model pharmacological data containing demographic and clinical variables improved the prediction of hospitalization. Greater therapeutic complexity decreased or risk of hospitalization (hazard ratio 0.98, 95% CI 0.97-0.99, p = 0.001).

Conclusions: Pharmacological information contributed significantly with a geriatric assessment for hospitalization prediction in the elderly attended in hospital day. Higher therapeutic complexity is associated with a lower risk of hospitalization in this population.

Poster Abstracts
D98 Student Presentation
Identifying characteristics influencing patient enrollment in cancer clinical trials
J. C. Todd. Medical School, Eastern Virginia Medical School, Norfolk, VA.

Background
The National Institute on Minority Health and Health Disparities aims to eliminate health disparities of all kinds in order to provide all Americans an equal opportunity to live healthy lives. One area of focus in health disparities is participation in clinical trials. Recent studies have found that seniors (>65 years old) are less likely to participate in cancer clinical trials, despite the fact that most cancers disproportionately affect the elderly. Therefore, we ask what factors, including age, influence patient participation in cancer clinical trials?

Methods
We analyzed a patient cohort from the Sidney Kimmel Comprehensive Cancer Center (SKCCC) at Johns Hopkins that included all patients with cancer seen from 2014 to 2015. The final analysis file included 13,896 patients. We measured clinical trial participation among seniors as well as demographic features and patient characteristics.

Results
Our analysis demonstrated that elderly cancer patients were more likely to be white (p<.001), less likely to be of Hispanic ethnicity (p=.005), and more likely to reside in Maryland (p<.001). Additionally, analysis of cancer clinical trial participation demonstrated that patients with fewer comorbidities were more likely to enroll in a trial (p<.001). However, the unadjusted relationship between age group and trial participation in this cohort did not show a significant disparity in participation among seniors (p=0.916). A multivariate analysis model analyzing patient characteristics by clinical trial enrollment demonstrated that a patient’s number of comorbidities (p<.001) influenced enrollment in cancer clinical trials in some Maryland regions.

Conclusions
While the data analyzed did not demonstrate a deficiency of seniors enrolled in cancer clinical trials in this cohort which focused on a tertiary cancer care center, it is plausible to expect participation in cancer clinical trials among the elderly may be lower in a broader patient population. We learned that other factors such as a patient’s number of comorbidities influence cancer clinical trial enrollment. Additionally, multivariate models showed a significant relationship between certain geographic regions, cancer sites, number of comorbidities and a patient’s decision to enroll in a clinical trial. Further research investigating what influences a patient’s decision to enroll in a cancer clinical trial is needed in order to address trial disparities more specifically.

D99 Student Presentation
Healthy Dietary Patterns and Risk of Abdominal Aortic Aneurysm in the Physicians’ Health Study
K. Frisby,1 J. Chen,2 H. Sesso,2 L. Wang,2 J. Gaziano,2 L. Djousse.2
1. University of New England College of Osteopathic Medicine, Biddeford, ME; 2. Brigham and Women’s Hospital, Harvard Medical School, Boston, MA.

Background: Abdominal aortic aneurysm (AAA) is typically an asymptomatic health problem that carries a greater than 50% mortality rate in the event of rupture. The incidence rate of AAA increases dramatically after age 75. Because of the devastating nature of this disease, prevention is a key component to reducing the burden of AAA. The Dietary Approaches to Stop Hypertension (DASH), Alternative Healthy Eating Index (AHEI), and Mediterranean (MED) dietary patterns have been shown to decrease atherosclerotic risk factors, known determinants of AAA. Our objective was to assess the association between DASH, AHEI, and MED scores and incidence of clinically diagnosed AAA in the Physicians’ Health Study.

Methods: We prospectively studied three dietary patterns assessed between 1999 and 2002 via a self-administered food frequency questionnaire (FFQ) among men from the Physicians’ Health Study. The DASH, AHEI, and MED scores were each calculated. Incidence of AAA was obtained through annual follow-up questionnaires with validation in a subsample. Patients were excluded if they had AAA at baseline, were missing components necessary to calculate dietary scores, or reported calorie consumption outside 800-4200 kcal/day. We used Cox regression to estimate the multivariable hazard ratio of AAA adjusted for age, smoking, exercise, alcohol use, BMI, hypertension and high cholesterol.

Results: The mean age at baseline was 66.3 ± 9.0 years for DASH (n=18854), 65.9 ± 8.9 years for AHEI (n=16080), and 66.4 ± 9.2 years for MED (n=19389). Overall mean follow-up was 9.5 ± 2.5 years. We did not observe a statistically significant association between dietary patterns and risk of AAA. The adjusted hazard ratios (95% CI) across consecutive quartiles of DASH (AAA, n=526) were 1.0 (ref), 0.75 (0.55-1.01), 0.77 (0.56-1.06), and 0.80 (0.59-1.10) (p = 0.22); corresponding values were 1.0 (ref), 1.14 (0.82-1.58), 1.02 (0.72-1.42), and 0.82 (0.57-1.20) (p = 0.28) for AHEI (AAA, n=270),
and 1.0 (ref), 1.03 (0.75-1.41), 0.87 (0.66-1.16), and 0.81 (0.58-1.14) (p = 0.15) for MED (AAA, n=330). Neither age nor BMI modified the relation of the DASH, AHEI or MED dietary patterns with risk of AAA.

**Conclusion:** Our study does not provide evidence for a significant association between dietary patterns and risk of AAA in US male physicians.

**D100 Student Presentation**

**Can Functional Outcome Measures Assess Mobility Decline in the Middle-Aged?**

L. S. Faber, 1 Y. Yosida. 1 The University of New Mexico School of Medicine, Albuquerque, NM. 2 Department of Orthopaedics & Rehabilitation Division of Physical Therapy, University of New Mexico School of Medicine, Albuquerque, NM.

Impacts on quality of life from mobility deficits are significantly higher in middle-age (45-55 years old) and decrease with age. 1,3 Varied functional outcome measures have been utilized in clinical practice to test mobility such as Gait Speed (GS), 30 Second Chair Rise (30sCRT), 5 Times Sit to Stand to Sit (5STS), and Timed Up and Go (TUG), but have focused on older cohorts. 4,6 Thus, there are no normative values for mobility in middle-age. We analyzed if current evidence proved that these measurements could properly evaluate mobility in middle-aged individuals.

A systematic review was performed of the existing literature reporting the results of TUG, 30sCRT, GS, and 5STS. Data was categorized into four groups: <40, 40-65, 65-75, and >75 years old. We hypothesized that a progression pattern of mobility will be logarithmic, reflecting significant changes in mobility in the middle aged, leveling off with aging.

Significant regression equations for GS (F(1,2)=11.912, p=0.001 R^2=0.145), 5STS (F(1,2)=3.314, p=0.022, R^2=0.187), and TUG (F(1,2)=6.222, p=0.018, R^2=0.414) were found. 30sCRT was not significant (F(1,2)=0.931, p=0.354, R^2=0.072). The post-hoc test revealed it was due to insufficient power (1-ß=0.15). However, the results of 30sCRT showed a reduction of 15 between groups 1 and 2 and a reduction of 4 between groups 3 and 4, which exceeds the MCID.

The reported declines in mobility seem to fit logarithmic patterns. Due to increased prevalence of health issues, more sensitive mobility tasks for middle-age individuals are needed. While a 30sCRT may address this issue, the supportive evidence is inadequate.


**D101 Resident Presentation**

The pee, or not the pee, that is the question: Over-diagnosis of urinary tract infections among skilled nursing facility residents re-admitted to hospital within 30 days of hospital discharge

L. Wang, A. Pai, M. E. Maddens. William Beaumont Hospital, Royal Oak, MI.

**Background:** Hospital quality metrics include their 30-day re-admission rate to the hospital after a patient has been discharged. Urinary tract infection (UTI) is a common condition, but is often over-diagnosed in the elderly, subsequently resulting in unnecessary antimicrobial therapy and potentially avoidable (re-) hospitalization. Data on the prevalence of 30-day re-admissions from skilled nursing facilities (SNF) to the hospital for UTIs is limited.

**Objectives:** Determine the prevalence of “over-diagnosis” of UTI among SNF residents re-admitted to the hospital within 30 days of hospital discharge.

**Results:** Between July 1st and October 2nd 2016, 122 SNF residents were re-admitted to the hospital within 30 days of hospital discharge. Of those 122, 17 (13.9%) residents had a total of 19 distinct admissions in which a resident was diagnosed and treated primarily for a UTI. Of the 19 admissions, only 3 (15.8%) diagnoses fulfilled the Stone Criteria for a UTI. Five additional admissions, despite not meeting the Stone Criteria, were reclassified as appropriately diagnosed and treated UTIs based on review of laboratory and clinical data. Of the 17 residents, 5 (29.4%) had a chronic indwelling urinary device (Foley catheter or nephrostomy tubes) and 6 (35.3%) were already on an antimicrobial at the time of the UTI diagnosis.

**Conclusion:** Among residents of SNFs re-admitted to the hospital with a primary diagnosis of UTI within 30 days of hospital discharge, over-diagnosis of UTI is common. More research is needed to evaluate the adverse effects of antimicrobial over-use in this population and to determine what percentage of these residents could have avoided hospital re-admission.

**D102 Student Presentation**

**Preparation for Death: Population Markers for Preparedness in OlderAdults**

J. Moran, M. K. Kanwar, UTMB, Galveston, TX.

**Background:** Inadequate preparation for medical care at the end of life can result in excess spending. Before appropriate, targeted interventions are developed, it is important to understand population-level indicators to identify high-risk groups. This project aims to describe participation in three activities including: having a written will, written advanced directives, and assigned a Durable Power of Attorney for Health Care.

**Methods:** Data from the 2010 wave of the Health and Retirement Study is used. We study three key indicators to investigate participation in activities associated with preparation for death. Logistic regression is used to describe relationships between covariates (age, gender, race/ethnicity (RE), years of education, marriage status, assets) and three outcomes (will, advanced directives, power of attorney) using odds ratios. Three unique subsets excluding missing data are generated.

**Results:** Descriptive statistics for the subsamples demonstrate associations between having a will (n=19,961) and RE, education, marriage, and assets, advanced directives (n=1,396) and gender, RE, and education, and power of attorney (n=1,386) and RE, and education. Stepwise selection is used for model generation and final models include all covariates in each subset. Strong associations are found between will and RE (0.54, 0.52-0.57) and marriage (0.54, 0.46-0.64), advanced directives and RE (0.54, 0.46-0.64), and power of attorney and RE (0.64, 0.46-0.74).

**Conclusion:** These findings demonstrate consistent findings for race/ethnicity for all three outcomes when controlling for other significant covariates. In general, non-Hispanic Blacks and Hispanics are half as likely to have a will, advanced directives, or power of attorney compared to non-Hispanic Whites. Also, those who have never been married are half as likely to have a written will. Therefore, interventions should target ethnic minorities and individuals who have never been married.
D103 Student Presentation
Are difficulties with daily activities related to neighborhood? A geospatial analysis of CAPABLE baseline data
P. Patadia,1 L. Roberts,2 S. Szanton.3 1. Northeast Ohio Medical University, Stow, OH; 2. Johns Hopkins University, Baltimore, MD.

Background: Although it is known that people with low socioeconomic status report more difficulties with ADLs and IADLs, it is not known whether those who live in neighborhoods with high poverty levels report the same difficulties. The objective of this analysis was to determine whether participants who lived in poverty-stricken neighborhoods of self-reported difficulty with a greater number of ADLs, IADLs. Our hypothesis was that the higher the level of poverty in the area, the higher the number of ADLs and IADLs would be with which the participants reported difficulty.

Methods: The 292 individuals included in this cross-sectional analysis were those who had participated in the CAPABLE study and lived in Baltimore City. CAPABLE compared a home-based intervention of up to 4 nurse visits, up to 6 Occupational Therapy visits and up to $1300 in handyman repair and modification to attention control visits in a convenience sample of low-income disabled older adults. The primary outcome was improvement in ADLs, IADLs and overall quality of life.

For this analysis, PolicyMap, a mapping database with information about demographics, was used to geocode the participants’ residences based on percent of families in poverty. The participants’ neighborhoods varied in percent of families living below the Federal Poverty level from 5.47% to 34.13%. The total number of ADLs and IADLs performed with difficulty were analyzed as a dependent variable. SPSS was used to conduct analyses, and ANOVA and linear regressions were implemented.

Results: Overall, it was found that there are not any trends of ADL or IADL difficulty increasing with poverty level of the neighborhood. There is no significant difference (p>.05) in the number of ADLs or IADLs depending on where the participants lived.

Conclusion: The null result of this analysis is useful as it demonstrates that ADLs and IADLs are more dependent on individual and environmental factors that are more amenable to improving than neighborhood poverty level. CAPABLE reached many individuals in Baltimore City; future studies will be aimed at determining whether the intervention helped to decrease ADL and IADL difficulty.

D104 Student Presentation
Comparative analysis of co-morbid conditions and driving status among older adults belonging to racial minorities.
P. Dubbaka,2 I. Okosun,2 O. Syed.1 1. General Medicine and Geriatrics, Emory University School of Medicine, Atlanta, GA; 2. Public Health, Georgia State University, Atlanta, GA.

Background: As older adults give up driving, there is a steeper decline in health measured by several indicators and a higher prevalence of depression, which can lead to uncontrolled chronic diseases. The prevalence of visual impairment was 81% among all drivers, and 72% among non-drivers; and hearing impairment was 13% among drivers and 16% among non-drivers. The functional scores indicated that 80% of the drivers and 34% of the non-drivers were independent in all basic ADLs; and 96% of drivers compared to 67% of non-drivers were independent in all instrumental ADLs. Additionally, 30% of drivers and 63% of non-drivers reported using an assistive device.

Conclusion: Less than a third of patients getting care in the geriatrics clinic at a safety net hospital in Atlanta report driving a motor vehicle. As expected, drivers had a lower score on functional dependency index. However, medical co-morbidities were similar among drivers and non-drivers.
D106 Resident Presentation
CAIDE Risk Score Prediction of Short-Term Incident Cognitive Impairment in African Americans
S. E. Kerut,¹ S. Lirette,¹ R. Abi Saleh,¹ S. T. Turner,² E. J. Benjamin,³ M. Fornoje,¹ T. H. Mosley,¹ M. Griswold,¹ B. Windham.³
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Background: The Cardiovascular Risk Factors, Aging, and Dementia (CAIDE) study risk score showed predictive utility for dementia in whites with replication in an independent ethnically diverse medical records database study. We examined the performance of the CAIDE risk score and CAIDE plus clinical factors in predicting short-term incident cognitive impairment among the African American (AA) Genetic Epidemiology Network of Arteriopathy (GENOA) cohort.

Methods: We included cognitively unimpaired AA at visit 2 (Mini-Mental State Examination (MMSE)>20 & global cognition z-score>-1.5), when CAIDE risk score components (age, education, sex, body mass index, systolic blood pressure, cholesterol and physical activity) were assessed, who also underwent cognitive exams at visit 3 (mean 7 years later). Using race-specific cut points, we defined incident cognitive impairment as follow-up MMSE<20, z-score<1.5, MMSE decline ≥1 point/year, or z-score decline of ≥0.1/year. We fit generalized estimating equations with binomial families and logit links to derive C-statistics for the CAIDE risk score and for the CAIDE risk score plus clinical factors (WC, diabetes, and smoking).

Results: Among 587 participants (mean age 62.3 years, 74% women, 92% with hypertension, 24% with diabetes, 54% obese), 107 participants (18%) developed cognitive impairment. The C-statistic in the CAIDE study was 0.77 (95% confidence interval [CI]: 0.71-0.83) and 0.75 (no CI reported) in the independent medical records study. The CAIDE risk score C-statistic in GENOA was 0.64 (95% CI: 0.58-0.69), while WC improved this modestly (C=0.66 [0.61-0.72]), diabetes and smoking had little additional impact (C=0.67 [0.61-0.73]).

Conclusions: While predictive utility typically decreases in independent studies, the GENOA results were poorer than other independent studies, highlighting a critical knowledge gap of contributing factors to cognitive impairment in AA. Central adiposity may play an important role in cognitive decline among AA with prevalent vascular risk factors.

D107 Student Presentation
Ethnic and Racial Differences in Prevalence of Meibomian Gland Dysfunction within the Older Population
S. P. Yalamanchili,¹ J. Donaldson,² M. F. Ward,² R. M. Davis.³
¹. Northeast Ohio Medical University, Avon, OH; 2. Ophthalmology, University of North Carolina-Chapel Hill, Chapel Hill, NC.

Background: Meibomian gland dysfunction (MGD) is the principle cause of evaporative dry eye disease (DED), and is a main cause of discomfort in older adults. However, little research has been done regarding the racial and ethnic differences in the prevalence of MGD, and few studies have reported the MGD prevalence rates in older age groups. We conducted a retrospective chart review to investigate the prevalence of MGD in older adults of various ethnic and racial populations in a large academic healthcare network.

Methods: Healthcare records of living patients aged 50 and older that had a clinical encounter within the UNC Ophthalmology system were obtained from the Carolina Data Warehouse for Health. This study encompassed patient records from April 4, 2014 to July 23, 2017. ICD and EMR codes for MGD and MGD spectrum disorders were used to obtain demographic information from this data. Subjects were categorized by sex, age, ethnicity, and race. Prevalence rates and 95% confidence intervals for each race, ethnicity, and age interval were calculated.

Results: Out of 19,314 eligible patients who were seen at UNC Ophthalmology clinics, 2,002 patients were diagnosed with MGD. The highest prevalence rates of MGD were reported in Asians (10.20%; 95% CI, 7.58-13.59) and Caucasians (13.20%; 95% CI, 12.60-13.83), whereas African Americans displayed the lowest prevalence rate (5.56%; 95% CI, 4.87-6.34). With increasing decades of age, prevalence rates significantly increased from 7.72% (95% CI, 7.06-8.43) in the 50-59 age group to 13.71% (95% CI, 12.33-15.24) in the 80-89 age group.

Conclusions: MGD varies in prevalence based on race and ethnicity, while also increasing with age. The likelihood of developing MGD with increasing age will be a potential focus for future study. Further investigation is needed to delineate the association between race and ethnicity and the risk of developing MGD so that providers can better identify and treat this underdiagnosed disease.
D109 Student Presentation
Joint hypermobility and multijoint osteoarthritis in a community-based cohort
T. Gullo,1 Y. Golightly,2 P. Flowers,2 J. Jordan,7 J. Renner,2 T. A. Schwartz,2 V. Kraus,3 M. Hannan,4 R. Cleveland,2 A. Nelson.2

Background: This cross-sectional study of a community-based cohort evaluated potential associations between joint hypermobility and multijoint osteoarthritis (MJOA) given conflicting evidence.

Methods: The sample included 1677 Johnston County OA Project participants (African American and white adults aged ≥45 years who were assessed for hypermobility and MJOA during 2003-2010. Based on the literature, 4 definitions were used for radiographic (Kellgren-Lawrence grade) and symptomatic MJOA. Hypermobility was based on a score of ≥4 on the Beighton Criteria, which assesses hypermobility at 4 bilateral joint sites and trunk (scored 0-9). Logistic regression models were used to estimate associations of hypermobility with each MJOA definition via odds ratios, adjusting for age, sex, race, body mass index (BMI) and enrollment cohort.

Results: The sample was 68% women, 31% African Americans, mean age 69 ± 9 years and mean BMI 31 ± 7 kg/m². Compared to participants without MJOA, those with MJOA were generally older, and for MJOA1-3 were more likely to be female and white. Depending on the definition, joint hypermobility was associated with lower odds of MJOA (74% lower odds of radiographic and 58% lower odds of symptomatic MJOA compared with not having MJOA1) or was not associated (MJOA2-4, Table). The individual Beighton maneuvers yielded statistically insignificant associations, excepting 5th digit hypermobility, which was associated with 8-34% lower odds of symptomatic MJOA1,2,4.

Conclusion: Overall, joint hypermobility did not appear to be positively associated with MJOA in this cohort, and an inverse association may exist with MJOA1. Longitudinal studies are needed to determine the contribution of hypermobility to the incidence and progression of MJOA.

Associations between hypermobility by Beighton criteria and 4 definitions of radiographic and symptomatic MJOA

<table>
<thead>
<tr>
<th>Beighton Measure n/N</th>
<th>MJOA1</th>
<th>MJOA2</th>
<th>MJOA3</th>
<th>MJOA4</th>
</tr>
</thead>
<tbody>
<tr>
<td>≥2/1 IP + 2/2 other sites (hip, knee, spine)</td>
<td>0.62 (0.53-0.73)</td>
<td>1.21 (0.95-1.57)</td>
<td>0.92 (0.78-1.09)</td>
<td>0.92 (0.78-1.09)</td>
</tr>
<tr>
<td>≥2/1 IP + ≥1 CMC and ≥2/2 other sites (hip, knee, spine)</td>
<td>0.72 (0.53-1.01)</td>
<td>1.27 (1.01-1.60)</td>
<td>0.92 (0.78-1.09)</td>
<td>0.92 (0.78-1.09)</td>
</tr>
</tbody>
</table>

*Statistically significant; IP: interphalangeal, CMC: carpometacarpal, DIP: distal interphalangeal, PIP: proximal interphalangeal, rOA: radiographic OA, sxOA: symptomatic OA

D110 Student Presentation
Screening for Falls Risk in Older Adults
T. M. Gomes,1,2 J. H. Gurwitz.1,2

Background: Falls are a leading cause of injury among community-dwelling older adults, yet older patients may not be routinely screened for risk of falling by primary care providers. We conducted this study to: (1) determine the prevalence of positive fall risk screens among older adults in an ambulatory care setting; (2) examine the relation of age and gender to screening positive; and (3) assess what percent of older adults who screen negative subsequently screen positive. Methods: Three falls risk screening questions were administered to all patients aged 70+ who were seen at a large, multi-specialty group practice in central Massachusetts between 2014 and 2017. The falls risk screening questions included: (1) Have you fallen 2 or more times in the last year? (2) Have you fallen and sustained an injury in the last year? and (3) Are you afraid that you might fall because of balance or walking problems? Questions were administered by a medical assistant in association with rooming the patient. A positive screen was defined as a “yes” response to one or more questions. The prevalence of positive screens was calculated by dividing positive screens over total screens, and we calculated a 95% confidence interval around the estimate. Results: The prevalence of a positive screen for falls among 13,582 screened patients was 32.6% (95% CI 31.8%-33.4%). Advancing age was associated with an increasing prevalence of a positive screen (p=0.001). Across all age groups, women were more likely than men to screen positive (p=0.001). Among patients who initially screened negative and underwent at least one re-screening, 39.6% subsequently turned positive (95% CI 38.4%-40.8%). Conclusions: A large percentage of older adults receiving care in an ambulatory setting screen positive for risk of falls. The likelihood of screening positive increases with age and female gender. Our findings underscore the need for ongoing screening among patients who initially screen negative. Health care systems and providers in the ambulatory setting should implement procedures and practices that encourage screening for falls risk for all older patients in the context of visits to the primary care provider.

D111 Student Presentation
Physical, Mental and Social Health Status of Older Adult Cancer Survivors
A. Wilson, N. Bruner, J. Semin, R. High, J. Potter, T. Koll. University of Nebraska Medical Center, Omaha, NE

Background: The number of cancer survivors in the United States will likely reach 20 million by 2024. Cancer disproportionally impacts older adults. The objective of this study is to compare physical, mental and social health among older cancer survivors and non-cancer controls.

Methods: This is a cross-sectional study design. We used data from the National Social Health and Aging Project (NSHAP) Wave 2 sample, an in-home, nationally representative probability sample of older adults from households across the United States collected between August 2010 and May 2011. Adults ≥50 years old with a history of cancer (nonskin) were matched with individuals without a history of cancer on age, education and gender. In addition to descriptive analysis, we used random effects model to account for the correlation of paired data.

Results: Among 3,377 older adults (age ≥ 50 years), 11.6% were cancer survivors. Table 1 presents data on physical, mental and social health, by cancer survivorship status. Cancer survivorship was significantly associated with self-rated fair/poor physical (OR 1.44, p<0.005) and mental health (OR 1.28, p=0.064). Compared with individuals without cancer, a greater percentage of cancer survivors have functional limitations.

Conclusions: Self-ratings of health by individuals have shown to be a predictor of mortality in a growing number of studies. Research is needed to understand the determinant of older cancer survivors’ appraisal of illness and outcomes of fair/poor self-rated health.

Table 1: Physical, Mental and Social Health

<table>
<thead>
<tr>
<th>Variables</th>
<th>Individuals with Cancer (N=394)</th>
<th>Individuals without Cancer (N=394)</th>
<th>Odds Ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-rated physical health (poor/fair)</td>
<td>1.44 (1.005-2.05)</td>
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<tr>
<td>Self-rated mental health (poor/fair)</td>
<td>1.28 (0.94-1.76)</td>
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<tr>
<td>Difficulty dressing</td>
<td>1.68 (1.07-2.65)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difficulty climbing stairs</td>
<td>1.03 (0.83-1.28)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Difficulty walking a block</td>
<td>0.87 (0.47-1.61)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social activity with friends and relatives (less than once a month)</td>
<td>0.85 (0.27-2.74)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Statistically significant.
D112 Resident Presentation
Impact of Visual Impairment in Community Dwelling Elderly with Diabetes Mellitus
V. Ho,1 M. Chen,1 M. Y. Lim,2 R. Merchant.1,2 1. National University Hospital, Singapore, Singapore; 2. National University of Singapore, Singapore, Singapore.

Background: With ageing and increased prevalence of falls and frailty, population health and preventive medicine are top priorities. Aside from primary eye diseases, ocular manifestations of systemic diseases like diabetes mellitus (DM) are a formidable proportion. Poor vision is linked with geriatric syndromes of falls, dementia and frailty. We aim to evaluate the prevalence of visual impairment in diabetics and its impact on frailty, physical function and cognition.

Methods: Cross-sectional healthcare screening was conducted among ambulant community dwelling elderly (>65years) in an urban Singaporean town. Demographic data, frailty status, physical and cognition were measured. 3-metre Snellen’s chart was used to measure visual acuity. Poor visual acuity was defined as performance of 6/18 or worse in at least 1 eye. Statistical analyses were done with 2-tailed T-test.

Results: There were 785 participants with a mean age of 71.3±0.2 years. 448 (57.1%) were female. Prevalence of DM was 175 (22.3%). Amongst those with DM, 104 (59.4%) had visual impairment (VI). This subset was significantly older. 29 (27.9%) had Mini Mental State Examination (MMSE) of less than 24 compared to 7% in those with DM and were visually intact. Interestingly, those with DM and VI had higher prevalence of frailty, falls and longer Timed-Up-and-Go (TUG) scores. Mean subjective health status was similar in both groups and half of both groups had low grip strength. There was no significant difference in cognition between DM and non-DM in the visually intact.

Conclusions: Our study shows a clear relationship between cognition and VI in elderly with diabetes. If not identified early, sensory impairment will further exacerbate cognitive decline and subsequent medication adherence. Cognitive assessment should be carried out in all patients with diabetes with VI.

D113 Resident Presentation
Cognitive Function Changes in patients with Diabetes Mellitus in Mexican population in ENASEM

Background: Epidemiological studies have found a relationship between Diabetes Mellitus type 2 (DM2) and dementia. In Mexico, it’s estimated 2.08 times greater risk of suffering cognitive impairment in the diabetic population. There is a shortage of studies with long follow-up in these patients. Our aim was to evaluate which cognitive domains change across time in DM2 population to focus on screening tools for a better assessment.

Methods: A descriptive - retrospective study using the database ENASEM (Encuesta Nacional de Salud y Envejecimiento en México) following diabetic patients older than 60 years that survived from 2001 to 2015. The cognitive assessment tool called Cross Cultural Cognitive Examination test (CCTE) was used, 80 points (pts) maximum. The domains compared in time were: selective attention (60 pts), primary and secondary verbal memory (8 pts each), visuospatial abilities (2 pts) and visual memory (2 pts). Pared sample t student test was performed.

Results: We followed 149 patients divided by education: 0, 1-6 and >7 years of schooling. Patients with DM2 had a survival of 42% at 14 years. In patients without scholarship, there was a significant alteration in primary and secondary verbal memory (4.14 to 1.76 pts in the latter); in 1-6 years all domains were altered except for visuospatial abilities; in >7 years, only selective attention and secondary verbal memory were significantly affected (37.75 to 26.17, and 6.25 to 3.9 respectively). A constant alteration in secondary verbal memory or evocation was found. By adding years of study to the sample, domains with non-amenic characteristics were affected. The results are partially compatible with other populations.

