Canadian Geriatrics Society 36th Annual Scientific Meeting Abstracts

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ORAL ABSTRACTS

Cards: A Novel, Case-Based Method for Undergraduate Medical Students to Learn Key Concepts in Geriatrics

A. Tang, E. Kwan, M. Paget, S. Coderre, K. Burak, K. McLaughlin. University of Calgary.

The flipped classroom is a reversal of conventional teaching models: learners obtain first exposure to material through independent study and then in-class time is dedicated to activities for learners to apply the knowledge. Cards are a novel method of "flipping the classroom" using adaptive multiple-choice questions with patient cases containing randomized demographic data. The purpose of this project was to implement a flipped classroom model on Geriatrics topics to determine if Cards provide an additional benefit to podcasts in learning outcomes for second-year medical students.

Three distinct modalities were used: traditional lectures, podcasts, and Cards. All of the material was covered in lectures and podcasts. Half of the material was randomized to be presented in Cards. Recall and comprehension were tested as part of a formative examination. After the exam, students were asked to evaluate each teaching method based on a Likert scale: 1 (strongly disagree) to 5 (strongly agree).

Students performed better on exams when faced with material covered by Cards compared to material covered by only lectures and podcasts (37.8 ± 16.5% correct responses versus 30.3 ± 14.3%; n= 131; $p < 0.01$). The students viewed Cards as a valuable supplement to lecture material (4.2 ± 0.56; n= 41) that helped add to their knowledge about the topics (4.2 ± 0.61). The majority would want more instructors to incorporate Cards into their teaching (4.2 ± 0.67) and preferred Cards over the traditional lectures (3.8 ± 0.92).

Further studies will be required to see if Cards alone can show improved learning outcomes or if the other components of the flipped classroom are needed to supplement Cards.

Cards reinforce knowledge acquisition through repetition and are a well-received teaching method.

Enhancing the Conference Experience Through Social Media. An Evaluation of Twitter Use at the Annual Scientific Meeting of the Canadian Geriatrics Society

L. Budd[1], C. Wong[1], A. Gardhouse[1], C. Frank[2]. [1]University of Toronto, [2]Queens University.

Twitter is a microblogging application utilized for medical education and communication. Twitter participation at scientific conferences enables international networking, resource sharing and critical appraisal. This study evaluates and describes the participation, content and impact of the live Twitter stream at the 2015 Canadian Geriatrics Society annual scientific meeting "(#CGS2015)." This is the first analysis of Twitter applications for Geriatric Medicine conferences.

Twitter transcripts of #CGS2015 were obtained from Symplur and analyzed for content, impressions and participant demographics. The analysis began one week before the conference and extended to three days after the conference. Qualitative data on participants' opinions were obtained by questionnaire. TweetReach provided transcripts from the 2014 CGS scientific meeting for growth analysis.

There were 1491 total #CGS2015 Tweets, 40% original. Tweet content categorized as follows: conference sessions (38.8%), networking (29.2%), resource sharing (17.6%) and conference promotion (14.3%). Of the 279 participants, 60% were non-Canadian. The study authors and CGS Twitter accounts were responsible for 18% of Tweets. Through questionnaire data, participants emphasized the value of Twitter in facilitating collegial interactions and providing insight into sessions not attended live. The most cited drawback was divided attention when using personal devices. Analysis from #CGS2014 to #CGS2015 revealed increases in total participants (1057), number of Tweets (229) and impressions (788,225).

Future conferences may benefit from workshops teaching Twitter basics. This study also brings into focus the need for implementing strategies to minimize stigmas when participants use handheld technology.

Twitter engagement at CGS 2015 enabled international participation in online discussions of conference-specific sessions, resource sharing and networking. The efficacy of Twitter in complementing Geriatric Medicine conferences is supported by the growth of Tweeting between #CGS2014 and #CGS2015.

Nursing Perspective on the Confusion Assessment Method: a Qualitative Focus Group Study

E. Wong, J. Lee, K. Nair, C. Patterson. McMaster University.

Delirium is associated with substantial morbidity and mortality. Nurses are often first to detect delirium. When the Confusion Assessment Method (CAM) is used by nurses, a 2001 study showed that delirium is under-recognized compared to trained researchers. This study sought to understand nurses' attitudes and perceptions regarding operationalization of CAM and barriers to its proper use.

