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What Underlies the Belief that UI is Normal for Aging? An Exploratory Analysis

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Background: For many women urinary incontinence is seen as a normal part of growing older. In a recent study, 68.5% older community dwelling Canadian women felt this to be so but if incontinent were no less likely to seek treatment than women who did not hold this belief. The aim of this descriptive study was to explore other health related factors associated with holding this belief.

Methods: This was a secondary analysis of baseline data collected as part of a CIHR funded randomised controlled trial which evaluated whether continence promotion and self-management improved Health Related Quality of Life in community dwelling older women.

Results: The sample included 4446 women, mean (SD) age 78.23 (8.99) and mean (SD) BMI of 26.55 (5.55). Women who felt incontinence was normal for aging were older (77.4v 78.3, $p=0.04$), had a higher BMI (25.6v 26.3, $p=0.03$), reported lower levels of general health and energy, were more likely to report limitations in their daily activities and reported a higher frequency of feeling downhearted.

Discussion: The belief that incontinence is a normal consequence of aging appears to be related to lower reported levels of health and physical activity in older women. As such this belief may be held as an additional facet of “unhealthy aging” for these older women, or may reflect an overall pessimistic outlook on life or acceptance of consequence of comorbid conditions.

Conclusions: Educational workshops aimed at education and self management of incontinence delivered to community dwelling older women have demonstrable altered this attitude. Geriatricians have a key role to play in ensuring that incontinence does not remain an unaddressed condition

Outcomes of Delirium and Subsyndromal Delirium in Older Medical Inpatients

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Background: Delirium is associated with poor outcomes such as functional and cognitive decline, however less is known about the impact of subsyndromal delirium (SSD). We aimed to evaluate outcomes of full- syndromal delirium (FSD) and SSD at discharge and at 6 months in older medical inpatients.

Methods: Older medical inpatients without prevalent delirium on admission were assessed daily up to one week using the Revised Delirium Rating Scale (DRS-R98). Data pertaining to in-hospital mortality and discharge destination were also collected. At six months, patients and / or their next-of kin or family doctor were contacted to ascertain if they were still living and whether they remained at home or had been admitted to nursing home. Fischer’s exact test was calculated for differences in proportions of outcomes between groups using SPSS version 20.

Results: Of 191 patients included, 61 developed full-syndromal delirium (FSD), 41 had SSD without ever meeting criteria for FSD and 89 controls never developed any significant delirium features. Four patients died in hospital: 0 controls, 2 SSD (4.9%), 1 FSD (1.6%). Three patients were discharged to nursing home having been admitted from home: 0 controls, 1 SSD (2.4%), 3 FSD (4.9%), $p<0.001$. At six months, 23 patients had died: 4 controls (4.5%), 9 SSD (22%) and 10 FSD (43.5%). Nine had moved to nursing home since admission: 2 controls (2.3%), 1 SSD (2.4%) and 5 FSD (8.2%), $p=0.002$.

Discussion: SSD was associated with poor outcomes intermediate between those who did not have any delirium and those with FSD.

Conclusions: This adds to the existing literature that delirium and SSD occur along a continuum, with even subsyndromal

symptoms being associated with increased morbidity, and reiterates the importance of being alert to all delirium presentations.

Nurses' Knowledge, Clinical Behaviors and Perceptions on Acute Pain Management in Elderly Patients with Fractures in the Emergency Department

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Background: Rapid detection and relief of pain are challenging when caring for older patients in the Emergency Department (ED). Fractures, a common reason for ED visits in this vulnerable population, cause acute pain, which if relieved rapidly, improves wellbeing and reduces risks of adverse events. Our aim is to describe ED nurses' knowledge, clinical behaviors, and perceived barriers to optimal pain management in the elderly consulting in the ED following a fracture.

Methods: A self-administered survey was developed and distributed to ED nurses from 6 Montreal (Quebec) EDs. The 21 closed-ended questions on demographics, perceptions and behaviors were analyzed using descriptive statistics, and a content analysis was conducted for the two open ended questions using NVivo 11.

Results: A total of 386 (57% participation rate) ED nurses completed the survey (86% women, mean age 36 [SD ± 12] years and nursing experience 8 [SD ± 7.8] years). Of the nurses surveyed, 86% were confident or very confident in their ability to assess and to manage pain in the elderly. Nurses were equally confident in their abilities regardless of their age, time since graduation and ED site of practice. Perceived barriers included difficulty in assessing cognitively impaired patients, fear of adverse events following opioid administration, lack of time for assessment and optimal monitoring and miscommunications with patients and family

Discussion: Although ED nurses are confident in their ability to assess and manage acute pain in the elderly, important barriers remain such as the evaluation of cognitively impaired patients and the generalized concerns about opioid administration in this population.

Conclusions: Educational sessions and development of point of care tools to efficiently assess, document and manage acute pain were recommended by the survey participants.

Experiencing the Geriatric Conundrum by Medical Students in Acute Care Settings: Complexity, Communication, Conflicts and Cooperation

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Background: As the rise of aging population becoming a worldwide issue, healthcare professionals are facing challenges to treat increasing older patients in acute care settings. Medical students are required to develop competencies for taking care of older patients. Despite designing curricula of early exposures to geriatrics for students, it is important for clinician educators to better understand about students' actual experiences in taking care of older patients and how do they perceive geriatric care. The purpose of this study is to explore medical students' lived experiences of taking care of older patients in acute care settings.

Methods: We designed a qualitative study and purposively sampled thirteen 5th and 6th-year medical students for individual interviews using a semi-structured interview protocol from March to August in 2016. Thematic framework analysis was applied for the transcribed data.

Results: The findings comprise three overarching themes: (1) Complexity: encountering geriatric patients with complex clinical conditions had made geriatric care a daunting task; (2) Communication: taking care of older patients was challenging because many factors confounded effective communication, such as language issues, sensory and cognitive impairment; (2) Conflicts and cooperation: the different roles played by family caregivers, foreign caretakers, and health professionals and the responsibilities they entailed contributed collectively to conflicts in delivering geriatric care, which required cooperation among different parties for resolution.

Discussion: The results illuminate a fuller picture about the geriatric conundrum experienced by medical students, which can be worthy to inform future geriatric educational design, such as unravelling clinical complexity, overcoming communication barriers, and resolving conflicts with inter-professional cooperation in geriatric care.

Conclusions: Complexity, communication, conflicts and cooperation constitute the geriatric conundrum experienced by medical students in taking care of older patients in acute care settings.

Self-Rated Health and Mood Improve with Age in Older Adults

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Background: Older adults experience increasing physical illness, but paradoxically, they frequently describe improvements

in mood and self-rated health. The role of declining physical health as a risk for depression in elderly men and women remains unclear. We assessed whether declining physical health predicted changes in depression (Δ depression) and self-rated health (Δ SRT) over time among seniors using data from the International Mobility in Aging Study (IMIAS).

Methods: IMIAS is a longitudinal population-based study of older adults in Canada, Colombia, and Brazil. We assessed Δ depression by comparing Center for Epidemiology – Depression (CESD) scores for 1161 men and women between 2012 and 2016, and used multiple regression to identify whether changes in chronic health conditions (CHC), grip strength and self-rated health (SRH) predicted Δ depression over time.

Results: Despite worsening physical health measured as CHC and grip strength, mean CESD scores decreased from 8.15 (95% CI 7.70 – 8.60) in 2012 to 7.15 (95% CI 6.75 to 7.56) in 2016. Counterintuitively, women reported increased SRH despite having declining physical health, $p = 0.004$. Decreases in depressive symptoms were aligned with higher CESD in 2012 and with increases in SRH among women and overall, and with high CESD 2012 and absence of increased CHC in men, $ps < 0.05$.

Discussion: As respondents aged, they reported fewer depressive symptoms. Older adults may develop adaptive coping skills to handle physical and social stressors, allowing them to experience improved mood despite declining physical health.

Conclusions: Mental health appears to be a fundamentally different construct than physical health in older adults, allowing seniors to experience improved mood despite declining physical health. Clinicians should not consider depression in elderly populations as an inevitability of aging.

A Nursing-Directed Approach to Identifying, Documenting and Preventing Delirium in Hospitalized Elderly Individuals

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Background: The Government of Québec introduced the Approche Adaptée à la Personne Âgée (AAPA) to improve the delivery of care to hospitalized elderly individuals. One of its components focuses on cognitive status and delirium. This study aimed to improve nursing practices at identifying delirium in the elderly.

Methods: Two medical units participated in this prospective, single-centre study. Data was collected through chart audits from inpatients who were > 75 years old. Variables included demographics, diagnosis, number of comorbidities and

medications and baseline cognitive impairment. Charts were reviewed for documentation of mental status, documentation of the Confusion Assessment Method (CAM) and preventive measures implemented by nurses. A pre audit of 32 charts was followed by a teaching session on delirium, CAM administration and systematic preventive interventions. Reference documents were made accessible for nurses to use in their screening. Three weeks later, a post audit of charts assessed the same variables to see if there was an improvement in the number of assessments performed.

Results: In the pre audit, no CAM was reported. Preventive measures were recorded for 44% of patients. After the teaching session, 38% and 55% of charts contained minimum one documented CAM. However, documentation of preventive interventions did not change significantly.

Discussion: The teaching session was followed by increased CAM usage. It also highlighted difficulties hindering nurses' adherence to delirium protocols such as lack of time, difficulties in differentiating between sundowning and delirium, language barriers, and insufficient physician cooperation.

Conclusions: This study suggests benefits of teaching on delirium on nursing practices and uncovers remaining challenges. Assessment of long-term outcomes of patients who experienced delirium in hospital can further evaluate the impact of a specialized approach to senior care.

Assessing the Osteoporosis Care Gap in Hip Fracture Patients at The Ottawa Hospital: Phase I Quality Assurance Project

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Background: Osteoporosis is characterized by low bone mass and microarchitectural disruption of bone resulting in increased risk of fracture. While the risk of recurrent fractures can be reduced within the first year of initiating osteoporosis treatment, previous studies indicate that fewer than 20% of patients with fragility fractures receive osteoporosis treatment post-fracture (Papaioannou, et al., 2010). This reflects a care gap in osteoporosis management, allowing for cycles of recurrent fractures. This quality assurance project examines the management of bone health in an academic tertiary care hospital following hip fracture in patients over age 65 and determines if prescribing patterns are compliant with clinical practice guidelines which recommend management of patients with fragility fractures.

Methods: A retrospective chart review of patients over age 65 admitted to The Ottawa Hospital following hip fracture

between July 1, 2015 and June 30, 2016 was conducted. Ontario Digital Health Drug Repository records were used to determine pharmaceutical management within 12 months of admission.

Results: 475 patient charts were reviewed. Average age 83 years. Only 3.8% had a BMD completed within 12 months of admission. On discharge 48.0% were treated with calcium, 61.9% with vitamin D, 16.2% with a bisphosphonate, and 3.6% with a RANK ligand inhibitor. At one year 27.2% were on a bisphosphonate, and 6.5% on a RANK ligand inhibitor. Only 8.4% of patients were assessed by the Fracture Liaison Service within 12 months.

Discussion: A care gap still exists in osteoporosis management within 12 months of hip fracture at our institution, despite well-established guidelines on optimal osteoporosis management, osteoporosis screening programs, and pre-printed orders.

Conclusions: Multifaceted and multidisciplinary approaches focusing on quality improvement are needed to bridge the ongoing treatment gap.

Association Between Corrected QT dispersion on EKG and Cognitive Performances in Healthy Older Adults

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Background: Dysfunctions of the autonomic nervous system (ANS) are frequent in patients with dementia, possibly because of cholinergic neuronal loss. Cardiac dysautonomia was shown to be reflected by the dispersion of QTc (QTcD) on an electrocardiogram (EKG). A few studies have shown a link between QTcD and cognitive executive functions, revealing that a higher dispersion was associated with lower cognitive performance. The aim of this study was to validate this relationship and to assess if other measures on the EKG correlate with cognitive function.

Methods: This was a secondary cross-sectional analysis of data collected from a RCT assessing the effect of physical activity on cognition. Baseline EKGs at rest of 63 healthy inactive adults over the age of 60 were sampled for QTc length in each derivation, PR interval, QRS length and heart rate at rest. QTcD was calculated from these data (maximum QT interval minus minimum QT interval). Global cognition and executive cognitive functions (inhibition, switching, divided attention, and updating) were measured by an extensive set of clinical and experimental neuropsychological tests.

Results: (Preliminary results) Simple linear regression analyses have revealed that in participants with a QTcD higher than 50 (N=28), higher QTcD was significantly associated with lower overall cognitive abilities (MMSE; $F(1,27)=5.71$, $p<0.024$), lower performance on the WAIS-III substitution test ($F(1,27)=5.30$, $p<0.03$), lower overall executive functions (based on a composite score; $F(1,27)=4.90$, $p<0.036$) and slower reaction time in a dual-task condition ($F(1,27)=5.55$, $p<0.026$).

Discussion: The cause/effect relationship between ANS and cognitive performance still needs to be established.

Conclusions: These results support the notion that ANS dysfunction is linked to lower cognitive performance, suggesting that QTcD could be used as a marker of cognitive deficits in elderly patients.

Impact of a Healthy Aging Workshop on Older Women's Quality of Life: Evidence Derived From a Cluster Randomized International Trial

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Background: Few evidence-based interventions have been tested in clinical trials to improve quality of life in older women.

Methods: Our objective was to assess the impact of a 60-minute healthy aging workshop on 1-year health-related quality of life (SF-12) physical and mental health outcomes. Frailty status was determined with the Vulnerable Elders Survey (VES-13). We analyzed data from CACTUS-D (Continence Across Continents to Upend Stigma and Dependency), a multi-centre (Canada, United Kingdom and France) cluster randomized trial. Participants included community-dwelling women over age 65 with urinary incontinence. Random assignment was to a 60-minute workshop on one of two topics: continence promotion or healthy aging.

Results: Of 909 enrollees attending healthy aging (n = 448) or continence promotion (n = 461) seminars, 751 completed the 1-year follow-up. Mean age was 78 ± 8 years. On the VES-13, 420 women (52.9%) were deemed frail. We found a trend towards increased SF-12 derived utility scores (range 0-1) only among participants who attended the healthy aging workshop (0.034 vs 0.020, difference 0.014 [-0.002 – 0.029]). Statistically significant gains in health-related quality of life were observed among frail older women (utility gain 0.044

vs 0.004, difference 0.041 [0.020 – 0.063]). Physical health SF-12 scores (on 100) decreased among participants in the healthy aging workshop (by 0.117 vs 0.328 increase for the continence promotion group, difference -0.445 [-1.352 – 0.484]), however mental health scores diminished less (-0.077 vs -0.761 respectively, difference 0.684 [-0.335 – 1.703]). No significant difference was noted by frailty status.

Discussion: We conclude that community-based frail older women may stand the most to gain from healthy aging workshops.

Conclusions: Scale and spread of the educational intervention will require partnerships with community groups and healthy aging advocates.

Multicomponent Intervention Signage for Delirium Prevention in Orthopedic Inpatients (MIND-ORIENT)

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Background: Multifactorial interventions have been shown to be effective in delirium prevention. Orthopaedic inpatients are at high risk with a delirium prevalence of up to 50% in the hip fracture population. Our aim was to design and evaluate a multicomponent bedside sign to assist healthcare staff in using non-pharmacologic strategies to prevent delirium.

Methods: A multidisciplinary expert panel designed the sign using delirium prevention strategies as outlined by the HELP program. PDSA cycles were used to implement the sign on a 35 bed orthopaedic inpatient unit with weekly evaluations of sign use and completion rate. Both quantitative (pre/post surveys) and qualitative (focus groups with nurses and allied health) methods were employed to determine sign value and staff satisfaction.

Results: One month after initial implementation, 47% of patient rooms had signs in use. The most frequently completed sections were mobility (84%), diet type (59%), and glasses (55%) and the least frequently completed were hearing aids (4%), sleep promotion (10%), and fluid intake (21%). The findings of two focus group sessions with staff indicate that logistical challenges and time constraints remain the biggest challenges to consistent completion of the sign. Before sign implementation, just 25% of 39 staff surveyed were “very confident in implementing non-pharmacological interventions”. Post-sign survey data collection and analysis is ongoing.

Discussion: A multicomponent sign to assist staff in using non-pharmacologic delirium prevention strategies was

implemented successfully on an orthopaedic inpatient unit. Using PDSA cycles to inform further adjustments is necessary to address barriers to sign utilization for sections with low completion rates.

Conclusions: Bedside signage is a helpful tool to promote non-pharmacologic interventions to prevent delirium. Future studies will investigate the sign’s impact on delirium incidence by examining confusion assessment method scores.

Delirium Undetected: How Much Does Allied Health Care Worker Documentation Contribute to the Detection of Delirium in Geriatric Inpatients?

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Background: Delirium is a common problem among older hospitalized patients. It increases mortality, morbidity, length and cost of stay. Delirium underdiagnosis exacerbates these consequences. We sought to understand the incidence of inpatient delirium and the potential role non-physician health care professionals contribute to the detection of this condition.

Methods: We conducted a retrospective chart review, in duplicate, of a random sample of 200 geriatric patients (≥70 years old) admitted to a community hospital in Ontario, Canada between April 1, 2016 and March 31, 2017. Exclusion criteria included patients admitted to critical care, stroke or non-medicine beds, or subsequent admissions during the study period. We defined delirium as a specific reference by physicians or allied health care professionals to “delirium” or a validated set of delirium “trigger words” (altered mental status, disoriented, hallucination, confusion, reorient, disorient and encephalopathy).

Results: Of 188 eligible charts, we found 67 cases of physician-captured delirium (36%). We identified an additional 39 charts in which allied health care workers noted delirium or a trigger word in keeping with delirium (21%). We found delirium in 56% of this cohort of older inpatients.

Discussion: Our quality improvement study found that allied health professionals may increase the detection of delirium. Limitations include the use of the trigger word “confusion” in the validated protocol and its inability to differentiate between dementia and delirium. The risk of underdiagnosing delirium, however, is greater than the risk of over-vigilance. Our results suggest that closer collaboration between allied health care professionals and physicians may facilitate the diagnosis of delirium, contribute to timely management and potentially decrease morbidity, mortality and health care costs.

Conclusions: Closer multidisciplinary collaboration in hospital may improve the diagnosis of delirium in inpatients.

Validity, Reliability, Feasibility, and Acceptability of Using the Consultation Letter Rating Scale to Assess Written Communication Competencies Among Geriatric Medicine Postgraduate Trainees

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Background: The implementation of Competence by Design (CBD) involves developing in-training assessment tools. The modified "Consultation Letter Rating Scale", published in the Royal College of Physician and Surgeons of Canada's Tools Guide, evaluates written communication competencies. This multisite project evaluates the validity, reliability, feasibility, and acceptability of this tool for use in postgraduate Geriatric Medicine training.

Methods: Ten geriatric medicine trainees each provided five consultation letters from the 2017-2018 academic year. Letters were de-identified. Six geriatricians reviewed a standardized module on consultation letters, and then independently completed the tool for 50 letters in a block-randomized order. They recorded the time used to complete the tool for each letter and completed a face validity survey. Inter-letter and inter-rater reliability was estimated using weighted and unweighted kappa. Responses on face validity were reviewed independently by two authors for thematic content. Participants completed a survey on the usefulness of the tool.

Results: Data from a total of 300 assessments was collected, where a very small portion (4%, N=12) were incomplete. There was a high agreement among raters, with an overall multiple rater weighted kappa of 83% (95% CI: [76%, 89%]). High level of pair-wise agreement between raters was also observed, with minimum kappa of 73% and maximum of 98%. Strong agreement across the five letters was observed, with a weighted kappa of 81% (95% CI: [72%, 88%]). An average of 4.82 minutes (SD=3.17) was used to complete the tool; the minimum and maximum time spent were 0.83 and 20 minutes, respectively.

Discussion: N/A

Conclusions: The "Consultation Letter Rating Scale" has adequate reliability and feasibility for assessing written communication competencies in postgraduate Geriatric Medicine training. Acceptability and face validity analysis is underway.

"But I said No": Adherence to Advance Directives in Long-Term Care

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Background: Frail older adults in long-term care facilities (LTCF) often have specific goals of care. Many experience acute health crises but are at high risk of in-hospital morbidity and mortality. It is common for residents to complete advance directives (AD) regarding future care, including directives for hospital transfers. This study describes LTCF adherence rates to ADs and examines why some residents are transferred to acute care against previously expressed wishes.