Conclusion: Secondary verbal memory was the only cognitive domain that remain altered in 3 groups with DM2. As neuropsychological assessment varies according education, selection of a screening tool for cognitive impairment that assesses word evocation may be useful in diabetic population.

References:

D114 Student Presentation
Does anti-tumor necrosis factor therapy affect colorectal cancer outcomes?
W. Luo,1 A. Bryant,1 S. Stringfield,3 J. Murphy,2,1 S. Eisenstein,3,1 1. UCSD School of Medicine, San Diego, CA; 2. Radiation Medicine and Applied Science, University of California, San Diego, La Jolla, CA; 3. Surgery, University of California, San Diego, La Jolla, CA.

Background: The association between inflammatory bowel disease (IBD) and the development of colorectal cancer (CRC) has been documented. However, the causes of this association are still subject to debate. Chronic inflammation associated with IBD is likely a large contributor. Immunosuppressive anti-Tumor Necrosis Factor alpha (antiTNF) therapy has also been implicated in the development of other malignancies. However, other studies have refuted this. This retrospective study seeks to examine CRC outcomes in patients on antiTNF therapy. In doing so, we hope to identify whether such a correlation exists, giving insight into additional risk factors for CRC.

Methods: We identified all patients diagnosed with CRC from the Veterans’ Affairs (VA) Informatics and Computing Infrastructure (VINCI) database between 2000-2015. We identified patients with a history of antiTNF therapy by text mining clinical notes. Multivariable logistic regression analyses were performed to assess effects antiTNF on CRC stage and histologic grade. Multivariable Cox regression analyses were performed to assess cancer-specific and overall survival. Multivariable models controlled for potential confounding variables including age, sex, alcohol/tobacco use, IBD history, and Charlson comorbidity index.

Results: A total of 42,579 CRC patients were included of whom 397 received antiTNF treatment within one year of CRC diagnosis. We found no significant association between antiTNF use with tumor stage at presentation or grade. AntiTNF was associated with a 24% decreased risk of cancer-specific mortality (hazard ratio 0.76 (95% CI: 0.60-0.96); p=0.02), though was not associated with overall survival (hazard ratio 0.90 (95% 0.76-1.07); p=0.22).

Conclusions: Our findings show that there appears to be some association with improved cancer-specific survival among CRC patients that have been treated with antiTNFs. Though antiTNF use may be a surrogate marker of IBD in patients, this association may be independent of IBD status. These results are not surprising considering the lack of consensus in the current literature on antiTNF use and malignancy risk, and warrants further investigation.

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References:
D115 Student Presentation
Changes in Advanced Care Directives in at risk patients seventy-five and older at hospital admission, discharge and 30 days post discharge

A. Adams,1 C. G. Hoffer,2 G. Engstrom,3 B. Reyes,4 J. Ouslander.5 1. Charles E. Schmidt College of Medicine at Florida Atlantic University, Pembroke Pines, FL; 2. Florida Atlantic University, Boca Raton, FL; 3. Florida Atlantic University, Boca Raton, FL; 4. Florida Atlantic University, Boca Raton, FL; 5. Florida Atlantic University, Boca Raton, FL.

BACKGROUND: The purpose of this study was to determine whether patients who had a transition recommendation to address goals of care were more or less likely to have an Advanced care directives (ACD) compared to those who did not. Patients who had recommendations were hypothesized to be more likely to have a change in their ACD, both between admission and discharge, as well as between discharge and 30 days after. METHODS: The STAR (Safe Transitions for At Risk Patients) program is a collaboration between Florida Atlantic University, Boca Raton Regional Hospital and post-acute care facilities that aims to address the complex needs of older high risk patients. Data were collected on 219 STAR patients who were enrolled from July 2016-2017. 139 had a 30-day posts-discharge visit. ACDs were determined by record reviews. Data were analyzed by comparing the number of ACDs on admission and discharge and 30 days post-discharge, and determining how many changes occurred between admission discharge and 30 days. Of those changes, it was then determined what percent had transition recommendations to address goals of care. RESULTS: Results of this analysis showed that on admission only 7/139 (5%) had an ACD documented in their medical record, and 20% had an ACD documented at discharge. At 30 days post-discharge, 65/139 (47%) had an ACD and 74/139 (53.2%) did not have an ACD. In total, 70 changes were made: 23 were made between admission and discharge and 47 were made between discharge and 30 days post-discharge. Out of the 70 changes, 15% had transition recommendations to address goals of care. CONCLUSION: Overall, a relatively low proportion of high risk older patients had an ACD, even after a hospitalization. The percent of patients with an ACDs increased from both admission to discharge and from discharge to 30 days post-discharge. This may have been due to the acute illness and patient/family recognition of the benefits of an ACD. This may also have been due to lack of documentation of an ACD on admission.. This research highlights the needs for effective end of life care discussion with high risk older patients and their families.

D116 Student Presentation
Exam room prevention of crashes and injury on the road: assessment of a geriatric patient’s driving ability

C. Quaglieri,1 J. Kuester.1 1. Medical College of Wisconsin, Wauwatosa, WI; 2. Milwaukee VA, Milwaukee, WI.

The second leading cause of injury-related deaths in 65-84 year olds are motor vehicle crashes (CDC, 2015). While the American Medical Association, Department of Transportation, American Geriatrics Society, and Veterans Health Administration all offer driving assessment recommendations and resources, there is no standardized assessment tool used by health care providers when assessing the driving ability of elderly patients. This study sought to explore the practices and opinions of health care providers who conduct these assessments. A population of primary care providers at the Clement J Zablocki VA Medical Center in Milwaukee, Wisconsin, was included in this qualitative, ethnographic study which employed anonymous, voluntary interviews and value-ranking surveys. Nineteen of the thirty-nine surveys (48.7%) were returned and most notably displayed a higher value attributed to the importance of the provider assessing the safety of elderly patients than the value attributed to the self-perceived confidence in provider ability to assess the safety of these patients. Six of the thirty-nine participants (15.4%) were interviewed and a wide variety of opinions were expressed on: driving assessment methods in the exam room, the self-perceived role of providers in assessing patients and reporting to the Department of Motor Vehicles, and the concept of standardized screening for driving safety. No participants admitted referencing any materials produced by a healthcare organization to aid in their driving assessment. From these results, it appears that health care providers share a common unawareness or underutilization of assessment resources. Additionally, there is discord in providers’ self-perceived role, responsibility, and confidence level in assessing the driving impairment of elderly patients. Future studies should explore the use of standardized screening prompts during the patient encounter and how to best make health care providers aware of current assessment resources.

D117 Student Presentation
Advance care directives at hospital admission versus discharge for patients aged seventy-five and older by patient gender and age.

C. G. Hoffer, A. Adams, G. Engstrom, B. Reyes, J. Ouslander. Charles E. Schmidt College of Medicine at Florida Atlantic University, Boca Raton, FL.

BACKGROUND: The purpose of this study was to examine Advance Care Directives (ACDs) for older adults aged 75-84 and 85 and older at hospital admission, and changes made prior to discharge. Changes in ACDs during hospitalization may differ based on gender and age. The hypotheses are as follows: 1. Female patients are more likely to have ACDs at admission than male patients and are more likely to change them during hospitalization. 2. Patients aged 85 and older are more likely to have ACDs in place at admission than patients aged 75-84, and are more likely to change their ACDs from admission to discharge.

METHODS: Data were analyzed for 13,574 patients admitted to Boca Raton Regional Hospital. Types of ACDs included: DNR, DNI, and Full-Code, and were determined by record review at time of admission and discharge. Data were assessed by comparing male and female patients in two age brackets, patients aged 75-84, and 85 and older.

RESULTS: Overall, 643 of the 13,574 (5%) patients had ACDs in place when they were admitted to the hospital. 1,318 of the 13,574 (10%) patients changed their ACDs from admission to discharge. Among males 75-84 years (n=3,206), 69 (2%) had ACDs in place prior to hospitalization, and 172 (5%) changed their ACDs from admission to discharge. Among females 75-84 years (n=3,743), 82 (2%) patients had ACDs in place at admission, and 229 (6%) patients changed their ACDs from admission to discharge. Among males age 85+ (n=2,875), 176 (6%) had ACDs in place prior to hospitalization, and 404 (14%) changed their ACDs from admission to discharge. Among females aged 85+ (n=3,750), 316 (8%) had ACDs in place prior to hospitalization and 513 (14%) changed their ACDs from admission to discharge.

CONCLUSION: Female patients in the 85+ group had more ACDs in place at admission than male patients, but changed with the same frequency as male patients. In the 75-84 age group, female patients had the same percentage of ACDs as male patients, but changed their ACDs more frequently. Patients in the 85+ age group had overall more ACDs in place, and were more likely to change their ACDs than in the younger age group. This study highlights the need for better documentation and re-evaluation of patient goals and care needs before and during hospitalization.
D118 Student Presentation
Clinicians’ views on factors influencing prescribing decisions for patients with dementia
P. R. Lee,1 C. Boyd,2 A. Green.2 1. University of Illinois College of Medicine at Chicago, Chicago, IL; 2. Medicine (Geriatrics), Johns Hopkins, Baltimore, MD.

Background
Patients with dementia often have co-existing conditions and may have challenging behavioral symptoms, both of which can lead to increased risk for polypharmacy, potentially inappropriate medication use and adverse drug events. Little is known about how clinicians prescribe treatment approaches prescribing decisions for to these such patients. To begin developing a framework for optimizing prescribing decisions for patients with dementia, our objective was to investigate the factors that clinicians consider when making decisions about starting, continuing, or stopping medications for such patients.

Methods
Semi-structured interviews of 12 primary care and 8 specialist clinicians in community-based clinics in urban, suburban and rural settings. Qualitative content analysis was used to identify major themes. Interviews were conducted from March 1 to October 21, 2017.

Results
Participants comprised 18 physicians and 2 nurse practitioners with a mean (SD) age of 45.7 (4.0) and a mean 12.8 years in practice. Thirteen were women; nine were white. Nine reported that 10-25% of their patients have dementia; the rest reported a smaller percentage. Clinicians considered dementia severity, functional status, living situation, and patient and caregiver preferences, but felt uncertain when making prescribing decisions. The following drug classes were cited as challenging: bladder antimuscarinics, cholinesterase inhibitors, sedative-hypnotics, statins and oral anticoagulants. Participants identified many barriers to reducing polypharmacy and potentially inappropriate medication use in patients with dementia: lack of resources to assist family caregivers with challenging symptoms such as incontinence, inability to gauge the efficacy effectiveness of a drug for an individual patient, and fear of “giving up on the patient” or causing potential harm by deprescribing. Facilitators of optimal prescribing included collaboration with pharmacists and early communication of expectations of the progression of dementia to families.

Conclusions
Clinicians encounter multiple challenges in making prescribing decisions for patients with dementia. Guidelines and decision aids that explicitly address how dementia should influence the care of co-existing conditions should be tested to reduce polypharmacy and use of potentially inappropriate medicines in patients with dementia.

D119 Student Presentation
Patient-Centered Care: Medical Students Engagement Through Immersion Learning
S. Marcello,2 W. Brown,3 M. R. Gugliucci.3 1. University of New England College of Osteopathic Medicine, Biddeford, ME; 2. University of New England College of Osteopathic Medicine, South Plainfield, NJ; 3. Division of Geriatrics, University of New England College of Osteopathic Medicine, Biddeford, ME.

Introduction: An integral part of providing patient-centered care is the development of communication skills that allows practitioners to understand the needs of their patients [1]. However, physicians and medical students receive little training on these communication skills [1]. The University of New England College of Osteopathic Medicine 48 hour Hospice Home Immersion project provided an intense and experiential learning modality for medical students to learn and experience components of patient/person centered care during end of life care that will impact their future as physicians.

Methods: Ethnographic/auto-biographic research methods were applied. Two second year medical students were immersed into an 18 bed inpatient Hospice Home for 48 hours to provide patient, family, and post-mortem care in an inter-professional setting [2]. Students recorded their feelings, observations, and thoughts in writing during 3 phases of the project: before entering the Hospice Home, during the 48 hour immersion, and after completing the immersion experience [2]. Data were collected in the form of journal notes and included subjective and objective reporting of observations and experiences. Analyses included journal review and thematic categorization and coding through content analysis.

Results: Although many themes were identified, three themes were directly associated with patient/person centered care: 1) Importance of Patience and Presence in the Moment; 2) The Healing Power of Touch; and 3) Developing a Relationship. Representative quotes and key outcomes were included for each theme.

Conclusion: For the medical students who volunteer for the 48 Hour Hospice Home Immersion Project, it has influenced their understanding and application of patient/person centered care. This project appeared to be a life altering experience that may be a catalyst for change.

References

D120 Student Presentation
Multicompartment Mesenchymal Tissue Analysis of Spontaneous Lower Extremity Fractures using 3D Computed Tomography
A. Narayan. University of Texas Southwestern Medical Center, Irving, TX.

Background: Spontaneous fractures are non-pathologic and occur without a demonstrable external cause. These debilitating injuries are poorly studied in older populations and are a major cause of morbidity and mortality in nursing home residents. DEXA suffers from several limitations in evaluating osteoporosis, such as an inability to estimate volumetric bone density, the delayed progression of BMD changes observable on DEXA in disease and treatment course, and calcification artifacts in older adults compounded by a lack of depiction of anatomic details for pre-surgical planning and cause of fracture. Given the ability of CT scans to generate accurate 3D imaging of bony anatomy and semi-automated software programs which allow multicompartment mesenchymal tissue segmentation and volume calculation, it is possible to generate surrogate imaging markers of spontaneous fractures.

Methods: Among 522 consecutive patients from 01/2013 to 01/2016 with extremity fractures, 38 spontaneous hip fractures were identified. Patients with a history of physical trauma, secondary pathology, or surgery at the fracture site were excluded. Of those, 25 femoral fracture cases (mean age: 65.0 years, SD: 14.0 years, 48% male) were then further selected after excluding local metal and artifacts. These cases were then assessed for bone, fat and regional muscle analyses proximal, at, and distal to fracture as well as at the contralateral non-fractured sites.

Results: Fixed ROI analyses revealed a mean HU density of 180.2 HU at fracture site, likely attributable to hemorrhage and trabecular compression of the non-pathologic bone. Both fracture site density and density of 109.1 HU observed at the corresponding contralateral unfractured femur site were consistent with underlying decreased bone density (p < 0.05). Visceral to Subcutaneous (V/S) fat analysis, outer body
circumference, and muscle analyses are pending and will be reported at the time of the abstract presentation.

**Conclusions:**

Spontaneous fractures are associated with underlying decreased bone density and osteoporosis. Bone density relatively increases at the site of fracture, confirming the non-pathologic nature of the fracture. Currently, multicompartment tissue segmentation work is underway and will be presented to illustrate the role of concomitant sarcopenia. Future work will be performed at other extremity sites from the data set, such as the knee, upper, and lower legs.

**D121 Student Presentation**

**Older Mice Conserve Water Less Well than Young Mice**

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**Background:** Resilience has been defined as the ability of an organism to respond to stress. Resilience diminishes with age, increasing morbidity and mortality from acute challenges in older adults. Here, we tested a 12-hour water deprivation as a test of resilience in aged mice (28-30 months old, n=8) versus young (4 months old, n=14) C57BL6/J mice and compared the weight loss.

**Methods:** After 12-hour water deprivation, mice were granted free access to water. Their weights in grams were recorded before and after the water deprivation and one hour after providing water. Food was available during the deprivation.

**Results:** Old mice lost a higher amount of weight when subjected to a 12-hour water deprivation period (1.61 ± 0.16 g vs 1.25 ± 0.06 g, p=0.03). There was great heterogeneity in the older mouse weight loss, the coefficient of variation was 50% greater in old versus young. After providing water, we observed less fluid consumption over a 1-hour period in old mice compared to young mice. Old mice recovered 60% of the weight lost, young animals recovered 67% (p=0.45).

**Reproducibility:** When the water restriction test was repeated after a week time span in a subset of old mice, we observed no difference in the mean weight lost (1st test 1.49 g vs 2nd test 1.50 g, p=0.93) and minimal variability in the individual animal measurements.

**Conclusions:** Overnight water deprivation has a greater impact on the body weight of old mice compared to young mice with some old animals retaining water much better than others. The test is safe, reproducible and clinically relevant. We believe that poor performance in this provocative challenge may predict poor performance in other stress tests and reveal loss of resilience in old mice.

**D122 Student Presentation**

**The Identification of the New Signaling Pathway Involved in the Pathogenesis of Nonalcoholic Fatty Liver Disease (NAFLD)**

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**Background:** The obesity epidemic continues to increase in the United States; it is estimated that 1 in 3 adults are obese (BMI ≥ 30 kg/m²). Non-alcoholic fatty liver disease (NAFLD) is an epidemic health problem, and it is the most common acquired metabolic disorder such as obesity. NAFLD is common in the geriatric population and carries greater complications of steatohepatitis, cirrhosis, liver cancer, cardiovascular disease, and hepatic neoplasms than in younger population. The serine/threonine protein kinase Liver Kinase B1 (LKB1) has been identified as a tumor suppressant, but its metabolic function in the liver remains unclear. This study aims to identify the new signaling pathway involved in the pathogenesis of Nonalcoholic Fatty Liver Disease (NAFLD).

Methods: Two animal models of NAFLD were used for this experiment. One model is with genetically obese model that compared wild-type mice and ob/ob mice fed in the normal diet and another model is diet-induced NAFLD model that compared C57 B/J6 mice with normal diet and high-fat high sucrose (HFHS) diet.

**Results:** In NAFLD sample patient, LKB1 phosphorylation was decreased compared with normal subjects. HFHS-diet-induced obese mice displayed high body weight, increased adipocyte size, increased liver lipid levels and elevated plasma lipid levels in ob/ob mice and HFHS-fed mice, and decreased the phosphorylation of hepatic LKB1 in HFHS-induced obese mice. The gene expression of lipogenic regulators including sterol regulatory element-binding protein (SREBP)-1 and fatty acid synthase (FAS) were increased in ob/ob mice compared to lean mice.

**Conclusion:** Defective hepatic LKB1 function may represent a new signaling pathway for the initiation and progression of NAFLD in obesity.
D124 Student Presentation
Axonal Transport of AAV serotype 7
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Background: Brain viral vector directionality will direct the selection of the serotype in future clinical indications. It has been shown that axonal transport is serotype dependent (Salegio et al. 2012). Anterograde axonal transport describes virus passing from cell body to distal terminal. Retrograde axonal transport describes viral particle uptake from axon termini and their transport to cell body. Previous work in rat and nonhuman primate thalamo-cortical projections showed that adeno associated virus serotype 2 (AAV2) undergoes anterograde transport, while AAV serotype 6 (AAV6) is transported retrograde from the injection site to distal structures (Ciesielska et al. 2010; Kells et al. 2011; Salegio et al. 2012). In the present study, we evaluated axonal transport of AAV serotype 7 (AAV7) into the rat brain parenchyma.

Methods: Six rats (Sprague-Dawley, n=3 per vector) received unilateral convection-enhanced delivery infusions (15 µL) of AAV2 or AAV7 (7E+12 vg/mL and 8E+12 vg/mL, respectively) encoding aromatic L-amino decarboxylase gene (AADC) into the right thalamus (AP -3.0, ML 2.5, DV -5.5mm from bregma). AAV2 was used as an anterograde transport control. Two weeks after brain infusions, rats were perfused with PBS and 4%PFA. Brains were cut into 40-µm sections with a sliding microtome. Sections were incubated overnight with specific primary antibody (polyclonal rabbit anti-human AADC, 1:5000), and then, incubated with Mach 2 anti-rabbit HRP polymer for 1h at room temperature, and visualized with 3, 3’-diaminobenzidine.

Results: AAV7 viral vector showed a stronger level of transduction and broader local distribution in the injection site compared with the AAV2 vector, likely due to faster uncoating of the viral capsid. The transduction pattern along different brain structures support a mixed anterograde and retrograde transport of AAV7 viral vector, where only fibers transduced in the putamen and cell bodies transduced in the substantia nigra. The levels of transduction in distal structures were lower than expected, likely due to dose-dependent axonal transport of AAV7 viral vector.

Conclusion: Although further research in cellular tropism, dose-dependent axonal transport and immune response is required to fully understand the potential of AAV7 as a feasible tool for direct brain delivery, AAV7 showed promising results to be eligible when broad transgene distribution into the brain is required.

D125 Student Presentation
Neurodegenerative mechanisms in a Drosophila model of traumatic brain injury
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Background: Traumatic brain injury (TBI) is a significant cause of morbidity and mortality in the 65+ population, which visited the emergency room due to TBI more than twice as many times as any other age group in 2010. The mechanism of TBI-induced neuronal damage, while believed to be a type of tauopathy, has not been clearly delineated. In this study, we aim to show that TBI causes neurodegeneration via neuronal apoptosis in a Drosophila melanogaster model.

Methods: TBI was induced in two-day old flies via the High Impact Trauma device proposed by Katzenberger et al. Flies were loaded into a vial and attached to the end of a spring; the opposite end of the spring was in turn fastened to a horizontal wooden plank. The fly end was retracted to 90° and released. Flies were divided into three groups that received either one hit, two hits with a two-minute interval, or no hits (control). Flies were then aged to either 10 or 20 days, processed, embedded in paraffin wax, and sectioned at a thickness of four microns. Flies that died before the intended sacrifice day were excluded from analysis.

Results: Apoptosis was assessed via a TUNEL assay, which allowed for quantification of apoptotic neurons under bright field microscopy. A one-way ANOVA was run to determine if the number of hits caused a significant difference in apoptosis between the control group, the one-hit group, and the two-hit group (n=6 per group). Among the flies aged to 10 days, there was no significant difference between the three groups (F=3.25, p=0.05). The 20-day flies also did not show outstanding differences between groups.

Conclusions: These findings suggest that neuronal apoptosis was not induced in flies using the HIT device, likely due to the variable nature of the injury. Since flies contacted the side of the vial randomly, it is possible that many experienced non-head injuries. Moving forward, we intend to employ a different injury method which will result in a more reproducible head injury by delivering an impact directly to the fly head. Our goal is that by demonstrating the underlying pathophysiology of TBI, we may be better equipped to develop treatments for TBI, as well as gain a better understanding of tauopathies as a whole.

D126 Resident Presentation
Reduced Nrf2 expression mediates the decline in endothelial progenitor cell function during aging through upregulating NLRP3 inflammasome
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Background: Aging is one of the independent risk factors for cardiovascular disease. Decreased endothelial progenitor cells (EPCs) number and function play a pivotal role in reduced endothelial repair and development of cardiovascular disease. The purpose of the present study was to explore the protective effect of the nuclear factor (erythroid-derived 2)-like 2 (Nrf2) on EPCs dysfunction during aging and mechanism underlying. Methods: Biological functions of EPCs from young (3 month), middle-aged (12~13 month) and aged mice (22~24 month) were evaluated, including migration, proliferation and secretion of vascular endothelial growth factor (VEGF), stromal-derived growth factor (SDF) and nitric oxide (NO). Laser Doppler perfusion imaging was conducted to demonstrate the blood flow reperfusion. Capillary density was measured in the ischemic gastrocnemius muscle. Oxidative stress levels was evaluated by ROS, SOD and MDA. Furthermore, the functions of EPCs and the levels of oxidative stress were assessed after the Nrf2 silence by siRNA or activation by tert-butylyhydroquinone. LC3B and p62 expression was measured to evaluate autophagy level. Western blot was used to determine the protein expression of Nrf2, keap1, NLRP3, TRX1, TXNIP, p65, p62, LC3B. Quantitative PCR was used to determine the mRNA expression of Nrf2, HO-1, NQO-1, TRX1-1, keap1, NLRP3, IL1β, IL18, TXNIP, p65, p62, LC3B. Immunofluorescence is also used to detect Nrf2 expressions. Results: Biological functions of EPCs both in vitro and in vivo decreased during aging, accompanied with declined Nrf2 expression and its target gene (HO-1, NQO-1, TRX-1), impaired autophagy, and increased levels of NLRP3 expression and oxidative stress by increasing ROS and MDA content and decreasing SOD activity. Moreover, Nrf2 silence obviously damaged the biological functions of EPCs and enhanced the oxidative stress in EPCs from young mice, with a declined autophagy. While Nrf2 activation protected the impaired EPCs from aged mice against oxidative stress and ameliorated the biological dysfunction of EPCs derived from aged mice by downregulating NLRP3 inflammasome and upregulating autophagy. Conclusion: Nrf2 could protect the functional damage of EPCs by downregulating NLRP3 inflammasome though NF-kB signal during aging, and autophagy plays a vital role in it.
D127 Student Presentation
Response to Lipopolysaccharide: Aging and Surgery
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Background: Older patients often require elective spine surgery although there is a high likelihood of perioperative morbidity and mortality. Older patients have higher baseline levels of inflammatory cytokines, which are associated with frailty, functional status and cognitive impairment. Perioperatively, higher levels of interleukin-6 (IL-6) in older patients are associated with postoperative delirium and other adverse outcomes. The purpose of this study was to determine if older age and stimulation with lipopolysaccharide (LPS) increase the perioperative blood IL-6 response.

Methods: Individuals 70 years and older undergoing elective surgery for multi-level spine injury were prospectively enrolled. Preoperative baseline and postoperative day one (POD1) whole blood samples were collected and treated with a standard inflammatory dose of LPS or an equal volume of phosphate buffered saline as controls. Samples were also collected and processed from young healthy non-surgical controls. The concentration of plasma IL-6 was measured using a commercially available IL-6 ELISA.

Results: Six older patients (77 ± 5 years) and four healthy young controls (24 ± 3 years) were enrolled. At baseline, IL-6 levels in young controls were significantly less than in older preoperative patients (Student’s t-test, p = 0.01). After stimulation with LPS there were no differences in IL-6 levels between the samples drawn from the young controls and older preoperative patients (Figure A). On POD1, IL-6 levels in older surgical patients were higher than preoperatively but the response to LPS was lower in postoperative samples relative to preoperative samples (2-way ANOVA, p < 0.001 for effect of LPS, p = 0.05 for interaction between day and LPS, Figure B).

Conclusion: This pilot study suggests that IL-6 levels are higher in older patients, and increase after surgery when compared to baseline values. Stimulation with LPS may lead to an increase in IL-6 on POD1 suggesting a difference in the inflammatory capacity of preoperative when compared to postoperative blood.

D128 Student Presentation
Clarifying the Role of Hepatic Stellate Cells in Age-Related Liver Fibrosis by Their Depletion in Novel Murine Models

Introduction: Hepatic stellate cells (HSCs) are the major cell type driving fibrogenesis in chronic liver injury. However, their contribution to liver regeneration and hepatocyte turnover—pathways integral to liver aging—is unclear. Our goal is to elucidate the role of HSCs in liver aging by comparing the impact of their depletion in young and old mice.

Methods: We evaluated two HSC reporter mouse lines to assess their suitability for HSC depletion experiments: PDGFRβ-eGFP and LRA Tcre-ZsGreen. The PDGFRβ-eGFP line were treated with T cells from JEDI mice (Nature Biotech. 2015), which express CD8+ T-cells engineered to recognize and kill GFP expressing cells. In HSC-depleted mice, we evaluated changes in hepatocyte proliferation by PCNA mRNA level and Ki67 expression. In parallel, we assessed the specificity of an alternative HSC-reporter line which uses the lectin acetylretins transferase (LRAT) promoter to express ZsGreen, an enhanced GFP. Liver was examined for HSC-specific labelling. Additionally, other major organs including brain, lung and heart were screened for extrahepatic LRAT expression.

Results: The PDGFRβ-eGFP depletion model demonstrated >99% depletion of desmin-positive HSCs by immunofluorescence (p = 0.07) and qPCR (p < 0.0001). Expansion of the transplanted JEDI T-cell population was confirmed via flow cytometry. In HSC-depleted mice, the number of proliferating hepatocytes between control and depleted mice was not significantly different when measured by PCNA mRNA level or immunofluorescence. In the LRAT-ZsGreen model, ZsGreen reliably labelled desmin-positive HSCs in the liver. Extrahepatic screening revealed widespread ZsGreen expression including in lung, pancreas, brain, gut, and tests.