Using a thematic approach, 4 focus groups were conducted with orthopedic ward nurses at an academic hospital in Hamilton, Ontario. All participants use the CAM daily. Groups were moderated by a geriatrician using a semi-structured guide. Focus groups were continued until saturation was reached. Themes were coded by 2 independent investigators, with NVivo 11 used to facilitate analysis.

Twenty nurses participated (75% female, mean age 46.5 years, mean years in practice 16.8, 50% RNs, 50% RPNs, 50% recall CAM training). Although the CAM was praised for its simplicity, some nurses wanted more flexibility for narrative descriptions of delirium episodes. Across the groups, disorientation was used to evaluate all criteria without objective testing for inattention. Reported challenges included differentiating delirium from dementia, determining baseline cognitive status, non-verbal patients, language barriers, time constraints, discrepancy with physician assessments, and pressure to diagnose delirium. Fear of precipitating delirium with opioids appeared to create an environment of undertreated post-operative pain.

Our study confirms previously reported issues with nurses' use of the CAM. Several new findings were identified, including frequent discontinuation of opioid medications in delirious patients with pain.

Fifteen years after the original report on nurses' use of CAM, significant knowledge gaps still exist in the understanding of delirium and how this popular tool is used. There is an urgent need to improve delirium detection and prevention.

How Safe is Automated Prescribing for Elderly Patients in Hamilton Health Sciences? A City-Wide Review

K. Piggott[1], G. Ioannidis[1], A. Papaioannou[1], V. Vastis[2]. [1]McMaster University, Hamilton, Canada, [2]The Royal College of Surgeons, Ireland.

Seniors are the most susceptible to adverse drug events, and over 10% of seniors in 2009 were taking potentially inappropriate prescriptions (PIPs). Order sets are convenient and serve as a helpful checklist, particularly when physicians are under-slept or hurried. They do however introduce risk, as medications "checked off" may easily be prescribed without being carefully considered.

The most widely-used criteria for PIPs are the Screening Tool of Older Person's Prescriptions (STOPP), and the Revised 2015 Beers Criteria. These tools are supported by a rigorous base of evidence that have shown a reduction in the use of high-risk medications, decreasing the incidence of potential drug interactions, and improving patient outcomes.

All automated order sets available to physicians in Hamilton Health Sciences (HHS) were reviewed. All order sets that could be applied to elderly patients were included in the study. Order sets specific to paediatrics or obstetrics were excluded. Order sets were screened by two independent researchers for medications on the AGS 2015 Updated Beers Criteria, or the STOPP/START Criteria. A total of 314 order sets met inclusion criteria for the study.

More than half (57%) of order sets contained at least one medication that was potentially inappropriate for seniors, by STOPP/Beers criteria. Order sets with the greatest number of PIPs were from Medicine, Surgery and the Coronary Care Unit.

At least one PIP was found in 65.6% of Medicine order sets (including subspecialties); 63.2% of Diagnostic Imaging order sets; 63.2% of Cardiology; 64.3% of Emergency services, and 51.0% of Surgery order sets. The most commonly available PIPs were NSAIDs, steroids, opiates, and benzodiazepines.

These results highlight the wide availability of PIPs to physicians caring for seniors, who may not always be carefully considering their safety. PIPs in seniors are a preventable cause of patient harm. Approximately 50% of hospitalized seniors receive at least one inappropriate medication that can lead to falls, delirium, stroke, fracture, mortality, increased length of stay, or readmission to the hospital.

More often than not, physicians in Hamilton have PIPs available to them when caring for elderly patients. Over half of all order sets contained at least 1 PIP, and the most commonly available PIPs were NSAIDs, steroids, opiates, and benzodiazepines.

Development of Competencies for an Ambulatory Geriatric Medicine Subspecialty Program Using a Consensus of Experts

C. Tessier-Bussieres, S.E. Straus, B. Liu. University of Toronto.

Ambulatory care is a key component of geriatric medicine subspecialty training but currently there are no standardized core competencies in this domain. The goal of this project is to develop a set of competencies for geriatric ambulatory medicine that are essential for geriatric subspecialty residents to master by the end of their curriculum to become independent in their professional practice, offer the best care possible and respond to the increasing demand for the ambulatory care of older patients.

We completed a multi-phased project including an environmental scan, a modified Delphi and a webinar with relevant experts to develop the list of core competencies.