Methods: We conducted a mixed methods study in 10 LTCFs in NS, Canada and reviewed 748 resident charts from 3 time periods. ADs were divided into those requesting transfer to hospital and those requesting on-site management only. The directives were then analyzed in relation to hospital transfers experienced by residents.

Results: ADs were complete in 92.4% of charts. Half of residents requested on-site management only. Older residents with dementia were more likely to have no-transfer directives, but frailty did not impact ADs. Paramedics were called for 80.5% of residents, and 73.6% were transferred to hospital, 51.3% with explicit ADs to the contrary. The majority of those were transferred for fall-related injuries, followed by respiratory and systemic illness.

Discussion: Half of those transferred to hospital had explicit ADs to the contrary, largely driven by fall-related injury. This highlights an important gap in advance care planning. Frailty did not appear to inform ADs, despite its impact on health outcomes and function. Common themes informing transfer decisions included unclear care plans, communication, symptom control, and the perceived need for diagnostic tests or procedures.

Conclusions: The results from this study highlight important care gaps in the management of seniors in LTCF. Clarifying and respecting advance directives will lead to better experiences for residents and improve effective resource utilization.

Frequency, Indications and Outcomes of Palliative Care Consultation Among Long-Term Care Residents with Advanced Dementia in Calgary, AB: A Mixed-Methods Exploratory Study

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Background: Palliative care encompasses dying from end-stage chronic illnesses in addition to malignancies. Few studies on palliative care for those with advanced dementia are available. In this mixed-methods study we describe palliative care practices for advanced dementia in long-term care (LTC) facilities in Calgary, AB.

Methods: Eight semi-structured interviews of physicians and other health care providers working in LTC were conducted. Using a thematic content analysis approach interview transcripts were coded by hand by SR with a subset coded independently by DH. These results will be presented. The second component utilizing the Calgary Zone Palliative Care Consult Service database (to determine number of LTC consultations and proportion conducted on those with advanced dementia during 2014/2015) and comparative chart reviews will not be discussed.

Results: Themes identified from the interviews included: belief on the part of LTC practitioners that the provision of palliative care in advanced dementia was a core competency; importance given to multidisciplinary input; significant impact of patients' families on the timing of palliative care decisions; and importance of early conversations regarding goals of care and prognosis. Palliative care consultations were reserved for atypical cases, such as unusually difficult families, challenging symptom management, or provision of specific procedures.

Discussion: LTC practitioners made a distinction between taking a palliative approach to residents with advanced dementia and consulting palliative services. These consultations were valued for uniquely challenging situations but not perceived as required in the care of most LTC residents with advanced dementia.

Conclusions: Preliminary findings highlight the complexity of the provision of palliative care for advanced dementia. As a perceived core competency, it is important to both evaluate and enhance the skills of LTC physicians and staff in dealing with end-of-life care for advanced dementia.

Admission Diagnosis of "FTT" vs. discharge diagnosis in older adults on a clinical teaching medicine service in a tertiary care teaching hospital

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Background: Failure to thrive (FTT) is commonly used to describe older adults presenting to the emergency

department. This non-specific term is often used when an actual admission diagnosis cannot be elucidated. Many of these patients are admitted to the hospital for further investigations and may be found to have underlying acute medical diagnoses.

Methods: We conducted a retrospective cohort study of adults over 65 years of age admitted to a tertiary university hospital in Vancouver, British Columbia from Jan 1, 2016 – Nov 1, 2017. All patients had an admission diagnosis of "failure to thrive" and were admitted under Family Practice or Internal Medicine (Clinical Teaching Unit).

Results: A total of 74 charts were reviewed. The average age was 83.5 years of age. The average length of stay was 17.5 days. There were 57 cases (77%) with presentations due to an acute medical illness. The most common acute diagnostic categories included infection, cardiac disease, and adverse drug events. Concurrent diagnostic labels given on admission were confusion (24%), weakness (24%) and falls (43%). Multimorbidity was highly prevalent (51% with 6-10 comorbidities and 20% with >10 comorbidities). Thirteen cases (18%) had a previous admission within 30 days. Geriatrics was involved in the care of 15 cases (20%). Discharge summaries included FTT as a discharge diagnosis in only 13 cases (18%).

Discussion: The data suggests that there is a high rate of acute medical illness in older adults admitted with FTT. Further study is needed to better understand the rationale for using this non-specific term as an admission diagnosis for older adults presenting to the emergency department.

Conclusions: Older adults with an admission diagnosis of FTT have a high prevalence of multimorbidity and often have acute medical illnesses.

The Prevalence of Delirium on Admission to General Internal Medicine in Older Homeless Adults

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Background: Although they are chronologically younger, the constellation of health and functional problems of homeless people 50 years and older resemble those in the general population of adults aged 65 years and older. Older, homeless patients are prone to more comorbidity and cognitive impairment than their age and sex matched low-income counterparts. To our knowledge, the prevalence of delirium on admission to hospital in older homeless medicine inpatients has not been assessed.

Methods: To describe this population we identified and performed a chart review of all homeless individuals aged 50 years and older admitted to the general internal medicine (GIM) inpatient unit at St. Michael's Hospital from September 2013 – September 2014. We used a validated chart abstraction tool to identify the presence of delirium on admission.

Results: Of the 2194 patients over age 50 years admitted to GIM, 146 (6.6%) of them were homeless. The average age of this group was 64 years old, 87.6% were male and they had an average of 4.6 comorbidities. At baseline, 18.6% had cognitive impairment and 46% percent had a history of alcoholism. Their average length of stay was 10 days. On admission 21% had an acute confusional event. Approximately half (51%) had delirium as the likely cause. The total prevalence of delirium on admission was 10.1%. Other causes of acute confusion included medications, substance misuse, seizures, hepatic encephalopathy, Wernicke's encephalopathy, psychosis and stroke.

Discussion: Further research is required to determine whether the prevalence of delirium on admission to hospital is greater in homeless older adults than in housed individuals. We plan to expand this study to a case-control study.

Conclusions: Over 10% of older homeless adults had delirium on admission to GIM.

Impact of Outpatient Comprehensive Geriatric Assessments on Repeat Visits After an Emergency Department Visit

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Background: An emergency department (ED) visit is a sentinel event for an older person, with increased likelihood of adverse outcomes post-discharge including return visits. A pilot project was undertaken to provide timely access to a comprehensive geriatric assessment (CGA) following an ED visit with the aim of delaying the need for further acute care.

Methods: As part of a quality improvement project, a geriatric emergency medicine nurse referred community dwelling adults over age 65 years to a resident-led clinic for a CGA within 10 days of discharge from the ED. Criteria for referral included willingness to attend the appointment, limited home care supports and presence of a geriatric syndrome. Patients who had been assessed by a geriatrician in the previous year or who were awaiting long term care placement were excluded.

Results: In the initial 4 months of the pilot project 15 patients were referred and 14 were assessed. Patients were seen within

6 days from their ED visit, with 100% clinic attendance and 100% accompanied by a caregiver. A new diagnosis was made in 100% of visits and a medication change was made in 93% of visits. No patients were admitted to hospital within one month of their clinic visit. Only two patients presented to the ED within one month of their clinic visit. On a patient satisfaction survey, 96% responded "agreed" or "strongly agreed" that the "appointment was helpful".

Discussion: EDs are an entry point to the healthcare system for older patients. Strategies to reduce repeat visits to EDs and to connect elderly patients to appropriate resources, including geriatric services, are not yet well understood.

Conclusions: A targeted outpatient CGA may be an effective way to reduce repeat ED visits.

Are we Preparing Future Doctors for the Real World? Geriatric Coverage in the Mandatory Clerkship Curriculum at the University Of Toronto

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Background: The number of Canadians over 65 will reach 20.1% in 2024. In 2009 the CGS published a list of core geriatric competencies that should be achieved by all graduating medical students. However, University of Toronto does not have a mandatory geriatric clerkship rotation; therefore, the delivery of geriatric content falls on other specialties. In order to determine where this content is being taught and identify any gaps, we reviewed the course content of mandatory clerkship rotations.

Methods: We used "Core Competencies in the Care of Older Persons for Canadian Medical Students" by Parmar et al. (2009) as the primary template to assess the mandatory clerkship rotations, in addition to the UofT geriatric competencies. Online course material was reviewed and it was noted where these competencies were mentioned. Subsequently, we interviewed each of the Course Directors to ensure accuracy of the data and gather more in-depth information about students' clinical experiences.

Results: The main courses that included geriatric topics were Family Medicine, Internal Medicine, Psychiatry, and OBGYN. Competencies that were covered included dementia, delirium, falls, medications, and transfer of care. However, physiology of aging, adverse drug reactions, atypical presentations of disease, hazards of institutional care, restraints, frailty, and caregiver stress had minimal, if any, clinical teaching.

Discussion: Although a few core geriatric competencies are covered thoroughly, there remain large gaps in geriatric

teaching at the clerkship level. The barriers we identified to overcoming these gaps include limited time during current courses, insufficient numbers of preceptors with a geriatric focus, and lack of prioritization of geriatric topics within other disciplines.

Conclusions: There remain many geriatric competencies which are insufficiently covered during clerkship. Strategic and efficient approaches will need to be used to fill these gaps.

Which Technology Interventions Reduce Emergency Department Visits and Hospital Admissions From Long-Term Care Facilities? Findings From a Systematic Review

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Background: Long-term care facility (LTCF) residents are at risk for adverse health outcomes during unnecessary transfers to hospitals. We aimed to systematically identify clinical interventions aimed at reducing these transfers and to characterize the technologies applied therein.

Methods: A systematic mixed studies review was conducted through databases (MEDLINE, CINAHL, EMBASE, Social Work Abstracts, and other relevant scientific literature from inception until July 2016), forward and backward citation tracking, and grey literature search. Primary studies using quantitative and mixed methods, measuring emergency department (ED) transfers and/or hospital admissions (HA), and incorporating various technologies in the intervention were eligible. Using the World Health Organization (2010) telemedicine definition, a thematic analysis was conducted to categorize the technology components of the interventions.

Results: > 16 eligible studies used one or more of the following technologies: 1) “telemedicine for direct care” using visual elements allowing direct patient evaluation (n=5); 2) “non-visual tele-coaching” allowing clinical consultation with experts from outside LTCF via telephone conversations or emails (n=6); 3) “health information exchange system” to facilitate electronic transfer of clinical information or documents (n=3); and 4) “alert systems” for the notification of a nurse, physician, or outreach team concerning the health status of a resident (n=3). Most studies reported insufficient quantitative data for inclusion in a random-effects model meta-analysis. While non-visual tele-coaching did not show significant reductions, the other three technologies were reported to be effective in most cases.

Discussion: Despite high heterogeneity across the eligible clinical interventions, our study has identified several technologies that can be used to reduce unnecessary EDs and HAs from LTCFs.

Conclusions: Future interventions should collect and report quantitative and standardized data (e.g. transfer rates per 100 resident-days) to allow assessment of intervention effectiveness in meta-analyses.

Impact of Informal Caregiver Distress on Health Outcomes of Community-Dwelling Dementia Care Recipients: A Systematic Review

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Background: Most dementia care occurs in the community with support from informal caregivers who are often distressed. Dementia caregiver distress is known to be hazardous to the caregiver's health, but the impact on the care recipient is not well known.

Methods: We searched the MEDLINE, Embase, PsycINFO, CINAHL, and Cochrane databases from inception until June 2017 for studies investigating the impact of informal caregiver distress on health outcomes of community-dwelling dementia care recipients. The search results were screened and then data were abstracted, and the risk of bias was appraised by pairs of reviewers, independently.

Results: We included 81 original investigations (n=43,761 caregivers and dementia care recipients). Sixty-six studies (81.5%) were observational or cross-sectional in design, and forty-seven (58%) studies had a low risk of bias. There was considerable clinical and methodological heterogeneity precluding quantitative synthesis. Dementia care recipients (n=21,881) had a mean age of 78.2 years (SD±3.8 years), half (50.0%) were women, and two-thirds (66.1%) had Alzheimer's disease. The dementia caregivers (n=21,880) had a mean age of 62.5 years (SD±23.3), three-quarters (74.1%) were women, and half (50.5%) were spouses of the care recipient. Twenty-two care recipient outcomes were studied including cognition, mood, quality-of-life, function, healthcare utilization and costs. Overall, informal caregiver distress is commonly linked to the dementia care recipient being institutionalized, having worsening of behavioural and psychological symptoms of dementia, and experiencing elder abuse.

Discussion: In this systematic review of 81 original investigations, we identified that increased dementia caregiver distress was associated with important dementia care recipient health outcomes. Evidence for these associations comes from a relatively small number of high quality studies.

Conclusions: Caregiver support interventions and their related outcome measures need to more fully consider the broader consequences of caregiver distress.

Drug Predictors of High Cost Healthcare Use Among Older Adults

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Background: High cost users (HCUs) use disproportionately high healthcare resources compared to the average patient. The extent to which medications and the quality of prescribing may be contributing to HCU status is unclear.

Methods: Retrospective population-based cohort of incident HCUs aged ≥ 66 years in the top 5% of healthcare expenditure users in Ontario, Canada matched to non-HCUs (1:3) based on age, sex and health region. Health and drug utilization data were obtained for the index year and two years prior to HCU designation from Ontario's linked health administrative databases. The objectives were to determine the relative contribution of drugs to HCU healthcare expenditures and explore whether the quality of prescribing is a predictive factor in determining future HCU status and health outcomes.

Results: Senior HCUs (n=176,604) utilized \$4.9 billion in health system costs and \$433 million in drugs. Polypharmacy (>10 drugs) was more prevalent amongst HCUs (55.1% vs. 14.5%, p<0.0001) than non-HCUs (n=529,812). Annual drug expenditures alone triggered HCU status in 6258 (3.6%) HCUs. Use of higher-cost drugs such as ranibizumab, other biologics and antineoplastics increased the likelihood of HCU status (aOR 11.87, 30.85, 53.46 respectively). Use of high-risk drugs such as benzodiazepines, opioids, and antipsychotics increased the likelihood of HCU status (aOR 1.62, 3.56, 4.45 respectively) and death in the incident year (aOR 1.59, 1.22, 2.89 respectively).

Discussion: Use of potentially inappropriate high-risk and higher-cost drugs increased the likelihood of future HCU status and mortality. Better methods to reduce unmeasured confounding are needed to improve estimates of the contribution of individual medications.

Conclusions: Medications and the quality of their prescribing are important contributors to high cost healthcare use. Interventions focused on improving medication appropriateness and cost-effectiveness may prevent HCU status and contain expenditures.

Association of Motoric Cognitive Risk Syndrome and Cardiovascular Risk Factors in the Japanese and the United States Populations

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Background: The association between Motoric Cognitive Risk (MCR) syndrome and cardiovascular risk factors is relatively newly characterized in the American and Japanese populations. MCR syndrome is defined as the combination of objective slow gait speed and cognitive complaint, in the absence of dementia. No comparison has yet been conducted, to examine the association of MCR syndrome and cardiovascular risk factors in the American and Japanese populations.

Methods: A literature search was conducted in PubMed and Embase databases. The selection criteria for the articles were: human study, published in English or French, MCR as outcome, control group (of non-MCR participants), calculated (or able to calculate), Odds Ratio (OR) or Hazard Ratio, and Cardiovascular risk (such as cardiovascular disease, hypertension, diabetes, stroke and obesity) as outcome. After removing duplications and screening all results - a total of 6 studies were included.

Results: MCR syndrome was associated with cardiovascular disease (OR 1.41 [95% CI: 1.29; 1.54]), hypertension (OR 1.20 [95% CI: 1.11; 1.30]), diabetes (OR 1.44 [1.31; 1.59]) and obesity (1.34 [1.20; 1.50]). Forest plot of pooled odds ratios for the association between MCR syndrome and pooled cardiovascular risk factors showed that an individual diagnosed with any one cardiovascular risk factor is significantly more likely to be diagnosed with MCR syndrome.

Discussion: The findings show that MCR syndrome is associated with multi morbidities and cardiovascular risk factors. Moreover, in the Japanese and European populations an individual diagnosed with any one cardiovascular risk factor is significantly more likely to be diagnosed with MCR syndrome

Conclusions: In the Japanese and US populations MCR syndrome was associated with cardiovascular risk factors.

White Matter Hyperintensities Correlate With Neuropsychiatric Manifestations of Alzheimer's Disease and Frontotemporal Lobar Degeneration

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Background: The contribution of white matter hyperintensities (WMH) to neuropsychiatric symptoms (NPS) in Alzheimer's disease (AD) and frontotemporal lobar degeneration (FTLD) is not well characterized. The objective of this study was to investigate the possible correlations between regional WMH volumes with NPS in pathologically proven AD and FTLD.

Methods: Autopsy-confirmed AD and FTLD cases were identified from the Sunnybrook Dementia Study, an ongoing longitudinal study where participants received comprehensive evaluations, including brain imaging. Data analysis included linear regressions with items of the Neuropsychiatric Inventory (NPI) as the dependent variables, regional WMH volumes as predictors, and age, sex, education level, and corresponding regional grey matter volumes as covariates.

Results: Fifty-three cases of FTLD (17 TDP-43 proteinopathy, 10 Pick's disease, 11 corticobasal degeneration (CBD), and 15 progressive supranuclear palsy (PSP)) and 15 cases of AD were identified. Anxiety was associated with increased WMH in right medial frontal region for TDP-43 (standardized $\beta = +0.431$, $p = 0.008$), in left lateral frontal region for PSP (standardized $\beta = +0.720$, $p = 0.004$), and in right lateral frontal region for AD (standardized $\beta = +1.315$, $p = 0.012$). In TDP-43, increased WMH in the left medial frontal region was associated with euphoria (standardized $\beta = +0.901$, $p = 0.015$). In PSP, increased WMH in left lateral frontal region was associated with euphoria (standardized $\beta = +0.680$, $p = 0.041$) and with eating changes (standardized $\beta = +0.720$, $p = 0.041$).

Discussion: Increased WMH in distinct frontal regions were associated with specific NPS in AD, TDP-43 and PSP pathologies. WMH burden was particularly important in TDP-43 cases.

Conclusions: Identifying WMH on patients' brain MRI could have diagnostic and prognostic utility, which may ultimately help to determine the best therapeutic interventions.

Evidence for Limited Cognitive Reserve During Complex Walking in Middle-Age

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Background: Gait impairments during complex walking conditions in older adults are thought to result from a progressive failure to compensate for deteriorating peripheral somatosensory and proprioceptive input by central cortical processing. It is the primary hypothesis of this paper that these higher cortical adaptation processes may already be active in middle-aged adults (45-65) who do not present with observable gait impairments. We therefore, sought to compare metabolic brain activity during upright complex walking in young and middle-aged individuals, taking advantage of the principle of metabolic trapping inherent to [18F]-fluorodeoxyglucose ([18F]-FDG) Positron Emission Tomography (PET).

Methods: Seven young adults (aged between: 20-28, mean age: 24 ± 3) and seven middle-aged adults (aged between: 55-63, mean age: 59 ± 3) participated in this study. Cerebral metabolism of [18F]-FDG, a marker of brain activity, was assessed during over ground straight walking (i.e., simple locomotion) and steering of gait (i.e., complex locomotion) using PET.

Results: Compared to middle-aged adults, young adults had increased metabolism in frontal (dorsolateral prefrontal cortex) and occipital (cuneus) cortices as well as the cerebellar vermis during steering relative to straight walking. Both groups demonstrated increased metabolism in the superior parietal lobule (7A), superior frontal gyrus (BA 6), and cerebellar lobules bilaterally during steering.

Discussion: Cerebral metabolism during complex locomotion (relative to simple locomotion) is increased in a frontoparietal network for cognitive control in young adults compared to middle-aged adults.

Conclusions: These results provide indirect evidence that a higher demand for cognitive compensation to maintain gait performance is already necessary for simple locomotor tasks in middle-aged individuals. These mechanisms may deteriorate later in life with progressive decline of proprioceptive input and central processing capacity, thus resulting in gait impairments.