Conclusions: GFp-specific CD8+ T-cells efficiently deplete HSCs in PDGFRβ-eGFP mice while sparing other cell populations within the liver. LRA Tcre-ZsGreen reliably identifies desmin-positive HSCs in the liver. However, we identified significant extrahepatic labelling that has not been previously reported for the LRAT-ZsGreen line and might lead to unintended depletion of cells outside the liver. These findings advance our ability to establish a platform for assessing the contribution of HSCs to age-related loss of hepatocyte regeneration.

D129 Student Presentation
Targeted Audiologic Education for Trainees: Needs and Deficits
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Background: Hearing loss is a problem endemic to older adults, and healthcare providers can expect to encounter hearing-impaired patients frequently. However, few providers have had training in basic audiology principles. Hearing impairment has clear repercussions on an individual’s ability to communicate and socialize and studies have shown this condition to be independently linked with cognitive decline. Given the impact on patients, it seems likely that healthcare practitioners would benefit from education on basic audiology principles.

Methods: A needs assessment survey was created to determine: previous audiology education, topics of interest, and self-reported skills in caring for hearing impaired patients. Additionally, we developed a rubric of key observable behaviors that reflect best practice in identifying and appropriately supporting individuals with hearing impairment within the context of the clinical encounter. Geriatric medicine fellows were observed (prior to education) during continuity clinics for 3 months as a pre-assessment. Geriatric medicine fellows then attended 2 one-hour audiology didactics and experienced their own hearing assessment in the audiology clinic.

Results: Surveys were sent to a variety of healthcare professional roles with a 41% response rate. Of 31 respondents, 68% worked with older adults at least 50% of the time and only 16% reported receiving previous audiology training of any type. Topics of greatest interest included causes of hearing impairment/red-flag symptoms and tips and tricks for hearing aids and assistive devices. Finally, respondents reported performing best practice clinical skills for hearing impaired less than 50% of the time on 15 separate topics. In 20 observed clinical examinations, physicians rarely performed otoscopic examinations, asked questions regarding hearing loss, or made audiologic referrals for those requiring services.

Conclusions: The results obtained from our survey and clinical observations show a clear need for audiology education for geriatric medicine trainees and other healthcare providers. This is supported by the lack of previous training reported, and low self-reported and observed performance of best practice techniques. The effectiveness of the educational curriculum is not yet clear, as more content will be delivered and post-intervention observations will be performed at the end of the academic year.
D130 Student Presentation, Encore Presentation
Impacting nurses’ knowledge of delirium through an interprofessional, patient and family centered clinical simulation scenario
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Background: Delirium is a frequent complication in patients with cancer occurring in up to 30% during acute hospitalization and 85% in the terminal stages of cancer. Iatrogenic delirium can complicate hospital stays in over 2.6 million older persons by increasing fall risk, restraint use, increased length of stay, and increased post-acute placement. The last 2 years, 19% of patients discharged from Moffitt Cancer Center experienced at least one episode of delirium during hospitalization. It is critical that nurses learn to identify delirium early and intervene to reduce and prevent associated complications.

The purpose of this project was to compare Knowledge Scores on delirium in a standardized Geriatric Institutional Assessment Profile (GIAP) in traditional learning groups and scores in a sample enhanced by delirium clinical simulation.

Methods: In the initial GIAP, knowledge scores on delirium were significantly lower than benchmarked hospitals. A self-study module on delirium in the older cancer patient became part of mandatory education. As part of a nurse residency, an interprofessional delirium simulation case utilizing standardized patients was introduced after didactic. The GIAP was re-administered to all nurses. Nurse residents’ scores were filtered into cohorts that participated in simulation instead of nursing unit.

Results: An independent t test compared means of delirium knowledge scores of traditional learning and traditional learning plus simulation. Scores of nurse residents who participated in simulation (5.91) was statistically significantly higher than all peers (5.39), all peer teaching status (5.01) and all hospital (5.29) comparison groups (p<0.05). The impact of the intervention resulting in higher score is strengthened by lower overall Total Knowledge score of new nurse residents (5.67) in relation to seasoned nurse comparison group (6). This supports belief that simulation improved delirium scores and not overall intelligence or recent nursing school.

Conclusions: Research supports that learners are more likely to retain content when grounded in clinical experiences such as simulation rather than traditional learning methods. Follow-up evaluation of delirium knowledge may support this. Simulation is a multi-modal type of experiential learning that creates a safe environment to enhance critical thinking skills with the goal of improving patient outcomes.

D131 Student Presentation
Needs Assessment and Online Program for Physiotherapists in Alberta Regarding Physical Function and Drugs
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Background: To identify learning needs related to medications for practicing physiotherapists in Alberta, and to develop online modules to address learning needs related to common medications affecting physical function.

Methods: An online survey was compiled from existing literature regarding self-identified learning needs of health professionals, and a scoping review that was previously conducted by this research team. In addition to learning needs and practice description, demographic questions regarding physiotherapists in Alberta was obtained from the 2015 Alberta Physiotherapists Association Annual Report. The survey was administered through the University of Alberta IST department with one original email and 2 reminders at two week intervals. The survey feedback, scoping review, and Health Canada Drug and Health Products Safety Review all informed the content of the modules for the online program. A total of 4 modules were developed and guided by the online learning format used by the Faculty of Rehabilitation Medicine, University of Alberta. The modules were presented for peer review to Rehabilitation Medicine. The study was approved by the University of Alberta Health Research Ethics Board.

Results: The survey was distributed to the 2,765 physiotherapists registered with the Alberta Physiotherapists Association. At the time of abstract preparation, there were 284 responses. The majority of respondents had over 20 years of clinical experience, worked in general practice in large urban centres, and the most common specialty reported being orthopaedics. The responders reported being unfamiliar with statins, psychiatric medications, anti-glycemic agents, and medications affecting the stomach (e.g. PPIs). A four module accredited online program was subsequently developed with topics including: (1) drug induced tendinopathy; (2) drug induced myalgias, arthralgias, and rhabdomyolysis; (3) physical function and drugs in the elderly; and (4) antidepressants and post-stroke motor recovery. Each module included a case study, self-assessment questions, and a final assessment quiz in multiple choice format.

Conclusion: This project demonstrated that learning needs can be addressed in health professional continuing education through interprofessional collaboration.

D132 Resident Presentation
Geriatric Medicine-Adult Protective Service goes Back to the Home Bedside
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Background: As part of the required Geriatric Medicine rotation, HCMC Internal Medicine (IM) resident collaborate with Adult Protective Service (APS) workers in providing multidisciplinary team home visits to clients being evaluated for abuse or neglect. The ACGME project “Back to the Bedside” proposes that strengthening five aspects of clinical learning environments may reduce physician burnout and enhance the ability to find meaning in the work of being a physician. Components include increasing time in direct patient care, fostering a sense of teamwork, reducing time spent on non-clinical duties, maintaining a collegial work environment and a learning environment that supports clinical mastery and progressive autonomy. In order to strengthen the learning experiences of residents participating in the Geriatric Medicine-Adult Protective Service (GMAPS) we evaluated the extent to which Back to the Bedside goals are addressed.

Methods: Current PGY-2 and PGY-3 IM residents (n = 41) were invited to participate in a retrospective survey of their GMAPS experience. Information on the number and subject matter of visits was collected. 5-point Likert scales were used to assess residents’ perspectives about the extent to which GMAPS supported the five Back to the Bedside themes. Affirmative responses were defined as either strongly agree or agree.

Results: Of 22 respondents, 18 completed ≥1 APS visits. Of these 18, affirmative responses included: GMAPS supported a collegial work environment (78%), provided time for direct patient care (72%), fostered a shared sense of teamwork (56%), appropriate amount of time spent on non-clinical duties (50%), experience was conducive to developing clinical mastery/progressive autonomy (28%). Residents with ≥3 vs ≤2 home visits were more likely to affirm developing clinical mastery/progressive autonomy although this difference was not statistically significant.

Conclusion: The majority of respondents affirmed learning opportunities involving patient care in a collegial work environment and a shared sense of teamwork. While immediate verbal feedback by residents at the conclusion of their GMAPS experience is invariably positive this analysis may underestimate its formative impact on physician development due to recall bias. GMAPS addresses aspects
of Back to the Bedside initiatives in the context of multidisciplinary team home visits.

**D133 Resident Presentation**  
**Shared Physician-Pharmacist Visits as a Model for Geriatric Training**  
G. Ayers, D. Yuan, H. Sakely. UPMC St. Margaret, Pittsburgh, PA.

**Background:** As our population ages, there is a need for more geriatric-trained healthcare professionals. In 2016, there were 146 geriatric medicine fellowship programs and in 2017, there were only 20 post-graduate year 2 (PGY2) geriatric pharmacy residency programs in the country. The University of Pittsburgh Medical Center (UPMC) St. Margaret currently has both a Geriatric Medicine Fellowship program as well as a PGY2 Geriatric Pharmacy Residency. Trainees in these two programs are based out of two outpatient offices and multiple skilled nursing facilities. Geriatric fellows and geriatric pharmacy residents participate in shared office visits as well as shared skilled nursing facility visits. The purpose of this study is to identify similar and complimentary program requirements, as well as activities within shared visits that enhance fulfillment of these requirements.

**Methods:** In this descriptive study, program directors, geriatric fellows, and geriatric pharmacy residents from UPMC St. Margaret were provided with an evaluation form containing the geriatric medicine milestones from the Accreditation Council for Graduate Medical Education and the required objectives for PGY2 geriatric pharmacy residencies from the American Society of Health-System Pharmacists. Participants independently identified milestones and objectives that were either similar or complimentary, as well as specific activities within shared visits that allowed for achievement of these requirements. Co-investigators then identified themes from participant responses.

**Results:** There are currently 23 geriatric medicine milestones and 27 required objectives for geriatric pharmacy residencies. A majority of the milestones and objectives are similar, and several of the milestones and objectives were found to be complimentary, including those relating to scholarship, comprehensive patient care, and interdisciplinary teamwork. Activities, such as co-authoring publications and co-designing comprehensive management plans through precepting encounters, allowed for complimentary fulfillment of the trainees’ requirements.

**Conclusions:** Shared visits with geriatric fellows and geriatric pharmacy residents in the outpatient and skilled nursing facility settings enhance trainees’ ability to fulfill their respective program requirements.

**D134 Student Presentation**  
**Elder Abuse detection, reporting, and care: a needs assessment**  
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**Background:** Elder mistreatment is a largely under-recognized and under-reported public health issue. Healthcare providers, although in a unique position to report, represent a marginal proportion of reports of elder abuse to law enforcement or APS. This may be due to inadequate training making providers ill equipped to accurately identify, report, and care for abuse victims.

**Methods:** We performed a needs assessment to understand the knowledge, attitudes, and practices of healthcare providers (physicians, advanced practice practitioners, social workers, mental health providers, etc.) and students. We surveyed providers at a large academic medical center as well as rural based community providers about their previous training, experience, and confidence in detecting, reporting, and managing suspected elder abuse. Results were analyzed with percentages, ranges, means, and t-test as appropriate.

**Results:** Two hundred and eleven providers completed the survey, including 91 students. Those surveyed included 12 geriatricians, 20 family medicine providers, 20 internists, 40 emergency medicine physicians, and 14 other providers. Almost all felt that healthcare providers play an important role in recognizing and reporting abuse (97%), and in determining the care and social needs for victims (92%). However, only 62% of respondents received formalized training in elder abuse. Providers most often report having encountered neglect with 58% having cared for a patient in the last 6 months as compared to physical (35%), verbal (48%), sexual (<1%), and financial (29%) abuse. Most providers reported more comfort in detecting, reporting, and caring for victims of physical abuse (77%, 69%, 67%, respectively) than any other type of abuse, and reported the most discomfort with sexual abuse. Overall, primary care providers were more comfortable in the detection and care of victims of verbal and financial abuse, while emergency providers were more comfortable in the care of physical abuse and neglect victims.

**Conclusion:** While healthcare providers receive some training in elder abuse, most desire more training and were only comfortable managing physical abuse. Further development of educational tools for reporting, detection, and care management of abuse should focus on all types of abuse to improve the care of these vulnerable and complex patients.

**D135 Student Presentation**  
**Geri Friends: A medical student run pilot program to provide social support for hospitalized older patients**  
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**Background:** At Boston University School of Medicine (BUSM) there are over 90 student run organizations and 28 services learning groups. The American Geriatrics Society Student chapter at BUSM and the Patch Adams Club (whose mission is to visit and perform magic tricks for hospitalized children) collaborated to start a service learning project called Geri Friends. Current research shows that early exposure to geriatric patients improves attitudes among medical students towards older adults. In the program Geri Friends, we seek to improve attitudes and decrease biases toward geriatric patients by promoting student interactions with hospitalized geriatric patients.

**Methods:** First and second year medical students at BUSM were assigned to visit hospitalized older adult patients. The students signed up for an afternoon of their choice ahead of time and then contacted the AGS student group leaders to find a patient. The AGS student leaders contacted the faculty advisor of the interest group who then contacted the inpatient attending to find suitable patients. During the visit, students could either converse, do crossword or Sudoku puzzles, or perform magic card tricks. Students were instructed to spend time with the patients socially and not to obtain a medical history.

**Results:** Geri Friends has expanded to include nine 1st and 2nd year medical students. It has been accepted as a service learning project under the student branch of American Geriatrics Society at BUSM. The medical students visited a total of 15 patients since the start of the program in July 2017. The average age of patients was 80 years, and admitting diagnoses included hip pain, dementia, heart failure, and GI disturbances.

**Conclusions:** We hope that medical schools can use this protocol to implement service learning projects similar to Geri Friends to expose medical students to geriatric patients during preclinical years. We also hope to encourage collaboration between student interest groups within a medical school. Going forward, our goal is to keep expanding and visiting more patients, while also assessing our program’s impact on stress and social isolation among hospitalized elderly patients and assess the impact on student attitudes towards geriatric patients.
D136 Student Presentation
Patterns of Technology Use Among Older Adults
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Background:
Internet usage rates among seniors trail the whole population by a substantial margin. Older adults are one of the least likely demographic groups to have a computer in their home and are less likely than all other age groups to use the internet. Studies have shown that older adults are more likely to have physical or health conditions that make technology use challenging. The aim of this study is to examine the patterns of technology use in older adults among various ethnic groups. We sought to determine 1) The percentage of technological device ownership and internet usage among older adults. We also examined the prevalence of internet usage across various ethnic groups. 2) Among internet users, the prevalence of individuals who use the internet to seek out health information. 3) Whether older adults with lower cognitive performance, measured by TRAIL Making Tests A and B scores, were less likely than seniors who do not have these challenges to go online?

Methods:
The data from this study comes from the FAU Healthy Aging Research Initiative (HARI), a multiethnic longitudinal study in South Florida. Participants were a sample of volunteers over 60 years of age, with an MMSE score of 23 or greater, and who identified as one of the following ethnic groups: African American, European American, Hispanic, and Afro-Caribbean. Technological device ownership, internet use, and internet use for health related purposes was determined via survey. Cognitive ability was measured by the Trail Making Test Scores A and B (TMT A and B).

Results:
We found that in the total population, 72% of HARI participants own at least one technological device. Despite this less than 50% of participants reported that they are internet users. There were statistically significant differences between the ethnic groups regarding internet use with 31% of Afro-Caribbeans being internet users, and 69% of European Americans with internet use (p=0.00). We found that 77% of the internet users use the web to find health information. We also found significant differences in internet use among older adults with declining cognitive function, defined by a TMT A score >78 (25%) and TMT B score >273 (16%), and those older adults in the database without these challenges (75%, 84% respectively), (p=0.00).

Conclusion:
Our findings indicate a barrier to technology use, most strikingly among racial/ethnic minorities and older adults with declining cognitive function.

D137 Resident Presentation
Evaluation of Geriatric Undergraduate Curriculum in Canadian Medical Schools
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Background: With the rapidly growing elderly population in North America, there is a critical need for a strong geriatric foundation in undergraduate medical education. Currently, the Canadian Geriatrics Society’s (CGS) “core competencies in the care of older persons” developed in 2009 is a framework that guides the development of geriatric curricula in Canadian medical schools. Our objectives were (1) to compare the University of Ottawa’s geriatric curriculum to the CGS core competencies, (2) to compare Ottawa’s geriatric curriculum with the curricula of the other Canadian medical schools and (3) to determine the extent to which Canadian medical school geriatric curricula are in accordance with the CGS core competencies.

Methods: All 17 medical schools across Canada were contacted and asked to provide a list of geriatric content delivered to their students. The collected data was analyzed using simple descriptive statistics. Additional topics received from the schools that were not part of the CGS core competencies were collected, coded, and sorted thematically.

Results: Out of 17 schools, one school had no dedicated geriatric curriculum and four others were undergoing a similar evaluation of their geriatric content. The core competencies that were most consistently met were in the categories of cognitive impairment and functional assessment. The competencies least consistently met were related to adverse events and patient safety. Overall, 68.5% of the CGS competencies were met by all schools; the University of Ottawa performed above average at 80%. Twenty-seven topics were identified that had been classified as geriatric curriculum by Canadian medical schools but are not explicitly part of the CGS core competencies.

Conclusion: This study illustrates which CGS competencies are addressed, and the degree of emphasis placed on them. The results from this study are currently being used to review the strengths and weaknesses of the University of Ottawa’s geriatrics curriculum. The challenges encountered during our study suggest a deficit in the quality of geriatric education in medical schools that should be explored in light of the changing Canadian demographics.

D138 Resident Presentation
Assessment of Comfort Level with Geriatric Core Competencies in Internal Medicine Residents
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Background: Fewer than 2% of new physicians chose geriatrics as a specialty. In order to meet the demand for quality geriatrics care, all graduates must understand how to approach the aging patient. In this study, we survey internal medicine residents at the University of California, San Diego on their comfort with geriatric competencies.

Methods: Our study anonymously surveys internal medicine residents on their comfort in the American Geriatrics Society’s 26 core competencies, grouped into the seven domains listed below. A five-point Likert scale was used. A total of 31 residents completed the survey with a response rate of 30%.

Results: Overall, few graduating internal medicine residents feel comfortable with many geriatric core competencies. Residents are least comfortable with ambulatory care and the most comfortable with hospital patient safety (Table 1). The biggest difference in comfort level between PGY1 and PGY3 residents is seen in cognitive, affective, and behavioral health; hospital patient safety; and palliative and end of life care. These topics are commonly encountered during extensive inpatient training.

Conclusions: We identify a need to expand the training that current internal medicine residents receive for geriatrics, particularly for ambulatory topics. We are transitioning the required geriatrics rotation from the PGY3 to the PGY2 year, and plan to increase the rotation length from 2 to 4 weeks. We propose designing a new geriatrics elective that can be selected as early as PGY1 year.
D139 Student Presentation

Does an Experiential Geriatrics-Focused Curriculum Shift Medical Students’ Attitudes Towards Older Adults?
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Background: While the population of older adults in the US has continued to rise, the number of physicians specially trained to treat these individuals has not. Former students have expressed dissatisfaction in the geriatrics-focused curriculum at our university. The primary aim of this study is to assess whether the Year 1 and 2 medical student curricula influence a change in students’ perceptions of and attitudes toward older adults. This study builds on work that was presented at the AGS 2017 Annual Meeting.

Methods: The UCLA Geriatrics Attitudes Scale was administered electronically to current students at four time points throughout their first two years of medical school: orientation week (T1), the midpoint of Year 1 (T2), the end of Year 1 (T3), and the midpoint of Year 2 (T4). Student responses therefore reflect attitudes prior to academic curricula, during academic curricula but prior to clinical exposure, and during clinical exposure.

Results: Response rates at T1, T2, and T3 were 95%, 95%, and 87% respectively. The mean age was 24. 80% of students identified as White, 8% as Black or African American, 8% as Asian, and 7% as multiracial. At T1, 70% of students agreed most older adults are pleasant to be with, a figure that remained stable (72%) at T3. The percentage that agreed they would rather see younger patients than older ones increased from 45% at T1 to 57% at T3. The percentage that agreed the treatment of chronically ill old patients is hopeless increased from 8% at T1 to 15% at T3. The percentage that agreed taking a medical history from elderly patients is frequently an ordeal increased from 17% at T1 to 44% at T3. A majority of students (85% at T1 and 80% at T3) agreed it is society’s responsibility to provide care for its elderly persons.

Conclusions: After completing their first year of medical school, students agreed that providing care for older adults is important. Many students expressed an interest in having more exposure to older adult patients, and felt better prepared to care for them. However, most Year 1 students would prefer to take care of younger patients than older ones. This data will be used to understand medical students’ attitudes toward older adults and identify when and why these attitudes may shift. We hope to develop targeted interventions in our institution’s curricula to better engage future physicians in the care of older adults.
and laughter as well as sadness. Being in the home taught the students the importance of hospice and the intent focus of hospice to make the dying process as comfortable and peaceful as it can be.

Conclusion: The hospice home experience was valuable in challenging the assumptions surrounding hospice care and broadening the students’ perspectives on what patient centered care truly means and how that eases the burden of the dying process.

D142 Student Presentation
Making it Personal: A Technique to Engage Learners Around Geriatrics
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It is known that in the US, there is a shortage of geriatricians. Despite the increasing need, medical student’s interest in the field has not increased. To garner interest in geriatrics, the authors believe that geriatric-focused education is a necessary component of medical education. The objective of this activity is to activate prior knowledge to increase engagement with geriatrics content by establishing a personal connection to an older adult.

In the first geriatrics session for year one medical students, each student was given a blank index card and the following prompt: “Who is the older adult who has meant the most to you in your life either personally or professionally? Write their first name on your card. Turn to the person sitting next to you and for the next 2 minutes, tell them why this person is meaningful to you. Then switch.” This think-pair-share exercise was implemented to establish a personal connection to the geriatric curricula. Volunteers shared their personal story with the class. Students were then asked to provide qualitative feedback to the prompt, “Please provide any comments related to the specific strengths and/or areas of improvement for this instructor’s lecture” using online evaluation software. At each subsequent geriatric session, the index cards were reintroduced as a personal reminder of the students’ connections with geriatrics.

Qualitative results from the session were uniformly positive. Comments included, “Dr. S. did an amazing job at drawing interest in a field (geriatrics) that has been relatively understated”; “Activities made the concepts easily relatable”; “She was able to make geriatrics personal to each of us by relating it to someone we know.”; “She made the lecture as interactive as possible, making geriatrics personal to all of us”; “They enhanced the compassion aspect needed for the geriatric community”; “After doing this activity, I was more invested and engaged with the material than if I hadn’t [done it]”; “The use of anecdotes...was helpful in growing our empathy for geriatrics.”

The qualitative comments from students suggest that the use of a personal connection coupled with a “think-pair-share” exercise was effective in engaging them with geriatrics content. This activity could also be used to garner interest in geriatrics by trainees in other specialties, hospital staff, and others who are involved in providing care to older adults.

D143 Student Presentation
A Qualitative Study of Determinants Affecting Retention within A Falls Prevention Program
M. Barrios-Malabad, A. Torrens Armstrong. Community and Family Health, University of South Florida, Tampa, FL.

Background: Falls are a major cause of unintentional injury and death in the geriatric population, affecting between 28-35% of those above age 65 annually. Due to the prevalence and severity of the issue, A Matter of Balance Falls Prevention Program was created to reduce the frequency of falls and the emotional fear experienced by seniors in relation to falling. The Senior Connection Center in Tampa, FL offers this program across the community, but retention rates were observed as less than ideal by the researcher and members of the agency. This qualitative study seeks to identify determinants affecting retention in a falls prevention program using constructs from the Health Belief Model and to provide information to health practitioners on key factors promoting attendance as well as future suggestions to improve retention.

Methods: A qualitative telephone interview process was utilized to infer retention determinants. Participants were identified and broken into two comparison groups: Retention Group (RG) or Attrition Group (AG), as defined as those with 100% attendance (n=10) and those with <65% attendance (n=9) respectively. These individuals were asked the same 11 questions, informed by the HBM. The seven constructs of the HBM were applied to the topics of falling and class attendance, measured on a five point scale, and compared for analysis.

Results: Both groups reported ~80% intrinsic motivation to attendance. Likewise, ~80% of both AG and RG ranked perceived susceptibility and severity of falling as very high. Perceived benefits of taking the class ranked higher in RG than AG, with 100% reporting very high benefits vs. 44% respectively. Prominent benefits were increased self-efficacy and knowledge. Prominent barriers were health issues and scheduling conflicts. Across both groups, ~74% reported an increase in self-efficacy to prevent falling as result of the class.

Conclusion: The need, desire, and benefits for such programs as MIB is high in the senior population. Much of the attrition observed was attributable to scheduling conflicts and health issues outside the control of participants. Seniors have uniquely dynamic schedules and circumstances that make program retention complex. It is imperative for health practitioners to remain flexible in implementation of programs. Telecommunication, make-up sessions, and cues to action could enhance participation, retention, and benefits of future programs.

D144 Resident Presentation
Impact of a cardiology curriculum for interprofessional learners at a skilled nursing facility

Background: There is an established interprofessional team within our practice that participates in the care of patients with significant cardiovascular disease at a transitional rehabilitation unit within a skilled nursing facility. A majority of the patients have end-stage heart failure, have undergone stenting or have had valve repairs and replacements along with many other co-morbidities and have complex cardiovascular medication regimens. The team consists of geriatricians, geriatric fellows, and clinical pharmacists with rotating learners that can include family medicine physician residents, pharmacy residents, and pharmacy students. The two accrediting bodies for our groups of learners, ACGME for family medicine residents and ASHP for pharmacy residents, have overlapping objectives and competencies which emphasize medical and medication knowledge for diverse patient populations with complex co-morbidities and complicated medication regimens. We developed a pharmacist-led cardiology curriculum for learners rotating at our site to enhance cardiovascular disease and complex medication management knowledge.

Methods: The cardiology curriculum was developed by a pharmacist and consisted of pre-reading materials, in-person presentations, and pre- and post-test evaluations developed from the American College of Cardiology and American Heart Association Task Force guidelines and evidence based recommendations for valvular heart disease, heart failure, and ischemic heart disease. The presentations were given to family medicine residents, pharmacy residents, and pharmacy students on rotation at the skilled nursing facility. Learners were asked to complete a pre-test consisting of multiple choice questions before the presentation and a similar post-test at the end of the presentation.

Results: Learners actively participating in the curriculum will be able to identify appropriate medication regimens for patients with valvular heart disease, heart failure, and ischemic heart disease.

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Learners will also be able to identify monitoring parameters for these specific disease states, accompanying medication regimens and other co-morbidities that may be affected by significant cardiovascular disease.

Conclusions: Targeted curriculum presentations led by a pharmacist will have a positive impact on medical and medication knowledge for interprofessional learners taking care of complex cardiovascular patients at a skilled nursing facility.

D145 Resident Presentation
Impact of a deprescribing curriculum on family medicine residents’ knowledge of safe deprescribing
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Background: Deprescribing is the systematic process of reducing or stopping medications that may be harmful or no longer needed in patients. A provider-specific barrier to deprescribing that has been identified is uncertainty and lack of knowledge about how to safely deprescribe, particularly regarding eligible medications, tapering regimens and appropriate populations. This study aimed to create a curriculum for family medicine physician residents using algorithms for safe deprescribing. The primary outcome was impact on knowledge for safe deprescribing for family medicine physician residents.

Methods: A deprescribing presentation was developed by a pharmacist clinician-educator and presented to family medicine residents during an in-person didactic session. The presentation consisted of two deprescribing algorithms and recommendations from Deprescribing.org for proton pump inhibitors, benzodiazepines, and antipsychotics. Residents were asked to complete a pre-test before participating in the presentation, a post-test at the end, and an additional post-test 4 weeks after the presentation to assess changes in knowledge and retention over time. The tests consisted of case-based, multiple choice questions that assessed eligible patient populations, medications, and appropriate tapering regimens for deprescribing. The questions were developed by a geriatric and palliative care pharmacist. Baseline knowledge was measured based on the number of questions participants answered correctly on the pre-test and change in knowledge was measured based on the difference in correct responses between pre- and post-tests.

Retention of knowledge was measured by the difference in correct responses across the 2 post-tests.

Results: We anticipate that family medicine residents actively participating in the deprescribing curriculum will be able to identify appropriate patient populations, eligible medications, and appropriate tapering regimens for deprescribing. We also anticipate that active participants will be able to retain this knowledge after participating in the curriculum.

Conclusions: A pharmacist-led deprescribing curriculum will have a positive impact on family medicine physician resident knowledge towards safe deprescribing practices.