In the first phase, we identified 108 core competencies from recent literature (2010 to 2014) as well as currently used lists that were provided by 7 Canadian geriatric medicine program directors. They were divided into the six Canmeds domains (medical expert, leader, collaborator, communicator, scholar and professional). The second phase, the Delphi process, identified 102 competencies for the final list and 6 competencies for discussion during the webinar. 2 competencies were eliminated through webinar discussion with 13 experts in geriatric medicine and education. A total of 9 new competencies were developed during the project based on suggestions from second phase participants and the opinion of experts during the webinar.

115 Geriatric Ambulatory Care Competencies for geriatric residents were identified.

We produced a tool to guide the development of standardized ambulatory geriatrics training which emphasizes skills specific to ambulatory medicine. We are hoping to integrate some of the competencies into the Royal College Competency by Design initiative. The next step of this project will be to validate the tool with geriatric trainees and elderly patients.

The Effectiveness of Education in Mild Cognitive Impairment (MCI) Patient Groups

W. Lin, J. Kow, P. Lee. University of British Columbia.

Little is known about the effects of educational intervention in mild cognitive impairment (MCI). This study assesses the effects of an intervention in a patient group setting.

This prospective cohort study recruited patients through the "Living well with MCI" program at St. Paul's Hospital, Vancouver BC. The program consisted of educational sessions led by an occupational therapist and a social worker for subjects diagnosed with MCI. Participants completed questionnaires before and after the program followed by a face to face interview, in order to quantitatively and qualitatively assess the program's effects on patients' knowledge and quality of life regarding MCI.

A total of 13 participants were recruited. The study showed that participants perceived themselves to be more knowledgeable regarding MCI and healthy brain practices after attending the program. The study also suggested that participants may have a better understanding of MCI. There were positive correlations between self-perceived knowledge and feeling more confident to live well with MCI and lessened anxiety. There were trends which showed an increase in the number of healthy brain behaviour practiced and tasks enacted for future planning, but they were not statistically significant.

The study demonstrated effectiveness of patient-centered educational intervention in patients with MCI. Patients reported less anxiety, less distress, and more confidence after attending a program. Further studies with increased sample size and longer follow-up are required to establish behavioural change with these educational interventions.

Patient-centered educational intervention groups improve the quality of life in those with MCI.

Safety of Parenteral Medication Monographs for Elderly Patients

Z. Al-Khateeb, J. St. Onge. McMaster University.

Institutional parental medication monographs are used to guide staff on the safe administration of medications. These documents advise how to prepare and administer the drug, but also alert the user of potential side effects and appropriate dosing regimens. Since many hospitalized patients are older, and risk of adverse drug events increases with age, these monographs should include potential hazards of use and dosing adjustments in older patients. As a quality improvement initiative, we reviewed our institution's parenteral medication monographs for alignment with principles of safe prescribing in older adults.

All parenteral medication monographs at a single acute care hospital were reviewed. Those identified as potentially inappropriate by the 2015 Beers criteria were evaluated for (a) evidence of geriatric dosing recommendations and (b) warnings about the adverse effects highlighted in the Beers recommendations.

Of 226 monographs, 21 were identified as potentially inappropriate medications in the elderly. Of these, 18 (86%) were found to lack safety and dosing guidelines specific for the elderly. Risk of delirium was rarely mentioned. Cautions to use lower doses in the elderly were uncommon.

At our institution, a significant proportion of parental drug monographs do not warn about common geriatric side effects or dosing adjustments. This may be of broader interest because our monographs are based on a foundational parenteral drug therapy manual that is used by other hospitals. Based on the findings, we have proposed amendments to the

current monographs to alert staff of common safety concerns when these medications are prescribed to older adults.

Increased attention to parenteral drug monographs is recommended to ensure that they include administration guidelines specific to elderly patients.

Preoperative Risk Factors Predict Risk of Delirium and Other Postoperative Complications Among Elderly Patients Undergoing Elective Surgery: Systematic Review

J. Watt[1], A. Tricco[1], C. Talbot-Hamon[1], A. Grudniewicz[1], D. Sinclair[1], S. Straus[1], P. Rios[2]. [1]University of Toronto, [2]St. Michael's Hospital, Toronto, ON.

As elderly patients are increasingly undergoing elective surgery, clinicians need to identify patients at higher risk of postoperative complications and implement interventions to mitigate this risk; however, the optimal method of assessment remains unclear.