Cerebral 18F-Fluorodeoxyglucose-Positron Emission Tomography in Prolonged Delirium

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Background: The interactions between delirium, dementia and cognitive decline are continuously at study. Our aim was to analyze the distribution of neurodegenerative disease emerging from topographic findings of 18F-FDG PET cerebral scans performed during prolonged delirium.

Methods: We retrospectively reviewed 18F-FDG PET studies performed in hospitalized patients with prolonged (>7 days) delirium between February 2012 and April 2016 at the Centre Hospitalier de l'Université de Montréal (CHUM). Subjects were > 65 years old and without a history of dementia. They were matched on sex and age with randomly selected outpatients imaged with 18F-FDG PET for the evaluation of cognitive impairment. Imaging studies were re-interpreted by 2 Nuclear Medicine physicians trained in neuroimaging and blinded to clinical diagnosis.

Results: Among 1604 reviewed cases, 28 met inclusion criteria (mean age 81 ± 8 , 64% male). Although not statistically significant, patients with delirium were more likely to show a scintigraphic pattern of neurodegenerative disease than controls (89% vs. 68%, $p=0.101$). Alzheimer's was the most frequent diagnosis for both groups (17 in delirium, 10 in controls; $p=0.108$). The scintigraphic pattern was compatible with Lewy body pathology in 9 patients with prolonged delirium compared to only 1 in controls (32% vs. 4%, $p=0.012$) and with mixed pathologies in 18 patients with prolonged delirium compared to 8 controls (64% vs. 29%; $p=0.008$).

Discussion: The finding of an 18F-FDG PET -defined neurodegenerative condition is similarly frequent in patients with an episode of prolonged delirium and in outpatients investigated for cognitive impairment.

Conclusions: Topographic findings suggestive of Lewy body disease and of mixed pathologies are over-represented in patients with prolonged delirium compared to controls, while Alzheimer disease remains the most frequent diagnosis in both groups.

Assessment of Limitations by Instruments that Measure Capacity to Manage Medications in Older Adults

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Background: An older adult's capacity to appropriately manage medications is dependent on factors such as vision, grip strength, dexterity, medication regimen complexity, and cognitive capacity, among others. Several instruments have been developed to assess medication management capacity (MMC); however, these instruments address the different factors mentioned above to varying degrees. The goal of this

project was to determine the extent to which each instrument examined limitations in MMC to identify components for a comprehensive assessment tool.

Methods: Instruments that address MMC were identified through the use of a systematic review conducted by Elliott RA, et al. Authors of published instruments were contacted to provide the original instruments for evaluation. Domains in MMC among older adults were developed through a literature search and review. Limitations in MMC were classified into four domains and three sub-domains each: "physical abilities" (vision, dexterity, hearing), "cognition" (comprehension, memory, executive functioning), "medication regimen complexity" (dosing regimen, non-oral administration, polypharmacy) and "access & caregiver" (prescription refill, new prescription, caregiver). We examined the degree ("definitely", "probably", "possibly" and "not" assessed) to which each identified instrument assessed each domain and sub-domains.

Results: Of the 10 instruments examined, no instrument definitely assessed all four domains identified. Some sub-domains (e.g. vision, memory) were not assessed at all while others were assessed with more frequency (e.g. dosing regimen). Only one instrument examined one domain definitely (medication regimen complexity). All instruments possibly or probably assessed components of all domains.

Discussion: No instrument enables a clinician to determine the full extent of MMC by an older adult.

Conclusions: A comprehensive assessment is required to identify all limitations in MMC and therefore, adherence, in older adults. The development and validation of such a tool is necessary.

Delirium Screening: An Assessment of Barriers and Needs Amongst Health Care Professionals

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Background: Delirium goes frequently unrecognized in hospitals. To improve delirium screening in our hospital, we sought to gain an understanding of the barriers and needs of frontline staff.

Methods: A survey was developed and distributed to 206 nursing and allied health staff working on four patient-care units (geriatrics, orthopedics, ICU, medicine) at our academic institution.

Results: The adjusted response rate was 81%. Our staff identified three major barriers to completing delirium screening:

co-existing dementia, English as a second language, and unknown cognitive baseline status. We did not identify differences between the four units. Mandatory daily delirium screening was highly supported by respondents (93%) and 31% thought they had received adequate training. Respondents' most preferred formats for learning included lectures (61%), professional workshops (70%), and presentations (73%) with no significant differences between staff on the four units.

Discussion: The most commonly cited barriers to delirium screening in the literature are time constraints and lack of knowledge of delirium, which were not amongst the major barriers found in our study. Several reasons may account for this difference at our institution including the incorporation of delirium screening into the daily charting systems and education efforts regarding delirium. The majority of respondents still agreed that they wanted to know more. One possible explanation for this is that staff learned in previous education efforts that delirium care impacts patient outcomes and this fuelled their interest in learning more about appropriate management strategies.

Conclusions: Health care providers want to receive further training on delirium especially on assessing patients with dementia, unknown cognitive status or language barriers. There is a need for continued research to evaluate the effect of addressing the identified barriers using the learning formats preferred by staff.

Diabetes and Neurocognitive Disorders: A Cohort Study of Cognitive Decline in Diabetic and Non-Diabetic Patients at the Sherbrooke University Memory Clinic

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Background: Type 2 diabetes in the elderly is a chronic disease with micro and macrovascular consequences. The link between diabetes and increased risk for prevalence and more rapid progression of neurocognitive disorders (Alzheimer and vascular) has been identified in different large prospective cohort studies.

Methods: A retrospective case-control study was realised at the Sherbrooke Geriatric University Institute Memory Clinic (MC) between 2004 and 2017. Patient's charts with multiple visits (>2) were analysed regarding the diabetic status (diabetic population (D)) and the cognitive evolution of the subjects between two time points was recorded and compared to a control population (CP). Additional information regarding comorbidities and sociodemographic information were also analysed.

Results: In total 110 patients were included in the study (CP: n=76 and D: n=34). At baseline, no significant difference was

observed between groups regarding gender, schooling ($9 \pm 3.4y$) and age at the first visit ($76 \pm 6.7y$). Between-group differences did exist for certain comorbidities: an increased prevalence of macrovascular disease ($p < 0.05$) and coronary heart disease ($p < 0.05$) was observed in the D population. Scores for the MMSE test significantly decreased over time ($p < 0.001$) in D and CP groups with no significant between-group difference ($p > 0.1$). Between evaluations, the MOCA score significantly decreased in the D group ($p = 0.006$) but with no significant between-group differences ($p > 0.7$).

Discussion: Cognitive decline was observed in both the D and CP subjects who consulted our MC. Contrary to the literature, no statistically significant differences between the two groups was observed. This could be attributed to a lack of statistical power in to our small sample.

Conclusions: A signal was observed with the global MOCA score in the D group: a sub analysis of this test is underway.

Evolution of the MOCA Score in Patients with Mild Alzheimer and Mixed Dementia Over a Six-Month Period

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Background: The Montreal Cognitive Assessment is frequently recommended as a diagnostic and follow-up tool in patients with dementia. However, the expected decline in the total score over time is unknown, which limits its usefulness.

Methods: This is a retrospective, descriptive study of patients with mild Alzheimer or mixed dementia, diagnosed at the IUGM memory clinic between October 2011 and July 2016. Demographic, clinical and functional data were recorded from their medical records.

Results: Seventy-one patients with a basal MoCA and a follow-up test carried out within the following 4-8 months were included (mean age: 79 years old; 62% were women). Their average GDS-Reisberg score was 4 and 68% of them had at least one vascular risk factor. Over an average 6-month period, 34 patients (47.9%) had a statistically significant decrease of 2.84 points on the MOCA total score; 17 patients' MoCA scores (23.9%) remained unchanged and 20 patients (28.0%) significantly improved by 2.80 points. There was a non-significant trend ($p = 0.07$) for a larger 6-month MoCA score decline in the mixed dementia patients ($n = 33$). The probability of increasing, decreasing or maintaining MoCA scores over 6 months was not explained by any of the sociodemographic variables, vascular risk factors, the degree of functional impairment, symptomatic or psychoactive medication use, the variation in a specific MoCA subscore or a learning effect.

Discussion: While this is a small and retrospective study, the number of patients is relatively similar to other published studies looking at the evolution of MoCA scores in MCI patients over time.

Conclusions: The results are clinically significant and could help evaluate a patient's response to symptomatic treatment. These first results should be further confirmed in a larger sample and with a longer follow-up time.

Technology Adoption and E-Health Literacy in Older Adults who Have Recently Suffered a Fracture

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Background: Electronic health resources are increasingly used in the management of medical conditions. This study's objective was to identify current level of technology adoption and eHealth literacy among older adults who recently suffered a skeletal fracture, to determine if use of a mobile app to optimize acute pain management would be feasible and acceptable.

Methods: Adults ≥ 50 years with recent fractures attending one of 3 orthopaedic clinics were invited to complete a self-administered survey composed of 21 closed-ended questions, including an 8-item perceived eHealth literacy scale (eHEALS) scored on a 5-point Likert scale, with higher scores indicating higher literacy. Descriptive statistics are presented.

Results: A total of 231 participants completed the survey (women: 65%; ≥ 65 years old: 62%; university degree: 28%). The majority (78%) owned at least one mobile device: cell-phone 30%; smartphone 45% or tablet 46%. Thirty-nine percent had recently used the Internet for obtaining information about health and 60% indicated being interested in using technology to improve their health. Of the 139 (60%) respondents who reported going online in the previous 6 months, 81% looked for health information. The eHEALS scores of these participants were similar among men (mean 3.4; SD 0.9) and women (3.5; SD 0.9), and in younger age group categories (50-64 years: mean 3.6; SD 0.8, and 65-74 years: mean 3.6; SD 0.8), but lower in older age group (≥ 75 years: mean 2.8; SD 1.0). eHEALS was lowest in those without a high school diploma (mean 2.8; SD 1.1).

Discussion:

Conclusions: Older adults use electronic resources regularly and express an interest in using technology to improve their health. This supports the development of an interactive mobile app for the management of acute pain in this population.

Dual-Tasking Attenuates Anticipatory Gait Adjustments to Negotiate an Obstacle in Older Adults with Mild Cognitive Impairment: Results from "The Gait & Brain Study"

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Background: Previous research suggested that anticipatory postural control to overcome balance perturbations is impaired in older adults with cognitive decline. However, it is currently unknown how anticipatory gait control to negotiate an obstacle is affected in older adults with Mild Cognitive Impairment (MCI). This study aimed to test whether anticipatory gait control for obstacle negotiation is impaired while facing cognitive challenges, using the dual task paradigm, in older adults with MCI.

Methods: An obstacle negotiation protocol was applied during single and dual-task (counting backwards by 1s from 100 while walking) conditions to control and MCI participants. To assess the anticipatory control behaviour, a 6m electronic walkway embedded with sensors recorded foot prints to measure temporal and spatial gait variables, specifically gait speed and step length variability, during early phase (3 steps before the late phase) and late phase (3 steps before obstacle) before crossing an "ad hoc" obstacle, set at 15% of participant's height.

Results: Seventy nine participants (mean age = 72.0 \pm 2.7 years) were included in this study (controls = 27; MCI = 52). A significant interaction between group and early and late phases ($p=0.01$) revealed that gait speed in the MCI group decelerated less before the obstacle than the control group while dual-tasking. Similarly, step length variability while dual-tasking increased less in MCI before the obstacle ($p=0.05$) compared to controls. Results remained significant after controlling for demographics, physical and medical confounders.

Discussion: Individuals with MCI had attenuated anticipatory gait adjustments to overcome an obstacle while walking and dual-tasking, a strong sign of "posture second" strategy.

Conclusions: Underlying cognitive impairments appear to mediate this obstacle negotiation behaviour and may be a factor for the high risk of falls seen in older adults with MCI.

Comparative Efficacy of Pharmacological and Non-Pharmacological Treatments for Aggressive Behaviours in Dementia: A Systematic Review and Network Meta-Analysis

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Background: Behavioral and psychological symptoms of dementia (BPSD) are commonly treated with pharmacological and non-pharmacological strategies, but their comparative efficacy is unknown.

Methods: We conducted a systematic review of the literature from inception to November 23, 2016, to retrieve randomized trials assessing the efficacy of pharmacological and non-pharmacological treatments for BPSD (PROSPERO: CRD42017050130). Our primary outcome was change in aggressiveness. Studies were retrieved from MEDLINE, EMBASE, PsycINFO, CINAHL, CCTR, CDSR, and DARE. All screening, data abstraction, and risk of bias assessment was completed independently in duplicate. Bayesian shared parameter random-effects network meta-analyses (NMAs) were conducted using vague priors to derive standardized mean differences (SMDs) and surface under the cumulative ranking curves (SUCRA). The NMA model was tested for inconsistency. Exploration of model inconsistency and analyses of secondary outcomes will be completed in February 2018.

Results: 15974 abstracts were screened and 3781 were retained for full-text review. 43 randomized trials (5196 patients) yielded 23 treatments: 8 pharmacological, 14 non-pharmacological, and 1 mixed. Studies were at moderate risk of bias using the Cochrane Risk of Bias Tool. None of the treatments were significantly efficacious against aggression (all SMD credible intervals included zero). Anticonvulsants (91.5%), oxytocin (80.5%), and trazodone (76.3%) had the highest probability of success compared to placebo. Recreation therapy (85.5%), horticulture (82.4%), and tailored activities of daily living (74.7%) had the highest probability of success compared to usual care among non-pharmacological treatments. Anticonvulsants (74%), trazodone (72.7%), oxytocin (71.2%), and horticulture (71.2%) had the highest SUCRA values. Local inconsistency was identified in two network loops.

Discussion: Treatments with the highest probability of success are possible options against aggression.

Conclusions: Further studies are needed given our limited success against treating aggression in patients with dementia and the impact of symptoms on patients and caregivers.

The Use of Videoconferencing to Enhance Hospital Discharge Planning in Older Patients

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Background: Occupational therapists (OTs) need to perform a home assessment prior to hospital discharge to provide recommendations (ex.: assistive devices) that promote the independence of older adults. Studies have shown that home visits improve performance in activities of daily living and safety. However, due to the cost and time required, home visits are not usually performed before discharge, in Quebec. Technology such as videoconferencing thus appears as an innovative option to assess the patient's home environment, and to provide appropriate OT recommendations from the hospital. Objectives: 1-To document the feasibility of using videoconferencing (Ipad + Skype) to perform a home assessment prior to discharge; 2-To generate pilot data about OT recommendations, with and without the use of videoconferencing.

Methods: 30 participants are being recruited. Based on a mix-method design, home environment is first assessed through standard procedure (interview) and then by videoconferencing (interview + electronic tablet), with the help of the caregiver in the patient's home. Data collection aims to compare the benefits of using videoconferencing as opposed to only the standard procedure.

Results: Preliminary data (n = 11) revealed feasibility issues regarding the short length of hospital stay, and with digital devices (ex.: lack of access to a mobile network).

Discussion: Our results suggested that some clinical units (ex.: Intensive Functional Rehabilitation Unit) seem to be more favorable to the use of videoconferencing. Some of the occupational therapists added or modified their recommendations following the videoconference. Patients and caregivers perceive videoconferencing as an added value and appreciate the immediate interaction and recommendations made by OTs.

Conclusions: Videoconferencing may be a familiar and easy solution for many caregivers, providing a promising and inexpensive option to promote home assessment upon hospital discharge.

HIP Mobile: A Community-Based Monitoring, Rehabilitation and Learning E-System for Patients Following a Hip Fracture

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Background: Following a hip fracture, most patients do not return to pre-fracture autonomy level. e-Health solutions incorporated within homecare rehabilitation may lead to better outcomes and reduce cost to the healthcare system. Our objective is to enable recovery and improve quality of life following a hip fracture through the development and implementation of the HIP Mobile e- Monitoring and Coaching system.

Methods: Our interdisciplinary team partnered with Greybox Solutions for the development of the HIP Mobile technology. A trial was initiated to determine if this technology is more effective at improving in mobility in with a recent hip fracture than a printed material support program.

Results: HIP Mobile is an e-Monitoring and Coaching support program, comprised of a wearable sensor- a smart insole for the shoe- with a tablet based app interface and a secure cloud based remote monitoring dashboard. Expert educational content (user guides, 6-level exercise program to be followed at home, and post-intervention exercise program), exercise-tracking algorithms and a patient-oriented interface have been piloted, validated and formatted for the electronic and printed versions and translated in French. Recruitment is ongoing for a randomized clinical trial with parallel groups with the primary outcome of functional mobility (as measured by gait speed and 30-second sit-to-stand activity) 6 months following hip fracture. Patient-reported outcomes and place of residence have been collected throughout the trial and persistence of effect will be determined at 12 months.

Discussion: Our interactive HIP Mobile e-system encourages active engagement in the rehabilitation process following a hip fracture and has the potential to improve functional mobility and autonomy at reduced costs.

Conclusions: If successful, such technology could be harnessed towards a variety of rehabilitation processes.

Preliminary Study – Is Proton Pump Inhibitor (PPI) Deprescribing Appropriate for All Patients?

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Background: Deprescribing reduces medication burden and harm while maintaining or improving quality of life. PPIs are

one of the most commonly prescribed medications; however, where there is no clear ongoing indication, it is prudent to consider deprescribing. Concerns regarding occurrences of gastrointestinal bleed (GIB) subsequent to PPI deprescribing were identified. The objective was to assess appropriateness of PPI deprescribing in patients admitted to the complex continuing care (CCC) unit.

Methods: Charts of 10 reported cases of adverse events after PPI deprescribing, were retrospectively reviewed and appropriateness of PPI deprescribing was assessed using the deprescribing guidelines.

Results: All patients were admitted from acute care with an average age of 76 years old and had either a feeding- tube, tracheostomy, or both. Three patients were not candidates for deprescribing as previous symptoms of GIB such as hematemesis or melena were reported. In 2 cases appropriateness of deprescribing was unclear, as the indication for the PPI was uncertain. Deprescribing was appropriate in 5 cases.

Discussion: The results indicate that there may be a lack of consistency in applying deprescribing guidelines, since one of the criteria for ongoing PPI use is documented history of bleeding GI ulcer. PPI deprescribing guidelines may not be equally applicable to older patients in different healthcare settings, as in cases whereby deprescribing was appropriate, adverse effects were observed.

Conclusions: The results of this preliminary chart review can be hypothesis generating for future larger studies in this topic for evaluation of safety and effectiveness of PPI deprescribing in frail older adults admitted to CCC or long-term care settings with multiple comorbidities, complex medication regimens, and presence of feeding tubes.

Cognitive Performances Are a Better Predictor of Falls than Mobility Assessment in Older People With Fear of Falling

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Background: Fear of falling (FOF) is a major health problem for more than 50% of the older adults. The aim of this study was to determine if there is a link between cognition and/or mobility performances and falls in people with FOF.

Methods: Twenty-six older adults with FOF participated in this study. Neuropsychological and mobility assessments were performed focusing on various cognitive functions and aspects of mobility. Information about falls occurring

during the year prior the inclusion was collected. Logistic regression analyses were performed to explore the association between past falls and the presence of cognitive and mobility impairments. Then analyses were performed to explore the association between fall and specific cognitive function or specific aspects of mobility.

Results: No differences in age (74.6 vs 76.4 years), gender (93% vs 82% women), level of education (4.4 vs 4.4) or body mass index (29.6 vs 25.5) were detected between fallers and non-fallers. Past falls were related to cognitive performances ($p < .038$; $R^2 = 24.7$) and mobility scores were not significant predictors. Among specific functions, visuospatial skills distinguished between fallers and non-fallers ($p = .027$; $R^2 = 25.8$). Other specific cognitive functions and aspects of mobility were not significant predictors.

Discussion: In older people with FOF, the main factor related to falls is cognitive impairment, and more particularly visuospatial skills. Although the number of participants and variables in the models tested here are valid, replication of these results on a larger sample, and especially older people without FOF, would help further understand the complex interaction between cognition, mobility and FOF.

Conclusions: Cognition seem to play a more important role than mobility in the occurrence of falls in this population and should be a primary target in fall prevention interventions.

Frailty Index in Older Adults (>50 Years) Living with Human Immunodeficiency Virus (HIV)

Jacqueline McMillan, Hartmut Krentz, John Gill, David Hogan. University of Calgary.