D147 Student Presentation
ECHO-Chicago: Geriatrics- Identifying and Addressing Geriatrics-Preparedness Gaps Among Community PCPs
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Background. Despite the growing American geriatric population, few primary care providers (PCPs) have received formal geriatrics training, and little is known of the knowledge and confidence gaps faced by PCPs as they increasingly care for an aging, multimorbidity patient population. Extension for Community Health Outcomes (ECHO)-Chicago: Geriatrics is an evidence-based telementoring program that seeks to improve community PCPs’ self-efficacy across a variety of geriatrics competencies.

Methods. The ECHO-Chicago: Geriatrics course consists of twelve weekly, hour-long, case-based videoconferencing sessions led by interprofessional geriatrics experts at the University of Chicago Medicine. By August 2017, one abbreviated pilot series and two full series (32 sessions in total) had been completed, reaching 107 participants from primary care practices across the Chicago metropolitan area. Participants were surveyed pre- and post-series regarding self-efficacy in geriatric care and frequency of geriatrics-specific practice behaviors. In addition, data from recorded ECHO sessions were qualitatively analyzed for emerging themes via a grounded theory approach.

Results. Pre- and post-surveys (response rate 61%) indicated significant (p<0.05) increases in provider self-efficacy across all 15 queried geriatrics competencies (e.g., ability to diagnose dementia). Participants also reported significant increases in the frequency of several “geriatrics-oriented” practice behaviors (e.g., falls screening). Qualitative analysis of session recordings identified three aspects of geriatric care that PCPs found most challenging: Defining a PCP’s role in the context of patient co-management by multiple specialists; Lack of familiarity with geriatrics best practices or with navigation of Medicare/Medicaid; Establishing effective, culturally-competent communication with patients and caregivers.

Conclusions. Community PCPs face many common challenges in caring for complex older adult patients. ECHO-Chicago: Geriatrics
is a novel continuing-education intervention with the potential to identify and address geriatrics knowledge and confidence gaps and foster “geriatrics-oriented” practice behaviors, thus improving geriatrics-preparedness among community PCPs.

D148 Student Presentation
The Educational Gap in Geriatrics: Interviews with San Antonio Geriatric Patients and their Caregivers
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Background: The geriatrician shortage is a growing problem. By 2030, Texas will need 1,833 more geriatricians to meet estimated needs. “Geriatricizing” primary care providers though Continuing Medical Education (CME) is one possible solution. The San Antonio Geriatric and Palliative Education (SAGE) Symposium is an inter-professional CME conference for providers of health care for older adults. This study aims to make the educational content of the SAGE Symposium more patient centered by conducting a qualitative community needs assessment to better understand the medical needs of San Antonio older adults.

Methods: Unstructured in-depth interviews were conducted via convenience sampling methodology at San Antonio public locations frequented by older adults and their families (such as malls, the Riverwalk, senior centers). Respondents were asked unstructured questions about geriatric medical care in San Antonio. Applying Attride-Stirling’s approach to qualitative research, we performed thematic network analysis of interview transcripts.

Results: 33 respondents at 14 locations were interviewed before reaching thematic saturation. Three overarching themes emerged from the transcripts: Geriatric Syndromes (polypharmacy, falls), Patient-Provider Relationship (respect for patients, communication), and Patient Support (community resources, navigating healthcare systems). 45% of respondents discussed topics under the Geriatric Syndromes theme, 33% of respondents discussed Patient-Provider Relationship topics, and 42% of respondents discussed Patient Support topics.

Conclusions: Our unique approach of interviewing community recipients of geriatric care for an educational needs assessment has given new insights into the needs of our CME learners. Although our interviews demonstrate the need for educational content in all three thematic areas, historically, the SAGE Symposium and other CME programs have primarily focused on the Geriatric Syndromes theme with less attention given to the Patient-Provider Relationship and Patient Support themes. Future SAGE conferences will include expanded content in the latter two themes, will utilize compilations of these interviews as multimedia educational tools, and will seek to survey healthcare providers of geriatric patients for provider centered needs assessments.

D149 Student Presentation
Discussing Advance Directives with Older Adults: A Competency-Based Medical Student Curriculum
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Background: The AAMC geriatric competencies state that graduating medical students must be able to define and differentiate health care proxies and AD in the state where one is training. Though many graduating medical students recognize the importance of ADs, they still report feeling underprepared to discuss them with patients. At UMMSM, education on advance directives (AD) begins in the first year of training as part of a longitudinal competency based curriculum in geriatrics. This study presents an overview of our first year curriculum and outcome data from 2 cohorts (N = 305)

Methods: In the first semester, students received a 1-hr didactic on death and dying followed by a 2-hr small-group session on palliative care and advance care planning. Students evaluated this session using a 5-point Likert type scale. Later in the semester student pairs made a home visit to an active older adult in the community and discussed advance directives, among other topics. They submitted a write-up with an assessment and plan for each topic discussed. At the end of year 1, students completed a brief online competency assessment. They were asked to match 4 definitions of advance directives with 4 terms and to select from 16 statements about different types of advance directives those they would include when counseling patients. The performance standard was set at 16/20 possible points.

Results: Student evaluations of the small group session were positive (4.7/5). Almost 90% of our older community volunteers had a written AD in place. Common recommendations students made were to periodically review and update ADs, discuss ADs with family and physicians, store ADs in an easily accessible location, and carry a wallet sized card. On the competency assessment, 6% of students did not achieve the performance standard on their first attempt and underwent remediation and reassessment. In their write-up students noted that despite early hesitation approaching the topic, many elders were at ease with the topic and had ADs in place.

Conclusions: The curriculum provides medical students with multiple, early opportunities to become competent in ADs, increasing their comfort with discussing such matters. Furthermore, our competency rate is 100%. In future studies, we hope to assess the retention and application of this knowledge during the clinical years.

D150 Student Presentation
Geriatrics Curriculum as a Tool for Educational Synthesis
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Background: The University of Nebraska Medical Center medical education is undergoing sweeping curricular change for its medical students. For the pre-clerkship students, a core organ system block based curriculum is being utilized. In geriatrics, we have been given the opportunity to have a separate “synthesis” block at the end of the pre-clerkship curriculum. The purpose of this block is to review and build upon previously presented information as a means of board preparation.

Methods: A faculty focus group, using national geriatric objectives, prepared objectives for the new course. These objectives were laid in the seven categories including multimorbidity, functional loss, cognitive loss, delirium/hazards of hospitalization, frailty, interprofessional care, and patient centered care. Students with an interest in geriatrics were then utilized to help design cases from which these objectives could be learned.

Results: The synthesis block is being designed primarily using short, online modules to be previewed asynchronously prior to small group case discussions. The small groups will additionally have some opportunity for development of geriatric specific clinical skills and application of geriatric principles to physical exam skills. Throughout the cases, there are opportunities to discuss applicable board review topics. At the conclusion of each case, students will participate in interactive geriatric influenced board review-style questions.

Conclusions: With the integration of a geriatric synthesis block into the pre-clerkship curriculum, UNMC is poised to provide an earlier and stronger understanding of geriatric medical principles to their medical students. The idea that geriatrics can be used as a means for synthesis of all previously learned organ system information is a novel principle in curriculum development.
D151 Student Presentation. Encore Presentation
PAIN-ME-FREE Video Game: Interdisciplinary Student Response to a Geriatric Pain Educational Tool
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Background: There is an increasing gap between the need for safe/effective pain management of older adults (OA) and the current pain education across healthcare disciplines. The PAIN-ME-FREE (PMF) video game uses interactive cases to follow pain management of an OA from hospital to home using an interdisciplinary approach.

Methods: This study analyzes post-game survey responses of nursing students (NS) and medical students (MS) to assess the educational effectiveness of PMF. Qualitative data was collected to allow NS/MS to freely report learning experiences. Responses were analyzed thematically and compared among NS/MS. Quantitative data measured via Likert scale was obtained on improved knowledge about geriatric needs and pain assessment, improved comfort level in treating frail OA and interdisciplinary team involvement. This was analyzed using chi-squared test and odds ratios.

Results: While both NS(n=325)/MS(n=191) recognized that pain is multidimensional and OA require conservative medication dosing, NS had stronger focus on patient-centered topics such as fall risk and mental status assessment. MS had more focus on technical aspects such as medication conversion. Odds ratios for the 9 Likert responses were calculated comparing how likely a NS versus MS was to agree to a particular statement. No statistically significant difference in agreement between NS/MS was observed. NS were 1.217 times more likely to agree that PMF improved their comfort in treating frail OA (95% CI 0.826 – 1.793). NS were 1.446 times more likely to agree that PMF improved their comfort initiating interdisciplinary involvement (95% CI 0.948 – 2.207). Across all Likert responses, both NS/MS demonstrated positive responses to the survey with the majority agreeing to the statements. Over 82% NS and 79% MS agreed that PMF improved their knowledge of OA pain assessment and management. Over 76% NS and 68% MS agreed that PMF was important to their education.

Conclusions: Both NS/MS demonstrated positive learning experiences as game participants. There were no significant differences in agreement, demonstrating the multidisciplinary application of PMF. PMF addresses gaps in geriatric pain education using an innovative tool for the current generation of future practitioners.

D152 Resident Presentation
Evaluating a new geriatrics rotation for interns in internal medicine
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Background: The ACGME requires internal medicine residents to have geriatrics training. At University Hospitals Cleveland Medical Center - Case Western Reserve University, internal medicine residents complete a four week rotation in geriatric medicine during their intern year. The experiences offered by our geriatrics rotation include an Acute Care of the Elderly (ACE) service, geriatrics consultation service, ambulatory practices, house calls, palliative care, and didactics. We sought to evaluate the effectiveness of these experiences in preparing internal medicine residents to care for older adults.

Methods: Using Survey Monkey, we surveyed internal medicine residents about their experiences on the geriatrics rotation at the end of the intern year for two consecutive years. The survey included six questions which asked residents to rate their exposure to geriatrics across different training settings. Residents were also asked whether they felt the rotation was impactful in preparing them to care for older adults.

Results: Out of 77 residents who rotated through the geriatrics block for the 2015 and 2016 academic years, 27 (35%) completed the survey. 89% of respondents indicated that they were satisfied with the structure of the rotation. Residents found palliative care (96%) and VA clinic (81%) experiences the most valuable, followed by didactics (74%), and ACE service (70%). Of those completing the survey, 74% found the geriatrics rotation useful in preparing them for taking care of older adults. 93% stated that they made changes to their practices when taking care of older patients.

Conclusions: The majority of survey respondents who completed our geriatrics rotation were satisfied with the structure of the geriatrics rotation and felt many components of the rotation were valuable. As a result of this rotation, almost all residents responded they had made changes in their practices when taking care of older adults.

D153 Student Presentation
The Model medical student: A Model one week curriculum designed to Increase Geriatric exposure to Third year medical students
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Background: Within America, there is a growing need for more practicing Geriatricians as the elderly population continues to trend upward. According to the CDC’s 2013 data, “By 2050, it is anticipated that Americans of age 65 and older will have a population of nearly 89 million people, which is more than double the amount in the United States in 2010”. For such a large elderly population, there is a decline in physicians pursuing a career in Geriatric medicine. This could be due to the lack of incorporating Geriatric education into the medical school syllabus. Improving medical education by integrating Geriatric medicine into the curriculum may garner the interest of medical students and is an essential part of addressing this issue.

Methods: We propose to construct a Model to incorporate one mandatory week of Geriatric medicine into the core curriculum of third year medical schools across the nation. The curriculum encompasses management of mental, psychosocial and physical aspects widely noted in the Geriatric population. The management topics include Geriatric pharmacology, palliative care, narcotic usage, and strategies towards approaching DNR/DNI mandated situations. The rotation would have a didactic portion entwined into the curriculum, in which students are exposed to the latest research and case studies within their respective institutions regarding Geriatric medicine. A similar model of approach has also been utilized in the University of Pittsburgh third year medical curriculum.

Discussion: A significant portion of the American population consists of Baby boomers. In the years to come, the need for health care services to grow alongside these demands will arise. Currently, there are not enough medical professionals that are able to fulfill this void to encourage healthy aging. Therefore, changes must be made now to educate young minds about the importance of these issues, among others that will arise in the near future. Incorporating our Model of Geriatric focused clinical experience into our medical schools allows students to explore new interests and gain more knowledge about an underserved population.
D154 Student Presentation
Patient Perspectives on Fall Risks and Actual Fall Causes
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Background: Estimated to cost the US health system $34 billion annually, falls are the leading cause of fatal injury, and the most common cause of non-fatal trauma among older adults. In this qualitative study, we sought to elicit older patient’s perspectives on their fall risks as a step in enhancing fall prevention interventions.

Methods: Using a purposive sampling technique, we interviewed ten patients with a history of falls from the University of Massachusetts Medical Center inpatient trauma and outpatient geriatric services. Participants were English-speaking patients aged 65 or older with sufficient cognitive function to participate. Transcripts were analyzed independently by five individuals using triangulation and constant comparison (NVivo11, QSR International) to determine fall risks and compare them to actual fall causes. Adjudication was performed by the PI. Theme saturation was achieved by the 6th transcript.

Results: Patient perceptions of fall risks fell into seven major themes: physiologic decline, e.g., worsening eyesight (8/10); underestimating limitations, e.g., denial (7/10); housing environment, e.g., rugs (7/10), lack of awareness to surroundings, e.g., snow, sidewalk (4/10), walking aid, e.g., not using (3/10); changes in Position, e.g., sitting to standing (2/10), and improper footwear, e.g. slippers (1/10). In contrast, reported causes of actual falls were reported to be Changes in Position e.g. transition to standing (1/10), Underestimating Limitations e.g. rushing (1/10), Physiologic Decline e.g. weakness (2/10), Walking Aid e.g. use or misuse of walking aid (2/10), Lack of Awareness to Surroundings (7/10), House Arrangements (3/10), Footwear (2/10), and Extenuating Circumstances (1/10). Some patients identified more than one fall risk or cause. Extenuating Circumstances was the only fall cause not identified as a fall risk.

Conclusion: Our results reveal a disconnect between elderly patients’ perceived fall risks and actual causes of their own falls. Lack of insight into true vulnerability for falls has implications for imparting fall prevention strategies as perceived need for fall prevention is requisite for compliance and retention. Fall prevention strategies must not only teach practical aspects of fall prevention but also must educate on the rationale for elderly fall prevention.

D155 Student Presentation, Encore Presentation Decline in Katz Scores Is Associated with Longer Postoperative Lengths of Stay in Older Adults

Background: Poor preoperative functional status predicts worse postoperative outcomes, but little is known about how changes in functional status during hospitalization affect postoperative outcomes. Katz scores provide a simple, validated evaluation of functional capabilities of elderly patients. Currently, most surgical outcomes research uses NSQIP data which does not prospectively collect functional status. Instead, it retrospectively estimates functional status as independent, partially, or fully dependent. We hypothesized that a decline in functional status following surgery is associated with worse postoperative outcomes in older adults.

Methods: We used single institution NSQIP data for patients ≥65 years undergoing colectomy, proctectomy, hepatectomy, or pancreatectomy in 2014-2017. Functional status was assessed via Katz scores from inpatient medical records. Patients who had surgery with postoperative length of stay ≥3 days, a baseline Katz documented any time during hospitalization and ≥1 current Katz documented within 3 days postop were included. We divided patients into 2 groups: those with a decline in Katz score ≥3 or a stable score. We used Chi-square, Fisher’s Exact, and t-tests to examine differences in categorical and continuous variables, and a negative binomial model to compare length of stay between groups.

Results: Of 170 surgical patients, 87 (51%) had a postoperative decline in functional status. The groups did not differ significantly in demographics or comorbidities. Patients whose function declined were more likely to have undergone open surgery (93% vs 7%; p<0.01) and 55% underwent pancreatectomy. The majority of patients with no decline underwent colectomy or proctectomy (50%). Patients who experienced a functional decline during hospitalization were more likely to have a complication (38% vs 14%; p<0.01) and a prolonged hospitalization (mean: 9.2 vs 6.2 days; p<0.01). Functional status was documented as independent by NSQIP definition for 99% of our cohort.

Conclusion: Patients who experience a decline in functional status while hospitalized after surgery are more likely to have complications and a prolonged length of stay. Katz scores are more informative than NSQIP functional status. Katz scores or other prospective measures of functional status or frailty should be monitored in surgical patients to better assess postoperative risk.

D156 Student Presentation
Intergenerational Sharing of Tea & Poetry Enhances Mood in The Elderly

Background: Social isolation and loneliness in older adults is common, increases with age and is associated with a higher risk of mortality. Older adults with intergenerational connections report less depression, better physical health and greater life satisfaction. Poems that allow reminiscence of memories improve life balance and combat depression. This study outlines the program development of a monthly community Tea & Poetry session led by a high school student geared toward improving the moods of the geriatric outpatients who attended.

Methods: Monthly Tea & Poetry sessions were conducted at the Irving Wright Geriatric Center in NYC. A high school student with an interest in poetry, led a group of geriatric outpatients in reading and discussing poetry. Each session consisted of reading 3 to 4 poems followed by in depth discussions. Future sessions will include mood assessments before and after each session by the participants to determine if there is a positive impact on mood.

Results: From Dec 2014 to May 2017, 28 sessions were held, 112 people attended the program at least once, 98% attended ≥ 1 session, and 58% attended ≥ 10 sessions. Observer comments about the program included: “Alison is breaking down intergenerational barriers and creating new and engaging environments for our geriatric community. Participants make plans to see one another and share excitement for the next session.” “Alison teaches us about her generation while we share experiences from ours.” “We can disagree…and still leave with smiles on our faces.”

Conclusions: Social isolation and loneliness is common and detrimental to the well-being of our elderly population. An intergenerational community program of reading and discussing poetry may significantly improve the moods of its elderly participants. Preliminary findings indicate that participants of the program connected socially outside of the program and may also feel an improvement in mood. Future results will illuminate the degree to which this program improves elderly adults’ moods and may highlight an effective intervention to improve the mood and mental health of elderly adults.

References
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D157 Student Presentation
Does better bone health promote a longer lifespan?

Background: Public health achievements during the last century have resulted in a steady increase in life expectancy. An emergent subset of the world’s population have distinguished themselves by avoiding or delaying the onset of age-related diseases, allowing them to live well beyond the ninth decade. One component of this is avoidance of fractures and poor bone health. We evaluated the bone health of community dwelling, oldest old individuals living in rural Arkansas.

Methods: Electronic medical records of 299 patients ≥ 90 years who were seen over a 2 year period at the University of Arkansas for Medical Sciences were reviewed. Out of 299, 84% were female and 16% were male. 74% were 90-99 years old and 26% were ≥100. 74% were white, 23% were African American, and 3% consisted of 1 White, Hispanic patient and 7 of unknown ethnicities. We evaluated clinical and biochemical differences between patients who had fractures within the last 12 years vs. those who had not had a fracture.

Results: 21% (n=62) of patients were noted to have at least 1 fracture, and 15 had more than 1 fracture. 35% of those with fractures had radiological evidence of osteoporosis and 31% had osteopenia, respectively. 79% patients (n=237) had no documented fractures with only 18% having radiological evidence of osteoporosis and 16% of osteopenia. No significant differences were found in thyroid stimulating hormone, vitamin D levels, hematocrit, hemoglobin, or BMI between those with fractures and those without. Additionally, neither medications nor bone densitometric values were found to be significantly different between patients with and without fractures. No significant clinical markers among the oldest old that would explain the occurrence of bone fractures. There was a tendency towards an increased serum calcium in patients with fractures versus without fractures (3.4±0.8 vs 2.2±1.4, p < 0.06).

Conclusions: The oldest old patients had a low prevalence of fractures and relative preservation of bone health suggesting a better bone molecular profile in these individuals. Epigenetic factors and activity levels might also have favorably impacted the bone health. The low percentage of osteoporosis and bone fractures likely reduced the morbidity and mortality in this rural population and may have contributed to their overall longevity.

D158 Student Presentation
Evaluation of Emergency Room Visits within PACE: Rates of Hospitalization, Re-admissions and Length of Stay Ashruta Patel, MS1,2, Matthew McNabney, MD2 1Philadelphia College of Osteopathic Medicine – Georgia Campus 625 Old Peachtree Rd NW Suwanee, GA 30024 ashruta.patel1@gmail.com 2Johns Hopkins University School of Medicine 5200 Eastern Avenue Baltimore, MD 21224 mmcnabney@jhmi.edu

A. Patel. Philadelphia College of Osteopathic Medicine - Georgia Campus, AUBURN, GA.

Background: The Programs of All-Inclusive Care for the Elderly (PACE) consists of an interdisciplinary team of health professionals who coordinate medical care and social services for frail and community-dwelling individuals in a capitated payment model.1 Despite intense efforts to provide patient-centered care for enrollees, it is a challenge to control emergency room visits, ambulance utilization, hospitalizations, and re-admissions. In this study, we identified a cohort of PACE participants who visited the emergency room and evaluated patient characteristics that influence utilization of ER and subsequent hospital services.

Methods: We analyzed data from 276 emergency room visits made from 2014 – 2016. Data included patient demographics (age, race, sex, reason (symptom) for ER visit, living arrangement, code status, dementia status, balance score, hierarchical condition category (HCC)), and which hospital was used. Measured outcomes were: hospitalization, re-admissions, hospital length of stay (LOS) and ICU days.

Results: The study population: mean age was 78 years old; 86.6% were female, 32% white, 63% black, and 4% Hispanic. Among the 276 ER visits, 71.01% resulted in hospitalization, and 12.2% of those were re-hospitalized within 1 month. For those hospitalized (n=196), the average length of stay was 3.3 days. After adjusting for all characteristics, logistic regression results showed age (p=0.047), living arrangements (p=0.014), presenting symptom (p=0.02), and hospital (p=0.005) influenced hospital admissions in PACE patients. None of the characteristics were significantly associated with the rate of re-hospitalization or the hospital LOS.

Conclusions: Certain characteristics are associated with the likelihood of PACE patients being admitted to the hospital after presenting to the ER. These include patient-level factors, as well as which hospital is used. This information can be used by PACE programs to develop strategies for optimal use of ER.

References:

D159 Student Presentation
30-Day Functional Outcomes of Emergent Geriatric Subdural Hematoma
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Background: An aging population with increasing rates of anticoagulation medication makes geriatric patients at an acute risk for incurring subdural hematomas (SDH). The elderly tend to have a greater rate of fall-related injuries, anatomical strain of bridging veins in the brain, and increased likelihood of general surgical risk factors. Along with these general risks, age is naturally correlated with a general decline in cognitive and physical function, impairing independent functional status. Age as a predictor for morbidity and mortality in SDH evacuation is well studied; however, one aspect of morbidity that is often overlooked is the loss of functional independence. The study herein aims to assess how craniotomy following SDH affects the loss of functional independence in geriatric patients.

Methods: This is a retrospective study of 1395 functionally independent, geriatric (age>=65) patients who underwent craniotomy following SDH. These patients were compared to a cohort of patients under the age of 65. Multivariate regression models were used to analyze the effects of age on mortality, functional independence, and complications including ventilator dependence, return to the operating room, and 30-day readmission. Loss of functional independence was defined by a patient’s discharge status being anywhere but home.

Results: Age over 65 was confirmed to predict mortality (Odds Ratio [OR] 95% Confidence Interval [CI]: 1.20 -2.11, p=0.001) while age proved to have no effect on the presence of any complication (OR 95% CI: 0.65-1.003; p=0.054). Notably, age proved to be a significant negative predictor of independent-status (OR 95% CI: 0.50-0.77; p=0.0001) as well as length of stay (mean [standard error]: -2.60 [0.59]; p=0.0001) and return to the operating room (OR 95% CI: 0.56-0.97; p=0.03).

Conclusions: Older patients experience higher mortality rates and are more likely to lose functional independence compared to their younger counterparts while still having similar overall complication rates for a SDH craniotomy. The ability to anticipate the need for additional support and care for patients at risk of losing functional independence will better help families and physicians plan the care of the patient.
D160 Student Presentation
Prospective Evaluation of Health Related Quality Of Life in Geriatric Trauma Patients

Introduction: Health-Related-Quality-of-life (HRQoL) is an important outcome measure among trauma patients. Frailty is an established predictor of adverse outcomes. We aimed to examine the impact of frailty on HRQoL in geriatric trauma patients.

Methods: We prospectively enrolled all geriatric (age≥65years) trauma patients. We calculated frailty index (FI) within 24h of admission using validated trauma-specific frailty index (TSFI). Patients were stratified into frail (FI>0.25) and non-frail (FI<0.25). HRQoL was calculated at discharge and 30-d after discharge using the Short Form-36 (SF-36). Outcome measures were; discharge and 30d post-discharge-HRQoL, and delta HRQoL (30-d post-discharge-HRQoL - discharge HRQoL). Regression analysis was performed to control for demographic, vital and injury parameters.

Results: We prospectively enrolled 100 patients. Mean age was 74±8y, ISS was 15[12-16], and FI was 0.24±0.16. 50% of patients were frail. Non-frail patients had higher scores in 6/8 domains (physical functioning, limitations due to physical health, energy, social functioning, pain and general health) of HRQoL at discharge. Non-frail patients had significantly higher HRQoL scores at discharge (p<0.001), and 30d post-discharge (p<0.001) compared to frail patients (Table 1). 30d after discharge non-frail patients had improved HRQoL (p<0.001), however, there was no improvement for frail patients (p=0.11) (Table 1).

Conclusion: Geriatric frail trauma patients reported very poor HRQoL at discharge and 30-d post discharge compared to non-frail. The HRQoL did not improve following discharge for frail patients. Frail status is associated with decreased functionality in physical health domains as compared to non-frail patients. Implementing frailty indexes may help identify and develop targeted interventions to improve health-related quality of life among geriatric trauma patients.

Table 1. Outcomes

<table>
<thead>
<tr>
<th>Variables</th>
<th>Frail (n=50)</th>
<th>Non-Frail (n=50)</th>
<th>p-value</th>
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</thead>
<tbody>
<tr>
<td>Discharge HRQoL (Mean ± SD)</td>
<td>436 ± 84</td>
<td>547 ± 84</td>
<td>&lt;0.001</td>
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<tr>
<td>30-d Post Discharge HRQoL (Mean ± SD)</td>
<td>305 ± 74</td>
<td>765 ± 32</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>P-value</td>
<td>0.11</td>
<td>&lt;0.001</td>
<td></td>
</tr>
<tr>
<td>Delta HRQoL</td>
<td>27 ± 16</td>
<td>104 ± 18</td>
<td>&lt;0.001</td>
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</tbody>
</table>

D161 Student Presentation
Differences in Anesthesia-Related Adverse Outcomes Between Geriatric and Non-Geriatric Patients at a Large Tertiary Care Center
C. W. Root, Y. Belin, C. Curatolo, P. McCormack, J. Hyman.
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Background: Older patients are complex, and respond differently to anesthesia than younger patients. In order to provide better, safer anesthesia care to older patients, we must understand how and when complications occur during their care. The study objective was to understand differences in cause, type, timing, and outcomes of complications in older versus younger patients receiving anesthetic care.

Methods: This was a subanalysis of a retrospective study of all cases submitted to the Dept. of Anesthesiology’s Performance Improvement (PI) Committee from 2007 to 2015. Materials available for review included the PI committee meeting minutes, the anesthesiology information management system, and the institutional electronic health record. For this subanalysis the data was stratified by age into patients <65 and ≥65. χ² tests and logistic regressions were performed to determine significant differences between groups.

Results: Of 747 cases reviewed, 461 of the patients were <65 and 261 were ≥65. We found significant differences in the primary complication type (p<0.0001) and the timing of the complications (p<0.01). Most common type for ≥65 was cardiac (34.3%), <65 was respiratory (37.5%). Intraoperative was most common for both groups, but <65 had more complications pre-incision (24.1% vs 19.1%) and ≥65 had more complications post-operative (31.4% vs 19.6%). There were not significant differences in the underlying causes of the adverse events. Logistic regression showed that age ≥65 was associated with decreased likelihood of return to baseline post complication (p<0.01) and increased 48 hour mortality (p<0.05).

Conclusions: Older patients differ from younger patients in type, timing and outcomes of complications during anesthetic care. Our data suggests that anesthesia providers should anticipate cardiac complications in older patients and that older patients require a heightened vigilance in the post-operative period.