A systematic review was conducted to identify preoperative risk factors and assessment tools that predict elderly patients' risk of postoperative complications. Studies were identified by searching electronic databases (i.e. MEDLINE, EMBASE) for articles published between 1948 and June 24, 2014, and reviewing reference lists of included studies. Prospective studies reporting risk factors for postoperative complications including delirium, functional decline, institutionalization, prolonged length of hospitalization, and mortality among elderly patients (≥ 60 years and mean age ≥ 65 years) undergoing elective surgery were included. Two independent reviewers conducted all levels of screening, data abstraction, and quality appraisal. Data analysis will be completed in February 2016.

60 cohort studies and 1 controlled before-and-after study (12411 patients) were included after screening 5165 citations. Older age, functional dependence, cognitive impairment, frailty, history of alcoholism or smoking, presence of severe preoperative pain, and a history of delirium or depression were significant predictors of delirium after elective surgery. Poor functional status at baseline, greater comorbidity, smoking status, male sex, and having a diagnosis of cancer were predictive of functional decline. Older age, frailty, functional dependence, cognitive impairment, smoking status, small arm circumference, slower Timed Up and Go (TUG) test, polypharmacy, and weight loss ≥ 10% predicted prolonged hospitalization.

There are a number of identifiable risk factors that may predict postoperative complications in elderly patients.

The aforementioned risk factors and complications should be integrated into a preoperative discussion when considering elective surgery in elderly patients. Further studies are needed to refine these lists of risk factors.

The Effect of Melatonergic Agents in the Prevention of Delirium—a Systematic Review and Meta-Analysis

A. Shen. McMaster University.

Delirium is a common state of acute alteration in cognition among seniors admitted to hospitals. It is considered a medical emergency associated with high mortality, morbidity and healthcare costs. Melatonin is an endogenous hormone produced by the pineal gland that regulates the circadian rhythm. Supplementation of melatonin has been investigated as a mean to prevent the emergence of delirium. Literature search was performed through PubMed, Embase and Cochrane Database until Dec. 31, 2015, for randomized controlled trials (RCTs) investigating the use of melatonergic agents in the prevention of delirium. A systematic review and meta-analysis was subsequently performed.

Four RCTs met our inclusion criteria. Three trials used various doses of melatonin, and one trial used ramelteon, a melatonin receptor agonist. Two trials were done in medical inpatients, while two trials were done in peri-operative patients. The most recent large trial using melatonin for the prevention of delirium post-hip fracture surgery was negative. Whereas the three earlier smaller trials showed some benefit. Taken together, a meta-analysis of these four trials showed a lack of benefit for the use of melatonergic agents in the prevention of delirium (Risk ratio 0.34, Confidence Interval 0.10-1.13).

Overall, there is insufficient evidence to support the use of melatonergic agents in the prevention of delirium at this time. Further studies are needed to answer this question. It is possible that melatonergic agents are more helpful in the prevention of delirium in medical inpatients rather than peri-operative patients.

Sedentary Behaviour and Physical Activity Patterns in Older Adults after Hip Fracture: a Systematic Review

E. Zusman, M. Dawes, M.C. Ashe. University of British Columbia.

High levels of sedentary behaviour and low levels of physical activity are present in older adults with mobility impairment. Hip fracture is a life changing event that can result in long-term mobility impairment; it is therefore important to understand the ways in which sedentary behaviour and physical activity affects health outcomes, especially the fracture recovery process.

We conducted a systematic review to answer our research questions. Our objectives were: 1. Describe the patterns of sedentary behaviour and physical activity in older adults

after hip fracture; 2. Explore associations between sedentary behaviour and physical activity patterns with overall health and fracture recovery.

Our review questions were: For older adults with hip fracture: 1. How much waking time is spent in sedentary behaviour and physical activity?; 2. Is there an association between time spent in sedentary behaviour and health outcomes?

We followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines for conducting and reporting systematic reviews. We searched nine different databases. We included experimental and observational studies that objectively measured sedentary behaviour or physical activity in older adults (65 years+) after hip fracture.

We reviewed 404 papers at the title and abstract level and 33 papers at full text level. Ten papers met the inclusion and inclusion criteria for data synthesis.

There are ten studies that have objectively evaluated (accelerometers, pedometers etc.) sedentary behaviour and physical activity patterns in older adults after hip fracture. Older adults with hip fracture often spend prolonged periods of their waking hours sedentary or in light physical activity.

There is limited research describing activity following hip fracture. The evidence indicates high levels of sedentary behaviour that may cause increased morbidity.