Background: With the widespread use of antiretroviral therapy, individuals are living longer with HIV. At the Southern Alberta Clinic (SAC) in Calgary, Alberta, 48% of patients receiving care, and over 10% of those newly diagnosed each year, are over 50 years of age. Persons Living With HIV/AIDS (PLWHA) are at greater risk for age-related conditions such as frailty. Frailty has been identified at younger ages in individuals with HIV than in non-infected individuals, however the instrument most commonly used has been the Frailty Phenotype. The Frailty Index has only recently been introduced in the HIV literature. The aim of this study was to calculate a Frailty Index for adults over 50 years receiving HIV care at SAC.

Methods: We calculated a Frailty Index for each of the 712 patients who were over 50 years of age during the period November 1, 2016- October 31, 2017. The index included 32 variables, modeled after the Frailty Index used in an HIV cohort in Modena, Italy.

Results: The mean Frailty Index for patients > 50 years of age was 0.35 (standard deviation 0.11), the median was 0.34 (interquartile range: 0.28 to 0.41). Frailty Index values ranged from 0.094 to 0.656.

Discussion: The mean Frailty Index at SAC was 0.35 which is similar to PLWHA in Modena, Italy. The Frailty Index values observed are higher than would be expected in a non-HIV population of a similar age. The prevalence of frailty in PLWHA is greater, and manifests earlier, than in non-HIV populations.

Conclusions: Health care providers should be aware of the increased risk of frailty in PLWHA, in particular its earlier occurrence. This knowledge may guide the care of PLWHA who are experiencing the welcome success of ART and increasing life-expectancy.

Underrepresentation of Elderly Patients in Antiepileptic Drug Trials: A Systematic Review and Meta-Analysis

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Background: While disease burden and consumption of prescription drugs increase with age, elderly are frequently underrepresented in drug trials. It is unclear if cohorts enrolled in randomized controlled trials (RCTs) of antiepileptic drugs (AEDs) are representative of patients seen in daily practice. We performed a systematic review to analyze age representation trends over time in AED trials and to assess trial design elements as possible barriers to enrollment of elderly participants.

Methods: We searched MEDLINE, EMBASE, and PsycINFO, and meta-analyzed demographic data of cohorts enrolled in RCTs of AEDs published since 1991. Data analysis included trends of age representation over time and trial design elements associated with average age of enrolled cohorts.

Results: We identified 187 studies ($n = 48,077$). The mean age of participants enrolled increased steadily from 27.0 years (SD 5.7, range 21.0 to 38.4) in 1991–1992, to 41.9 years (SD 11.4, range 28.8 to 71.4) in 2015–2016 ($r = 0.868$, $p < 0.0001$). Maximum age limit for inclusion was present in 83 trials (44%). There was no significant decrease in the use of upper age limit over time ($r = 0.072$, $p = 0.8161$). Among the eligibility criteria assessed, exclusion of neurological conditions other than epilepsy was associated with a significant

reduction of the average age of enrolled cohorts (-2.1 years, 95% CI -4.1 to -0.1).

Discussion: Despite a progressive increase in the average age of participants enrolled in AED trials over time, elderly patients are still largely underrepresented. Older participants are frequently excluded from AED trials because of their age or comorbidity.

Conclusions: Successful strategies to increase representation of elderly patients in these trials will likely need to involve significant protocol modifications of eligibility criteria.

Major Neurocognitive Disorders and Delayed Discharge

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Background: Delayed Discharge, Alternate Level of Care, and Bed Blocking are among the expressions used to describe the situation experienced by patients who are perceived to be medically stable, but are not discharged. Older adults with symptoms of minor or major cognitive disorders (MCD) are more likely to experience delayed discharge; it has thus been hypothesized that MCD, or related behaviours, may affect the ability to secure home care or placement after hospitalization. This scoping review aims at finding scientific evidence about the influence of MCD on hospital length of stay (LOS) and on the inability to secure home care or placement at discharge.

Methods: Six bibliographic databases were searched for studies published in English, French or German, since 1997, and exploring reasons/factors associated with hospital LOS. Two reviewers independently screened the identified references according to inclusion (primary data on middle age or aged inpatients experiencing delayed discharge) and exclusion (intellectual disabilities, end-of-life or palliative care, no factors reported) criteria. Reference lists of relevant review articles and of included studies were screened for additional references.

Results: The databases search yielded 5574 references. After removal of multiple copies, the titles and abstracts of 3302 references were screened, 402 references were retained for full-text screening and 139 studies were included. Preliminary analyses show that ten studies dealt specifically with hospital LOS and MCD while nine studies investigated placement issues.

Discussion: It has been proposed that adequate home care services and more spaces in nursing homes may alleviate the problem of delayed discharge for inpatients with MCD.

Conclusions: At the moment, there is very little evidence from studies that have actually tested these propositions.

The Use of Cognitively Enhancing Medications to Improve Gait and Reduce Falls in Older Adults: A Systematic Review and Meta-Analyses

Benjamin Lee, Manuel Montero-Odasso. University of Western Ontario.

Background: Older adults with dementia have impairment in gait and are at significantly higher risk for falling than their cognitively intact peers. Gait central control had previously been thought to be an automatic process; however, emerging evidence shows that requires significant cognitive resources. Thus, it has been postulated cognitively enhancing medications (e.g. cholinesterase inhibitors) will improve gait and reduce falls. This systematic review and meta-analysis examines the impact of cognitively enhancing medications on gait and falls in older adults.

Methods: A systematic review of the literature using PUBMED, MEDLINE, EMBASE and COCHRANE databases was conducted using the following keywords and MeSH terms: cholinesterase inhibitors, donepezil, galantamine, rivastigmine, memantine, methylphenidate, gait, balance, mobility, mobility limitation, walking speed, falls, accidental falls, posture, postural balance, postural stability.

Results: 659 studies were identified. After removing duplicates, 513 studies were appraised by title. From them, 21 studies were selected based on inclusion and exclusion criteria. 6 studies examined cholinesterase inhibitors in MCI/AD. 3 studies examined memantine in AD. 4 studies examined of cholinesterase inhibitors in PD. 2 studies examined methylphenidate in cognitively normal older adults. 5 studies examined methylphenidate in PD.

Discussion: The studies of cholinesterase inhibitors in Alzheimer's disease yielded mixed results. However, they were small or of inferior quality and it is difficult to draw any conclusions. Larger randomized studies are required. Cholinesterase inhibitors consistently reduced falls in non-demented patients with Parkinson's disease. A meta-analysis of 3 studies revealed a standardized mean difference of -0.76 (95% CI -1.02 to -0.51). Only one of the studies measured gait, but did show improvement in gait parameters.

Conclusions: Our systematic review provides evidence class IB that cholinesterase inhibitors reduce falls in patients with Parkinson's disease.

Clinical Information Needs in Geriatric Long-Term Care: Protocol of a Canadian National Assessment Study

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Background: Timely and efficient access to clinical information presents an ongoing challenge to long-term care (LTC) physicians and nurses, especially when information is required urgently. In Quebec, for example, LTC facilities (LTCFs) lack electronic records and rely primarily on paper medical charts to access clinical information, while electronic standardized assessments are implemented in other provinces. The overall aims of this study are to 1) describe the clinical information needs of physicians and nurses working in LTCFs across Canada during episodes of acute patient decline and to 2) assess where information gaps exist, and how they affect the quality of care in this setting.

Methods: A two-phase explanatory, sequential mixed methods design will be employed. Phase I will consist of an online survey that will be sent to a random sample of 800 LTCFs across Canada. The survey will ask physicians and nurses to assess how clinical information is used, disseminated, required, and efficiently available for the purposes of clinical decision-making. In Phase II, 20 survey participant volunteers will be interviewed to assess the barriers and facilitators associated with efficient access to clinical information in their daily practice.

Results: We expect that efficient availability of clinical information will vary by facility-level (e.g. geographic region, accreditation status) and respondent-level (e.g. profession) characteristics.

Discussion: Clinical information that is not efficiently available when needed may impact the quality of medical and nursing care provided to Canada's institutionalized elderly.

Conclusions: Our results are expected to provide novel findings that will be useful to decision-makers at all levels in the development of policies pertaining to both LTC information systems and LTC quality of care in Canada.

Describing Management Patterns in Community-Dwelling Older Adults with New Presentation of a Sleep Disorder

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Background: Sleep disturbance is associated with increased use of health care services, including starting prescription sleep aids (PSAs). Older adults are particularly vulnerable to the adverse effects of PSAs. Existing studies describe PSA prescribing over time but do not describe the initial management of sleep disorders, nor do they explore differences between women and men.

Methods: Design: Population-based observational cohort study in community-dwelling adults aged 66 or older between 2014-2016. Data Sources: multiple, linked healthcare databases at the Institute for Clinical Evaluative Sciences, Ontario, Canada. Eligibility Criteria: Primary inclusion - those with a new diagnosis of sleep disorder in the last 1 year based on Ontario Health Insurance Plan diagnostic code 307. Primary exclusion - Those dispensed a PSA within the prior 60 days prior to the index date. We will explore those treated initially with a PSA, are investigated for sleep disorders, or have counselling or other follow up.

Results: Results are forthcoming. We will provide information using the estimated 1.8 million older adults in Ontario. Results will describe if a prescription for PSA was filled within 1 month of diagnosis and current PSA prescribing trends with a focus on sex differences.

Discussion: Given the substantial adverse profiles of PSAs, initial management should consist of non-pharmacological interventions (ie sleep hygiene techniques). It is unclear if this is common practice in the primary care setting. Our study will provide descriptive information on how sleep disorders are managed at initial presentation.

Conclusions: Understanding current trends will help identify if older adults are likely to be started on potentially inappropriate PSA and sex differences. Reflecting on these trends will help inform future practice with an aim to improve health outcomes for older adults.

Advanced Age and Cerebral Co-pathology Are Major Factors for Clinical Misdiagnosis in Frontotemporal Lobar Degeneration

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Background: Despite improved current diagnostic criteria and recent advances in investigational tools, frontotemporal lobar degeneration (FTLD) is frequently misdiagnosed

clinically. We aimed to identify potential factors associated with inaccurate clinical diagnosis in pathologically proven cases of FTLD.

Methods: Pathologically proven FTLD cases were identified through the Sunnybrook Dementia Study, an ongoing longitudinal study. These included neuropathological diagnoses of corticobasal degeneration (CBD), progressive supranuclear palsy (PSP), and frontotemporal dementia (FTD). Identified cases were dichotomized into whether the initial clinical diagnosis was concordant or discordant with autopsy results. Data analysis included exploration of potential factors contributing to erroneous diagnosis, such as demographic, clinical, and neuropsychological variables, as well as brain imaging and autopsy findings.

Results: Fifty-three cases of pathologically proven FTLD were identified: 11 CBD, 15 PSP, and 27 FTD. Discordant clinico-pathological diagnosis occurred in 29 subjects (55%): 7 with CBD (64%), 11 with PSP (73%), and 11 with FTD (41%). Misdiagnosed subjects were commonly mistaken for other FTLD disorders (15 cases, 52%) or with Alzheimer's disease (9 cases, 31%). Factors for discordant clinico-pathological diagnosis included age of onset ≥ 70 years (OR: 5.35, 95%CI: 1.31 – 21.90), age at assessment ≥ 70 years (OR: 7.22, 95%CI: 2.07 – 25.14), and presence of concomitant neurodegenerative pathologies or vascular findings at autopsy (OR: 3.45, 95%CI: 1.16 – 10.29).

Discussion: Several variables have been found to affect the initial clinical diagnostic accuracy. FTLD with later onset may be underrecognized and underappreciated by clinicians. Increased occurrence of atypical presentations, concomitant central nervous system diseases, and comorbidities with advanced age may also blur the clinical picture of FTLD.

Conclusions: Initial misdiagnosis of patients with FTLD disorders was frequent in our case series. Caution is needed when assessing older patients with a possible neurocognitive disorder.

Feasibility of Implementing the G8 Screening Tool in Oncology Clinics at a Community Hospital

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Background: Comprehensive geriatric assessment (CGA) in older oncology patients identifies issues not detected in standard history and physical exam, optimizes non-oncologic issues, detects geriatric variables with prognostic significance, influences chemotherapy decisions and improves chemotherapy tolerance. The G8 is an evidence-based

screening tool to triage who should receive a CGA. Primary objective: To determine the feasibility of administering the G8 to patients ≥ 70 years in hematology clinics at a community hospital. Secondary objectives: To determine the proportion of individuals with an abnormal G8 score and proportion of individuals with an abnormal score who received a CGA.

Methods: Patients ≥ 70 years seen in hematology clinics at the Michael Garron Hospital (November 2016 and June 2017) with a malignancy were eligible for screening. An electronic medical record embedded (EMR) G8 was administered by the hematologist and CGA referral was made at the discretion of the hematologist. Retrospective chart review was used to calculate the proportion of screened patients, proportion of screened patients with abnormal G8 score, and proportion of patients with an abnormal G8 who received a CGA.

Results: 114 patients were seen of which 19 had a malignancy. The G8 was completed in 9 eligible patients (47%). Among those with a completed G8, 8 (89%) had an abnormal score. Of these 7 (88%) received a CGA and of these 14%, 14%, 29%, and 14% respectively were seen by a physiotherapist, occupational therapist, social worker and dietician.

Discussion: Next steps include elucidating the facilitators and barriers to uptake of the G8 tool.

Conclusions: Despite an EMR embedded G8, the implementation rate at a community hospital was lower than in neighboring academic centers. However, rate of CGA completion in patients with an abnormal G8 score was superior.

Assessment of Elder-Friendly Emergency Department Care from the Perspectives of Frontline Physicians and Nurses in Two Quebec Cities

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Background: Emergency departments (EDs) are organizing their processes to meet the needs of older patients. We aimed to assess the extent of elder-friendliness in EDs according to frontline staff.

Methods: 4 Quebec urban EDs were purposefully selected for the in-depth phase of a multisite mixed-methods study. Randomly selected frontline physicians and nurses were invited to complete a survey reflecting the elder-friendly ED assessment tool (McCusker 2017). We calculated mean (SD) total scores

(0 to 61) and individual scores on 11 subscales (high-risk screening, care protocols, geriatric team, multidisciplinary, discharge planning, family-centered discharge, physical design, furniture/equipment, staff education, administrative data monitoring, quality improvement). For each informant category, one-way ANOVA test was performed to compare the mean scores of 4 EDs. Telephone interviews with purposefully selected participants explored current best practices and areas for improvement. We conducted a deductive thematic analysis using the 11 subscales as a framework.

Results: 38 nurses and 36 physicians completed the survey (83% response rate). Nurse-reported mean (SD) total score was significantly lower ($p < 0.01$) for one ED [22.9 (7.4)] than other EDs [37.4 (9.4); 34.2 (6.7); 36.6 (10.3)], particularly on screening, protocols, and staff education. Overall, physician-reported total scores were similar in 4 EDs ($p = 0.812$). Among the subscales, only multidisciplinary score was similar across 4 EDs according to both nurses and physicians. Findings from the interviews with 7 nurses and 6 physicians corroborated and provided a deeper understanding of the quantitative results

Discussion: Relationships between elder-friendly ED scores and characteristics of EDs and participants (ED work experience, perceived quality and importance of geriatric care) will be analyzed and discussed.

Conclusions: Some geriatric ED services still need to be improved. The barriers and facilitators to adoption of elder-friendly ED care should be explored.

Community Paramedicine: Addressing Lift-Assists After Falls in London, Ontario's Geriatric Population: A Prospective Business Case Analysis

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Background: A "lift-assist" (LA) occurs when paramedics assist individuals who have fallen up into a mobile position without providing further medical attention or transport to hospital. In 2016, Middlesex-London Paramedic Service (MLPS) responded to 1,767 LAs totaling 56 days of ambulance use, a 9.78% increase from 2015. Falls resulting in LAs go unaddressed, are early warning signs of health decline, and ultimately result in increased emergency department visits and hospital admissions.

Methods: This project presents the benefits of enrolling 272 repeat LA callers, representing 66.5% of LAs in London,

into MLPS' existing digital health monitoring program. The program emphasizes patient advocacy and fall prevention through staffing two expanded scope paramedics. Specialized training in geriatric assessment will help mitigate future fall risk by identifying the acute and chronic conditions that drive LAs. The team will respond to detected LAs from 7AM-7PM, 7 days/week, capturing 55% of MLPS' LAs. A dedicated non-emergent vehicle with safe lifting equipment reduces paramedic injury risk and increases availability of ambulances for other calls. The "Circle of Care" platform connects in-home Bluetooth biometric data collection devices with geriatric healthcare professionals to improve LA patient care coordination.

Results: An economic analysis of future LAs reveals that deployment of a non-emergency vehicle could reallocate 23 days of ambulance use and save \$109,319 within MLPS. Reduced emergency department visits and hospital admissions could further reallocate \$168,510 within the healthcare system.

Discussion: Projected results demonstrate cost savings and an improvement in geriatric patient quality of care. Additionally, this project aligns with Ontario's goal to proactively address chronic illness through in-home patient treatment.

Conclusions: This solution reduces healthcare costs and improves quality of care related to falls within London's aging population.

Psychosocial Predictors of Three-Year Incidence of Fear of Falling in the Elderly: Understanding the Role of Depression, Personal Mastery and Social Support

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Background: Fear of Falling (FF) is a major concern in older persons. It is a predictor of future disability as well as falls in this population. Cross-sectional analyses have identified determinants of FF, however, few longitudinal studies have examined potential predictors of incident FF. Purpose: We examined the ability of depression, personal mastery and social support to predict 3-year incidence of FF in older persons.

Methods: InCHIANTI study participants ($n = 350$) aged ≥ 65 years, cognitively intact and exhibiting no FF at baseline were included. FF was measured at baseline and at 3-year follow up using the Survey of Activities and Fear of Falling in the Elderly (SAFE). At baseline, depression (Epidemiological Studies Depression scale, CES-D), personal mastery (Pearlin and Schooler Mastery Scale, PSMS), several variables of social support, demographics and other potential confounding variables were measured.

Results: In the fully adjusted logistic regression model poor availability of people defined as ≤ 2 people completely available to the participant (OR 1.894, C.I. 1.164-3.081; $p=0.010$) and low personal mastery defined as PSMS scores ≤ 24 (OR 2.44, C.I. 1.365-4.373; $p=0.003$) were significant predictors of incident FF. CES-D score was not predictive of the incidence of FF. In the fully adjusted linear regression analysis depression, social support and personal mastery were not significantly associated with severity of incident FF. However, after stratifying by availability of people, lower personal mastery score was a significant predictor of higher FF in the low availability (i.e. ≤ 2 people completely available) group ($p=0.030$).

Discussion: N/A

Conclusions: Older persons with low availability of personal support and low personal mastery scores should be closely monitored by health care professionals for the incidence of FF.

Impact of Exercise Training and Protein Supplementation in Improving Intensity of Physical Activity in Frail Elderly Women

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Background: Frailty is a clinical condition in aging populations associated with loss of muscle mass and strength with decreasing activity. Numerous studies have shown that adequate protein intake and resistance exercise increase muscle mass and performance in aged muscle, but none have yet investigated how a high-intensity progressive resistance training (HIPRT) program combined with adequate protein intake could increase daily activity levels in pre/frail elderly women.

Methods: Thirteen pre/frail women (78 ± 1.9 y, 24.5 ± 1.1 kg/m²) wore an ActiGraph GT3X+ accelerometer on their waist for 3 consecutive days before and again during a 12-week whole-body HIPRT intervention with adequate dietary protein (1.2 g/kg/d). ActiLife v6.13.2 Data Analysis Software was used to extract the data according to activity intensity and kcal expenditure. A paired t-test assessed differences in activity ($\alpha \leq 0.05$).

Results: A significant increase in %moderate activity was observed pre-to-mid intervention ($1.4\% \pm 0.3\%$ vs $1.8\% \pm 0.3\%$, $p=0.047$) which was reflected in average moderate-to-vigorous physical activity per day (21.4 ± 4.7 min vs 28.5 ± 4.2 min, $p=0.027$). No differences were seen in any other parameters (average kcal per day, %Sedentary, %Light, %Vigorous, average light-moderate-vigorous physical activity per day).

Discussion: A HIPRT program significantly increases the proportion of time spent in moderate intensity activity, with no alterations in total energy expenditure, other levels of activity, or sedentariness. Whether these gains in moderate activity between pre and mid intervention translate to significant improvements in functional status is yet to be determined in the current study (in progress).