D162 Student Presentation
Fall Prevention DVD Adherence and Effectiveness in a Fall Assessment Clinic
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Background: Falls can impact quality of life and longevity. There are many fall prevention interventions; exercise is one of the most effective, particularly Tai Chi. Our Veterans Affairs (VA) Fall Assessment Clinic (FAC) created a fall prevention digital video disc (DVD) for patients to provide at risk Veterans access to an exercise program, education, and Tai Chi in the comfort of their own home. In this study, we aim to assess the efficacy of the DVD for fall prevention in this population and determine the factors most associated with likelihood of viewing the DVD.

Methods: 122 patients were seen between 2014-2016 at the FAC and had an initial evaluation where the DVD was given, as well as one follow-up visit. A fall prevention DVD survey was also used. The majority of survey results were gathered by calling Veterans via telephone with a minority collected in person at the follow-up visit. 83 patients completed the survey; 61 had at least one follow-up visit. A logistic regression was performed to assess the likelihood of watching the DVD (n=83). T-tests were used to assess differences between follow-up and initial visits (n=55) between the group who watched and the group who did not watch the DVD for physical therapy tests: Timed Up and Go (TUG), gait speed, and 30-sec sit-to-stand (30-STS).

Results: Of those surveyed (n=83), 62.7% watched and 37.3% did not watch the DVD. Average number of co-morbidities 6.4; number of medications 12.6/patient. Veterans who had higher Mini-Cog, OR=1.5 (95% CI 1.10-2.05) and IADLs, OR=1.22 (95% CI 1.02-1.44) were more likely to view the DVD. Those with higher TUG scores at initial visit were less likely to view the DVD, OR=0.96 (95% CI 0.92-0.99). There was no significant difference in TUG, gait speed, and 30STS scores, initial versus follow-up between groups.

Conclusions: The Veterans referred to the FAC are medically complex and require therapeutic interventions at multiple levels. Fall prevention education is vital to reducing falls; viewing a DVD may be an effective educational tool for some Veterans. The direct effect of the DVD on fall risk is unclear; viewing the DVD did not appear to affect physical therapy test results. Certain factors were associated with increased likelihood of viewing the DVD. This study will continue to investigate which interventions to reduce falls are best suited for the Veteran population.
D163 Student Presentation
Surgical Resection of Small Intestinal Neuroendocrine Tumors in Older Adult Patients Improves Survival
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Background: The incidence of small intestinal neuroendocrine tumors (siNETs) in the U.S. has been increasing over the past 20 years. The vast majority of these are diagnosed in older adults with a median age near 68. However, there is little in the current literature that outlines a definitive direction of treatment for these patients. The aim of this study was to determine whether older adult patients with siNETs who undergo surgery have different cancer-specific and overall survival outcomes than those who do not.

Methods: We identified patients 65 years and older diagnosed with siNETs from 1998-2014 in the Surveillance, Epidemiology, and End Results (SEER) database. To determine the risk factors associated with overall survival, we performed chi-square tests. Kaplan-Meier analysis was also used to estimate overall and cancer-specific survival functions for both study cohorts and log-rank tests were used to compare the curves. The effect of surgical intervention on overall and cancer-specific survival was further examined using a multivariable inverse probability weighted propensity score Cox Proportional-Hazard model to adjust for demographic and clinical variables.

Results: We found 4,732 patients with siNETs, 3,877 (81.93%) of whom underwent cancer-directed surgery. In univariate analysis, surgery was found to be significantly associated with an increase in 1-year (80.99% vs. 68.77%; p<0.0001) and 5-year overall survival (38.69% vs. 27.25%; p<0.0001). Log-rank tests performed on the Kaplan-Meier survival functions indicated a significant increase in overall survival (p<0.0001) and cancer-specific survival (p<0.0001) for patients receiving surgery. After propensity scoring, patients who underwent surgical resection were found to have a significantly reduced hazard of cancer-specific death (HR: 0.475; 95% CI: 0.422-0.535; p<0.0001) as well as overall death (HR: 0.659; 95% CI: 0.611-0.711; p<0.0001).

Conclusion: Older adult patients who underwent surgical resection of siNETs had better cancer-related and overall survival than patients who did not. Though surgery can be contraindicated in older patients, the results of this study provide support for the surgical management of siNETs and suggest this intervention as the standard of treatment.

D164 Student Presentation
Mortality Rates and Short-Term Outcomes of Nephrectomy for Renal Cell Cancer in Octo- and Nonagenarians

Background: As utilization of nephrectomy has increased from 1,262 cases in 1995 to 2,429 in 2014. The proportion of partial nephrectomies in the old-old group increased from 6.9% in 1995 to 27.8% in 2014. However, old-old adults were less likely than younger patients to undergo partial nephrectomy at every time point (p<0.0001). In both groups, mortality at index, 30 and 90 days declined over time. Most recently (2010-2014), old-old adults compared to younger patients had significantly longer stays, higher mortality rates, and higher readmission rates.

Conclusions: As utilization of nephrectomy has increased over the last 20 years, post-operative mortality has declined in all age groups. Although nephrectomy in octo- and nonagenarians has become safer, old-old adults continue to have higher mortality rates and longer stays compared to their younger counterparts.

D165 Resident Presentation
Geriatric Emergency Department Innovations: Impact on Patient Experience
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Background: As Emergency Departments (EDs) adapt for care for older adults, there is a need to study geriatric emergency care interventions impacting outcomes for this population, including patient experience. In this study, we compare patient responses about ED experiences among older adults receiving Geriatric ED care vs. those that did not.

Methods: This was a prospective observational study of English or Spanish speaking patients ages 65+ from an urban, academic, tertiary care ED from 2/10/2012-6/15/2015. Enrollees responded to questions adapted from the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS) and Care Transition Measure (CTM3) surveys 2 weeks after ED discharge. Comparisons were made of responses by those seen in a Geri ED space vs. regular ED and those seen by a geriatric transitional care nurse (TCN) vs. not. HCAHPS responses were compared for those answering “strongly agree” vs. all other responses (strongly disagree to agree). CTM3 scores were calculated via standard protocol. Logistic and linear regressions were completed adjusting for covariates significant in bivariate analyses or of construct validity when evaluating patient experience.

Results: 2,816 patients were surveyed. Of the 1,459 patients who were discharged, 1,117 (77%) completed baseline and 2 week follow up surveys; 34% were male, 31% were white, 52% were ages 65-74, 51% were seen in the Geri ED, 11% were seen by the TCN, and 9% were both placed in the Geri ED and seen by the TCN. Patient seen in the Geri ED vs. not were more likely to strongly agree their medications were explained (55% vs. 50%, p<0.01), their pain was controlled (41% vs. 36%, p<0.001), and their room was kept clean (79% vs. 73%, p<0.01). In analyses adjusted for age, gender, race, ethnicity, language, length of stay, and daytime, only the perception of room cleanliness had a trend for significance (OR=1.30 (0.97, 1.74)). For all other HCAHPS and CTM responses, there were no statistically significant associations with being seen in the Geri ED or by the TCN.
Conclusion: Early results indicate patient experience, measured by a modified HCAHPS survey or the CTM3, is minimally associated with being cared for in a geriatric ED or seen by a TCN. Further studies should explore patient experience with more refined instruments and a larger sample size.

D166 Resident Presentation, Encore Presentation
Predictors of Mobility in 6 Months in Elderly with Hip Fracture. Study COFFE--Cohort Of Femoral Fracture in Elderly
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Authors Godinho I A, Sitta MC, Vittal PH, Fortes-Filho SQ, Mello JÁ, Garcez Leme LE.

Institutions: Institute of Orthopedics and Discipline of Geriatrics Clinics Hospital of University of Sao Paulo, Sao Paulo, Brazil

Keywords: Hip fracture, mobility, elderly

Background: Hip fracture is very frequent in the elderly with high mortality and quality of life impairment. There is no consensus on the predictors of mobility in post-fracture and they can help identify patients with worse prognoses, allowing for a more effective rehabilitation plan.

Objective: To evaluate predictors of mobility loss in 6 months in elderly patients hospitalized for hip fracture

Methods: Prospective cohort study with 188 participants over 60 years old with hip fracture. The functionality was evaluated through the Katz Scale. Mobility was assessed by the Parker Score, the score ranges from 0 to 9 points, the higher the score, the better the mobility.

Cognitive impairment was defined if there was a previous diagnosis of dementia or 10-point Cognitive Screener ≤ 5 points. The endpoint loss of mobility was defined as non-recovery of the Parker Score at the end of 6 months. Data were collected at the time of admission and by telephone follow-up at 3 and 6 months after discharge. Statistical analysis was performed through logistic regression with main independent variables functionality and cognition.

Results: The elderly had a mean age of 79.4 ± 8.9 years, female (75%). Before the fracture 70.7% were independent activities of daily living and 43% had cognitive impairment. After 6 months of follow-up, 125 patients did not recover mobility prior to fracture. The elderly who did not recover mobility compared to those who recovered were older (80.5 x 77.3 years, p=0.018), with better mobility before the fracture (6.8 x 5.4 points, p=0.002), presented a higher proportion of delirium at admission (37.6 x 22.2%, p=0.034). In the logistic regression adjusted for socio-demographic variables and for multimorbidity, they were independent predictors of mobility loss: age (OR 1.06 [1.02-1.1] p=0.004), previous mobility (OR 1.4 [1.2-1.6] p=0.001) and functionality (OR 2.8 [1.03-7.8] p=0.043). Cognitive impairment was not associated with worsening mobility.

Conclusion: In the hip fracture there is significant loss of mobility in the late postoperative. Age, functionality and mobility prior to fracture were predictors of mobility loss in the elderly with hip fracture at 6 months.

D167 Resident Presentation
Geriatric co-management reduces mortality among trauma patients older than 80 years old.
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BACKGROUND: Given the impact of aging on one’s physiological reserve, patients older than 80 years old have higher mortality rates compared to their younger peers. Geriatric co-management programs (GTC) have been proven effective in patients over 80 with multiple rib fractures, but there are no studies investigating its effect in general trauma.

METHOD: A retrospective cohort study with 1572 patients aged ≥ 80 with any trauma diagnosis admitted from 2014-2016 to the trauma service, within a 719 bed level 1 trauma center. Outcome measures were obtained from the trauma registry. Primary outcome was in-hospital mortality and overall mortality (defined as inpatient death or discharge to hospice). Secondary outcomes included hospital length of stay (LOS), ICU LOS, and discharge location.

RESULTS: 346 patients (22.0%) were placed in the GTC program. Overall mortality was lower in GTC group (4.9%) when compared with Usual Care (UC) (11.9%), representing a 57.0% reduction (p-value =0.0003). There was a 7.42% hospital mortality rate in the UC group compared with a 2.5% rate in the GTC group (p-value =0.0020). GTC patients had a longer mean LOS (6.4 vs 5.3 days, p-value=0.001). Eighty percent of GTC patients were sent to inpatient rehabilitation facilities or skilled nursing facilities compared with 60% in UC (p-value <0.001).

CONCLUSIONS: Our results suggest that geriatric trauma co-management among trauma patients above the age of 80 is necessary to achieve substantial decrease in overall and in-hospital mortality.

<table>
<thead>
<tr>
<th>Main outcome</th>
<th>Unadjusted</th>
<th>Adjusted*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mortality</td>
<td>p-value</td>
<td>p-value</td>
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<tr>
<td>Usual Care</td>
<td>0.0020</td>
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</tr>
<tr>
<td>GTC</td>
<td>0.33</td>
<td>0.44</td>
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<td>Overall Mortality</td>
<td>0.0003</td>
<td>0.0028</td>
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<tr>
<td>Usual Care</td>
<td>0.23-0.64</td>
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</tr>
<tr>
<td>GTC</td>
<td>0.38</td>
<td>0.43</td>
</tr>
</tbody>
</table>

* Logistic regression controlling for Age, Number of comorbidities, major phys, dependant health status, length of stay, Number of Trauma Diagnoses, new ISS score, presence of CHF

D168 Student Presentation, Encore Presentation
Patient-Centered Outcomes in the Complete Health Improvement Program (CHIP)
J. G. Koch,1 T. Barnett,2 S. Friedman,3 1. University of New England College of Osteopathic Medicine, Spencerport, NY; 2. Rochester Lifestyle Medicine, Rochester, NY; 3. Medicine, University of Rochester School of Medicine and Dentistry, Rochester, NY.

Background: CHIP is an 18-week community-based lifestyle intervention program that has been used for over 25 years to reduce cardiac risk factors and promote healthy aging. CHIP has been shown to significantly reduce blood pressure, cholesterol, and triglycerides, however it has yet to be evaluated for its effect on quality of life measures important to many patients. We hypothesized that CHIP would improve patients’ energy, pain, and physical and emotional functioning.

Methods: Patients who had completed a Rochester Lifestyle Medicine CHIP program were interviewed via telephone to acquire quality of life data using the Short Form-36 Questionnaire (SF-36) and other questions assessing symptoms, healthcare utilization and prescription medications. Subjects were asked SF-36 questions regarding their health when they first began CHIP, and as of the present. Patient charts were reviewed to assess demographics, comorbidities, number of prescription medications, and change in cardiac risk factors.

Results: 42 of 79 CHIP participants (53.2%) completed the phone interview. Significant improvements were seen in all 100-point scales of the SF-36 questionnaire: energy/fatigue (18.1, p<0.001), physical functioning (12.6, p<0.001), role limitations due to physical health (34.5, p<0.001), role limitations due to emotional problems (19.0, p=0.005), emotional well-being (5.68, p=0.004), social functioning (13.8, p=0.002), pain (11.8, p<0.004), general health (27.4, p<0.001), and total health (18.2, p<0.001). 28.6% reported dose reductions of prescription medication related to chronic conditions. 50% and 40.5%
of patients reported changes in quality of sleep and reflux symptoms, respectively. Significant reductions were also seen in BMI (1.54, p<0.001), LDL (8.20, p=0.006), HDL (2.71, p=0.047), diastolic blood pressure (3.35, p=0.03), and fasting blood glucose (7.08, p=0.04).

Conclusions: Completing CHIP is associated with significant improvements in quality of life. A larger prospective study is needed to better characterize the impact of CHIP on quality of life from beginning to end of the program, and whether these changes are sustained/improved over time.

D169 Resident Presentation
A Simple Objective Score to Predict In-Hospital Mortality in Acutely-Hospitalized Elderly Patients
J. M. Bowie,1,2 C. E. Dunne,1 K. A. Cannon,1,2 R. Y. Calvo,1 J. D. Wallace,2 J. Badiee,1 V. Bansal,1 C. Sise,1 M. J. Sise.1 1. Trauma Service, Scripps Mercy Hospital, San Diego, CA; 2. General Surgery, Naval Medical Center San Diego, San Diego, CA.

Background: The early and accurate prediction of mortality in acutely-hospitalized elderly patients would assist decision-makers in recommending appropriate care and reduce the use of unnecessary healthcare resources. However, available tools applicable to this growing patient population are subjective, complex and impractical in the acute setting. We sought to develop a simple and objective score to predict in-hospital mortality in acutely-hospitalized elderly patients at the time of admission.

Methods: We developed the prospective Geriatric and Trauma Outcomes Registry (GATOR) to collect objective risk factors available on admission for all patients age ≥65 years admitted through our urban Level 1 trauma center’s trauma bay or emergency department between 10/1/15–9/30/16. Study patients had a hospital length of stay ≥24 hours. Patients were computer-randomized into training (n=2076, 60%) and validation (n=1367, 40%) groups prior to analysis. A predictive model was developed in the training group using candidate risk factors selected with backward stepwise logistic regression. Significant risk factors were dichotomized based on physiologic cut-points and converted to a point-based tool.

Results: Demographic, laboratory, vital sign, and comorbidity variables did not vary significantly between training and validation groups. Of the 45 risk factors collected in the GATOR, six were significant (Fig 1). The sum of points for the six risk factors generated the GATOR Score (range: 0–100). For in-hospital mortality, the GATOR Score showed excellent discrimination based on the area under the receiver operating characteristic (AUROC) curve of 0.7626 (95% CI 0.7047–0.8204).

Conclusions: In the acutely-hospitalized elderly, the GATOR Score accurately predicts in-hospital mortality based on objective data readily available at the time of admission. The GATOR Score will assist acute care clinicians in recommending appropriate care to patients and their families and reduce the use of unnecessary healthcare resources.

Figure 1. GATOR Score Point Assignments.

D170 Resident Presentation
Choosing wisely: perhaps general anesthesia is not the safest option for hip fracture elderly patients
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Background: Previous studies suggest that elderly hip fracture patients behave worse after surgery if general anesthesia is used compared to spinal anesthesia. However, evidence is still sparse and results are controversial. Our objective is to explore if modality of anesthesia has any influence on in-hospital morbidity and patients’ outcomes.

Methods: Prospective cohort of patients over 70yo. admitted due to a hip fracture. Sociodemographic, functional and relevant clinical data were collected: type of fracture, anesthesia and surgery, and in-hospital complications (including respiratory tract and urinary infections –UTI–, deep vein thrombosis –DVT– or pulmonary embolism –PE–, delirium, renal or heart failure, and pressure ulcers –PU–). Bivariate and multivariate analysis were performed to evaluate if modality of anesthesia influenced incidence of complications.

Results: 303 patients were recruited along 2017. Average age was 84±6yr, 61% were women. 47% had dementia, 52% and 25% of patients needed some help for walk (at least others’ supervision) or perform at least one of the ADLs at baseline. Mean time to surgery was 66 hours. 57% developed delirium, 14% presented acute kidney injury, 21 % heart failure, 16% respiratory tract infections and 12 % UTI; 4 and 6% developed DVT and PU respectively. 5% of patients died.

Bivariate analysis demonstrated that respiratory tract infections and delirium were more common among those who were operated under general anesthesia compared with other types of anesthesia. When other risk factors for complications were taken into account (time to surgery, ASA and comorbidities), only relationship between respiratory tract infections and general anesthesia remained significant (p<0.05). Mortality seemed to be not influenced for anesthesia modality in our cohort.

Conclusions: In elderly patients with hip fracture operated under general anesthesia, respiratory tract infections are more frequent when compared to other modalities of anesthesia, regardless their comorbidities, time to surgery and ASA. More research is needed to confirm our results and understand the underlying mechanisms of this relationship, and to explore if general anesthesia should be avoided or, on the contrary, we should focus on oral hygiene and early respiratory tract infections detection and treatment in patients operated under general anesthesia.

D171 Resident Presentation, Encore Presentation
Nutritional Risk and Post-Operative Outcomes in Elderly Surgical Patients
K. Goldlist. MD,3 A. Ehrlich,4 H. Stocker Cioltan,1 C. Wendel,1 R. Pang.5 K. Evans,1 J. Mohler, MPH, PhD,1 M. Fain, MD,1 R. Bastron, MD.3 1. AZ-GWEP, Tucson, AZ; 2. Internal Medicine, University of Arizona, Tucson, AZ; 3. Anesthesiology, University of Arizona, Tucson, AZ; 4. College of Medicine, University of Arizona, Tucson, AZ.

Background: The American College of Surgeons in collaboration with the American Geriatrics Society have defined best practice guidelines for the preoperative assessment of geriatric surgical patients in their 2012 ACS NSQIP/AGS Best Practice Guidelines. They classify severe nutritional risk patients as either having a BMI <18.5 kg/m², serum albumin <3.0 g/dl and/or unintentional weight loss >10%-15% within 6 months. In elderly patients undergoing elective surgery, malnutrition rates could be as high as 38.7%. This pre- and post-operative assessment studies the relationship between nutritional risk and surgical outcomes.

Methods: ACS NSQIP/AGS nutritional risk was assessed in 137 patients (≥60 years old) undergoing elective surgery. Subject characteristics and outcomes in severe versus non-severe nutritional risk groups were compared with t-tests, chi-square or Fisher’s exact tests, and for length of stay truncated negative binomial regression.

Results: The cohort had 25 patients with severe and 112 patients with non-severe nutritional risk. Both groups had similar mean age (77.1) and sex ratio (56% vs 60.7% male). Compared to non-severe risk group, patients with severe risk had increased length of hospital stay (median 5 days vs 3 days, p=0.015), increased surgical complications.
(28% vs 11.6%, p=0.04) and were less likely to be discharged from hospital to home (56% vs 79.3%, p=0.04).

Among all subjects, length of stay was estimated almost 2-fold higher in those at severe nutritional risk. We also found that patients with severe nutritional risk undergoing elective surgery were less likely to be discharged to home.

**Conclusions:** Nutritional deficient elders are at high risk of poor outcomes and early identification and intervention of older adult patients at nutritional risk prior to surgical intervention is warranted.

### D172 Resident Presentation

**Patient-Reported Outcomes in Idiopathic Pulmonary Fibrosis in The Geriatric Population**

**K. R. Parks, N. Osevala, A. Dimmock, R. Bascom.** *Milson S Hershey Medical Center, Hershey, PA.*

**Background:** Idiopathic Pulmonary Fibrosis (IPF) is a chronic, progressive, and fatal disease process that primarily affects the elderly. With the advent of anti-fibrotic agents, such as pifithrinone and nintedanib, these vulnerable patients are now being treated. The most common clinical tools for prognosis address those over 65 as a single category, but do not speak to how the disease will affect quality of life. The ATAQ-IPF is a patient-reported outcome (PRO) tool used to determine how IPF affects quality of life.

**Methods:** The patient cohort was obtained in cooperation with the PaTH Network, a clinical data research network. ATAQ-IPF was given at regular visits at IPF specialty centers. The data was analyzed with chi-square for the demographics and oxygen use, and ANOVA for domain subscales.

**Results:** See Table 1 for results. “Oxygen Total” describes the use of oxygen at any time. The “Dyspnea,” “Cough,” and “Fatigue” subscales indicate how the disease process impacts those PROs. “Overall” describes a global measure of quality of life. Higher scores always mean more impact.

There is a non-significant increase of continuous need for oxygen in the oldest age category, and also having completion of Advanced Directive. Limitations of this study include sample size and inability assess duration of disease process.

**Conclusions:** The PRO of IPF patients does not differ to a statistically significant degree based on age. This suggests that patients with a new diagnosis of IPF can be counseled that they will not experience higher impact on their quality of life due to their age alone.

### Table 1

<table>
<thead>
<tr>
<th>Sex (m, female)</th>
<th>Age 60-65</th>
<th>Age 65-75</th>
<th>Age &gt;75</th>
<th>p value</th>
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</thead>
<tbody>
<tr>
<td>Oxygen Total</td>
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<td>7.45</td>
<td>7.30</td>
<td>0.675</td>
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<tr>
<td>Dyspnea on all times</td>
<td>50%</td>
<td>45%</td>
<td>25%</td>
<td>0.462</td>
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<tr>
<td>Cough on all times</td>
<td>25.6%</td>
<td>23.7%</td>
<td>25.6%</td>
<td>0.903</td>
</tr>
<tr>
<td>Fatigue on all times</td>
<td>51.3%</td>
<td>45.3%</td>
<td>40.9%</td>
<td>0.095</td>
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<td>Global impact on quality of life</td>
<td>13.6%</td>
<td>14.6%</td>
<td>13.5%</td>
<td>0.624</td>
</tr>
</tbody>
</table>

### D173 Student Presentation

**Characterization of Degenerative Mitral Valve Prolapse in Elderly Patients: Fibroelastic Deficiency as Predominant Underlying Disease**

**L. C. Williams,1 D. Pandis,1,2 P. Boateng,1,2 D. Adams.2** *Icahn School of Medicine at Mount Sinai, New York, NY; 2. Cardiovascular Surgery, The Mount Sinai Hospital, New York, NY.*

**Introduction:** Primary degenerative mitral valve disease is a common form of mitral valve disease, estimated to affect about 2-3% of people in the United States. A thorough assessment of disease etiology is essential for understanding valve pathoanatomy in patients with this condition. Degenerative mitral valve prolapse (DMVP) can be subdivided based on the underlying disease process; degeneration can be attributed to fibroelastic deficiency (FED), forme fruste Barlow’s disease, or Barlow’s disease.

**Objectives:** The aim of this study is to characterize the etiological subtypes of primary DMVP and analyze their associated valve pathologies in elderly vs. non-elderly patients.

**Methods:** We conducted a retrospective cohort analysis of 476 patients undergoing surgery for DMVP at our center from 2013-2016. Patients were divided into two groups: elderly patients, defined as patients of age 65 or higher, and non-elderly patients. These two groups were compared for primary degenerative disease etiology as well as for valve pathology and surgical resection types. Statistical analysis was done using a two-sample t-test.

**Results:** FED was more prevalent in elderly patients than in non-elderly patients (53% vs 36%; p=0.001), whereas Barlow’s disease was more prevalent in younger patients (38% vs 36%; p=0.007). In the non-elderly group, in which Barlow’s disease was more prevalent, a more radical (quadrangular) tissue resection was performed than in the elderly group, in which FED was more prevalent (25.3% vs 12.7%; p=0.001).

**Conclusions:** The most common cause of primary DMVP in elderly patients is fibroelastic deficiency, as opposed to Barlow’s disease which is the most common cause in non-elderly patients. The complexity of the mitral valve pathoanatomy tends to increase from localized, segmental lesions in FED to diffuse, multi-segmental or bileaflet prolapse with larger annuli in Barlow’s disease.

### D174 Student Presentation

**Hepatitis C and diabetic retinopathy: exploring the relationship**


**Background:** Diabetes mellitus (DM) disproportionately impacts older adults, affecting one in four Americans over 65. Diabetic retinopathy (DR), a microvascular complication of DM, is a leading cause of blindness among US adults. Studies suggest that hepatitis C may increase the risk of DM up to 3-fold and can worsen glycemic control. However, the role of comorbid hepatitis C in development and progression of microangiopathic complications of DM, such as DR, has not been investigated. Chronic inflammation or liver dysfunction (and metabolic dysregulation) from hepatitis C may impact DR pathogenesis. This study evaluated the prevalence and severity of DR among DM patients with and without hepatitis C.

**Methods:** Patients with comorbid DM and hepatitis C seen by the Weill Cornell Department of Ophthalmology January 1, 2007 – December 31, 2012 were identified (N=120). Hepatitis C cases were defined by the presence of detectable viral RNA by quantitative PCR. Controls (N=120) were matched by age and DM type. Charts were retrospectively reviewed to determine prevalence of DR (diagnosed by an ophthalmologist by dilated fundus exam) and several measures of DR severity (treatment for diabetic macular edema [DME], surgery for proliferative DR, and final best-corrected visual acuity [BCVA]).

**Results:** Cases and controls exhibited similar baseline characteristics, such as comorbid hypertension (p=0.14) and average HbA1c (p=0.33), though controls had significantly longer DM duration (p=0.05). There was no significant difference in DR occurrence between cases and controls (35.8% vs. 42.5%, p=0.29). Further, no significant difference in DR severity was identified between cases and controls, as measured by treatment of DME (6.2% vs. 15.4%, p=0.08), surgery for proliferative DR (4.2% vs. 4.2%, p=1.0), or final BCVA among patients with DR (logMAR 0.33 vs. 0.42, p=0.48). Several covariates more prevalent in the hepatitis C group (comorbid HIV, liver failure, and cirrhosis) are being investigated in subgroup analyses to explore their impact on occurrence and/or severity of DR.

**Conclusions:** Comorbid hepatitis C was not associated with significantly higher rates or more severe manifestations of DR in
patients with DM. Future investigation will explore outcomes within hepatitis C subgroups.

D175 Student Presentation
Frailty to Predict Outcomes following Kidney Transplantation
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Background: Kidney transplantation has become increasingly common in older adults. What remains to be seen are outcomes post transplantation. An objective and standardized definition of frailty in this decision-making process is still lacking. Capacity to perform transplantation for this subset of patients is novel, and what begs further clarity are patient outcomes. Objective was to determine the indicators of frailty that can potentially predict if older patients can live fulfilling lives post kidney transplantation.

Methods:
Design: Retrospective, chart review analysis, matched 60 patient cohort (ages 38-80) to score measures of frailty prior to transplantation using Lekan et al. Frailty Index Lekan and a modified version. Outcomes included patient readmission and length of hospital stay following transplantation.
Setting: UCLA medical center’s CareConnect database to evaluate patient’s retrospective frailty risk.
Results: Matched 60 patient cohort: 37 young patients and 23 older patients. Frailty scores associated with categorical age. Lekan et al. score as high vs. low (Pearson p = 0.040). Association between Lekan M high/low score observed with categorical age (Pearson p = 0.017). Lekan et al. and Charlson co-morbidity index predicted the average number of readmissions. Patients with high Lekan score readmitted an average of 2.94 times compared to 1.13 for those with a low Lekan score (p = 0.031; high Lekan SD = 3.58, low Lekan SD = 1.77; CI -3.70% to 0.09%).
Frail patients have a longer transplant course. Patients with a high Lekan score stayed in the hospital for an average of 8 days, compared to 5.73 days for a low Lekan score (p = 0.0179, high Lekan SD = 3.95, low Lekan SD = 2.11; CI -4.39% to -0.17%). Patients with a high modified Lekan score stayed in the hospital for an average of 7.3 days, compared to 5.45 days for a low modified Lekan score (p = 0.0063, Lekan M high SD = 3.46, Lekan M low SD = 1.87; CI -3.31% to 0.42%).