Multi-morbidity in Older Adults: Examining Prevalence and Patterns of Multiple Chronic Diseases Using a Pan-Canadian Electronic Medical Record Database

K. Nicholson[1], A. Terry[1], A. Thind[1], M. Fortin[2], T. Williamson[3]. [1]Western University, [2]Université de Sherbrooke, [3]University of Calgary.

Multi-morbidity, the coexistence of multiple chronic diseases, is a significant burden for older patients and primary health care (PHC) providers alike. The objectives of this research are to: 1) Determine prevalence and characteristics of older PHC patients with multi-morbidity in Canada; and 2) Examine patterns and progression of multi-morbidity among these patients over time.

ata were derived from the Canadian Primary Care Sentinel Surveillance Network (CPCSSN) electronic medical record (EMR) database, which collects longitudinal, de-identified data from PHC practices across Canada. Chronic disease diagnoses were identified using the ICD-9 classification system and a list of 20 chronic disease categories identified older patients with multi-morbidity. Computational and statistical analyses were conducted using JAVA programming and Stata 13.1 software.

Overall, 69.2% of older PHC patients were living with ≥ 2 chronic diseases. These patients had an average age of 74.6 years (SD: 7.0) and majority were female (57.9%). The majority of older patients with multi-morbidity had ≥ 3 chronic diseases (70.4%). The most frequently occurring combinations of chronic diseases were: 1) diabetes and hypertension; 2) hypertension and hyperlipidemia; 3) hypertension and cancer; and 4) hypertension and cardiovascular disease. Preliminary survival analyses demonstrate quicker accumulation of subsequent chronic diseases over time.

The majority of older PHC patients in Canada are living with multi-morbidity. Insight into the most frequently occurring clusters of chronic diseases and the rate of disease accumulation indicate a need for more proactive clinical care delivery.

This research explores the prevalence and clinical profiles of older PHC patients with multi-morbidity. This information can be used strategically to inform more effective health care policy and clinical practice guideline redevelopment for older adults living with multi-morbidity in Canada.

Comparison of Patients with Low Bone Mineral Density With and Without Spinal Fracture

E. Ballantyne, J. Sennet, R. Crilly. Western University.

It is common to see post-menopausal women with low spinal bone mineral density (BMD) without spinal fractures. Whether these patients are in the early stages of osteoporosis, or whether the low BMD is an artifact is unknown. We hypothesized that low BMD may be an artifact as BMD is an areal density, influenced by vertebral body shape. Wider vertebrae have a greater surface area and may be calculated to have a lower BMD than vertebrae which are deeper and narrower, but of similar mass and strength.

Post-menopausal women attending the osteoporosis clinic with a BMD T-score ≤ -3.0 at L2-L4 sites, with and without spinal fractures, were studied. Patient height, weight, age, bone mineral content (BMC), vertebral area, BMD for the spine, and BMD at 3 standard hip sites—total, neck and intertrochanteric—were collected. Lateral thoracic and lumbar radiographs were assessed for compression fractures.

Of 112 women assessed, 39 patients had vertebral fractures. The patients did not differ in terms of vertebral morphometry, refuting the primary hypothesis. Fracture patients were significantly older (71.3±10.6 vs. 64.2±8.5, $p<0.001$) and had small but significantly greater reductions in BMD at all sites. After multiple-regression analysis, only age ($p=0.001$) and spine T-score ($p=0.014$) remained significant.

Low BMD in patients without fractures is not the result of differences in vertebral body shape. These

patients may represent an earlier phase in the development of osteoporosis, and may end up with vertebral fractures whether due to the passage of time (risk exposure), or due to a progressive drop in BMD.

A further longitudinal study is needed. For now patients with low BMD should be considered at risk and treated accordingly.

The Predictive Value of the Canadian Study of Health and Aging Clinical Frailty Scale on Adverse Outcomes among Geriatric Trauma Patients

A. Cheung[1], B. Haas[2], T. Ringer[3], C. Wong[4]. [1]University of Ottawa, [2]University of Toronto, [3]McMaster University, [4]St. Michael's Hospital.

Age and injury severity alone are inadequate at predicting outcomes in the geriatric trauma population because they fail to consider physiologic age and frailty state. The Canadian Study of Health and Aging Clinical Frailty Scale is a validated judgement-based scale that assigns a frailty score based on clinical data. We hypothesized that the Clinical Frailty Scale will predict outcomes following injury in geriatric patients.