Conclusions: A HIPRT program is conducive to increase moderate intensity activity in pre/frail women. Additionally, future analysis of the participants' daily activity may show that the improvements in functional capacity are sustained long-term post-intervention.

The Development and Implementation of an Online Platform for Geriatric Medical Education

Jessica Ashbourne, Brendan Lew, Graham Campbell, Andrew Costa. McMaster University, Waterloo Regional Campus.

Background: The McMaster Passport for Education on Ageing (MacPAGE) is an online program that is undergoing implementation at McMaster Medicine's Waterloo Campus. The aim of this quality improvement initiative is to increase knowledge about and promote positive attitudes toward the growing aging population. A survey of local medical students showed that only 15% had adequate exposure to geriatrics or felt prepared to provide care to older adults.

Methods: Pillars of geriatric education (lectures/conferences, interprofessional events, clinical encounters, volunteer/outreach, online learning, and research) were identified. Students, staff, and administration worked independently to complete an environmental scan. Lists of available geriatrics-related opportunities were created under each pillar. To assess change in students' knowledge/attitudes, pre- and post-surveys were developed. The knowledge component was adapted from the core competencies in the care of older persons for Canadian medical students by the Canadian Geriatrics Society. The attitudes component was adapted from the Geriatrics Attitude Scale.

Results: Students will complete experiences chosen from the lists developed during the environmental scan. Reflections written by participants about each experience will be thematically analysed. This process evaluation will help illuminate the strengths of and gaps in the passport. It will be further refined based on feedback from participants on acceptability and feasibility.

Discussion: By becoming engaged in aging-related activities, students will be exposed early on in their medical training to

the unique complexities of geriatric medicine. This exposure is the first step in improving awareness of the needs of older adults among future physicians.

Conclusions: MacPAGE will help fill a gap in geriatric medical education and better prepare students for careers in which they will frequently encounter and care for older adults.

An Atypical Case of Rapidly Progressive Dementia

Allison Pridham, Kimberly Babb. Memorial University of Newfoundland.

Background: Rapidly progressive dementias are a rare subset of dementia syndromes characterized by acute onset of functional impairment that quickly deteriorates. It is important to have an approach to diagnosis and workup of these diseases as it has implications in both prognostications and treatment for these patients. The following case highlights the atypical presentations that can occur and highlights the importance of follow-up and maintain a broad differential diagnosis.

Methods: The following presentation is a case report.

Results: A 72 year old man living home with his wife presents to the outpatient Geriatric clinic following a protracted in hospital complicated by delirium. The patient meets diagnostic criteria for a slow resolving delirium and is scheduled for follow-up. Before the patient returns his wife calls with concerns of odd behavior, significant impairment in activities of daily life. The patient is admitted to hospital for workup of a rapidly progressive dementia and later diagnosed with Creutzfeldt-Jacob Disease (CJD) on autopsy.

Discussion: There is great importance in correctly diagnosing a rapidly progressive dementia as this requires rapid evaluation for underlying cause and subsequent treatment plan. As illustrated in this case they presentation can be atypical and it is important to keep a high index of suspicion if a patient fails to improve or rapidly deteriorates while on prescribed therapy.

Conclusions: This case of Creutzfeldt-Jacob Disease was atypical in presentation in that a non-resolving delirium was the initial presenting symptom. When the delirium worsened alternative diagnoses needed to be considered. This case highlights the importance of maintaining a broad differential diagnosis because the presentation of rapidly progressive dementias (specifically CJD) may be atypical or confounded by other medical conditions.

Defining Clinically Important Differences in Frailty: Results From Community-Dwelling People and Emergency Department Patients

Robert J.A.H. Eendebak, Olga Theou, Alexandra M. van der Valk, Judith Godin, Kenneth Rockwood. Dalhousie University.

Background: Clinically important differences (CIDs) in the frailty index (FI) have yet to be defined. Our goal was to establish CIDs in FI levels in community-dwelling people and Emergency Department (ED) patients.

Methods: We used cross-sectional data from The Survey of Health, Ageing, and Retirement in Europe (SHARE) [n = 30680, median age and range: 63 [50 – 104] years] and ED patients referred to Internal Medicine at the QEII hospital in Halifax, Nova Scotia (n = 800, median age and range: 81 [57 – 103] years). FIs were constructed in both datasets using items regularly collected in comprehensive geriatric assessments; 44 items for SHARE and 56 items for the ED cohort. Minimum, moderate and large CIDs in the FI were defined based on Cohen's effect size and bootstrapping analysis.

Results: In the SHARE cohort, the minimum CID in the FI was 0.02 [95% CI: 0.02, 0.02] and the moderate and large CIDs in the FI were 0.06 [95% CI: 0.06, 0.06]) and 0.10 [95% CI: 0.09, 0.10]. In the ED cohort, the minimum CID in the FI was 0.03 [95% CI: 0.03, 0.03] and the moderate and large CIDs in the FI were 0.07 [95% CI: 0.07, 0.07]) and 0.11 [95% CI: 0.11, 0.12], respectively. Results were similar when stratified by age and gender.

Discussion: The two cohorts showed similar clinically important differences in frailty index scores. These remained similar after stratification by age and gender. Our results require validation in additional cohorts employing both cross-sectional and longitudinal designs.

Conclusions: The CIDs in the FI may prove valuable for understanding the mechanisms underlying ageing. They can improve assessment of the efficacy of therapeutic interventions for frailty, as these become more routine.

Driving and Dementia Self-Learning E-Module: How to Navigate a Difficult Conversation, While Enhancing Physician Comfort and Ensuring the Safety of Older Drivers

Kathryn Bezzina¹, Anna Byszewski¹, Frank Molnar¹, Peter Kuling¹, Gary Naglie², Derek Lanoue³. ¹The Ottawa Hospital, ²Baycrest Health Sciences, ³University of Ottawa.

Background: For persons living with dementia (PLWD), the loss of driving privilege may be perceived as worse than a

cancer diagnosis. Primary care physicians (PCPs) routinely include driving assessments of their patients with cognitive impairment, however PCPs are often quite uncomfortable with the conversations surrounding this issue, leading to avoidance, lack of patient satisfaction and a decreased therapeutic alliance. Knowledge and skills are crucial in discussing the sensitive topic of driving cessation. While there are readily available resources to enhance physician knowledge regarding how to assess and report upon fitness-to-drive, no tools presently exist which promote the development of crucial physician communication skills to navigate this challenging conversation. A tool that could improve this process and enhance communication skills would serve to provide best practice in this challenging area of dementia care, as well as to improve the safety of drivers at large.

Methods: The authors have previously developed an electronic self-learning module (eSLM), the content of which has been pilot-tested with medicine trainees to ensure internal validity. We will aim to establish external validity of this tool with fifty PCPs whose practice involves discussions around driving cessation with PWD in Ottawa, Ontario.

Results: Over a six month period, participants will be asked to complete our online eSLM, and to complete pre- and serial post-eSLM questionnaires which will enable us to acquire both qualitative and quantitative data to improve upon this current void in physician training.

Discussion: Our tool could have broad implications in informing future training resources for physicians, improving patient and caregiver experience and care in PLWD, as well as improve upon road safety for drivers at large.

Conclusions: Please see above.

Applying Best Practices in Resident Selection: a Quality Improvement Project for the Dalhousie Geriatric Medicine Program

Alison Rodger, Ian Epstein, Glen Ginther. Dalhousie University.

Background: Applicant selection for postgraduate residency programs is important and challenging, and significant variation exists between programs. A quality improvement project was completed to review the selection practices of the Dalhousie University Geriatric Medicine Program with the objective of developing a standardized, fair and transparent process.

Methods: The best practice recommendations as outlined in the Best Practices in Application and Selection (BPAS) (Bandiera et al., 2013) were used as a framework to evaluate

the current selection process. The Program's current selection process was evaluated through review of relevant documents and discussions with the Program Director.

Results: The Program's selection process fulfilled, at least partially, many of the BPAS best practice recommendations, particularly in the areas of process and assessment. Several components were identified as areas of weakness, such as transparency, fairness, knowledge translation and ranking.

Discussion: In response to the results, Program specific selection process goals were developed. A file review template was created to better reflect desired candidate attributes and selection goals. To better standardize applicant evaluation, a file reviewer guide was created. Changes to the current interview structure were not deemed necessary. The outcomes of this project will improve the Dalhousie Geriatric Medicine selection process to ensure it is fair, transparent and consistent and that it better reflects current best practices.

Conclusions: Transparency, fairness, knowledge translation and ranking were the main areas of weakness identified in this review. This project led to the development of program-specific documents and protocols for applicant selection process as a way to address these weaknesses. The results of this review can be useful to other postgraduate programs undergoing evaluation of their selection practices.

Antipsychotic Use, Time-to-Death and Mortality in the Elderly

Jason Randle, George Heckman, Mark Oremus, Joanne Ho. University of Waterloo.

Background: Antipsychotic medications are routinely prescribed to older adults residing in long-term care facilities for the management of the personal expressions of dementia, despite limited evidence for its efficacy and safety in this population. Current knowledge on the role of antipsychotics and increased mortality risk is mixed. This paper attempts to synthesize this evidence in order to clarify the association between antipsychotic use, time-to-death after treatment initiation, and mortality in older adults.

Methods: Systematic narrative review Scoping Review

Results: 23 (80%) of reviewed studies indicated that the use of an APM conferred an increased risk of all-cause mortality. This risk is highest within 40 days of antipsychotic initiation. Conventional antipsychotics confers a greater risk of all-cause mortality than do atypical antipsychotics across all included studies.

Discussion: Both atypical and conventional antipsychotics appear to increase mortality risk, but this risk is greatest within 40 days of antipsychotic initiation. This finding may indicate that the increased mortality risk may be due to an underlying health condition, or change in health status, rather than an idiosyncrasy of the drug itself. However, most of these studies are poor quality and so more rigorous research is required to fully elucidate the association between antipsychotic use and increased mortality risk.

Conclusions: Antipsychotic medication use increases mortality risk for older adults in residential care. Conventional (first-generation) antipsychotics appear to confer a higher risk than atypical (second-generation) antipsychotics. This risk appears to be higher within 40 days of antipsychotic initiation and this risk tends to decline over longer treatment duration.

Prevalence and Incidence of Delirium in Older Adults Admitted with Burn Injuries to the Burn Intensive Care Unit

Jawid Darvesh, Dov Gandell. University of Toronto.

Background: With an aging population, the number of older-adults admitted to specialized burn units in Canada is increasing. Older-adults with burns, experience delirium and other geriatric syndromes associated with functional decline, increased length of stay, and mortality. The older-adult population is not well characterized in the burn literature. We aimed to characterize a cohort of older-adults (≥ 65) admitted to the Ross Tilley Burn Centre at Sunnybrook Health Sciences Centre, Toronto, ON, between March 1st, 2017 and March 1st, 2018.

Methods: The sample size is estimated to be 35 patients. Baseline demographic characteristics, Charlson Comorbidity Index, cognitive/functional status, Rockwood Clinical Frailty Scale (FCFS), psychotropic medications, and discharge disposition will be determined. The primary outcomes will be the incidence and prevalence of delirium. The secondary purpose will be to evaluate the nature and adherence to recommendations from a geriatric consultation service implemented during this period.

Results: Preliminary data revealed 20 older-adults admitted to the burn unit between March 1st, 2017, and December 8th, 2017. The average age was 72.4 years. Prior to admission, 85% resided at home, 10% presented from long term care, and 5% lived in retirement homes. Mean RCFS score was 3.8. Only 25% of patients were discharged home. The majority, 75%, were repatriated or discharged to rehabilitation facilities. Data on the incidence and prevalence of delirium and the effect of geriatric consultation will be abstracted and completed by the end of March 2018.

Discussion: A better understanding of older-adults with burns, including the incidence and prevalence of delirium will help to inform quality-improvement initiatives and educational efforts.

Conclusions: Characterization of the nature and adherence to recommendations by a geriatric consultation service will help improve care in this vulnerable patient population.

Questions of Life and Death

Félix Pageau¹, Pierre Jacob Durand¹, Julie Castonguay², Luc Bégin¹. ¹Université Laval, ²Centre d'excellence en vieillissement de Québec.

Background: After discussions on the level of intervention, doctors and patients conclude on the main goals of care. Conflicts may emerge from divergent ethical perspectives of team members, patients, and their family.

Methods: Our question is: “What are the underlying principles that help to determine the level of intervention in Geriatrics?” Our study will be held on Geriatric wards of Quebec City and Levis, Quebec. We will recruit participants using a snowball pattern for semi-oriented interviews. A thorough statistical analysis with InVivo will then be performed. Main themes will emerge and be integrated with a structured philosophical and ethical reflection.

Results: The recruitment is ongoing.

Discussion: Ethicists developed different theories regarding level of intervention. Informed consent is currently the leading theory upholding major texts of law in Canada. Sunstein and Thaler's libertarian paternalism, Childress and Beauchamp's principlism, Mill's utilitarianism and vitalism are main critics of the informed consent theory.

Conclusions: No research has yet examined ethical principles upholding the level of intervention discussion. Those principles are key factors of the discussion and sometimes lead to conflicts. The world population is aging especially in Canada. Elders will require more care. Material resources will become more scarce as well as a shortage of manpower. Thus, it is imperative to study level of intervention in Geriatrics and Ethics.

Prevention of Rejection of Care: What's up, Nurse?

Sylvie Rey, Philippe Voyer, Suzanne Bouchard. Université Laval.

Background: Rejection of care is a common phenomenon among people living with Alzheimer's disease. It has disastrous consequences for elders, their families, caretakers and institutions. One of the unfortunate consequences is that bodily care, which is fundamental care, cannot be performed as outlined in the plan of care. Most recommendations and studies carried out relates to the management of these situations. However, theoretical developments suggest that it is possible to act prior to this phenomenon, instead of having to manage it.

Methods: The purpose of the presentation is to introduce a theoretical framework for the development of a nursing intervention aimed at preventing rejection of care.

Results: To begin, four theories describing the factors contributing to rejection of care will be presented. This will help to better understand the factors that can be addressed in prevention. Then, an intervention framework for clinical assessment, monitoring, and for determining interventions and their application will be proposed. Moreover, the risk profile of those most likely to express rejection of care will be presented, which will help target screening and surveillance activities in different populations. Then, a proposal to operationalize preventive nursing interventions will be carried out. A clinical vignette will illustrate this proposal.

Discussion: In addition, the research project conducted by the student will be presented. The design of this intervention research will be presented. Furthermore, the expected results regarding acceptability, feasibility and preliminary results will be thoroughly described. Finally, the prospect of collaboration with clients, their relatives and nurses to build this new intervention will be exposed.

Conclusions: This presentation will allow participants to discover a new perspective aimed at improving the experience experienced in bodily care by elders living with Alzheimer's disease.

Robots and Grannies

Félix Pageau. Université Laval.

Background: Social robotics is a new field of engineering that presumes that robots can accompany and care for humans. Although robots may seem to be an attractive solution to look after isolated elderly, they are not.

Methods: We conducted a comprehensive review of the literature with regards to ethical, philosophy and robotics use in Geriatrics. We interpreted ancient texts and recent ethical articles. Aristotle's Nicomachean Ethics and

Emmanuel Kant's Metaphysics of Morals were used as basis in our reflection. More than 35 contemporary articles were also used and analyzed.

Results: Conflicting societal values defending the use of social robots such as security, reliability, privacy, freedom, relationships, autonomy, and dignity competed with principles such as reliability, adaptability, financial burden, security, and freedom. We considered additional issues such as the environment, emotionality and human relationships. We conclude that social robots are poor replicants of human relationships and are detrimental to patients, society and the environment.

Discussion: Social robotics violate Kant's most important principle as treating a human being like an end rather than a means. Social robots objectify elderly citizens by manipulating their emotion and feigning feelings. Then some may ask: "If robots have real emotions, would it be adequate to use them as 'social' being"? To which, we answered with another question: "What would be the sense of using an emotional being for our own good"? We should never embed feelings into robots, as champions of social robotic would want.

Conclusions: Even if automatic machines can accomplish fastidious work, robots should be restrictively used as an emotionless tool. If robotic engineers were to create a mechanical sentient being, we consider that their use would never be ethical.

'Walk Well': Taking the First Step, Hearing from the Canadian Experts

Ahmed Abou-Sharkh, Mehmet Inceer, Kedar Mate, Suzanne Morin, Nancy Mayo. McGill University.

Background: The most common disability of seniors is mobility limiting capacity for walking. Gait training is temporarily effective, but benefits abate with cessation of therapy. There is a need for a knowledge tool that provides seniors, as well as their family members, with a way to improve and promote healthful walking. The aim of this study is to identify what Canadian gait experts label as the crucial elements of walking well and the best-evidence strategies to promote it.

Methods: A seed of Canadian experts in gait from Schools of Physical and Occupational Therapy (PT, OT) and Kinesiology were queried as to crucial gait/walking features needed to walk well and to gather a snowball sample of international gait experts. The relative importances of nominated areas were identified.

Results: From the 40 PT gait experts, 22 (55%) responded, and 9 have indicated their willingness to join the 'Walk Well'

team. Walking well elements grouped under four main themes: (i) biomechanical, neuro-motor, and sensory-motor integration; (ii) musculo-skeletal impairments; (iii) functional challenges; and (iv) ecological adaptation. Multiple elements within each theme were listed. Those who responded also provided us with 38 international researchers focusing on gait and walking. Data from OT and Kinesiologists are forthcoming.

Discussion: From the elements listed, items for self-assessment and intervention can be identified and will be used to inform the content of a Walk-Well Workbook.

Conclusions: “Casting-the-net widely” will be an effective knowledge translation strategy to engage the wider community in evaluation and dissemination of this knowledge tool.

Getting It Right: Improving Capacity in Cognitive Assessment

David Cowan, Christopher Patterson. McMaster University.

Background: Cognitive testing is an essential part of Comprehensive Geriatric Assessment. Given the widespread use of cognitive assessment tools, it is important that they be utilized in the appropriate setting, and in a standardized manner to gain the most from these tests. We noticed that many tests are not performed on the appropriate populations or in a consistent validated manner. We had previously developed a curriculum delivered in a large group format to instruct front-line healthcare workers on the appropriate use of cognitive assessment tools. We wanted to determine if the curriculum could be adapted to a small group format. We chose the most commonly used cognitive tests that encompassed a range of clinical issues: MMSE, MoCA, Trail Making Test, Clock Drawing Test, and the Geriatric Depression Scale.

Methods: Participants completed pre- post-workshop surveys of self perceived competency, ranking themselves from 1 (no proficiency) to 7 (mastery).

Results: From five small group workshops we received 44 complete pre- post-evaluations. Backgrounds included Nursing (n=13), Recreation (n=7), Social work (n=6), and other (n=18). There were significant improvements in understanding why cognitive tests are performed ($P < .001$) and in recognizing which tests to use in different situations ($P < .001$). There were significant gains in self perceived competency to administer each of the tests. (Pre-Post Mean Differences: MMSE=1.57; MoCA=1.98; TMT=2.89; CDT =1.43; GDS=1.91. All $P < .001$).

Discussion: This workshop resulted in significant improvement in the capacity of healthcare workers to administer

cognitive assessment tools appropriately. These gains were evident in a population where many already had experience utilizing these tools. There was a trend toward greater increases in self efficacy in the small group format compared with the large group format.

Conclusions: Small group workshops are an effective means of enhancing capacity in cognitive assessment in front line workers.

Introducing the Geriatric 5 M’s Framework to Promote Interprofessional Learning and Capacity Building in an Acute Care Hospital

Marjorie Hammond, Lori Whelan, Lindsay Beavers. St. Michael’s Hospital.

Background: Comprehensive Geriatric Assessment (CGA) is an evidenced-based, interprofessional approach for optimizing care of the frail elderly patient. Little is known about effective education approaches that support knowledge to practice for health professionals participating in CGA. The recent launch of the “Geriatric 5 M’s” framework (Tinetti, Huang & Molnar, 2017) compelled our interest in its use as a simplified communication tool to enhance geriatric knowledge translation activities. We will describe use of the Geriatric 5 M’s framework in the delivery of a pilot inter-professional geriatric curriculum within our organizational capacity building strategy.