Conclusions and Relevance: Project provides an impetus for standardization of frailty measures in the transplant field. Frailty assessments improve our understanding of future decisions regarding transplant eligibility. Evaluation of frailty in older transplant recipients can contribute to future risk stratification.

D177 Student Presentation
A comparative study of cerebrospinal fluid drainage by large volume lumbar puncture versus external lumbar drainage to predict CSF diversion procedure.
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Background: Idiopathic normal pressure hydrocephalus (iNPH) is a condition characterized by gait imbalance, cognitive impairment, and urinary incontinence in elderly. Ventriculoperitoneal shunting is indicated if the large volume lumbar puncture (LVLP) or external lumbar drain (ELD) procedure show improvement in gait and cognitive parameters. Both procedures are sensitive in predicting shunt response; however, the ELD has higher sensitivity and specificity. The Johns Hopkins CSF Center protocol indicates using a LVLP and subsequent ELD testing for borderline patients who do not meet surgical criteria with the LVLP. The aim of this study is to compare the CSF diversion testing modalities and determine the nature and characteristics of iNPH patients with negative LVLP testing as well as determine if there is a significant decline in baseline values between the LVLP and ELD tests.

Methods: Fifty-five patients with iNPH who underwent LVLP and ELD testing were selected for a retrospective chart review. Analysis of pre-LVLP and ELD parameters were compared against each other and against time between procedures using a Wilcoxon Signed Ranks Sums and a Spearman regression model. Patients who changed shunting candidacy between tests were analyzed for differences in clinical and demographic characteristics.

Results: Eight of 55 patients changed shunting candidacy with the ELD procedure. The ELD positive group were older (6.3 years) with a higher BMI (5.62 kg/m²). There was a decline between pre-testing baselines in the 6-minute walk (123.01m,
**Poster Abstracts**

**P314 AGS 2018 Annual Meeting**

LVLP positive patients who underwent shunting.

shunt outcomes to compare with baseline testing and compare with associated with each procedure. Further research aims to quantify post-shunt outcomes to compare with baseline testing and compare with LVLP positive patients who underwent shunting.

**ELD testing was beneficial for 15% of patients; however, implications of these findings require further evaluation of cost and morbidity associated with each procedure. Further research aims to quantify post-shunt outcomes to compare with baseline testing and compare with LVLP positive patients who underwent shunting.**

**Conclusion**: Baseline testing parameters showed a statistically significant decline in gait-only parameters with no significant correlation between baseline decline and increased time between procedures. ELD testing was beneficial for 15% of patients; however, implications of these findings require further evaluation of cost and morbidity associated with each procedure. Further research aims to quantify post-shunt outcomes to compare with baseline testing and compare with LVLP positive patients who underwent shunting.

**Results**: In our sample (n=259), the majority of patients were white (75%), female (60%), and had an AMT4 score of 4 (90%). Seventeen patients screened positive for elder abuse. Following the complete evaluation, assessors were absolutely confident in the patient’s ability to report abuse for 96% of patients. For patients with AMT4 scores of 4, assessors were absolutely confident for 97% following the AMT4, which increased to 99% following the safety questions. For patients with AMT4 scores ≤3, assessors were absolutely confident in the patient’s ability to report abuse for 20% following the AMT4, 48% following the MMSE, and 72% following the safety questions. For patients receiving paired evaluations (n=125), percent agreement between assessors regarding patient ability to report abuse was high (93%).

**Conclusions**: These findings suggest that among older adults in the ED, the ability to report abuse can be determined using a small number of questions and that many patients with mild or moderate cognitive impairment have the ability to report elder abuse.

**D178 Resident Presentation**

Comparison between surgical and conservative management of ortho-geriatric patients in an Asian population

X. Ruan, M. Nguyen, P. Sebastian, W. Foo, K. Yip, k. mamun, D. Seow.

**Background**: Given the global ageing population, there has been an increasing emphasis on the holistic care of elderly patients with fragility fractures. Despite advances in medicine and medical technology, there is still a substantial number of hip fracture patients treated conservatively. Our study evaluated the factors predisposing these individuals for conservative management.

**Methods**: All patients aged 60 and above, who presented with hip fracture to our tertiary hospital from July to October 2017 were evaluated through a comprehensive geriatric assessment, with documentation of demographics, clinical and surgical parameters. Exclusion criteria include those with high velocity trauma, pathological, pelvic, shaft of femur and pathological fractures. Institutional review board approval was obtained. Statistical analysis was performed using Statistical Package for the Social Sciences statistics version 23.0.

**Results**: Out of 118 patients (mean age 78 years, [SD 9.2]), 19 (16.1%) were conservatively managed while 99 (83.9%) had surgery of either the neck of femur fracture (60.6%) or intertrochanteric fracture (39.4%). The Clinical Frailty Score and Barthel Index of the surgical patients were lower compared to patients who were conservatively managed (p<0.001). A higher proportion of patients who were conservatively managed came from nursing homes (p=0.042), had lower abbreviated mental test scores (p<0.001), with previous history of cognitive impairment (p=0.009), and chronic renal disease (p=0.002). The in-hospital mortality of these patients was higher at 10.5% compared to 0% within the surgical arm (p=0.025). On discharge, these patients had lower Barthel Index (p=0.001) and increased risk of institutionalization (p=0.001).

**Conclusion**: Elderly hip fracture patients who were conservatively managed had poorer pre-morbid status with reduced likelihood for good functional outcomes post-hospitalization.

**D179 Student Presentation**

Determining the Ability of Older Adults to Report Elder Abuse: a Cross-Sectional Emergency Department-Based Study


**Background**: One challenge in screening for elder abuse is determining whether patients have the cognitive ability to report abuse. The objective of this study was to describe assessments of patient ability to report elder abuse based on responses to cognitive assessments and screening questions for abuse.

**Methods**: Emergency department (ED) patients ≥65 years were screened for elder abuse and neglect by trained research assistants and nurses (assessors). All patients completed the Abbreviated Mental Test (AMT4). Patients with AMT4 scores ≤3 completed the Mini-Mental State Examination (MMSE). All patients completed an elder abuse questionnaire, as well as a directed physical exam. Following each cognitive assessment and the elder abuse questions, assessors ranked their confidence in the patient’s ability to report abuse as absolutely confident, confident, somewhat confident, or not confident.

We examined changes in assessor confidence following the cognitive assessments and the safety questionnaire, as well as percent agreement between assessors.

**Results**: In our sample (n=259), the majority of patients were white (75%), female (60%), and had an AMT4 score of 4 (90%). Seventeen patients screened positive for elder abuse. Following the complete evaluation, assessors were absolutely confident in the patient’s ability to report abuse for 96% of patients. For patients with AMT4 scores of 4, assessors were absolutely confident for 97% following the AMT4, which increased to 99% following the safety questions. For patients with AMT4 scores ≤3, assessors were absolutely confident in the patient’s ability to report abuse for 20% following the AMT4, 48% following the MMSE, and 72% following the safety questions. For patients receiving paired evaluations (n=125), percent agreement between assessors regarding patient ability to report abuse was high (93%).

**Conclusions**: These findings suggest that among older adults in the ED, the ability to report abuse can be determined using a small number of questions and that many patients with mild or moderate cognitive impairment have the ability to report elder abuse.

**D180 Resident Presentation**

Cognitive Screening Test as Predictor of Mortality in the Elderly with Hip Fracture at Six Months. Study COFFE – Cohort of Femoral Fracture in Elderly

P. Vital, Geriatrics, HCFMUSP, São Paulo, Brazil.

**Background**: Hip fractures are very prevalent in the elderly population, configuring event of functional impairment, social isolation and high mortality. There is no literature review of studies evaluating how much cognitive decline could contribute to an increase in the number of deaths in the fractured elderly population. Our research proposes to evaluate Cognitive Screening Test (10-CS) as a predictor of mortality at 6 months in elderly patients with hip fracture admitted to HCFMUSP Emergency Care.

**Methods**: This is a prospective cohort study with consecutive sampling of 262 patients aged 60 years or older with hip fracture. Cognitive screening was performed by 10-CS, a scale from 0 to 10 points, which classified as: normal (8 to 10), possible cognitive impairment (6 to 7) and probable cognitive impairment (from 0 to 5). The outcome was mortality at 6 months obtained through telephone follow-up. The statistical analysis was by logistic regression model with 10-CS as the independent variable.

**Results**: During 6 months of follow-up there were 57 deaths (23.2%). The group that evolved to death compared to the survivors group was older (82.5 x 79.3 years, p = 0.021), with a higher male ratio (40.4% vs 25.4%, p = 0.029), more dependent (29 x 55, p = 0.002), with lower mobility (5 x 6.3 points, parker score, p = 0.001). Regarding cognition, the highest mortality group was the one with the highest impairment according to the 10-CS score: 64.6 x 40% of the survivors, p = 0.010. In the logistic regression adjusted for socio-demographic and multi-morbidity data, probable cognitive impairment had a 2.7-fold higher risk of mortality compared to the normal 10-CS group (OR 2.7 (95% CI, 1.1-6.8); p = 0.034).

**Conclusion**: The 10-CS Cognitive Screening Test was a good independent predictor for mortality in the elderly after hip fracture at 6 months follow-up.
D181 Student Presentation
Discrepancy between self-reported vision and visual acuity in patients with age-related macular degeneration.

P. P. Cunha,1 J. Zhuang,1 J. P. Wright,2 D. J. Madden,3 G. G. Potter,1 K. Allen,1 E. Lad,1 S. W. Cousins,1 H. Whitson.1 1. Duke University School of Medicine, Durham, NC; 2. Dartmouth-Hitchcock Medical Center, Lebanon, NH.

Background
Patients with age-related macular degeneration (AMD) often exhibit a discrepancy between self-reported vision (SRV) and visual acuity (VA). Our objective was to determine the degree to which this discrepancy may be explained by neurocognitive status or depression.

Methods
We recruited 79 subjects with AMD in one or both eyes. Best corrected VA was assessed using a Snellen chart and converted to log10 minimal angle resolution (logMAR) values. SRV was assessed with a single question; responses ranged from excellent to completely blind. Discrepancy between VA and SRV was defined in accordance with previous literature. We administered in person the Brief Test of Adult Cognition by Telephone (BTACT), which is a validated global cognitive assessment that does not rely on visual ability. Depressive symptoms were assessed with the Geriatric Depression Scale (GDS). Logistic regression was used to assess the association between neurocognitive variables and discrepant status.

Results
Discrepancy was present in 21 participants (26.5%), with 19 of these reporting SRV worse than VA. Discrepant and non-discrepant groups did not differ with respect to age, gender or education years. In a model adjusted for sex and education, age was associated with higher odds of discrepancy (OR 1.08, 95% CI 1.01 to 1.16, p value = 0.02). However, when cognitive and depression scores were included in the model, no variables were independently associated with discrepancy.

Conclusions
Almost a quarter of AMD patients perceived their vision to be worse than suggested by measured visual acuity, and discrepancy was slightly more common with advancing age. However, SRV-VA discrepancy was not explained by depressive symptoms or cognitive status. Ongoing analysis will assess whether white matter integrity or contrast sensitivity may explain the discrepancy. Understanding factors that contribute to the discrepancy is important because care is often targeted to VA but SRV is linked to function and independence in visually impaired older adults.

D182 Student Presentation
The Impact of Older Age On Outcomes of Renal Transplantation


Background: The population with end-stage renal disease necessitating dialysis is aging. Many in this population will undergo renal transplantation, which has been shown to improve quality of life and survival. Considering that a greater number of older adults are opting for transplantation, it is imperative to investigate the impact of older age on outcomes of renal transplantation.

Methods: All patients who received a kidney transplant in NYS from 1995 to 2015 were identified from the Statewide Planning and Research Cooperative System (SPARCS) database. The outcomes of interest were mortality, survival, transplant-related complications, 30-day and 90-day re-admission rates, and hospital charges. Logistic regression was used to assess associations between older age (≥65 years) and outcomes, adjusting for The Charlson Comorbidity Index (CCI) as well as race, facility volume and bed number, whether or not the patient lives in an urban location, and the median income associated with the patient’s residence.

Results: In the adjusted logistic regression model, age ≥65 years in patients receiving a kidney transplant was significantly associated with higher rates of mortality (p < .0001), 90-day readmission rate (p = 0.0024), total hospital adjusted charges (p < .0001), and higher likelihood of death within a year of transplantation (p < .0001). However, older age was also significantly associated with a lower risk of transplant-related complications (p < .0001). Older age was not associated with significantly higher 30-day readmission rate.

Conclusion: Age ≥65 years in patients undergoing renal transplantation is associated with certain poorer outcomes including higher rates of mortality, 90-day readmission rate, and higher likelihood of death within a year of the procedure. Nonetheless, older age was associated with a lower risk of transplant-related complications. These results can help guide providers when making healthcare decisions for their older patients who need renal transplantation.
**D184 Resident Presentation**  
**Post-operative Narcotic Use In The Elderly After Hip And Knee Arthroplasty**  
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**Background:** Narcotic use has been increasing in the United States with significant effects on health as well as health care cost. Narcotic use has been found to have a negative impact on outcomes with total hip arthroplasty (THA) and total knee arthroplasty (TKA). Narcotic use has also been found to increase risk of falls and fractures in the elderly. We sought to determine the effect of age on narcotic use after total hip arthroplasty THA and TKA.

**Methods:** A retrospective chart review was performed on patients presenting to an orthopaedic reconstructive-service clinic. New patients aged 18 years old or older, with osteoarthritis (OA) of the hip or knee, who presented over a one year period and underwent TKA or THA were included. The Arkansas prescription monitoring program was then used to determine narcotic prescriptions filled in the 3 months following surgery. Doses of different narcotics were transformed into morphine milligram equivalents (MME), and added together to determine a subject’s total narcotic use.

**Results:** 179 patients met the inclusion criterion. Patients below the age of 60 (N = 66) used an average of 742 MME post-operatively. In comparison, patients between the age of 60 and 74 (N = 88) used 567 MME on average, while patients 75 and older (N = 25) took an average of 451 MME post-operatively. However, the overall effect of age group on post-operative narcotic use was not statistically significant (P = 0.1095). Multivariate analysis was also conducted and, as with the univariate analysis, no significant difference was found between the age groups.

**Conclusion:** This study suggests that there is no significant difference in the amount of narcotics filled post-operatively after TKA and THA with respect to age. While not a significant difference we showed that patients over the age of 75 obtained 39% less MME post-operatively that patients under 60. With a larger sample size it is possible that a significant difference would be found.

**D185 Student Presentation**  
**Age and Narcotic Use in Patients with Hip and Knee Arthritis**  

**Background:** Narcotic use has been shown to increase healthcare cost and morbidity in the elderly. Preoperative use of narcotics can lead to worse results with higher rates of pain and failure. Patients also do not always report narcotic usage to their surgeon. Older patients may be put on post-operative narcotics in lieu of surgical repair. We set out to determine the actual narcotic use in patients with osteoarthritis and to compare this to the reported use of narcotics and to determine if this is age related.

**Methods:** A retrospective chart review was performed on patients presenting to an orthopaedic reconstructive-service clinic. New patients aged 18 years old or older, with osteoarthritis (OA) of the hip or knee, who presented over a one year period were included. A chart review via electronic medical record was evaluated for reported narcotic use. The Arkansas prescription monitoring program was then used to determine narcotic prescriptions filled within the 3 months before presenting to clinic.

**Results:** Of the 502 patients who presented to the clinic, 170 filled a prescription within the last 3 months. The mean age of these 170 narcotic positive patients was 59.3 while the mean age of the 332 narcotic negative patients was 64.3 (P < 0.001). Patients under the age of 40 had the highest rate of recent narcotic use (64.3%) while patients above the age of 80 used narcotic s less often (23.1%, Table 1). 92 of 170 patients accurately reported recent narcotic use and this was not age dependent (P = 0.4305).

**Conclusion:** This study suggests that older patients are less likely to be taking narcotics for osteoarthritis when presenting to an orthopaedic surgeon. Only 54% of patients who were filling narcotic prescriptions accurately reported narcotic use. Age was not different for patients who accurately reported versus patients who did not accurately report narcotic use.

**D186 Student Presentation**  
**Presence of Hospital Palliative Care (PC) Program Associated with Less Intense Treatment for All Hospitalized Older Adults with Serious Chronic Illness.**  
S. Schonholz, R. Morrison. Icahn School of Medicine at Mount Sinai, New York, NY.

**Background:** The number of hospital PC programs in the United States has continued to rise, increasing exposure among both patients and families. PC decreases treatment intensity among individual older adult patients with serious illness, yet evidence of a hospital-wide and population-based effect has yet to be determined. We hypothesized the presence of a hospital PC program is associated with less intense treatment for all hospitalized Medicare beneficiaries ≥ 67 years with serious chronic illness in the last year of life.

**Methods:** We merged hospital-linked data from the American Hospital Association Annual Survey, National Palliative Care Registry, and Dartmouth Atlas of Health Care to create a sample of 2,151 hospitals of Medicare beneficiaries with serious chronic illness who died in 2014. To evaluate treatment intensity, we compared mean intensive care unit (ICU) and hospice lengths of stay (LOS) and mean hospice enrollment in hospitals with and without PC. We used independent samples t-tests to examine these relationships.

**Results:** 436 hospitals with a PC program were compared to 1,715 without. Consistent with previous analyses, hospitals with PC were more likely to be higher volume, have a cancer program approved by the American College of Surgery, and be associated with a major teaching hospital. Among hospitals with PC, some had PC screening criteria and 24/7 coverage, most had formal ICU and education programs, and 4.78 percent of discharges received a PC consult (standard error [SE]=2.92). Hospitals with PC were associated with significantly shorter mean ICU LOS by 0.26 days (SE=0.13, p=0.04) and significantly higher mean hospice enrollment by 1.43 percent (SE=0.65, p=0.02). Average hospice LOS was longer in hospitals with PC by 0.34 days (SE=0.37), but this was not statistically significant (p=0.36).

**Conclusion:** Medicare beneficiaries with serious chronic illness receive less intense treatment in hospitals with PC compared to those without.

**D187 Student Presentation**  
**Don’t Have to Put on the Red Light: A comparison in outcomes of daylight PDL versus conventional PDL in the treatment of actinic keratosis.**  
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**Introduction**
Actinic keratoses are very prevalent skin lesions that have the potential to progress to squamous cell cancer. These lesions are found in up to 26% of the population in the United States. Cost, pain, time, and effectiveness are all important factors to keep in mind in the treatment of actinic keratoses (AK). Conventional red light photodynamic therapy (CPDL) is a common treatment for AK, but a new treatment that is gaining popularity is daylight photodynamic therapy (DPDL). Generally, CPDL is a very effective treatment, but it can be quite painful for the patient during and after treatment. This meta-analysis aims to evaluate the difference in response and pain in D-PDL versus C-PDL.

Methods
A systematic review was conducted through PubMed to identify relevant studies from 2008-2015 that compare daylight PDL and conventional PDL treatments for actinic keratosis in adults. The outcomes measured were response and pain after treatment. Statistical analysis was done using fixed-effects meta-analysis to compare the results of the two treatments by comparing odds ratio and standard deviation in means with standard error, as applicable. (Comprehensive Meta-Analysis Version 3.3.070 software; Biostat Inc., Englewood, NJ).

Results
Four out of 136 studies were quantitatively assessed and included for meta-analysis. There were a total of 176 patients treated with both D-PDL and C-PDL. There was no significant difference in response to treatment (OR 0.864; p = 0.546) between both D-PDL and C-PDL. Pain was greater with C-PDL (-0.553 ± 0.114; p < 0.05).

Conclusion
Daylight PDL treatment should be considered a better treatment option for patients with actinic keratosis.
C-15-PAL and BN-20 surveys were administered before RT, and at 1 month and 3 months after completion of RT. These validated measures are used to assess quality of life in palliative care and brain neoplasms patients. We collected patient demographic and tumor variables by chart review. Using correlation analysis, t-tests, and general linear modeling (GLM), we compared survey results in two cohorts, patients 60 and older vs. younger than 60.

**Results:** Of 173 patients, 55% were male, mean age was 57 (SD 14.8), and median KPS was 90. The majority (60%) had metastatic brain cancer. Of primary brain neoplasms, 64% were high-grade. Most common radiation treatment was stereotactic radiosurgery (45%). On a scale of 0 (not certain) to 100, mean certainty for both age groups at baseline, 1 month, and 3 months post-RT ranged from 24 to 45 (SD range 19 to 28). Quality of life ranged from 57 to 66 (SD range 21 to 27). Neither correlation analysis nor t-tests showed significant associations between certainty or quality of life and age. GLM analysis controlling for radiation type also showed no associations between age groups and certainty. Baseline quality of life was negatively associated with uncertainty at all time points.

**Conclusions:** Despite prevalence of diffuse malignancy and high-grade primary brain cancer, this study suggests that regardless of age, uncertainty for selected patients who undergo brain radiation is relatively low and quality of life is not poor. In our sample, age was not associated with certainty levels or quality of life scores. However, consistent with previous literature, uncertainty shows a negative association with quality of life.

**D191 Student Presentation**

**Analysis of pain during injection of injection of eyelid anesthetics**

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**Background:** Many indications for oculoplastic procedures exist in the older population, including ptosis, dermatochalasis, dry eye, and eyelid biopsies/excisions. Many of these can be done under local anesthesia in an outpatient setting. Studies have shown that the initial injection of local anesthetic is the most feared and painful part of an outpatient procedure (Strazar et al 2013, Arndt et al 1983). This can lead patients to delay or decline treatment, resulting in missed diagnoses and decreased quality of life. Various factors that influence the benefit of local anesthesia injection have been studied, including use of sharp or blunt needles, addition of hemostatic agents, pre-cooling, and warming of the anesthetic.

**Methods:** The primary variable of interest in this study was the location of the anesthesia injection. This was a retrospective study for men and women age 18 years and older, undergoing oculoplastic procedures (7/2017-8/2017) at Weill Cornell Eye performed by two surgeons. All injections were done with a 30-gauge needle and 2% lidocaine with 1:100,000 epinephrine. Patients were given routine injections as needed and asked to rate their pain from 1-10 at the time of the injector, 1 being the least and 10 being the most pain. The period orbital region was divided into four regions based upon innervation patterns: lateral lower, lateral upper, medial lower, and medial upper.

**Results:** Data were collected from 22 patients. The average age of the men was 62.8 and that of the women was 48.5 with a range of 31 to 95. The average pain scores for medial upper and medial lower were 4.6 (n=6) and 3.4 (n=5) respectively, compared to scores for lateral lower and lateral upper of 2.7 (n=3) and 1.8 (n=2). When compared by location of the injection, 1 being the least and 10 being the most pain. The peri-orbital region was divided into four regions based upon innervation patterns: lateral lower, lateral upper, medial lower, and medial upper.

**Conclusions:** Due to the small sample size, the data did not reach significance but trends toward indicating that medial injections are more painful. These data can be used as pilot study for future prospective studies. Understanding differences in pain thresholds based upon anatomic innervation of the eyelid will allow the treating physician to better forewarn patients about injections that may be more painful. Additional prospective studies are warranted.

**D192 Resident Presentation**

**Cognitive status and instrumental activities of daily living during and after hospitalization in an ACE Unit**

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**Background:** We expect that both cognitive decline and delirium lead to functional decline during hospital stay; however, data could be limited and controversial, or may change depending on which functional measure we use. Our objective was to determine factors associated with functional status in hospitalized older patients.

**Methodology:** A cohort study with 1658 patients 60 years and older hospitalized in an acute care of the elderly (ACE) between 2011 and 2015. Sociodemographic characteristics, laboratory variables, high comorbidity (≥4), cognitive decline (MMSE <19), delirium (CAM) were evaluated. Functional decline was determined by measuring the Lawton instrumental activities of daily living scale (LS; score 0–8) 15 days before admission (baseline), at admission, at discharge, and at 30 days follow-up. Functional decline defined as loss of ≥1 points in LS score from baseline until discharge or follow-up. We used multivariate logistic regression analysis to obtain odds ratios [OR] with confidence intervals [CI].

**Results:** Subjects had mean age 82.3±7.2 years, 52% were female. The average value of the LI at baseline was 2.4±2.7, at admission 2.3±2.8, at discharge 2.3±2.8, and at 30 days follow-up 3.1±2.7.

Risk factors for functional decline at discharge were cognitive decline (OR 2.91, 95% CI 1.64-5.15), hospital stay ≥11 days (OR 1.66, 95% CI 1.02-2.72). By contrast, factors associated with less functional decline were presence of delirium during any time at hospitalization (OR 1.29, 95% CI 0.25-0.92) and high comorbidity (OR 0.47, 95% CI 0.25-0.92). Similarly, a risk factor for functional decline at follow-up was cognitive decline (OR 1.90, 95% CI 1.05-3.43). By contrast, factors associated with less functional decline were presence of delirium during any time at hospitalization (OR 0.25 95% CI 0.11-0.59) and high comorbidity (OR 0.44, 95% CI 0.24-0.83).

**Conclusion:** We found an opposite effect of delirium and cognitive decline into functional status measured by the Lawton Scale during and after hospitalization among older patient in an ACE Unit.

**D193 Student Presentation**

**Withdrawn**

**D194 Student Presentation**

**Case Finding for Geriatric Syndromes in Community Pharmacies**

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**Background:** Falls and lower urinary tract symptoms (LUTS) are two geriatric syndromes that are prevalent in older adults. They cause significant burden to both the patient and healthcare system; however, they remain poorly assessed and undertreated in the community. Pharmacies are accessible and are well positioned to initiate the discussion with patients regarding these syndromes. The objectives of this case finding study were to:

- Identify the prevalence of falls and LUTS in community dwelling seniors accessing pharmacy services
- Determine the frequency and pattern of patient reporting to healthcare professionals about falls and LUTS
Methods: Pharmacy students on community clerkship rotations surveyed consecutive older adults (aged 65 years and older) in pharmacies regarding these geriatric syndromes. The questionnaire included previously validated questions for basic demographics, self-reporting of falls over the past year, self-reporting of LUTS (urinary incontinence) in the past 4 weeks, and whether the individual had sought healthcare assistance for these conditions. After completing the questionnaire, students provided participants with self-care brochures about these syndromes, as needed. Data was managed through REDCap and analyzed descriptively using SAS 9.4.

Results: A total of 190 subjects were surveyed, of which 62% were female, and the mean age was 75.1 years (SD 9.2). 71 participants (37%) reported falling at least once and of those, 37 (53%) were injured. 53 (28%) participants reported speaking to a healthcare professional about falls. 105 participants (55%) reported experiencing at least 1 LUTS symptom, and only 46 (25%) discussed them with a healthcare professional. When discussing falls and LUTS with healthcare professionals, the vast majority of did so with physicians: 43 (81%) and 45 (98%), respectively.

Conclusions: Falls and LUTS are common geriatric syndromes that older adults in the community do not commonly address with healthcare professionals. There are opportunities for pharmacists in the community, using simple tools, to start the conversation with patients about these syndromes.

D195 Resident Presentation
Frailty in Hospitalized Older Adults Predicts Risk of Future Hospitalizations & Emergency Department Attendances – 1-Year Prospective Study
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Background: Readmissions and emergency department (ED) reattendances following hospital discharge among older adults lead to increased healthcare resource burden. Thus, we aim to evaluate the association between frailty and risk of readmissions and ED visits within 1 year following an unplanned hospitalization among older adults.

Methods: This is a 1-year prospective cohort study of 210 patients (mean age 89.4 ± 4.6 years, 30.5% male) admitted to the Department of Geriatric Medicine in a 1300-bed tertiary hospital. Premorbid frailty status was assessed using FRAIL (5-item scale of fatigue, resistance, ambulation, illnesses, weight loss) with frailty defined by a score ≥3. Baseline data on demographics, comorbidities, severity of illness (SI) and function were collected. We captured adverse outcomes at 6- and 12-months post-enrolment, including readmissions, ED visits, mortality, and institutionalization. Mortality was counted as a case for each outcome measure. Multiple logistic regression analysis was performed to examine the independent association between frailty and outcomes of readmissions and ED visits, adjusting for age, sex, SI.

Results: 105 (50%) participants were frail. Frail patients were more dependent (Katz ADL 0.0 [0.0-2.5] vs. 6.0 [2.0-6.0], p<0.001) with no significant differences in age, comorbidities, or SI compared to those non-frail. Frailty was associated with increased readmissions (79.0% vs. 63.4%, p=0.013), ED visits (57.1% vs. 39.6%, p=0.012), institutionalizations (23.8% vs. 18.8%, p=0.001) and mortality (41.0% vs. 13.3%, p=0.001) at 1 year. FRAIL-defined frailty independently predicted 1 year composite outcomes of readmissions and/or mortality (Adjusted Odds Ratio (OR) 2.16, 95% Confidence Interval (CI) 1.14-4.09, p=0.018) and ED visits and/or mortality (Adjusted OR 2.05, 95% CI 1.16-3.61, p=0.013).

Conclusions: Our study supports using frailty assessment in identifying hospitalized older adults at highest risk of readmissions and ED visits within 1 year of initial hospitalization. Thus, it is important that early assessment of frailty status be performed during an acute hospitalization to aid clinicians in the appropriate use and allocation of resources to optimize health outcomes for frail older adults beyond their hospital stay.

D196 Resident Presentation
Honey as a Harbinger: High Mortality Rates Among Hospitalized Patients Prescribed Honey-Thickened Liquids
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Background: Dysphagia is a condition that is common among elders and advocated by some to be considered as a geriatric syndrome. It can result from a variety of disease states and is associated with high mortality. In its more advanced stages, thickening of liquids is often employed to minimize the risk of aspiration events. We sought to examine rates of mortality among a population of patients with dysphagia who were prescribed honey-thickened liquids (HTLs).

Methods: In August 2017, we reviewed electronic medical records for patients admitted to a large, urban Veterans Affairs Medical Center who received a speech/language pathology consultation between July 2015 and December 2015. Patients who were newly prescribed HTLs during hospitalization were included in the analysis. Investigators calculated length of survival and mortality rates after initiating HTLs.

Results: In total, 51 patients were initiated on HTLs during hospitalization. Patients were predominantly male, ranging from 51 to 96 years old, with the majority being 65 years or older (68.6%). In this sample, mortality rate was 21.6% at 2 weeks, 47.0% at 3 months, 56.8% at 6 months, 60.7% at 12 months, and 66.7% at 18 months. Among patients who died, the mean number of days to death was 82.9. Out of the entire sample set, only 13 patients (25.4%) received a hospice referral. Of the 29 patients suffering mortality at 6 months, only 11 patients (37.9%) were referred to hospice.

Conclusion: HTLs in hospitalized patients were associated with >50% 6-month mortality. Considering that patients are hospice eligible if their life expectancy is reasonably estimated at 6 months or less, these results suggest that hospitalized patients receiving HTLs should get strong consideration for a hospice referral and early emphasis should be placed on goals of care conversations.

Estimating prognosis is increasingly recognized as central to the care of complex, multi-morbid patients. Prognostication in complex adults who lack a dominant illness remains challenging. Dysphagia, as a common condition relevant to many disease processes, may be useful to consider in such patients. In particular, use of HTLs, as a surrogate for advanced dysphagia, may be a risk factor for short-term mortality, and could be incorporated into future prognostic models to enhance prognostic accuracy.

D197 Student Presentation
Predictors of Increased Post-Hospital Disability in Critically Ill Older Adults
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BACKGROUND: Older adults often survive critical illness with increased disability levels. Frailty is a geriatric syndrome studied as a risk factor for poor health outcomes. We aimed 1) to describe the prevalence of increased disability immediately following hospital discharge and 2) to identify pre-morbid and hospital factors associated with this adverse outcome.

METHODS: This was a prospective observational cohort study of older adults admitted to Intensive Care Units in two tertiary-care hospitals. The number of impairments in Activities of Daily Living (ADLs) was used to characterize the level of pre- and post-hospital disability: no disability (0 ADL impairment); mild (1-2); moderate (3-4); severe (≥ 5). Pre-hospital Frailty was quantified by research
physicians with the Clinical Frailty Scale (CFS). Severity of Illness was quantified with the Sequential Organ Failure Score (SOFA) on day 1 and day 5 of the hospitalization. We used logistic regression techniques to examine factors associated with transitioning to a higher level of disability at hospital discharge.

**RESULTS:** Of the 298 patients (mean [standard deviation, SD] age 67.2 (10.5)): 194 (64.9%) reported no disabilities at baseline; 33 (11.1%) reported mild pre-hospital disability; 26 (8.7%) and 45 (15.1%) had moderate and severe pre-hospital disability respectively. Hospital mortality was not significantly different by pre-hospital disability (55/227 (24.2%) in those with no/mild disability versus 23/71 (32.4%) in those with moderate/severe disability, p=0.172). Survival with increased disability was more common in those with no/mild pre-hospital disability (98/170 (57.7%) versus 7/47 (14.9%), p<0.001. In patients with no/mild pre-hospital disability (n=227): older age (adjusted Odds Ratio (aOR) 95% Confidence Interval (95% CI), 1.07 (1.02-1.11), p=0.001); pre-hospital frailty (aOR (95% CI) 2.18 (1.02-4.65), p=0.044) and SOFA increase (aOR (95% CI) 3.93 (1.58-9.73), p=0.003) were independently associated with surviving with increased disability at discharge.

**CONCLUSION:** Increased disability at hospital discharge is common in older adults with no/mild pre-hospital disability levels. Older age, pre-hospital frailty and a lack of improvement in organ failure scores appear to be associated with this outcome. More research into factors associated with increased disability at hospital discharge may improve shared decision-making in critically ill older adults.

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**D199 Student Presentation**

Falls in Community-Dwelling Older Adults with Heart Failure
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**Background:** Community-dwelling older adults with heart failure (HF) appear to have a high risk of falling related to their symptoms, suggesting a need for innovative fall prevention intervention. However, little is known about the effect of HF on falls in the U.S. Using data from the Health and Retirement Study (HRS), a nationally-representative longitudinal survey, this study examined the direct effect of HF on the likelihood of falling among community-dwelling older adults in the U.S., and examined the association between known risk factors for falls (i.e., physical, cognitive, sensory, and urinary function) and falls among HF patients.

**Methods:** This study included 17,712 community-dwelling older adults aged 65+ with and without HF, who participated in HRS between 1998 and 2014. Falls were biennially identified by self-report. Mixed-effects logistic regression with a person-specific random intercept was used to examine the direct effect of HF on falls while adjusting for multifaceted covariates (e.g., socio-demographics, comorbid diseases, functional status, and environmental factors). Then, the sample was limited to those with HF (n = 1,693), and mixed-effects logistic regression with a person-specific random intercept was used to examine the direct effect of physical (e.g., ADL), cognitive (e.g., IADL), sensory (e.g., vision) and urinary (incontinence) function on falls while adjusting for age, sex, race/ethnicity, and spouse/partner status.

**Results:** Compared to non-HF participants, HF patients had a 14% higher likelihood of falling (OR 1.14, 95% CI: 1.04, 1.26) after controlling for other multiple covariates. HF patients with the following functional difficulties had a higher likelihood of falling after controlling for socio-demographics: ADL difficulty (OR 1.86, 95% CI: 1.51, 2.29), mobility difficulty (OR 1.86, 95% CI: 1.45, 2.40), large muscle difficulty (OR 2.21, 95% CI: 1.70, 2.88), IADL difficulty (OR 2.00, 95% CI: 1.63, 2.45), poor vision (OR 1.43, 95% CI: 1.10, 1.86), and urinary incontinence (OR 1.96, 95% CI: 1.59, 2.40).

**Conclusions:** Community-dwelling older adults with HF are at higher risk for falls as compared to those without HF. HF elders with functional difficulties had a high risk of falling, suggesting a need for future research to test and develop fall prevention interventions for this population.
syndromes may be at high risk of urinary incontinence and a potential
target for intervention to prevent, detect or treat urinary incontinence.

D201 Student Presentation
Barriers and Priorities for Rural and Remote Dementia Caregivers
A. E. Slosser, 1,2 C. L. McKibbin, 1,2 C. P. Carrico, 2
M. E. Longstreth, 2,3 K. A. Richardson, 4 R. A. Barry. 4,2

Background: Informal caregivers, such as family and friends, shoulder much of the burden associated with Alzheimer’s disease and related dementias (ADRD). In addition, ADRD caregivers often struggle to identify and access resources for themselves and their care recipient (Black et al., 2014). Barriers to identifying and accessing resources are more pronounced in rural and remote areas, where formal supports and services are absent or insufficient, relative to need (Innes et al., 2011). Understanding the needs of ADRD caregivers in rural and remote areas is essential for addressing service gaps in these communities. Methods: A needs assessment was conducted among informal ADRD caregivers. Data were collected using either a paper or online survey. The survey was completed by 43 informal ADRD caregivers representing 18 out of 23 Wyoming counties. Descriptive statistics were calculated. Results: Respondents were largely female (n=35; 81.4%), in their late middle-ages (Mdn birth year=1955), were spouses (n=11; 25.6%) or adult children (n=18; 41.9%) of individuals with ADRD. On average, respondents provided nearly 60 hours of care per week (M=58.71; SD=68.84). Participants rated their satisfaction with several facets of caregiving needs (scale: 1=very dissatisfied - 4=very satisfied), reporting highest satisfaction with availability of generalized healthcare providers (M=2.56; SD=.91) and quality of services (M=2.38; SD=1.16). Participants reported lowest satisfaction with both in-person (M=1.38; SD=1.07) and telehealth-delivered care (M=1.03; SD=1.20) support in rural areas. Respondents ranked the relative urgency of areas of caregiving need. Aggregate rankings revealed access to services (M=3.22; SD=2.16) and information about available services (M=3.75; SD=2.84) to be among the highest priorities, with telehealth and electronic support in rural areas (M=8.30; SD=3.45) among the lowest priorities. Conclusions: Understanding needs of informal ADRD caregivers is essential for informing service development and delivery. For example, greater understanding of the relative urgency of areas of caregiving need. Aggregate rankings revealed access to services (M=3.22; SD=2.16) and information about available services (M=3.75; SD=2.84) to be among the highest priorities, with telehealth and electronic support in rural areas (M=8.30; SD=3.45) among the lowest priorities.

D202 Student Presentation
Geriatric Health Care Providers’ Needs, Barriers, and Knowledge in Rural and Remote Areas
A. E. Slosser, 1,3 C. L. McKibbin, 2,3 C. P. Carrico, 3
M. E. Longstreth, 4,3 K. A. Richardson, 5 R. A. Barry. 6,3

Background: The United States faces a shortage of providers with expertise and training in geriatrics (Eden et al., 2012; Alzheimer’s Association, 2017). This service gap disproportionately impacts older adults in rural and remote areas with older populations increasing in these regions (U.S. Census Bureau, 2010) and fewer providers trained in geriatrics practicing in these areas (Eden et al., 2012). Methods: A paper and pencil needs assessment was conducted among Wyoming health care providers. Descriptive statistics were conducted, and discrepancy scores, comparing ratings of current and desired knowledge, were calculated. Results: A majority of respondents (n=117) had Baccalaureate (n=35; 29.9%) or Master’s (n=30; 25.6%) degrees. Participants were primarily employed in the social work field (n=27; 17.9%) and worked in long-term care facilities (n=36; 30.77%), assisted living facilities (n=13; 11.11%), and hospitals (n=15; 12.28%). While most respondents characterized large proportions of their client base, 50-74% (n=16; 13.7%) or 75-100% (n=92; 78.6%), as aged 65 or older, a majority of respondents reported receiving no formal training in geriatrics (n=67; 57.3%). Respondents also identified barriers to attending trainings in geriatrics, including cost of trainings (n=53; 45.3%) and the distance of training sites (n=46; 39.3%). Analysis of discrepancy scores revealed highest mean discrepancy scores for alternative and complementary treatments (M=1.38; SD=.93), legal and financial issues (M=1.27; SD=.95), and medications and pharmacy (M=1.27; SD=.92). Conclusions: Findings from this needs assessment reflect national trends toward professionals with little formal training in geriatrics and growing numbers of older adult patients. Results also suggest disparities in knowledge among providers in a broad range of geriatric care topics. These results underscore the need for innovative training opportunities and delivery methods that address unique barriers faced by rural health care providers.

D203 Student Presentation
Predicting Hospice Length of Use: An Application of Quantile Regression
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Background: Use of the Medicare hospice benefit and length of use are proxies for quality of care at the end of life, but the associations between patient characteristics and distributional shifts in length of use are not well understood.

Methods: We used 2014 Medicare claims and American Community Survey data for hospice beneficiaries in North and South Carolina 65+ with common terminal diagnoses to estimate marginal effects of patient characteristics using 1) quantile regression models at the 25th 50th and 75th percentiles for hospice days, 2) ordinary least squares (OLS) estimates for mean effects on hospice days, 2) ordinary least squares (OLS) estimates for mean effects on hospice days. Equality of distribution that occur outside the mean. Results: For respiratory and circulatory diagnoses the mean shifts estimated by OLS (29.7 and 26.8 days, respectively) are about five times the median shift (5.4 and 5.7 days, respectively). For all patient characteristics except race, quantile regression coefficients are significantly different between the 75th percentile and the 25th percentile regressions (p<.001) and OLS overestimates the effect magnitude at the mean relative to the median effect (Figure 1).

Conclusion: Methodologica decisions can have a meaningful impact in the evaluation of factors influencing hospice length of use. Relative to OLS, use of quantile regression may provide researchers with more information to examine the impact of potential policies and programs on appropriate hospice use by evaluating shifts in the distribution that occur outside the mean.
D204 Student Presentation

How Low Do We Go?: Investigating Glycemic Control in Our Oldest Patients

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Background: Tight glycemic control in older adults increases the risk of hypoglycemia and other serious adverse events with no evidence of benefit in preventing microvascular or macrovascular complications related to diabetes. Current AGS guidelines recommend moderate glycemic control in most older adults by avoiding the use of medications other than metformin to achieve hemoglobin A1c <7.5%. The purpose of our study was to observe trends in current diabetes care in our oldest patients (over 80 years old).

Methods: We performed a chart review to evaluate the medications prescribed in 84 diabetic patients over 80 years old at two community primary care practice sites. To identify patients, we reviewed clinical data on all patients seen for a primary care visit between 1/1/2016 and 12/31/2016 who were 80 years of age or older. We identified patients as diabetic by their problem lists. We collected A1c values and diabetic medication information. This work was conducted as part of the Medical Student Training in Aging Research (MSTAR) program with funding from AFAR.

Results: Out of all patients identified, 22.6% were prescribed a sulfonylurea, insulin, or a DDP-4 inhibitor in the setting of an A1c <7.5%, 67.9% of patients prescribed any of the aforementioned agents had an A1c <7.5%. We also explored subgroup differences in median A1c levels based on their medication management. The median A1c for the 39 diabetic patients managed without medications was 6.1% (IQR=5.8-6.4) while it rose to 7.0% (IQR=6.3-7.9) for the 10 patients prescribed only metformin. Interestingly, the median A1c of the 10 patients prescribed a sulfonylurea alone was less than the A1c of patients prescribed metformin alone at 6.5% (IQR=6.1-6.7). For the 17 patients prescribed insulin the median A1c was the highest at 7.4% (IQR=6.6-8.6).

Conclusions: Our data examined the prescribing practices of PCPs for managing hyperglycemia in adults over 80 years old. Medications, including sulfonylureas and insulin, are being used to titrate patients’ A1c levels to less than the targets recommended by AGS guidelines. Interventions to assist primary care providers in adjusting diabetes management techniques in vulnerable older patients may be a target to improve patient care in this group.

D206 Student Presentation

Characteristics associated with stroke knowledge among racial/ethnic minority seniors


Background: In the United States, a stroke occurs every 40 seconds; knowledge of early symptoms of stroke can reduce morbidity and mortality. For older adults of ethnic minority background, there is higher incidence of stroke and lower prevalence of stroke knowledge.

Methods: We analyzed survey data for 233 seniors (ages 60-96, history of hypertension) recruited from four Los Angeles County community centers participating in a randomized trial of a walking intervention (“Worth the Walk”) that included a standardized stroke education curriculum. We conducted unadjusted and adjusted analyses to measure associations between independent variables (age,
gender, marital status, education, insurance status, acculturation, and years lived in the U.S.) and dependent variables: stroke knowledge at baseline; change from baseline to 1 month; change from baseline to 3 months. Stroke knowledge was measured using the STAT, a 28-item tool measuring knowledge of risk factors, signs, and symptoms of stroke.

Results: Participants (n=233) were African American, Latino/a, Chinese and Korean; mean age was 74 years, 69% were female. In unadjusted models, acculturation correlated with baseline stroke knowledge (r=0.162, p=0.039), but was no longer significant when adjusting for age (p=0.061) or insurance status (p=0.066). In a fully adjusted model, having insurance was associated with greater baseline stroke knowledge (p=0.022). STAT score means for those with insurance compared with those without were 47.52 ±1.54 to 36.52 ±4.84. 67% of the intervention group (n=80) increased their stroke knowledge between baseline and 3-month follow-up. Younger age was the only characteristic associated with this improvement (p=0.018).

Conclusions: Our exploratory analysis found independent correlations of 1) insurance with baseline stroke knowledge and 2) younger age with improvement in stroke knowledge among those exposed to a stroke education curriculum as part of a community-based trial. Further work is required to assess if improved stroke knowledge leads to better health outcomes and whether community-based educational interventions need to be modified to be more effective among older minority seniors, of whom are at most risk for stroke.

D207 Student Presentation
Evaluating financial burden and distress among older adult patients undergoing surgical oncology care: a pilot study
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Background: Recent studies have illuminated the financial burden experienced by cancer patients receiving chemotherapy. However, little is known about financial burden among patients with early-stage disease who are only treated with surgery. We hypothesize that a substantial portion of geriatric cancer patients experience financial burden, even when treated with surgery alone.

Methods: A one-time, paper-based questionnaire was administered to a sample of surgical oncology patients at a single institution. Cancer patients age ≥65 who were 6-18 months status post curative-intent surgery were eligible; patients who received chemotherapy were excluded. Survey items collected information regarding the effect of financial burden on decision-making and well-being. A logistic regression was performed to assess the association between higher financial burden and treatment decision-making.

Results: 57% of the 53 respondents were female and 91% were white. The median age was 73 years old. The majority were treated for melanoma (31%) or ductal carcinoma in situ (34%). Respondents who reported greater financial burden were more likely to report that treatment costs were an important factor in deciding whether (p=0.002), what type (p=0.009), and where to have surgery (p=0.002). 35% of participants reported no access to information on costs of surgery, 33% reported no awareness of financial resources, and 34% reported they felt uninformed on the costs of care. 22% of participants experienced least one catastrophic financial event.

Conclusion: Similar to patients receiving chemotherapy, older adult patients treated with surgery alone experience substantial financial burden. Often, older patients are poorly informed about the resources available on the costs of care. These costs influence surgical treatment decision-making and financial well-being. Interventions aimed at mitigating financial burden should not be limited to patients receiving chemotherapy.

D208 Student Presentation
Intention to Discuss Advance Care Planning and Treatment Options among Hospitalized African American Cancer Patients
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Background: Advance care planning (ACP), palliative care and hospice are options that are historically underutilized by African Americans. The reasons for this dynamic are often multifactorial.

Methods: We conducted a descriptive study that examined symptom burden, and the intention to discuss ACP (defined as advance directive [AD] and medical power of attorney [MPOA]), palliative care and hospice among hospitalized African American breast, lung, and colorectal cancer patients. Patients were identified by ICD-10 codes for their primary cancer diagnosis. Those who agreed to participate were questioned regarding their symptom burden, and intention to discuss ACP, palliative care, and hospice with their doctors. We determined intent to discuss care options by using the trans-theoretical model of behavior change, and symptom burden using the McGill Quality of Life Questionnaire. Patients were followed for six months to assess ACP completion, health care utilization, and death, if applicable.

Results: Twenty-three patients participated in the study. Median age was 59 years. Half had stage IV disease. Patients reported pain (86%), fatigue (82%), weakness (73%), and dyspnea (77%). For intent to discuss ACP, 35% did not know if they ever intended to discuss ADs with their doctor, and 30% planned to discuss MPOA with their doctor within 30 days of their assessment. Six (26%) patients planned to discuss palliative care with their doctors within 6 months of their assessment; however, 78% of patients did not intend to discuss hospice with their doctor at the time of their assessment and did not plan to within six months. Thirty percent of patients appointed a MPOA, but none completed an AD. Nine patients (39%) died within six months of their assessments, and 6 (66%) of those patients died during an inpatient hospitalization. The median time to death after assessment was 78 days.

Conclusions: Patients had varying degrees of readiness to discuss ACP and palliative care, and the majority did not intend to discuss hospice despite symptom burden and an apparent poor prognosis. Important opportunities remain to educate those who historically underutilize these services about their options for care.

D209 Student Presentation
Patient Willingness to Describe Social Needs in a Primary Care Setting
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Background: Social determinants of health (SDH) questionnaires in healthcare settings have recently become a popular approach for identifying social barriers. However, the efficacy of such tools has not been widely investigated. The aim of this study was to pilot an SDH screening tool and assess patient willingness to share information about their social needs in an outpatient setting.

Methods: A convenience sample of 48 patients was recruited from the waiting areas of three outpatient federally qualified health center sites. Inclusion criteria: patient age ≥18, English or Spanish speaking and clinically able to participate.

Results: There was a 58% (n=28) participation rate across all three practices. Mean age was 50.1 (±15.9) years with 57% male participants. A total of 14.3% respondents had a college degree while 35.7% had less than a high school diploma. Across the three practices, 46.4% of participants were not employed at the time of the assessment. Regarding quality of life, 28.6% of respondents reported eating less than they felt they should, 25.0% went without prescribed medication due to costs, and 28.6% were concerned with not having stable housing. Loneliness was the most reported social barrier with 39.3% of...
respondents indicating feeling alone and without connection to family or friends.

**Conclusions:** Patients were generally receptive to sharing their social needs in the ambulatory clinics. The major concerns reported from patients include several that can be targeted for interventions. More work is warranted for exploring the efficacy of SDH tools in eliciting the underlying social concerns reported from patients that can be targeted for interventions to improve overall health outcomes.

**D210 Student Presentation**

**Aging and in Jail: a retrospective analysis of people 55 and older in New York City jails**

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**Introduction:** The number of older adults over 55 in prison in the US has increased 300% from 1990-2009. Jails and prisons are struggling to meet the health needs of older patients.

**Objective:** This study was designed to characterize the demographics, health conditions and care utilization of people >55 incarcerated in the NYC jail system.

**Methods:** We conducted a retrospective analysis of data from the jail system’s EMR looking at all patients in the census from 2015-2017. We compared patients >55 (stratified to 55-64 and 65 +) to patients <55 across multiple categories including top charge, demographics and diagnoses, using bivariate analysis.

**Results:** There were 158,692 patient incarcerations in the jail system census during the study period, of which 11081 (7%) were >55 (9850 (6.2%) 55-64 and 1231 (0.8%) >65. Our results demonstrate that all patients >55 are more likely to report being homeless, are more likely to have had a serious mental illness (SMI) designation, have more medical diagnoses including a higher prevalence of Hepatitis C, HIV, Diabetes, osteoarthritis, CAD, HTN, CHF, Cirrhosis, COPD, incontinence, cancer, dementia and anemia, are more likely to be hospitalized during their incarceration, and are more likely to be prescribed more medication in jail than their younger counterparts. Patients over 55 were more likely to be incarcerated for misdemeanor offenses rather than felonies as compared to the under 55 group.

**Conclusion:** Given their excess medical and mental health burden and increased healthcare utilization, the patient population >55 in the New York City jails warrants characterization as a “special population” requiring targeted interventions to maximize safety and minimize jail-related harms.

**D211 Student Presentation, Encore Presentation**

**Longitudinal Assessment of Metamemory in Mild Cognitive Impairment and Alzheimer’s Disease**

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**Background:** Metamemory, the awareness and self-monitoring of one’s cognition, is impaired in Alzheimer’s Disease (AD). Mild cognitive impairment (MCI) is a risk state for AD. Metamemorv was evaluated in healthy cognition, MCI, and AD at baseline and one-year follow up. We hypothesized that MCI accuracy would be intermediate between controls and AD.

**Methods:** Participants were 77 controls, 108 MCI, and 44 AD. They were provided a description of each neuropsychological test, made predictions about their performance, were administered the test and then made postdictions. Metamemorv accuracy was the signed difference between pre/postdictions and performance. This was done via the Medical Student Training in Aging Research Program.

**Results:** Mixed model ANCOVAs were conducted to determine the impact of diagnosis and prediction type (pre vs postdiction) on metamemory, covarying for age and education, separately for each test and time point. There was an effect of diagnosis for the following: for delayed verbal recall, controls and MCI were more accurate than AD; for immediate visual and visuoconstructive recall, controls were more accurate than MCI. There was an interaction of diagnosis by prediction type for immediate visual recall: at baseline, MCI postdictions were more accurate than predictions, AD predictions were more accurate than postdictions, and there was no change in accuracy for controls. At follow-up, AD predictions were more accurate than postdictions, while the other groups showed no change in accuracy. For the same interaction for immediate verbal recall at baseline, AD postdictions were more accurate than predictions, with no change in accuracy for the other groups. At follow-up, control and AD postdictions were more accurate than predictions, with no change in accuracy for MCI. The 3-way interaction of diagnosis, prediction type, and time was not significant for any tests.

**Conclusions:** Metamemory accuracy in older adults is dependent on test type and cognitive status, but is mostly stable over one year. Accuracy may be preferentially impaired in certain cognitive domains over others, resulting in a specific pattern of impairment in MCI and AD.

**D212 Student Presentation**

**White Matter Lesions and Surgical Outcome in Normal Pressure Hydrocephalus**

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**Background:** Idiopathic normal pressure hydrocephalus (iNPH) is characterized by declines of cognition, gait, and urinary incontinence. Disease prevalence increases with age, and is associated with changes in white matter signaling. We aimed to determine whether the preoperative burden of white matter lesions (WML) seen on MRI can predict symptom improvements in patients with iNPH after shunt surgery.

**Methods:** Prospective study of gait and balance, measured by Timed Up and Go (TUG) and Tinetti tests, and cognitive function measured by Mini Mental Status Exam (MMSE), before and after shunt surgery in participants 65 years and older with iNPH at Johns Hopkins Cerebral Fluid Center. MRI T2 axial FLAIR images obtained at initial visit was reviewed and graded using modified Fazekas score to identify the burden of WML. Random effects models were used and adjusted for confounders.

**Results:** 98 participants were studied, with 82 having MRI images available for review. Included were 13 participants with Fazekas score 0, 25 with score of 1 or 2, and 19 with a score of 3. Subjects with Fazekas score 2 and 3 were significantly older (p=0.05), but otherwise similar in all demographic and outcome measures, as compared to the group without WML. When compared to Fazekas score 0, participants in all Fazekas groups equally improved on measures of Tinetti-gait (β=1.88, 95% CI 0.20, 3.57, p=0.01; β=1.25, 95% CI 0.15, 2.35, p=0.03; β=2.07, 95% CI 0.49, 3.65, p=0.01, respectively), but only participants in Fazekas group 1 improved significantly on Tinetti-balance (β=2.06, 95% CI 0.48, 3.64, p=0.01). None of the groups showed significant improvement on MMSE (β=0.21, 95% CI -2.11, 2.54, p=0.84; β=0.80, 95% CI -0.21, 1.81, p=0.12; β=-0.45, 95% CI -3.55, 2.64, p=0.77, respectively).