Methods: A geriatrics Clinical Nurse Specialist partnered with interprofessional content experts to develop and co-facilitate a full day curriculum designed for point of care staff. Clinical leaders of units with a high proportion of older adults identified point of care geriatric champions to participate. Using a case-based learning approach, the Geriatric 5 M’s framework was presented as the conceptual foundation for understanding and reinforcing the core domains of CGA as learners collaborated in the development of a comprehensive care plan.

Results: Twenty-eight nursing and health discipline staff attended the education day. Data was collected from administration of a learner satisfaction survey. Qualitative analysis of participants’ comments identified the Geriatric 5 M’s framework among the top 3 takeaway learning and validated the perceived value of interprofessional education and practice in geriatrics.

Discussion: Encouraged by the results, embedding the framework more consistently in geriatric practice based learning activities across inpatient units is recommended to advance capacity building efforts.

Conclusions: Use of the Geriatric 5 M's framework provided a meaningful way to engage interprofessional learners to apply knowledge of CGA and positively influenced perceptions of collaboration to enhance geriatric care planning.

Collaborative Partnerships for Building Capacity for Geriatric Care: The Geriatric Certificate Program

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Background: Many practicing regulated and unregulated health care providers find themselves ill-prepared to meet the complex health care needs of older adults in their care. The Geriatric Certificate Program (GCP) represents a collaborative partnership leveraging existing educational courses, with new courses developed to fill existing education gaps, aimed at improving quality of care for older adults. This presentation describes the streams of education provided and partnerships for program delivery and examines its applicability to practice, impact on knowledge, skills, clinical practice, confidence and comfort, and competence in providing geriatric care.

Methods: Upon program completion, all graduates (N = 146; 100%) completed an online evaluation survey.

Results: Graduates included: nurses (31%), allied health professionals (27%), other regulated (2%) and non-regulated professionals (28%) and other roles (12%). Rated on 5-point ratings scales (strongly disagree – strongly agree), the majority of graduates agreed that the program was applicable to clinical practice (91%), provided new knowledge (93%) and practical skills (84%), and increased the quality of care they provide (92%) and career opportunities (73%). The majority of graduates reported (5-point scale: 1=much less now; 5=much more now) being more confident (88%), comfortable (83%), and competent (89%) to provide optimal geriatric care than prior to the program. Self-reported practice changes included: improved assessment and management of responsive behaviours, increased use of standardized tools, improved communication, advocacy, education and support to clients, and improved staff education. Opportunities for improving the program were identified.

Discussion: The GCP provides a significant opportunity for practicing health care professionals to build their capacity for geriatric care.

Conclusions: Collaborative partnerships among existing continuing education programs can easily and efficiently

bring together existing, well developed curriculums to create a comprehensive program aimed at improving geriatric care.

RUSHGQ Professional Continuing Education Videoconferences: Evolution and Benefits

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Background: Since 2011, professional continuing education videoconferences have been offered at lunch time to members of the community practice comprising Geriatric Assessment Units and Geriatric Hospital Services in Quebec (RUSHGQ). These sessions are accredited by the Direction of Continuing Professional Development of the Faculty of Medicine at the University of Montreal since 2014. Purpose: Present the evolution of the program and the audience as well as the evaluation of the benefits derived from this activity by those in charge of each member community hospital (n= 61).

Methods: The compilation of the number of videoconferences and participants was performed annually. At the beginning of 2017, the 61 respondents received a Survey Monkey© questionnaire aimed at evaluating all activities of the RUSHGQ. A qualitative analysis (5-level scale and commentaries) was performed to evaluate the benefits the videoconferences had at the educational level and on the clinical practice, as well as the interest of the personnel in continuing their participation.

Results: Over 6 years, the annual number of videoconferences and participants has respectively increased from 4 to 23 and from 68 to 5535. The response rate to the survey was 59%. The impact the videoconferences have had on the educational level and clinical practice has been rated as moderate or high by 89% and 75% respectively. 89% of respondents indicate that the interest of professionals in continuing their participation to this activity falls within the categories moderate or high.

Discussion: The multiprofessional aspect of the activity is an important reason of its usefulness. The academic accreditation is a plus value and a factor which had increased exponentially the registration.

Conclusions: The continuing education offered by the RUSHGQ is appreciated by professionals and they wish these activities will continue.

Competency-Based Medical Education in the Long-Term Care (LTC) Setting: “Exploring Residents’ Perspectives of Learning in this Environment”

Vivian Ewa, Maeve O'Beirne, DeFina Rachel. University of Calgary.

Background: Long Term Care (LTC) medical education has been shown to increase the geriatric knowledge and skills of trainees. The literature on factors influencing learning in the LTC learning environment is sparse. With the challenge of an aging population and increasingly complex multimorbidity in this population, training physicians to deal with this challenge is a priority. The aim of this study is to explore learners' experience of learning within a structured LTC environment with direct clinical supervision. It also explores the impact of training on self-perception of competence to manage older adults across other care settings.

Methods: In-depth interviews were used to explore residents' perception of learning in the LTC environment. An iterative process of data collection and analysis consistent with grounded theory was employed to understand the reported experiences of residents.

Results: The study identified 26 themes in five categories that influenced learning in the LTC environment. Categories included; resident supervision, health system organization, patient context, communication, and the team. Despite acquiring competencies that could be used across care settings, residents identified the practice environment in other settings as a barrier to transfer of learning.

Discussion: The key theoretical construct developed through this study is the idea of "Slow-motion medicine". This construct underpinned the themes that influenced learning in the LTC environment and enabled competencies in the care of older adults with complex multimorbidity that can be used across care settings. However, the practice environment in other settings may influence how these competencies are used

Conclusions: Clinical practice in the LTC environment was conceptualized as "slow motion medicine". The practice environment in other settings may limit transfer of learning. Further research is needed on the impact on clinical practice following the LTC rotation.

Physical Function and Drugs in the Elderly – A Scoping Review

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Background: Side effect profiles of medication are well known, but evidence has not been synthesized regarding medications impacting physical function. This evidence

gap poses a challenge for clinicians making decisions about medication use in older adults at risk of functional impairment. The purpose of this scoping review was to evaluate the literature regarding medication and function in older adults.

Methods: Databases searched were MEDLINE, EMBASE, and CINAHL. Study restrictions included English language, subjects mean age >64 years, medications from top 10 drug classes used by older adults, and having a validated physical function test.

Results: We screened 11,375 titles/abstracts, with 22 articles meeting criteria related to physical function. The 22 studies fell into four groups: studies that looked at Angiotensin-Converting Enzyme Inhibitors (ACEIs), HMG-CoA reductase inhibitors (statins), opioids, and studies that examined a mixture of cardiovascular drugs. The studies varied from 24-h duration to 3 years, and included a variety of functional measures. The 5 ACE-I studies included 4 RCT's. One study found an improvement for the 6-minute walk test compared to placebo. The 8 statin studies included only one RCT. One study found a decline in balance, while 2 studies showed improvement in chair stands, walking speed, and distance. There were 8 mixed cardiovascular drug studies, with only 1 prospective RCT. One study found lower composite physical function, while 2 studies showed less functional decline versus control. One study on opioids found no difference in physical function.

Discussion: The studies were limited and not consistent quality but provide some evidence that the most commonly used medications do not appear to be causing harm in relation to physical function measures.

Conclusions: There is limited literature available regarding how medications impact physical function in seniors.

Emergency Department Visit Prevention through Telephone Intervention Service in a Comprehensive Geriatrics Clinic for Parkinson's

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Background: Introduction: 33% of people with Parkinson's Disease (PD) had a hospital encounter each year, and one-half of those had a repeat encounter. Elderly patients with PD are associated with longer hospital stay. One of the goal for our Geriatrics Clinic for Parkinson's is to prevent unnecessary Emergency Department (ED) visits/hospitalization by providing comprehensive management and telephone intervention.

Objectives: This prospective observational study aimed to evaluate: (1) whether pharmacist- administered telephone intervention (with physician support) averts ED visits; (2) reasons for calls.

Methods: All calls received from Jan - Dec 2016 were analyzed. They were classified as crisis calls when callers indicated intention to visit ED if issues were not resolved. Within 1 week, the pharmacist would follow up to document outcome and any ED visit.

Results: 337 calls were received to request assistance for 114 patients with mean age of 80 years. Patients were on an average of 11 medications and 9 medical comorbidities. Calls were initiated by caregivers (81%), patients (14%) and healthcare professionals (5%). Reasons for calls were: non-motor symptoms (29.1%), adverse medication effects (21.4%), physical PD symptoms (18.4%); request for service referral (11.6%), drug information or dosage/timing clarification (11%), medication refills (6.5%), and drug interactions (2.1%). Only 6 of the 82 crisis calls resulted in ED visits. The reasons were: falls (2), delirium (1), septicemia(1), anxiety with insomnia (1), end stage CHF (1).

Discussion: Telephone intervention service has resolved 313 (92.9%) problems from 337 calls during the 1 year study period. 92.7% of the 82 crisis calls or potential ED visits were averted.

Conclusions: This study suggests that timely telephone intervention is effective in averting ED visits for frail elderly patients with PD.

Comparing the Ability of Three Frailty Tools to Predict Mortality in Emergency Department Patients Referred to Medicine

Kenneth Rockwood¹, Alexandra van der Valk², Katie Lines¹, Susan Howlett¹, Olga Theou¹. ¹Dalhousie University, ²Nova Scotia Health Authority.

Background: Routine frailty evaluation is desirable in acutely ill patients. The purpose of this study was to compare three frailty tools in their ability to predict mortality in acute care: the Clinical Frailty Scale, a Frailty Index based on a Comprehensive Geriatric Assessment (FI-CGA), and a Frailty Index based on laboratory data (FI-Lab).

Methods: In total, 415 Emergency Department patients (80.6±8.4, 58.1% women) referred to internal medicine were screened with CFS and evaluated using a standard CGA. The FI-CGA was calculated based on each patient's current state, and the FI-Lab was constructed using 30

common laboratory tests collected within 2 days of CGA administration.

Results: Preliminary analyses showed that 77.3% of patients were admitted to hospital, having a mean hospital stay of 26.9±45.8 days. Overall, 15.7% died within 30 days and 20.2% died within 6 months. The mean CFS score was 5.7±1.7 and the mean FI-CGA and FI-Lab scores were 0.40±0.14 and 0.39±0.14, respectively. The percentages of deaths within 30 days increased with the degree of frailty, rising from 2.9% to 42.7% (CFS), 8% to 28.2% (FI-CGA), and 7.9% to 29.7% (FI-Lab). All three tools both independently and collectively predicted 6-month mortality. Mortality risk was 1.65 times higher (95%CI 1.46-1.87) per 1-point increase in CFS score. For FI-CGA and FI-Lab, the HR was 1.04 (95%CI=1.02-1.05) and 1.05 (95%CI=1.03-1.07) per 0.01-point increase, respectively.

Discussion: An FI from common lab tests is a promising tool for identifying frailty level and predicting mortality for Emergency Department patients. Early mortality appears to reflect high baseline frailty.

Conclusions: Further testing will examine the ability of the frailty tools to predict hospital re-admission, institutionalization, and length of hospital stay.

Mapping the Literature of Frailty in Acute Care

Olga Theou¹, Emma Squires², Kayla Mallery¹, Jacques Lee³, Sherri Fay⁴, Judah Goldstein⁵, Joshua Armstrong⁶, Kenneth Rockwood¹. ¹Dalhousie University, ²Nova Scotia Health Authority, Dalhousie University, ³Sunnybrook Health Service, ⁴Nova Scotia Health Authority, ⁵Emergency Health Services, Nova Scotia, ⁶Lakehead University.

Background: The growing proportion of older adults challenges the acute care system. The aim of this scoping review was to examine the literature surrounding frailty in acute care. Our purpose was to gain insight on current frailty use and highlight gaps in research to direct future work.

Methods: We included 617 original research articles published from 2000 to 2015 in the Medline, CINAHL, Embase, PsycINFO, Eric, and Cochrane databases. Study participants were acutely-ill Emergency Medical Services or hospitalized older inpatients who were identified as frail by the authors.

Results: In 67% of these 617 articles, authors identified their participants as frail without reporting on how or if they measured frailty. 204 articles measured frailty and they were mostly set in the geriatric (14%), emergency department (14.2%), and general medicine (10.8%) disciplines. 89 measures were used which included 13 different established

frailty tools and 35 non-frailty tools. The Clinical Frailty Scale, the Frailty Index, and the Frailty Phenotype (11.7% each) were the most commonly used tools. In 44% of the articles, the authors used frailty tools to predict adverse health outcomes, typically mortality and length of stay, and in 74.1% of the cases frailty predicted the outcome examined.

Discussion: Authors regularly identify their participants as frail without actually measuring frailty. The tools used to measure frailty varied widely, but there is a growing trend toward using established frailty tools. Overall, frailty appears to be a good predictor of adverse health outcomes.

Conclusions: Our review suggests that there is considerable benefit to measure and manage frailty in acute health care, but further research is necessary.

Supporting Alberta's Caregivers Across the Continuum of Care

Jasneet Parmar, Kathy Classen, Julie-Ann Babiuk, Jean Triscott. Network of Excellence in Seniors' Health and Wellness, Covenant Health.

Background: Family caregivers are the backbone and increasingly overburdened part of the health care system. There is increasing evidence that caregiving is being provided at significant physical, emotional and financial costs to the caregiver. Given the essential role of caregivers within the health care system, supporting them has become a national public health priority and needs attention in Canada. Purpose: Caregivers need to be provided with the care and supports that they require to maintain their own health and well being, and facilitate their caregiving roles. By combining information on existing programs and services offered by community organizations, partners and special interest groups and using our health services to leverage and increase accessibility to these programs and services, we can enhance the lives of many Albertans.

Methods: Covenant Health's Network of Excellence in Seniors' Health and Wellness (The Network) partnered with Alberta Health Services (AHS), Alberta Health, the Alberta Caregivers Association and the Alzheimer's Societies of Calgary and Edmonton & NWT on an Advisory Committee in order to: Develop an inventory of current resources available to caregivers; Make recommendations on how to spread the information gathered and make it accessible to caregivers; Leverage existing programs and services to improve access to education and supports for caregivers; Identify gaps, barriers and challenges for caregiver education and support.

Results: The document has 48 pages, with four inventories. (1) Inventory of Current Support Organizations for

Caregivers in Alberta. (2) Inventory of Caregiver Resource Documents. (3) Palliative and End-of-Life Resources for Caregivers in Alberta. (4) Financial Supports Available for Caregivers in Alberta.

Discussion: Recommendations have been sent to AHS and Covenant Health for consideration and follow through. All background information required to facilitate success and resources developed will be provided.

Conclusions: Through this work, the Network aims to enhance caregiver supports and education in Alberta.

Conversations on Supporting Family Caregivers of Seniors within Acute and Continuing Care Systems

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Background: The Covenant Health- Network for Excellence in Seniors' Health and Wellness, conducted a symposium on how best to involve and support family caregivers in the healthcare system and influence policies and practice. The symposium, entitled Supporting Family Caregivers of Seniors within Acute and Continuing Care Systems (the Symposium), brought together caregivers, healthcare providers, administrators, and policy makers. These participants were engaged in speakers' presentations and small-group discussions, called Conversations Circles, to raise awareness, identify gaps and opportunities, enhance health provider education, and review tools on supporting caregivers. Objective. To highlight the ideas generated in areas of identified need and offers recommendations to address these issues.

Methods: This was a secondary analysis of the proceedings of the Symposium. The symposium brought together 106 participants from 21 stakeholder organizations (38 frontline healthcare providers; 36 healthcare managers; 16 seniors service organizers; 8 family caregivers; 5 academics; 3 policymakers).

Results: Symposium participants identified a lack of both orientation and education for healthcare providers about family caregivers and standardized processes for assessing caregiver burden. They highlighted a need to ensure that the family experience is captured and included as an essential component of care, foster a culture of collaboration, expand the notion of the healthcare team to include family caregivers, provide more integrated palliative care, and enhance policies and programs to acknowledge family caregivers.

Discussion: Overall, the participants identified many factors and processes which block awareness, supports, and supports for family caregivers. However, the participants were also aware of the existing tools and resources for family caregivers and were hopeful for improvement.

Conclusions: There is a need to recognize the essential role of family caregivers in seniors' health and well-being and to take on a more comprehensive approach to patient care.

Can “Off the Shelf” Smart Home Technology Help Monitor Wandering in Persons with Dementia?

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Background: Night-time wandering and elopement are significant risks to persons with dementia (PWD). They also affect the quality of life of the care provider (CP). Technology that could redirect the PWD and only disturb the CP when absolutely necessary could make a significant difference.

Methods: Samsung Smart Things motion sensors, pressure sensor, hub, smart socket and speakers were used in this pilot. The system was installed in the home of a PWD and their spouse for 12 weeks. The following rules were programmed: 1) PWD exits bed → hallway lamp “on,” 2) PWD approaches front door → speaker reminds “go back to bed,” 3) front door is door is opened → CP phone message. The CP was interviewed regarding sleep and stress.

Results: The system monitored the PWD's night movements. At the beginning of the trial, the voice redirection was deployed once. For the rest of the trial the PWD did not return to the front door, and there were no episodes of elopement. The CP was reassured that if the PWD eloped she would be woken. The pressure sensor used in the bed did not function consistently. The data collection system was affected by a power failure, but the home based portion of the system continued to function.

Discussion: This pilot shows that home monitoring technology can be adapted to help PWD at risk of wandering at night, decreasing stress in the CP. Flexibility is required in installation in different home types. Use of the smart sockets needs to consider light switches and different bulb types. The use of the pressure sensor needs to be modified.

Conclusions: A larger roll-out of this technology is underway and redesign continues.

Predictors of Risk Factors for Social Isolation in Community-Dwelling Seniors: The Importance of Asking about Transportation Mobility

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Background: Social isolation is a common problem in community-dwelling older adults, with prevalence estimates ranging from 10% to 43%. Social isolation in older adults leads to negative health outcomes including an increased risk for all-cause mortality, dementia, falls, and re-hospitalizations. Despite the importance of transportation mobility to social integration, few studies have examined the relationship between of these two measures in older adults. Purpose: To address this need.

Methods: Telephone interviews with older adults in rural and urban Alberta, with RDD used to generate the sampling frame. In addition to driving status, predictor variables included age, gender, living arrangements, location (rural/urban), QoL, and well-being. The primary outcome variable was a composite measure of social isolation (lacking companionship, feeling left out, and feeling isolated). Logistic regression was used for data analyses.

Results: 1390 older adults were interviewed (1043 drivers/347 non-drivers). Driving status (non-drivers) was a significant predictor of social isolation, as were gender (female), living arrangements (living alone), QoL (lower), and well-being (lower) (all p 's < .05), accounting for more than 20% of the variance.

Discussion: Our results highlight the importance of the role that driving status, as well as other psychosocial variables, plays in social isolation in community-dwelling older adults.

Conclusions: Health care professionals play an important role in identifying social isolation in their older patients. Incorporating questions on driving status and providing resources on alternate means of transportation during the clinical visit have the potential

Factors Affecting Occurrence of Delirium in Elderly Hip Fracture Patients

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Background: Delirium is associated with worse outcomes in hip fracture patients. In ageing Singapore, there is a death of

data regarding the factors that contribute to the occurrence of delirium in elderly hip fracture patients.

Methods: A retrospective study of hip fracture patients aged 60 and above admitted to Singapore General Hospital over 9 months from February to October 2017. Comprehensive geriatric assessment was conducted on all patients and their clinical and surgical characteristics were documented. Patients were screened daily for delirium using the Confusion Assessment Method (CAM). Logistic regression analysis was employed to identify risk factors predisposing patients to delirium.

Results: A total of 257 hip fracture patients were admitted. Of these, 31 (12.1%) were diagnosed with delirium either on admission or incident delirium during hospitalization. Patients with delirium had longer length of inpatient stay (mean 17.4, SD±13.9 days vs 12.5, SD±9.0 days, $p=0.001$) and more likely had non-operative management of hip fracture (25.8% vs 9.3%, $p=0.013$). Univariable analysis revealed that higher Clinical Frailty Score (OR 1.5, 95%CI: 1.1-1.9, $p=0.006$) and underlying dementia (OR 3.9, 95%CI: 1.7-9.1, $p=0.002$) were related to incidence of delirium in hip fracture patients. Charlson age-adjusted comorbidity index (OR 1.0, 95%CI: 0.8-1.2, $p=0.976$) and Nottingham Hip fracture Score (OR 1.1, 95%CI 0.8-1.6, $p=0.484$) were independent but not significant risk factors for delirium.