**Conclusions:** 45% of participants with iNPH had coexisting mild to severe white matter lesions, a surrogate measure of vascular burden. Preoperative WML only had a significant influence on the clinical response to shunt surgery measured by Tinetti-gait.
D213 Student Presentation

Psychiatric Comorbidities, Use of Antipsychotic and Psychotropic Medications, and Mental Health Care in a Stratified Sample of Assisted Living Residents with and without Dementia

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Background: This study sought to identify psychiatric conditions comorbid to dementia and characteristics of psychotropic medication prescribing in assisted living (AL) residents. Methods: Data were obtained in a study of 280 AL communities across seven states by chart review of a stratified sample of AL residents (residents with and without dementia, prescribed and not prescribed an antipsychotic) and interviews with AL community administrators. A resident was determined to have dementia and/or a psychiatric comorbidity if there was a documented diagnosis in the AL chart. Results: In the first 40 AL communities, of 1052 residents (752 with dementia, 300 without) depression and anxiety were the most common psychiatric comorbidities (35-39% and 24-26%, respectively); there were no differences based on dementia status. Of residents taking an antipsychotic (n=379), 284 (75%) had a documented psychiatric comorbidity; 79 residents (21%) with dementia and no psychiatric comorbidity were prescribed an anti-psychotic. A notable fraction who were prescribed medications did not have documented psychiatric comorbidities (e.g., 30% prescribed an anti-depressant and 31% prescribed an anxiolytic without documentation). Ninety-three percent of administrators reported that their residents received mental health care; 65% reported it was provided on-site; 45% reported it was provided by a psychiatrist. In total, 5 residents had a noted psychiatric hospitalization in the last six months. Conclusions: The prevalence of psychiatric conditions is similar among AL residents regardless of dementia status. Pharmacologic treatment for psychiatric conditions is not always justified based on chart information, potentially questioning the decision to prescribe, the success of treatment, or more likely—the accuracy of AL charts. Over-time hospitalization for psychiatric conditions is rare. On-site mental health care is markedly higher than previous estimates, suggesting cause to better understand the nature and outcomes of mental health care for AL residents.

D214 Student Presentation

Characterizing Age-Related Neuroprotective Factors in Alzheimer’s Disease Patients

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Background: Aging is the greatest risk factor for the development of dementia, including the most common type, Alzheimer’s disease (AD). Although currently unclear, understanding how aging leads to early stage degeneration in the brain then AD is of utmost importance for future AD therapies. In AD patients, the tau protein becomes mislocalized and aggregated into classical neurofibrillary tangles (NFTs) that are present in all AD patient brains. We recently showed that tau accumulates within neuritic foci, or beads, that may serve to caution clinicians about possible adverse effects of psychiatric medications, and mental health care in a stratified sample of assisted living (AL) residents. Methods: Data were obtained in a study of 280 AL communities across seven states by chart review of a stratified sample of AL residents (residents with and without dementia, prescribed and not prescribed an antipsychotic) and interviews with AL community administrators. A resident was determined to have dementia and/or a psychiatric comorbidity if there was a documented diagnosis in the AL chart. Results: In the first 40 AL communities, of 1052 residents (752 with dementia, 300 without) depression and anxiety were the most common psychiatric comorbidities (35-39% and 24-26%, respectively); there were no differences based on dementia status. Of residents taking an antipsychotic (n=379), 284 (75%) had a documented psychiatric comorbidity; 79 residents (21%) with dementia and no psychiatric comorbidity were prescribed an anti-psychotic. A notable fraction who were prescribed medications did not have documented psychiatric comorbidities (e.g., 30% prescribed an anti-depressant and 31% prescribed an anxiolytic without documentation). Ninety-three percent of administrators reported that their residents received mental health care; 65% reported it was provided on-site; 45% reported it was provided by a psychiatrist. In total, 5 residents had a noted psychiatric hospitalization in the last six months. Conclusions: The prevalence of psychiatric conditions is similar among AL residents regardless of dementia status. Pharmacologic treatment for psychiatric conditions is not always justified based on chart information, potentially questioning the decision to prescribe, the success of treatment, or more likely—the accuracy of AL charts. Over-time hospitalization for psychiatric conditions is rare. On-site mental health care is markedly higher than previous estimates, suggesting cause to better understand the nature and outcomes of mental health care for AL residents.

D215 Student Presentation

The Effect of Psychotropic Drugs on Functional Outcomes in Sub-acute Hospitalizations

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Background: This study was conducted on the Johns Hopkins Bayview Medical Behavioral Unit, a long-term acute care unit specializing in dementia. Psych and behavioral improvement is prerequisite for discharge, while functional status is not a determinant. Many studies correlate the use of psychotropic drugs with increased fall risk and we sought to assess other measures of physical function including transfers and mobility. We hypothesized that fewer psychotropic medications would be associated with better function.

Methods: Retrospective chart review of all admissions in first quarter with length of stay >7 days. Demographics, medications, and function scores were extracted from the EMR. The medication categories were antidepressants, SSRI’s, antipsychotics, atypical antipsychotics, benzodiazepines (BDZ), and anticoagulants. The functional measures were transfer and mobility scores from PT/OT notes at admit and discharge. The primary analyses were linear regressions of association of psychotropic drug use (including admit, discharge, and changes during the stay) with changes in transfer and mobility function. P<0.05 was used as the threshold for significance.

Results: N=202, biased toward women (n=121, 60%), and white (162, 80%). Dementia diagnoses seen: Alzheimer’s (74, 37%), Vascular (42, 21%), LBD (10, 5%), and FTD (4, 2%). No dementia diagnosis was held by 32 patients (16%). See Table 1 for functional outcomes by drug class. There were no significant associations between admitting drugs and transfer/mobility, nor any significant associations for the interaction of admit and discharge. Many studies correlate the use of psychotropic drugs with increased fall risk and we sought to assess other measures of physical function including transfers and mobility. We hypothesized that fewer psychotropic medications would be associated with better function.

Conclusion: Change in psychotropic drugs was not correlated with function change, but use of antipsychotics and BDZ at discharge were associated with poorer transfers and mobility. These findings serve to caution clinicians about possible adverse effects of psychotropic medication use in very frail demented patients.
Table 1: Adjusted Analysis for Drug Class by Function (* if P<0.05)

<table>
<thead>
<tr>
<th>Drug Class/Function</th>
<th>Antipsychotic (all)</th>
<th>Antipsychotic (typical)</th>
<th>Antipsychotic (atypical)</th>
<th>SRRI</th>
<th>BDZ</th>
<th>Anticonvulsant</th>
</tr>
</thead>
<tbody>
<tr>
<td>A transfer (mean[SD])</td>
<td>-0.193 (2.20)</td>
<td>0.107 (2.24)</td>
<td>-0.40 (2.29)</td>
<td>0.428 (2.00)</td>
<td>0.379 (2.49)</td>
<td></td>
</tr>
<tr>
<td>A mobility (mean[SD])</td>
<td>-1.34 (1.60)*</td>
<td>-1.33 (1.64)*</td>
<td>0.076 (2.16)</td>
<td>-1.53 (2.39)*</td>
<td>-0.810 (1.79)*</td>
<td></td>
</tr>
</tbody>
</table>

β coefficients derived from linear regression representing the association of d/c drug use w/ function

D216 Student Presentation
Relationship between antibiotic treatment for urinary tract infection and hospital outcomes in dementia patients admitted with behavioral disturbances
1. University of Colorado School of Medicine, Aurora, CO; 2. Psychiatry and Behavioral Sciences, Johns Hopkins University School of Medicine, Baltimore, MD; 3. LSUHSC, New Orleans, LA; 4. Rehabilitation, Johns Hopkins Bayview, Laurel, MD; 5. Medicine, Johns Hopkins University School of Medicine, Baltimore, MD.

Background:
The behavioral and psychological symptoms of dementia (BPSD) have multiple causes including an acute medical condition. Therefore, patients with BPSD often undergo extensive medical work-up. Although screening for urinary tract infection (UTI) in the absence of clinical symptoms is not recommended, providers often obtain urinalysis (UA) and culture in these patients. As a result, many patients receive antibiotics for a presumed UTI, hoping to treat the BPSD. Our objective is to explore the relationship between UTI and its treatment on outcomes in dementia patients hospitalized for BPSD including length of stay, antipsychotic prescription on discharge, number of psychotropic medications on discharge, and functional mobility and transfers.

Methods:
We reviewed charts of 160 dementia patients admitted to a chronic medical psychiatry unit for BPSD from 5/2016 to 3/2017. We defined positive UA as pyuria plus leukocyte esterase and/or nitrates. We defined positive culture as >100k colony forming units or as deemed by infectious disease consult. We assessed functional mobility and transfer using the Functional Independence Measure (FIM). We measured differences between groups using ANOVA.

Results:
43% of the patients had a positive UA (N=68). Of patients with a positive UA, 21% (N=14) had a positive culture and 32% (N=22) received antibiotics. We found no statistically significant difference in length of stay, antipsychotic prescription on discharge, number of psychotropic medications on discharge, FIM score between patients with a negative UA, patients with a positive UA not treated with antipsychotics, and patients with a positive UA treated with antibiotics. We measured differences between groups using ANOVA.

Conclusions:
Antibiotic treatment for UTI did not affect outcomes in patients hospitalized for BPSD. Clinicians should exercise caution when prescribing antibiotics in this frail elderly population.

D217 Student Presentation
Cognitive and Physical Leisure Activities and Imagined Walking While Talking Neural Brain Patterns
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Background: Understanding gait, and gait decline in aging, is essential for preventing falls and mobility disability, as well as for decreasing the risk of cognitive decline, dementia, morbidity, and mortality. Due to limitations in the use of functional neuroimaging methods during locomotion, it has been difficult to define and measure the functional neural correlates of gait.

Methods: An imagined gait protocol that was previously developed and validated for use during functional magnetic resonance imaging (fMRI) was used to examine the relationship between imagery of complex walking tasks and participation in cognitive and physical leisure activities. A total of 42 cognitively-healthy older adults (M Age in years= 74.55) imagined walking (iW), imagined talking (iT), and imagined walking while talking (iWWT) during fMRI scanning, and completed a cognitive and physical leisure activity questionnaire. Multivariate covariance-based analyses were used to identify a functional activation and deactivation pattern or network that changed as a function of imagery task difficulty (iW, iT, iWWT) – or was expressed to a greater extent during iWWT than iT and iW alone. Individual expression of this network was then correlated with cognitive and physical leisure activities.

Results: As previously shown, increasing imagery task difficulty (iWWT>iW>T>iW) correlated with a pattern of brain activity that was primarily composed of cerebellar, prefrontal, supplementary motor, and prefrontal cortex activation. Moreover, the individual expression of this functional network correlated with participation in cognitive (p <0.01), but not physical (p >0.05), leisure activities.

Conclusion: Older adults that were more cognitively active expressed a functional network associated with iWWT to a greater extent than older adults who were less cognitively active. The expression of this functional network, however, did not vary as a function of participation in physical leisure activities. This suggests that cognitive, as opposed to physical, leisure activities are linked with brain activation during iWWT. Future studies should examine the shared and distinct functional neural substrates of cognitive and physical leisure activities, vis-à-vis cognitive and cognitive-motor dual task conditions.

D218 Student Presentation
Development of an Ultra-brief Screening Test for Delirium Superimposed on Dementia
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Background: Delirium superimposed on dementia (DSD) is a common, morbid, and costly condition among hospitalized older adults, which accelerates cognitive and functional decline in this already vulnerable population. As DSD is frequently undiagnosed, this study aimed to determine if a brief screening test could be developed to improve healthcare worker recognition of this condition.

Methods: Older hospitalized adults with dementia (based on medical records and proxy report) were prospectively enrolled and monitored for delirium each day of their admission. The reference standard delirium assessment used Confusion Assessment Method (CAM) criteria, and was based on a structured interview including the Mini Mental State Exam, interviewer observations, and medical record review. To develop the screening test, single items and two and three-item combinations from the reference standard assessment were analyzed to determine their sensitivity and specificity in comparison to delirium presence based on the reference standard. For multiple item screens, an error on one or more of the items was considered a positive screen.

Results: 391 older adults with dementia were enrolled (mean age=83.9 years, 71.1% female), and 95 (24.4%) developed delirium during their hospitalization, based on the reference standard. The best single-item screen for DSD was “Spell WORLD backwards,” with 89% sensitivity (95% confidence interval [CI]: 0.81-0.95) and specificity of 30% (CI: 0.25-0.36). The best two-item screen was the combination of “What day of the week is it?” and “Please repeat the
days of the week backwards”, with 93% sensitivity (CI 0.85-0.97) and 30% specificity (CI: 0.25-0.36). The best three-item screen was “Please repeat the days of the week backwards”, “What type of place is this [hospital]?” and “Does the patient appear sleepy?” with 94% sensitivity (CI: 0.87-0.98) and 42% specificity (CI: 0.36-0.48).

Conclusions: We identified a three-item DSD screener with excellent sensitivity, but only fair specificity. Thus, negative screens effectively rule out delirium, but positive screens require further testing to confirm the diagnosis. Although further clinical validation is necessary, this is a promising step towards developing efficient tools for DSD recognition among care providers.

D219 Student Presentation
Pre-Morbid MRI Stroke Analysis to Link Cognitive and Brain Reserve to Functional Outcomes
H. Tai, A. Costa, N. Dangayach. Ichon School of Medicine, New York City, NY.

Background: With a steady growth in our aging population, the number of older stroke survivors will also continue to rise. There are ongoing uncertainties and variabilities in determining outcomes in stroke patients. Coping mechanisms after stroke have been studied qualitatively, but there has been little research exploring cognitive reserve and brain reserve as determinants of outcome after stroke. We aim to determine whether pre-morbid brain imaging based biomarkers are predictive of recovery for patients with acute stroke. Differences in coping abilities with neurological injuries have been described as cognitive reserve and brain reserve in patients. We will determine whether there are any structural differences on quantitative imaging analysis which influence outcome.

Methods: Patient data recruited from IRB approved Mount Sinai data bases from 2012 to 2016. Patients with a MRI scan prior to their first brain injury were included in our study. We collected demographic variables, cognitive reserve variables like education level, occupation and past medical history and admission Glasgow Coma Scale. Brain reserve data for important deep brain structures were gathered using FreeSurfer and volBrain from pre-stroke MRI scans. Individual volumes were normalized based on sex and age. Pearson Correlation co-efficient were calculated for notable brain reserves and admission GCS.

Results: Cognitive reserve characteristics show a mean age of 66.2 ± 13.3. Admission GCS show a mean of 11.1 ± 3.9. Brain reserve observations are in attached table.

Conclusion: The relationship between cognitive reserve and brain reserve remains unexplored but may have important clinical implications. Multiple volumes were below average after normalization, but the Pearson Correlation showed admission GCS most correlated with globus pallidus volumes. One possible reason for the high p-values and large confidence intervals could be the small sample size. We hope to find a larger sample size to explore the correlations between brain reserve volumes and predict recovery course after acute stroke.

Brain Reserve Observations (n=10)

<table>
<thead>
<tr>
<th>Volume</th>
<th>Baseline</th>
<th>Normal</th>
<th>Above Normal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Putamen</td>
<td>3</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>Lenticulars</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Thalamus</td>
<td>7</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Amygdala</td>
<td>9</td>
<td>9</td>
<td>9</td>
</tr>
<tr>
<td>Accumbens</td>
<td>4</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Globus Pallidus</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Comparing with baseline:
P-value: 0.486; 0.034; 0.347; 0.118; 0.981; 0.006
Confidence Interval: [-0.45, 0.70]; [-0.73, 0.49]; [-0.53, 0.89]; [-0.88, 0.15]; [-0.69, 0.94]; [0.017, 0.89]

D220 Student Presentation
The Role of Pain Attitudes and Beliefs in Older Adults’ Willingness to Engage in Treatment

Background: Chronic pain is a common reason for older adults to seek care and has a significant impact on quality of life. Identifying appropriate targets for intervention can be challenging. The extent to which older adults’ attitudes and beliefs affect their decisions about various treatment options remains poorly defined. This study sought to quantify the impact of specific attitudes and beliefs about pain and pain treatments on older adults’ use of physician recommended therapies.

Methods: 154 adults ages 65 and above with chronic non-cancer pain were recruited from 7 senior centers and 1 geriatric outpatient office in New York City. Attitudes and beliefs regarding pharmacologic, psychologic, and physical therapies, as well as aging (fatalistic beliefs), were ascertained using a 16-item measure. Seven questions assessed participants’ willingness either to engage in or continue to use specific physician recommended treatments (i.e., strong pain medication, physical activity, psychological therapy.) Multiple linear regression models were constructed to evaluate relationships between attitudes/beliefs and treatment intention, with additional models evaluating the impact of sex, race/ethnicity, age, disability, and pain level on belief-behavior associations, specifically whether those associations differed by levels of those additional variables.

Results: Negative attitudes and beliefs about pharmacologic therapy were associated with a reduced likelihood to take a physician recommended pain reliever (beta =-0.06; P = 0.008.) Alternatively, positive views regarding physical therapy increased the likelihood of initiating physical therapy (beta = 0.18; P <0.001). Positive views regarding psychologic therapy increased both the likelihood of participating in and adhering to psychologic therapy (betas = 0.17; P <0.001 and 0.08; 0.014, respectively). These associations were stronger in women, Caucasians, and those reporting pain scores ≥5. Fatalistic attitudes and beliefs did not significantly affect patients’ willingness to engage in any form of therapy.

Conclusions: Attitudes and beliefs about specific forms of pain treatment affect older adults’ likelihood to follow therapies suggested by physicians. To ensure better outcomes and pain relief, beliefs should be elicited and adequately addressed to improve treatment adherence and efficacy.

D221 Student Presentation
Characterizing E-cigarette Use in Older Smokers with Mental Illness
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Background: Electronic cigarettes (e-cigs) have been suggested as tools to assist in quitting smoking, but their use in older smokers with mental health conditions (MHC) is not well-characterized. We assessed e-cig use among older smokers with MHC by investigating their reasons for use, readiness to quit smoking, and attributes of mental illness.

Methods: We used baseline survey data from a large randomized smoking cessation trial enrolling smokers with a mental health visit in the past year, from 4 Veterans Health Administration (VA) hospitals. Participants were categorized as current, former (having ever tried an e-cig), or never e-cig users. Pearson’s Chi-Square and ANOVA Type 3 F-Tests were used to test bivariate associations between e-cig use and variables measured.
Results: Among 1836 participants, mean age was 58 ±11 years and 87% were male. 15% were current e-cig users (n=275) and 27% were former users (n=503). Top primary psychiatric diagnoses included substance use disorder (42%), depression (15%), PTSD (10%), other alcohol disorder (7%), and anxiety (6%). Participants smoked 15 cigarettes per day on average and 79% smoked within 30 minutes of waking. 65% of e-cig users reported “wanting to quit smoking” as a primary reason for e-cig use. A past smoking quit attempt was reported by 90% of current and former e-cig users and 82% of never-users (OR=0.53, 95%CI=0.40-0.70). Mean readiness to quit smoking (0-10) was 7.2 (±2.6), 6.8 (±3.3), and 6.4 (±3.0) for current, former, and never e-cig users respectively (p=0.0002). 63% of current and former e-cig users and 55% of never-users reported some mental distress on the Kessler-6 scale (p=0.0003, OR=1.4, 95%CI=1.1-1.7). A primary psychiatric diagnosis of alcohol or substance use disorder was recorded for 50% of current or former e-cig users and 60% of never-users (p=0.0003, OR=0.69, 95%CI=0.56-0.84).

Conclusions: In our population of older smokers with MHC, e-cig users were more ready to quit and most often reported using e-cigs to assist with quitting. E-cig users had more psychological distress and were less likely to have substance use disorders as their primary psychiatric diagnosis. Future research should investigate the smoking cessation success of e-cig users in mental health populations.

D222 Student Presentation
Immunohistochemistry of Moesin in Sporadic and Rapidly Progressive Alzheimer’s Disease
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Background: Proteomic analysis performed by our lab recently identified moesin as a protein with significantly altered expression in Amyloid-β (Aβ) plaques in rapidly progressive Alzheimer’s disease (rpAD) relative to sporadic Alzheimer’s disease (sAD). Few studies have examined the role of moesin in AD, and none have discussed its link to AD pathology or its effect on the rate of AD progression.

Methods: In an initial qualitative analysis, we used fluorescent immunohistochemistry to determine the localization of moesin in a brain from an sAD patient. Aβ was identified with two antibodies stained together (4G8 and 6E10), and phosphorylated Tau (p-Tau) was identified using three separate antibodies (AT8, MHC1, and PHF1). In a second analysis, we quantitatively measured moesin staining in cortex and hippocampal tissue from patients with sAD, rpAD, and age-matched controls (n=5 for all groups).

Results: Our qualitative staining revealed colocalization of moesin and Aβ in mature plaques but not in diffuse plaques. Moesin also stained what appeared to be glial cells and blood vessels. There was no colocalization with p-Tau. Our second analysis revealed no quantitative difference in baseline levels of moesin throughout the hippocampus (CA1 region) and cortex in sAD, rpAD, and age-matched control brains. However, qualitative observation revealed moesin staining localized in plaques of both sAD and rpAD cases. We also noted variable plaque staining in both sAD and rpAD, in some plaques, colocalization appeared as a “target” staining pattern in which a ring of Aβ surrounded a ring of moesin that in turn surrounded an Aβ core, while in others, the moesin colocalized diffusely with the entire plaque.

Conclusion: Immunohistochemistry studies suggest a connection between moesin and plaques of AD. While there were no significant quantitative differences between moesin levels in sAD patients versus rpAD patients, there was clearly colocalization within plaques in both cases, hence suggesting the significance of this protein in AD plaques. Moesin colocalization to what appeared to be glial cells and blood vessels, perhaps astrocyte processes on the vessels, suggests a connection between glial cells and plaques. Additionally, the target and diffuse staining patterns observed suggest differences in moesin activity in different plaques, perhaps in diffuse plaques relative to cored plaques.

D223 Student Presentation
The effect of depression and sleep apnea on cognitive improvement following extended lumbar drainage (ELD) in patients with idiopathic normal pressure hydrocephalus (iNPH).
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Background: Depression and sleep apnea are well-documented causes of cognitive impairment. In iNPH patients undergoing ELD, improvement in cognitive and gait scores were used to determine response and thus the suitability for shunt placement. Studies have also shown that both depression and cognition improved following shunt surgery, suggesting that depression may be comorbid factor as well as contribute to the cognitive impairment of iNPH patients. However, this has not been directly demonstrated. Similarly the effect of sleep apnea on cognitive improvement in this population has not been studied. The purpose of this study is to evaluate the effect of depression and sleep apnea on cognitive scores in patients with iNPH.

Methods: We performed a chart review of 30 patients admitted for ELD at The Johns Hopkins CSF disorders center from 2015-2017. We identified depressed patients based on a previous diagnosis or based on the severity of depressive symptoms using the PROMIS questionnaire which consisted of eight questions, rated on a 5-point scale. The raw scores were converted to a T-score using the PROMIS conversion table and stratified into mild, moderate or severe categories. Cognitive assessment is performed using The Montreal cognitive assessment (MoCA). Patients with sleep apnea were identified using polysomnogram (PSG) data. We calculated improvement in MoCA scores before and after ELD in patients with depression and sleep apnea.

Results: Our sample size was 30, all Caucasian, Mean age 73.53 (SD 6.25, Range 60 – 85 years). Student t-tests were performed comparing the average post ELD improvement in MoCA scores for the depressed (n=16, 53.33%) and non depressed group (n=14, 46.66%). The average improvement was 1.81 for the non depressed and 0.64 for the depressed group (p-value 0.321). A total of 18 patients had PSG data. Post test improvement in MoCA scores for sleep apnea (n=13, 72.2%) versus non sleep apnea group (n=5, 27.7%) showed an average improvement of 2.8 for the non sleep apnea and 0.92 for the sleep apnea group (p-value 0.159).

Conclusion: In patients with iNPH those with depression or sleep apnea showed less improvement in cognitive scores after ELD compared to those without these conditions. Not correcting for these confounders could lead to inaccuracies in predicting the outcome of ELD for iNPH.

D224 Student Presentation
Depression, Anxiety, and Physical Health Outcomes Among Older Veterans with COPD
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Introduction: Veterans are disproportionately affected by chronic obstructive pulmonary disease (COPD). Anxiety and depression are associated with worse health outcomes among patients with other chronic physical illnesses, but little is known about their association with health outcomes among patients with COPD.

Objective: To examine whether anxiety and depression are associated with health care use and outcomes among older patients with severe COPD.

Methods: Retrospective cohort study of all veterans ≥65 with COPD hospitalized in a VA acute care facility from 2012-2016 and with post-year intensive care unit (ICU) or multiple hospital
Admissions (n=9,983). We used VA administrative data to examine relationships among past-year and newly diagnosed depression (NDD) and anxiety (NDA) and ICU admission, mechanical ventilation (MV), hospitalization cost, and in-hospital mortality. We used multivariable logistic regression for binary variables and a generalized linear model with a gamma distribution and log link for costs. Analyses controlled for sociodemographics, comorbid physical and mental illnesses, and facility. Additional analyses explored the role of past-year or in hospital mental health care (MHC).

Results: Of the sample, 14% had anxiety, 28% had depression, 3% died before discharge, 24% were admitted to the ICU and 3.5% received MV. The median hospitalization cost was $13,449. In adjusted models, depression was associated with fewer ICU admissions but not MV or mortality. Individuals with NDD and NDA had lower costs than patients without depression or anxiety (depression:-$7369, 95% CI=-$10,013,-$4725; anxiety:-$6745, 95% CI=-$11,889,-$1602). When we accounted for MHC, depression was no longer associated with ICU use, but relationships among anxiety, depression and costs remained. Past-year MHC was associated with lower odds of ICU use or MV and lower costs.

Conclusions: One-third of veterans with COPD in our sample had comorbid depression or anxiety. Past-year MHC was associated with better hospitalization outcomes, although this may reflect better underlying physical function. Further analyses that account for selection into mental health treatment are needed to identify patients with COPD who may benefit from additional MHC.

D225 Student Presentation
Advance care planning decisions by dementia caregivers
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Background: Caregivers often feel unprepared to make treatment decisions for dementia patients. Little is known about factors that support preparation for treatment decisions in late-stage dementia, thus more knowledge may help caregivers engage in advance care planning (ACP). This study aimed to investigate whether family perceived prognosis, knowledge of dementia, and education level are associated with ACP decisions for late-stage dementia patients.

Methods: Participants enrolled as dyads of patients and caregivers. Patients had clinician-confirmed dementia staged 5-7 on the Global Deterioration Scale and were hospitalized at UNC Hospitals. Caregivers participated in an enrollment interview, with structured items to measure their perception of prognosis, knowledge of dementia, and their education level. The primary outcome was decision-making for ACP, operationalized as self-report of decisions on common treatments. A univariate analysis of variance was conducted to identify correlation between the independent variables and ACP treatment decisions.

Results: 125 caregivers were approached about the study, and 57 enrolled. One-third of caregivers believed that the dementia patient would get better or stay about the same, and two-thirds expected the patient’s health to worsen. Caregivers generally decided for hospitalization (94%), ICU transfer (74%), treatment for pain (98%), and treatment for emotional distress (93%); they often decided against using a feeding tube (46%), a ventilator (68%), and CPR (58%). No significant correlation existed between summary scores for overall decisiveness or for the number of decisions against use of specific treatments and education level, dementia knowledge, or assessment of patient prognosis.

Conclusions: Prior knowledge of dementia and educational level at baseline do not seem to be a causal factor, suggesting that it is the physician’s responsibility to discuss dementia and end-of-life care to the caregiver. Physicians must explore the caregiver’s understanding of dementia and factors they consider important in ACP decisions.

D226 Student Presentation
Longitudinal Relationships between Productive Activities and Cognitive Functioning Among Older Adults
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Background and Objectives. Productive activities such as work and formal volunteering have been linked to positive health outcomes in older adults. Yet, less is known about if the beneficial effects of productive activities extend to changes in cognitive functioning over time. The purpose of this research is to investigate how productive activities and concurrent engagement in work and formal volunteering relate to cognitive functioning over time in older Americans.

Methods. Using six waves of HRS data (2004-2014) of individuals 51 years and older, the researcher analyzed the longitudinal relationship between engaging in productive activities and cognitive functioning over time using multilevel linear models.

Results: The results showed that those who volunteered 100 hours or more had significantly higher levels of cognitive functioning over time than those who were engaged in formal volunteering less than 100 hours. Older adults who were involved in two productive activities (work and formal volunteering) had significantly higher levels of cognitive functioning over time than those who did not engage in any productive activities.

Conclusions: The study results showed not only that higher levels of formal volunteering had cognitive health benefits but also that concurrent engagement in work and formal volunteering resulted in better cognitive functioning over time than not participating in productive activities. Geriatric practitioners, researchers, and policymakers from multi-disciplinary areas can utilize productive activity interventions to enhance the cognitive health of older adults.
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