Discussion: Surgeon factors may influence management outcomes (operative versus non-operative).

Conclusions: Frailty and underlying dementia were associated with delirium in elderly hip fracture patients. Patients with delirium also had longer lengths of hospitalization and were more likely to receive non-operative management of hip fracture.

Frailty Screening in Primary Care: A Pilot Study Involving Collaboration Between Community Pharmacy and Family Practice

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Background: The “C5-75” program (CFFM Case-finding for Complex Chronic Conditions in seniors 75+) was developed in 2012 by the Centre for Family Medicine Family Health Team (CFFM-FHT) to address frailty in primary care. Individuals 75 years and older are screened annually for frailty based on gait speed and handgrip strength to pro-actively address and ensure appropriate care and follow-up. Successfully implemented in the CFFM-FHT, this pilot study

explored provider acceptance and feasibility in a family practice setting lacking the interprofessional resources of a FHT through collaboration with community pharmacy.

Methods: The C5-75 program was implemented into an urban family practice (14 physicians, 11,819 patients), co-located with a community pharmacy. The pharmacy staff were trained to complete initial C5-75 screening in consenting eligible persons attending regular family physician visits, and when indicated, further assessment and intervention was completed at the family practice. Surveys demonstrating perceived feasibility, acceptability and satisfaction were completed by staff ($n=2$) and patients ($n=33$).

Results: Over 6 months, gait speed suggested frailty in 6 (13%) of 46 patients (<0.8 m/s). Gait speed and grip strength combined as a dual-measure indicated frailty in 4 (9%). Healthcare providers conducting the screening indicated screening was feasible with no reports of discomfort, while acceptability was scored higher. Patient surveys indicated an average satisfaction of 4.5 on a 5-point Likert-type scale and staff perceived screening as acceptable and feasible.

Discussion: This pilot study suggests frailty screening is acceptable and feasible. The finding of 9-13% of persons aged 75+ indicated as frail is consistent with other studies.

Conclusions: This study suggests potential for broader implementation of C5-75 frailty screening in primary care providers through collaboration with community pharmacies.

Transitions in Care

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Background: Much research has been done on how to smooth the transition home from hospital. This can involve identifying patients at high risk for readmission and coordinated discharge with community supports. We aim to facilitate a smoother discharge from the medicine units at the Grey Nuns Community Hospital, Edmonton, for high risk discharges.

Methods: The study had 2 phases. Phase 1 utilized expert consensus from the Covenant Transition Steering and Working Groups and a literature review to design a risk assessment tool and the components of a scripted telephone call. A pilot was then undertaken to validate the efficacy of the risk assessment tool. Phase 2 included the intervention of the risk assessment tool and follow-up telephone calls 48 hours after discharge, bridging any gaps in medications, equipment, home care, and physician appointments.

Results: 27% of patients discharged home (n=1621) were high risk according to their LACE score. 79% of patients/caregivers were contacted within 3 days of discharge of which 99% found the call helpful. 93% of patients had a good understanding of their discharge instructions. 18% were new referrals to home care. 83% had picked up their prescriptions and 51% their equipment. 78% of patients had an appointment booked with their PCP.

Discussion: Phase 1 study has helped inform the risk assessment tool and telephone call/supports needed to facilitate smooth discharge home for high risk patients. Phase 2 has identified where things are being done well for high risk patients. However, it has also identified gaps in the system with a significant number of high risk patients not having home care involvement and difficulties picking up equipment.

Conclusions: Support across the continuum is required for seamless transition planning.

The 12 Ds of Geriatric Medical-Psychiatry: a New Case Presentation Format

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Background: The Seniors Outpatient Collaborative Care Program at Trillium Health Partners is for seniors living in the community with at least one chronic physical condition impacting function and co-occurring symptoms of depression or anxiety. Patients are assigned a care manager with training in geriatrics and psychiatry. Care managers may be nurses or allied health workers and are supervised through participation in weekly systematic case reviews (SCR) with a team including a geriatric psychiatrist, geriatrician, and a primary care representative to review recommendations to the primary care physician.

Methods: We found the traditional case presentation format during the SCR too time consuming. In response to this a new format for case presentation was developed based on an SBAR (Situation, Background, Assessment, Recommendations) format using the novel 12 Ds of Geriatric Medical-Psychiatry.

Results: 12 Ds of Geriatric Medical-Psychiatry:

- dementia;
- depression/anxiety-demoralization;
- delirium (subsyndromal);
- disabling medical illness;
- drugs-drinking & dope;
- disconnection/disengagement (social health);
- delusions;
- decision-making capacity;

- discharge planning;
- deconditioning;
- driving;
- death

Discussion: Prior to the development of the 12 Ds - SBAR framework the average SCR was requiring 30-40 minutes for presenting a new case, and 20-25 minutes for discussion of a follow-up case. With the new 12 Ds - SBAR framework the average times have come down to approximately 15-20 minutes for a new case and 5-10 minutes for a follow-up case.

Conclusions: The 12 Ds of geriatric medical-psychiatry provides a comprehensive, organized format to discuss the pertinent issues facing geriatric medical-psychiatry patients and when used in an SBAR format appears to be a more efficient and informative means for inte

Practical and Structured Interprofessional Approach for the Prevention, Evaluation and Management of Disruptive Behavioural Problems Related to Delirium and Other Neurocognitive Disorders in Quebec Geriatric Assessment Units

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Background: A sub-committee from a community of practitioners made up of professionals and clinical managers from Quebec Geriatric Assessment Units (GAU) in acute care hospitals was mandated to develop a clinical guideline for patients hospitalized in GAU having disruptive behavioral problems related to delirium and other neurocognitive disorders.

Methods: The key elements of a good quality of care process were determined from a review of the literature and consultation of professionals among GAU members of the Regroupement des Unités de courte durée gériatriques et des Services Hospitaliers de Gériatrie du Québec (RUSHGQ).

Results: The approach consists of 4 strategic components: Prevention (A): general and individual systematic interventions

to be put in place for each patient admitted to the GAU and if disruptive behavior is identified : Assessment and specific interventions (B) i.e. basic approach verification, reframing, biographical history, basic intervention strategies, description and detailed analysis of behavior, targeted physical examination and choice of non-pharmacological and pharmacological interventions; Management of persistent behavior and specialized interventions (C): if necessary, use of an observation grid and an interprofessional meeting for the revision of interventions; Preparation of discharge (D): throughout the hospitalization and the transfer of the interprofessional intervention plan and the discharge prescription. The guidelines, written in French, also include 20 clinical or administrative tools applicable to GAU's in appendices.

Discussion: A clinical approach was developed to provide an application of good management practices to prevent or manage these behavioral problems in the context of GAU.

Conclusions: These clinical guidelines are intended for GAU professional teams who wish to optimize their care of patients at risk or presenting disruptive behavioral problems related to delirium and other neurocognitive disorders.

Ambulatory Blood Pressure Patterns in Orthostatic Hypotension

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Background: Although abnormal ambulatory blood pressure (ABP) patterns have been described in orthostatic hypotension(OH), their distinctive patterns have not been defined. The study aims to quantify systolic ABP patterns, especially nocturnal hypertension in older patients with OH.

Methods: ABP data of patients aged > 65 years with OH who underwent ABP monitoring in a medical clinic during a two year period from 1 Jan 2016 to 31 Dec 2017 were retrospectively reviewed. Dipping patterns and the presence of nocturnal hypertension(NHT, systolic BP(SBP) >120mmHg), postprandial hypotension (PPH, a decrease in systolic BP>20mmHg within 75 minutes of a meal), and non-compensatory heart rate variability(HRV, increase in HR<10 beats/min when systolic BP decreased by >20mmHg) were reviewed. OH was diagnosed using office BP as per standard diagnostic criteria.

Results: There were 36 patients(mean age 78.64+ 4.6years, Males 56%). The underlying diagnoses consisted of neurological(64%), hypertensive/cardiovascular(25%) and a group of miscellaneous conditions(11%). 34% patients received anti-hypertensive medications. NHT was present in 27(75%).

The mean nocturnal SBP was>150 in 10(37%). 25(69%) had reversed-dipping and 9(25%) had non-dipping. PPH and non-compensatory HRV were present in 22(61%) and (26)72% patients, respectively. NHT had a significant independent association with non-compensatory HRV(adjusted odds ratio:1.62 (95% confidence interval: 1.25- 8.92)).

Discussion: The findings confirm a high prevalence of NHT, followed by reversed dipping and PPH in OH. The significant association between NHT and non-compensatory HRV suggests that NHT is probably a manifestation of dysautonomia. However, this requires confirmation by formal autonomic assessment.

Conclusions: Abnormal ABP patterns are common in OH, with likely implications for its management. Patients with OH are likely to benefit from routine ABP monitoring.

Interdisciplinary Perspectives on Recruitment of Participants for Clinical Research in the Primary Care Collaborative Memory Clinic Setting

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Background: This study aimed to explore the beliefs and attitudes of healthcare practitioners working in Primary Care Collaborative Memory Clinics (PCCMCs) towards recruitment of persons with dementia for clinical research.

Methods: Surveys were distributed to 397 interdisciplinary PCCMC team members. On a 5-point Likert-type scale, practitioners rated their level of knowledge about research, comfort level and willingness to recruit for different types of research, concerns about conflicts of interest, the importance incentives for assisting with recruitment, and the perceived need for a PCCMC Research Committee which would review requests by external researchers for participant recruitment from PCCMCs. Open-ended questions addressed perceived barriers and supports to recruiting participants.

Results: 244 surveys were completed by physicians (n=67), registered nurses/registered practical nurses (n=47), social workers (n=28), nurse practitioners (n=21), pharmacists (n=16), and other disciplines (n=65). Reported willingness to recruit patients varied with research type, with observational and non-drug intervention trials significantly preferred over interventional drug trials (24%, 26%, and 60% expressing discomfort, respectively). Of the respondents, 76% indicated that the formation of a central PCCMC Research Committee was important. Having established funding to support participant recruitment was significantly favoured over being named a Co-Investigator or Collaborator or being offered co-

authorship for a publication (28%, 14%, and 15% positively indicating importance, respectively).

Discussion: Expressed willingness of PCCMC team members to recruit participants for clinical research varied with type of research, with least comfort in recruiting for drug interventional trials. Most felt it was important to establish a central PCCMC Research Committee to review requests by external researchers for participant recruitment.

Conclusions: Forming a central PCCMC Research Committee would be valuable for supporting recruitment of participants for clinical research.

Primary Care Collaborative Memory Clinics: Improving Care Coordination for Persons Living with Dementia

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Background: Integration of community services into primary care may improve care coordination for persons and care partners living with dementia. This study explored the perceptions and experiences of Home and Community Care (H&CC) representatives who have been integrated into Primary Care Collaborative Memory Clinic (PCCMC) teams across Ontario.

Methods: Semi-structured phone interviews were conducted with H&CC team members to better understand their roles and contributions to PCCMCs. H&CC team members were asked for their impression of the PCCMC model of care, their perceived impacts of the H&CC and PCCMC partnership, and how integration might be improved. The interviews were transcribed verbatim and analyzed thematically in NVivo 9.

Results: Eight interviews were completed with H&CC Care Coordinators (n=7) and a Director (n=1) located in four regional Local Health Integration Networks. Most commonly-described benefits of the H&CC and PCCMC partnership included: a) improved comprehensiveness of assessment and improved quality of care, b) increased efficiency of access to and delivery of community services for complex cases, and c) reduced vulnerability of persons living with dementia as a result of enhanced education about available community resources. Participants reported no disadvantages to the partnership.

Discussion: H&CC representatives were overwhelmingly supportive of being integrated into PCCMCs because they

believed that their expertise and skills were being leveraged to improve the quality of care for persons and care partners living with dementia. Care Coordinators believed that the benefits to the partnership were numerous and that system level impacts would be evident with greater provincial support and resources enabling expansion of this partnership across Ontario.

Conclusions: Study results suggest that integration of H&CC Care Coordinators into PCCMCs improves quality of care and efficiency of delivery of community services.

Specialist and Family Physician Collaboration: Insights from Primary Care Collaborative Memory Clinics

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Background: A key component of the Primary Care Collaborative Memory Clinic (PCCMC) care model is specialist support for each clinic. To date, no formal framework has been developed to support this collaborative relationship; collaboration varies across all clinics. This study explores the nature of the unstructured collaborative relationship between PCCMC family physicians and specialists.

Methods: 71 (68%) PCCMC physicians and 21 (75%) supporting specialists (19 geriatricians, 2 geriatric psychiatrists) completed surveys assessing: primary methods of communication and frequency (common methods listed), time spent per month in collaboration (never; <29 minutes; 30-60 minutes; 2-3 hours; >3 hours), specialist perceptions of time spent in collaboration (should be less, just right, should be more), and what they think is the most important aspect of their interactions with PCCMC physicians (open-ended).

Results: Telephone and email were identified by both groups as common methods of communication. The majority of specialists (76%) and PCCMC physicians (84%) report spending 1 hour or less per month collaborating. The majority of specialists (62%) reported that more time should be spent collaborating with PCCMC physicians; 70% (11/16) of specialists that spent 1 hour or less per month collaborating reported that more time should be devoted to collaboration, while 60% (3/5) of those who spent 2-3 hours collaborating reported that this was "just right". Specialists valued the collaborative nature of their interactions with PCCMC physicians, PCCMC ability to manage less complicated cases independently and provision of comprehensive assessment results accompanying referrals made for direct consultation.

Discussion: Specialists value their collaboration with PC-
CMC physicians and desire greater opportunities to do so;
formalized processes may support optimal collaboration.

Conclusions: These findings may have implications for
integrating collaborative specialist support for primary care.

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: 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, a High
Tolerance Short Duration (HTSD) unit and on a Low Tolerance
Long Duration unit (LTLD). The Functional Independence
Measure Motor scale (FIMM) was the external reference.

Methods: 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). 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.

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% ($p=0.19$). 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 internal responsiveness 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. External responsiveness was related to
diagnosis with correlation of 0.75 for unilateral hip fracture
and 0.45 for more medically complex cases ($p=0.01$).

Discussion: With limited resources for post-acute inpatient care
rehabilitation settings, it is important to understand functional
status both from the clinician assessment and from the patient's
own perspective for more efficient targeting of resources.

Conclusions: The patient-rated AM-PAC-BM demonstrated
responsiveness to change in clinical status from admission to
discharge on HTSD and LTLD rehabilitation units.

Feasibility of a Systematic Approach for Implementing a Home-Based Adapted Physical Activity Program at Discharge from a Geriatric Short-Term Unit to Prevent Loss of Mobility

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Background: Loss of mobility often leads to an increased risk
of falls, fractures and loss of autonomy in elderly people after
hospitalizations. There is no current recommendations for the
prescription of physical activity (PA) programs at discharge
from hospitals aiming at preventing mobility decline. Objec-
tives: To evaluate the feasibility of a systematic approach for
implementing a home-based adapted PA program for elderly
people recently discharged from a Geriatric Short-term Unit
(UCDG).

Methods: A decisional tool based on 3 main components
(balance/cardio-strength/cognitive) was developed to
establish an individual mobility profile and its specific
prescription (among 18 program subtypes). After assess-
ment for eligibility (physician), participants were instructed
(physiotherapist) on how to perform this simple (without
equipment), potentially-safe (adapted to physical-cognitive
autonomy) and time- saving (4 exercises, 15-20 min/session/
day) PA program. Telephone monitoring took place every
week during 12 weeks. Eligibility criteria were : Admission
to the UCDG-Montreal; community-dwelling; MMSE>18;
length of stay>7 days.

Results: 100 patients were admitted (April-October 2017); 59
patients were eligible; 35 accepted to participate and 16 com-
pleted the 12-week follow-up. There was no between-group
difference (eligible vs not eligible) at the socio-demographic,
cognitive, clinical and physical level.

Discussion: Therefore, ~50% of patients admitted to an
UCDG could benefit from this type of program at hospital
discharge (against ~15% currently). Nevertheless, factors
other than physical status could explain the reason why only
27% ($n=16$) of the total potential sample size ($n=59$) com-
pleted the program (who prescribes, motivational aspects,
type/amount of supervision, type of program). Quantitative
(physical effects) and qualitative (adherence, motivation,
caregiver) analyzes are in progress for better understanding
these aspects.

Conclusions: This home-based adapted PA program appears to
be feasible for elderly people discharged from short- term units.

Treatment of Asymptomatic Bacteriuria in Elderly Patients with Delirium: A Systematic Review

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Background: It is typical to look for UTI in delirious elderly patients, despite a high prevalence of asymptomatic bacteriuria (ASB) in this population. A common presentation of infection is delirium, which often has a non-specific and multifactorial etiology. Therefore, when bacteriuria is present with delirium in the absence of urinary symptoms, physicians prescribe antibiotics for the suspected UTI-induced delirium. We set to determine whether antibiotic treatment in the elderly presenting with delirium in the presence of ASB resulted in resolution of delirium.

Methods: Literature searches were performed in MEDLINE, EMBASE, CINAHL and Cochrane Library. Abstracts were independently reviewed by two authors for decision to include for full-text review. Inclusion criteria included female gender, >65 years of age, presenting in an acute care setting with delirium and ASB. The primary outcome was resolution of delirium. The secondary outcomes were mortality, frequency of side effects from antibiotics, length of hospital stay and readmission for delirium.

Results: 930 abstracts published from 1946-2017 were screened, and 42 were included for full text review. No studies were eligible for inclusion in the systematic review, as none addressed the primary outcome. One study addressed the outcomes of poor functional recovery after delirium and the rate of improvement of delirium symptoms after presentation of delirium with ASB.

Discussion: Even though current guidelines recommend against treatment of ASB, no guideline states whether ASB should be treated in elderly patients with delirium. Little evidence exists to elucidate whether treating delirious patients with ASB results in improvement in outcomes.

Conclusions: Future studies should focus on demonstrating the relationship between resolution of delirium with antibiotic treatment. This will clarify whether delirium is a true symptom of ASB and whether treatment results in faster resolution of delirium.

Development of a Frailty Ladder using Rasch Analysis: If the Shoe Fits

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Background: The current measurement approach to frailty is to create an index of frailty status, rather than measure it. The purpose of this study is to test the extent to which a set of items identified within the frailty concept fit a hierarchical linear model (eg Rasch model) and form a true measure reflective of the frailty construct.

Methods: A sample was assembled from three sources: community organization for at-risk seniors (n=141); colorectal surgery group assessed post-surgery (n=47); and hip fracture assessed post-rehabilitation (n=46). The 234 individuals (age 57 to 97) contributed 348 measurements. The frailty construct was defined according to the named domains within commonly used frailty indices and items drawn to reflect the frailty came from self-report measures and performance tests. Rasch analysis was used to identify the extent to which the items from the measures formed a unidimensional linear measure.

Results: Of the 68 items, 29 fit the Rasch Model: 19 self-report items on physical function and 10 performance tests including one for cognition Patient reports of pain, fatigue, mood, and health did not fit; nor did body mass index (BMI) or any item representing participation.

Discussion: Not all datasets analyzed here had all items; the prototype developed here needs further validation and testing. Items that are typically identified as reflecting the frailty concept fit the Rasch model. The Frailty Ladder would be an efficient and statistically robust way of combining results of different tests into one outcome measure.

Conclusions: The Frailty Ladder would be a way of identifying which outcomes to target in a personalized intervention. The rungs of the ladder, the hierarchy, could be used to guide treatment goals.

Preliminary Clinical Results from the CIMA-Q Cohort

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Background: Alzheimer's disease is a complex multifactorial pathology that starts years before clinical manifestation. The «Consortium pour l'Identification précoce de la Maladie d'Alzheimer Québec» (CIMA-Q) aims ultimately to develop tools to detect the very first signs of the neurodegenerative process. Interestingly, some studies tend to show that cognitive and functional decline after diagnosis in women is more

rapid than in men. Taking into account sex difference may enhance our understanding of the pathology.

Methods: CIMA-Q, a prospective, multicenter study that started recruiting participants in 2014, now has approximately 300 participants divided into four groups: (1) cognitively healthy; (2) subjective memory complaint; (3) mild neurocognitive disorder; and (4) major neurocognitive disorder with a minor functional change due to Alzheimer's disease. At baseline, each of the participants had a medical and neuropsychological evaluation along with routine blood work. Participants could also volunteer for optional techniques, such as (1) neuroimaging, biological sample collection and brain donation. We present the sex related differences in the CIMA-Q cohort at baseline and compare these data with the North American population and other studies.

Results: At present, only baseline data are available for all participants of the CIMA-Q cohort. We observed a difference in the rate of women and in the men who had a past history of depression, 37% (67/181) and 15% (16/106), respectively, as well as for those who suffer from obstructive sleep apnea, 7% (13/181) and 18% (19/107), respectively.

Discussion: The prospective follow-up of the CIMA-Q cohort will help not only with the early identification of the factors linked to this disease

Conclusions: but can also contribute to a better understanding of the sex-linked differences in the evolution of the disease.

Reducing Use of Inappropriate Medication by Personalizing Pharmaceutical Care and Optimal Use of Professional Resources in Long-Term Care: A Controlled Demonstration Study (PEP)

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Background: Increasingly, frail seniors in Canadian long-term care (LTC) facilities receive polypharmacy and inappropriate medications. PEP is a research project initiated by the pharmacists of the Centre intégré universitaire de santé et de services sociaux de la Capitale-Nationale (CIUSSSCN), Quebec. PEP is an evidence based intervention to optimize pharmaceutical and nursing care, facilitated by recently expanded professional competencies empowering pharmacists and nurses. Our objective is to evaluate whether PEP will:

reduce polypharmacy and inappropriate medications; be beneficial/neutral regarding adverse outcomes of medication use (emergency visits, hospital transfers, falls); be cost-effective compared to usual care.

Methods: The intervention updates clinical practices to recent legal changes and comprises 1) tailored knowledge exchange (KE) sessions for pharmacists, nurses and physicians, 2) short information sessions for personal care workers and 3) leaflets for residents/their families. Pharmacists perform medication reviews in consultation with nurses, residents/families and physicians using published criteria aimed at deprescribing inappropriate medications. While the intervention is feasible in the CIUSSSCN, all KE sessions, tools and questionnaires will be translated into English, adapted to the organizational context and tested for feasibility in Ontario in 2019.

Results: Five months pilot data show that PEP is feasible, preliminary data support that objective 1 is attainable and the project was approved by the local ERB. In early 2018 baseline LTC data will be analyzed. In fall 2018 routinely collected data will allow evaluation of the demonstration project and the qualitative part will investigate team satisfaction, barriers and facilitators for the intervention using questionnaires and focus groups.

Discussion: Encouraging preliminary data are creating a momentum to implement PEP in further LTCF in Quebec.

Conclusions: Results from the PEP study are hypothesized to help decrease inappropriate medication use in LTC.

Impact of the Quebec Alzheimer Plan on the Needs of Patients with Dementia and Their Caregivers: A Mixed Methods Study

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Background: According to the Quebec Alzheimer Plan, Family medicine groups (FMGs) are the first contact patients with dementia and their caregivers (dyad hereafter) have with the healthcare system and they are ideally positioned to address their needs. Family physicians (FPs) closely work with a nurse to diagnose and develop a care plan for the dyad – the model called case management (CM). Objectives: Determine the extent to which different CM models address the needs of the dyad; Evaluate the impact of different CM models on hospitalization and emergency department visits; Identify an ideal model of care from the perspective of the dyad and healthcare providers.

Methods: Design: A mixed methods sequential explanatory study design: a cross-sectional survey on the needs of the

dyad; a quasi-experimental study on the health service use; a qualitative descriptive study on the barriers and facilitators of the needs. Setting: FMGs participating in the Quebec Alzheimer Plan. Patients: Patients with dementia living in the community and their caregivers. Intervention: CM model 1 - all FPs of FMG work with a case manager; CM model 2 - FPs refer a dyad to a case manager who conducts an evaluation and reviews a care plan with a FP with expertise in dementia. Main Outcome Measures: Quantitative results - needs of the dyad; hospitalization rate and emergency department visits; Qualitative results - barriers and facilitators of the needs.

Results: Preliminary **Results:** We are expecting to measure the rate of needs of the dyad in two different CM models; rate of hospitalizations and emergency department visits of patients with met versus unmet needs; to describe the barriers and facilitators of the needs.

Discussion: The findings of this study will identify an optimal CM model that could be adapted by FMGs to better address the needs of the dyad.

Conclusions: Findings will help refine the Quebec Alzheimer Plan.

Relationship of Nutrients Intake, Blood Levels, and Anthropometric Measurements, with Frailty and Mortality

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Background: Emerging evidence suggests that frailty is preventable and ameliorable by multidimensional interventions, including nutritional management. This study aims to evaluate the relationship between the frailty index (FI) and nutrition-related parameters and to investigate the association between nutrition and mortality controlling for frailty levels.

Methods: This study enrolled 10,020 subjects aged ≥ 20 years from the 2003-2004 and 2005-2006 cohorts of the National Health and Nutrition Examination Survey (NHANES). In total, 57 nutrition-related parameters with established cut points were evaluated. 33 items related to dietary intake were obtained from 24-hour dietary recall by interview. We also examined 21 blood tests correlated with nutritional status and 3 anthropometric measurements. A FI was constructed by combining 42 items, excluding items related nutritional status. Mortality data came from death certificate records until 2011; analyses were adjusted for age, sex, and energy intake.

Results: The number of participants with abnormal nutritional parameters significantly increased with higher frailty

levels for 37 nutritional deficits, (e.g. protein, omega-3 intake). Similarly, the proportion with higher sugar, cholesterol, sodium and alcohol consumption and lower serum albumin levels decreased with higher frailty. Abnormal consumption of thiamin, tocopherol, folate, ascorbate and caffeine were significantly associated with higher mortality risk. Lower energy intake and abnormal levels of 13 blood tests (e.g. vitamin D, homocysteine, and lycopene) were also associated with higher mortality. Mortality risk was reduced in overweight and obese participants but augmented in underweight and participants with abnormal skinfold.

Discussion: Of dietary intake items, energy intake, tocopherol, thiamin, and folate both declined with frailty and were associated with higher mortality risk.

Conclusions: This study revealed that most nutritional parameters changed with frailty but not all were related to mortality risk.

The Predicted Public Health Impact of RZV in Canadian Adults ≥ 50 Years of Age

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Background: Herpes Zoster (HZ), also known as shingles, is characterized by a unilateral vesicular rash. It can lead to complications including postherpetic neuralgia (PHN), a debilitating nerve pain affecting 14%-33% of HZ patients. In Canada, approximately 1 in 3 people will develop HZ over their lifetime, with this risk increasing to almost 50% by age 85. Two HZ vaccines are licensed for use in Canada: the Adjuvanted Recombinant Zoster Vaccine (RZV) and Zoster Vaccine Live (ZVL). This analysis reports the predicted public health impact of both vaccines in adults ≥ 50 years old.

Methods: The Zoster economic Analyses (ZONA) model predicts the public health impact of RZV and ZVL immunization over the lifetime of the cohort. Demographic data was obtained from Statistics Canada, vaccine efficacy estimates from clinical trials, and HZ and PHN epidemiologic and healthcare utilization parameters from publicly available literature. Additional assumptions included 80% coverage rate and 75% second dose compliance for RZV.

Results: Amongst the approximately 12 million Canadian adults ≥ 50 years old, the ZONA model predicts that RZV immunization would prevent 741,116 additional cases of HZ and 177,031 additional cases of PHN compared to ZVL over the lifetime of the cohort. This would translate into 7,411 additional avoided hospitalizations and 1,845,378 additional avoided general practitioner visits. In this age group, the

number needed to vaccinate with RZV to prevent one case of HZ is 10 and 37 for PHN.

Discussion: This analysis can help healthcare practitioners, policy makers, and public health officials make informed decisions about HZ vaccines.

Conclusions: The model predicts a greater reduction in HZ and PHN morbidity and healthcare utilization associated with RZV compared to ZVL immunization.

Canadian Older Adults' Experience and Knowledge Regarding Influenza Illness and Vaccination

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Background: Older adults are at high risk for influenza-related complications, resulting in worsening frailty and function. We surveyed Canadian seniors to explore the impact of influenza and assess knowledge about this illness and its prevention.

Methods: A survey of Canadian adults aged 65+ was conducted through an online market research panel platform in March/April 2017. The survey included questions about the respondents' experiences during the 2016/17 influenza season, specifically, influenza vaccination practices and knowledge about influenza. Respondents were also asked to report their frailty and functional status prior to the season, during illness (if applicable), and following the season, using validated measures.

Results: 5014 older adults completed the survey; mean age 71.3 ± 5.17 years, 50% female, 42.6% had one or more chronic conditions, 7.8% vulnerable and 1.8% frail. 67.9% reported receiving last season's influenza vaccine. Those who rarely/never receive the influenza vaccine were significantly less likely to correctly answer questions about influenza than those who receive the vaccine more consistently. Of the 21.5% who reported experiencing influenza or influenza-like illness (ILI) last season, one-fifth had health and function declines during this time. 40% indicated a recovery longer than two weeks and 3.1% "never fully recovered". Older age, memory loss, and having influenza/ILI were among the independent predictors of persistent declines in health and function.

Discussion: Our results show that older adults' knowledge about influenza and influenza vaccine positively correlates with vaccine uptake. Functional declines and worsening frailty are common during illness, and for some these declines can be persistent.

Conclusions: Influenza has a significant temporary and long-term impact in older adults. Canadian seniors' knowledge about influenza and its prevention by vaccination remain sub-optimal.

Income Security and the Risk of Mortality in a Prospective Cohort Study - the Manitoba Follow-up Study

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Background: Income security has been shown to be a determinant of health in many populations in many societies at many times. There is less evidence that income insecurity predicts death in very old men. The purpose is to determine if self-reported current income adequacy or future expectation of income adequacy predicts death amongst older men.

Methods: We conducted an analysis of the Manitoba Follow-Up Study (MFUS), a prospective cohort of 3 983 men who were initially found fit for aircrew training in the Second World War and who have been followed since 1948. In 2006, 1001 men were alive, of whom 807 completed the annual survey without assistance. Two items added in 2006 were: "How well do you think your income and assets satisfy your current needs?" and "How well do you think your income and assets will satisfy your needs in the future?" Both had ordinal response options: Very well; Adequately; With some difficulty; Not very well; and Totally inadequate. We collapsed the first two, and last two, options into very adequate, adequate and inadequate. Time to death of end of follow-up by 2017 was examined with the Cox proportional hazards models for mortality, and adjusted for age, marital status, and functional status.

Results: The mean age in 2006 was 85 years old. The median follow-up time was 5.9 years, and 82% of the participants died in the observation time frame. Those with an expectation of inadequate future income had a higher risk of death: Hazard Ratio of 1.37 (95%CI; 1.02, 1.84) for "Not adequate" relative to "Very Adequate". In models adjusting for age, marital status and functional status, this association was no longer statistically significant ($P=0.07$). Instrumental activities of daily living and basic activities of daily living strongly predicted death over the time frame.

Discussion: Perceived adequacy of future income predicts mortality over a long time horizon, even in very old men. The effect, however, may be confounded or mediated by functional decline.

Conclusions: Income security may be a social determinant of health even into very late life.

Health Contemplations About Sundowning Behaviours: Weekly, Seasonal and Geographic Patterns

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Background: Sundowning behaviors (increased agitation later in the day) are common in older adults with dementia. The underlying etiology for these behaviors is unclear; possibilities include increased caregiver fatigue at the end of the day and disruption of circadian rhythms by both age and neurodegenerative illness. For the United States, we examined American Google Trends search data for health contemplations around ‘sundowning’ for circumseptan (day-of-the-week) and seasonal patterns. We also examined how interest in sundowning varied on a state-by-state basis with mean daily sunlight (percent) and latitude.

Methods: Daily internet search query data was obtained from Google Trends (2005 to 2016 inclusive). Circumseptan patterns were determined by a wavelet analysis for 2016 data. Seasonality was determined by the difference in search volumes between winter (December, January and February) and summer (June, July and August) months for 2005 to 2016. Geographic associations between percent sunny days and latitude were done on a state-by-state basis for the year 2016.

Results: Searches showed a significant increase at the end of the weekend with activity 10.9 ± 4.0 percent higher on Sunday as compared to the rest of the week. Search activity showed a seasonal pattern with search activity significantly higher in the winter months while declining in the summer months (36.6 ± 0.6 versus 13.7 ± 0.2 , $p < 0.001$). State-by-state variations in ‘sundowning’ searches showed a significant negative association with increasing mean daily sunlight ($R^2 = 0.16$, $\text{Beta} = -0.429 \pm 0.149$, $p = 0.006$) and showed a positive association with increasing latitude ($R^2 = 0.38$, $\text{Beta} = 0.648 \pm 0.122$, $p < 0.001$).

Discussion: Interest in ‘sundowning’ is highest after a weekend, a time when external caregiver support is reduced. ‘Sundowning’ searches also were highest in winter, in states with less sun, and states at a more northerly latitudes, supporting disrupted circadian rhythms as a contributing factor to these behaviors.

Conclusions: Health contemplations surrounding sundowning behaviors are higher at the end of weekends, in less sunny states, in states at higher latitudes, and during the winter months. These results provide support for both the caregiver stress and disrupted circadi

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Background: Older adults are at heightened risk of problematic polypharmacy, and require consistent and effective medication management. It is unclear how prescribers’ non-clinical characteristics (i.e., demographic and practice-based factors) influence the medication management decisions made for older adults. A scoping review was conducted to summarize the non-clinical characteristics of physicians that have been associated with medication management approaches for multi-morbid adults over 65 years old.

Methods: A comprehensive search using Embase and Medline was conducted. Information regarding physicians’ demographics and practice-based characteristics and medication management for older adults were independently evaluated and abstracted by two reviewers, and descriptively summarized.

Results: Twenty-five physician characteristics with varying influences on medication management approaches were identified from the 65 studies included. These were three demographic characteristics (age, sex, language) and ten practice characteristics (hospital affiliation, compensation model, practice location, size and type, training location, type and length, past prescribing and referral rates, and profile of patient roster). Associations between prescriber characteristics and medication management were most commonly reported in studies describing cardiovascular (18), neuropsychiatric (12), and non-specific multi-morbid (25) conditions. Significant associations were most commonly reported between medication management practices for cardiovascular condition and physician’s specialty (16), years since graduation (7) and practice location (6). Among neuropsychiatric studies, significant associations were most commonly reported between medication management practices and physician’s specialty (6), practice location (3) and training level (2).

Discussion: Physicians’ demographic and practice-level characteristics may differentially affect aspects of the medication management process for older adults. Strategies proposed to standardize medication management by physicians with diverse characteristics included: audit and feedback, increased collaborations, reviewing and improving existing training programs.

Conclusions: Research and training development aiming to standardize medication management should account for differences in physicians’ non-clinical characteristics.

Influences of Physicians’ Demographic and Practice-Based Characteristics on Medication Management for Older Adults: A Scoping Review

Experiences of Driving Cessation and Dementia: A Meta-Synthesis of Qualitative Literature

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Background: Driving provides a crucial link to the outside world and is a marker of independence for many older adults, often affecting their quality of life. Decision-making about driving and the experience of transitioning to driving cessation is a significant challenge facing persons with dementia, their family caregivers, and healthcare providers. To provide a deeper understanding of the challenges and strategies associated with this transition we conducted a systematic review and synthesis of the qualitative research on factors that influence the experiences of dementia and driving cessation.

Methods: A meta-synthesis of qualitative studies on key informant perspectives on dementia and driving cessation was conducted, focusing on the challenges and coping strategies they employed. Structured inclusion criteria were applied to screen 616 titles and abstracts, and 9 qualitative studies were included, published from 2002 to 2016. Descriptive themes were identified using content analysis and synthesized to generate analytic themes.

Results: Cross-cutting themes on experiences of driving cessation for people with dementia are the importance of: open communication and autonomy in decision-making; advanced planning with connections to resources; relationships for social inclusion; providing support to address the impact of cessation on identity and emotional wellbeing; and the benefit of individualizing support approaches.

Discussion: It is important to ensure that drivers with dementia and their family caregivers are well informed and supported in their decision-making and transition to non-driving. Health care providers as key communicators and health systems conducive to this dialogue, as well as strategies to address the emotional impact of driving cessation, are needed to facilitate this.

Conclusions: This review illustrates the challenges experienced in driving cessation for persons with dementia and identifies some important areas for consideration when designing supportive programs to address driving.

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Background: The Canadian Collaboration on Neurodegeneration and Aging (CCNA) is a study of people with cognitive impairment or dementia funded by CIHR and study partners engaging 360+ dementia researchers and 20 teams. The 8 platforms supporting the teams include the Clinical Cohorts Platform; COMPASS-ND study.

Methods: To create cohorts of participants with various cognitive disorders. Integrate a wide range of experimental, clinical, imaging and genetic expertise. Addresses causes, identification, management, treatment and prevention of cognitive conditions in the aging population. Collect bio-specimens, imaging, genetics, and brain donation to support the 20 national research teams.

Results: In July 2014 a Clinical Cohort Working Group met monthly by teleconference (TC) to design a comprehensive clinical protocol. Since July 2015, the Platform Implementation Team has met weekly. The protocol includes clinical questionnaires, neurologic examination, neuropsychology testing, blood and CSF biomarkers and MRI brain imaging. The 7 clinical cohorts include Subjective Cognitive Decline (244 for intervention trials in Toronto and Montreal and 56 from other sites) MCI (400), MCI with subcortical vascular lesions (200), mild dementia of mixed etiology (150), mild Alzheimer's Disease (150), Parkinson's Disease dementia spectrum (Lewy Body disease, Parkinson's dementia, MCI in Parkinson's disease) (200), frontotemporal disorder (FTD) (behavioural variant FTD, primary progressive aphasia, progressive subranuclear palsy and cortical basal syndrome) (200) for a total of 1600 participants. In addition, 660 normal elderly controls have been added.

Discussion: To date 29 sites have completed signed agreements and contracts, and staff and have been initiated with a total of 32 sites anticipated. Over 200 participants have been recruited, with the largest group having MCI. Recruitment strategies are being implemented through TC's.

Conclusions: COMPASS-ND Study is established, implemented and is actively recruiting.

The Canadian Collaboration on Neurodegeneration and Aging – Platform 1 – COMPASS-ND Study. Planning and Implementation

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Gait Speed vs. VES 13 - Comparing Screening Tools To Determine the Need for a Comprehensive Geriatric Assessment in Senior Women with Breast Cancer

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Background: Currently, geriatric oncology patients receive very standardized cancer therapy. Many of these patients are much more frail and at risk than younger cancer patients and require specialized treatment plans to reduce risk of toxicities or to optimize their state of health before therapy. To determine which patients require special care a Comprehensive Geriatric Assessment (CGA) is required. This assessment is very time consuming and geriatricians are scarce. The purpose of this study was to determine if Gait Speed (GS) analysis is equivalent to the Vulnerable Elders Survey 13 (VES-13) assessment, the current screening tool used in women 70 years or over with breast cancer to determine if they are frail, and may benefit from a referral to geriatricians for CGA.

Methods: Each participant completed the VES-13 assessment and a 4-meter GS assessment. Comparative statistics were used to analyze the data.

Results: 29 participants completed each assessment. On the VES-13, nine (31%) tested as frail (score > 3) with mean gait speed 0.690m/s, while the non-frail recorded a mean GS of 1.23m/s. Comparatively, only 7 (24%) qualified as frail from the GS assessment with a mean GS of 0.784m/s, while the non-frail completed the assessment with a mean 1.21m/s. Each of the seven qualified as frail on GS also were deemed frail on the VES-13 assessment ($p < 0.001$), and there was no difference in mean GS of those deemed as frail by either assessment ($p = 0.559$).

Discussion: This data shows that each assessment is equally as effective in flagging women over 70 with breast cancer as potentially frail.

Conclusions: The GS assessment is a slightly cheaper and faster option than the VES-13, so it should be considered to replace its screening-tool counterpart.