We performed a retrospective cohort study of geriatric patients (aged ≥ 65 years) admitted to a level 1 trauma centre between 2011 and 2014. The pre-admission Clinical Frailty Scale score was assigned to each patient by a geriatrician in their initial assessment or was abstracted by manual chart review. The primary outcome of interest was discharge destination, either adverse (death or discharge to a long term, chronic care or another acute care facility) or favourable (home or rehabilitation). Logistic regression was used to evaluate the relationship between these outcomes and the Clinical Frailty Scale.

260 patients met inclusion criteria. The mean age was 77 and mean Injury Severity Score was 19. Moderate or severe frailty (CFS 6 or 7) was strongly associated with adverse discharge destination (OR=5.3; 95% CI 2.1-13.5), compared to age (OR=1.1; 95% CI 1.0-1.1) and total number of comorbidities (OR=2.8; 95% 1.1-7.3).

Frailty independently predicts adverse discharge destination in geriatric trauma patients. This may be because frailty comes from a detailed assessment of the loss of physiologic reserves, unlike age or total number of comorbidities, which fail to consider the multi-factorial nature of geriatric trauma patients.

The Clinical Frailty Scale can be used as a clinical tool to triage resources and expertise to mitigate adverse outcomes in this population.

Efficacy of Cholinesterase Inhibitors for Dementia Patients of Chinese Descent

T. Chan[1], K. Leung[1], V. Li[1], Y. Ng[1], K. Kwok[1], R. Wong[2]. [1]University of Hong Kong, [2]University of British Columbia.

Cholinesterase inhibitors (ChEI) are the primary pharmacologic treatment for dementia. Their efficacy in patients of Chinese descent is not well described. The aim of this systematic review is to gauge the overall efficacy of ChEI in Chinese patients with Alzheimer's disease (AD), vascular dementia (VaD), or mixed dementia.

MEDLINE, PsycINFO, EMBASE and CINAHL were systematically searched for controlled trials of ChEI, including donepezil, galantamine and rivastigmine, for Chinese patients with AD, VaD, or mixed dementia. 54 relevant articles published from 1 Mar 2000 to 1 Mar 2015 were retrieved: 48 were excluded due to issues in study design or methodology, leaving six articles in this review. Outcomes for cognition, function, behavioural/psychological symptoms of dementia, and overall dementia rating were assessed.

Dementia patients of Chinese descent treated with ChEI (n = 180) had significantly higher mean Mini-Mental State Examination (MMSE) score than patients not treated with ChEI (standard mean score difference of 0.65, 95% confidence interval 0.34, 0.96). There was a trend favouring ChEI treatment measured by Alzheimer's Disease Assessment Scale–Cognitive (ADAS-Cog) scale, Activities of Daily Living scale, and Clinical Dementia Rating scale. However, there was no observed ChEI benefit in behavioural/psychological symptoms of dementia measured by the Neuropsychiatric Inventory.

The cognitive benefit of ChEI in Chinese patients was similar to previous reports in other ethnicities. It remains unclear if ChEI treatment had different effects on functional and behavioural outcomes in Chinese patients compared to other ethnicities.

Cholinesterase inhibitors are effective in improving cognition among patients of Chinese descent with AD, VaD, or mixed dementia. Further studies are needed to examine the potential benefits in the non-cognitive, clinically relevant outcomes in Chinese patients with dementia.

Relationship Between Physical Frailty in Community Dwelling Older Adults and Informal Caregiver Burden: a Systematic Review

T. Ringer, A.A. Hazzan, A. Agarwal, A. Mutsaers, A. Papaioannou. McMaster University.

Physical frailty is a prevalent syndrome in older adults that increases vulnerability for a range of adverse outcomes

including death and increased dependency. Caregivers of older adults experience significant physical, emotional, and financial burden, which is associated with physical and psychiatric morbidity. Our systematic review examined the state of the evidence regarding the relationship between these two prominent concepts in the geriatric literature.

We searched key databases to identify original English-language articles. Screening was based on a priori inclusion criteria, including discussion of physical frailty, caregiver burden, and a population of community-dwelling older adults. Included studies were critically appraised using the Cochrane Risk of Bias Tool or the Newcastle-Ottawa Scale (for RCTs or cross-sectional studies respectively).

Two researchers screened titles and abstracts of 1,205 retrieved studies, followed by the full-text 265 retained studies. Nine included studies underwent abstraction and appraisal. Heterogeneity of included studies precluded meta-analysis.

Five studies had the same author and drew from the same population. Three studies were of limited value since they did not include a validated measure of frailty. While caregivers of frail older adults experience burden, the scarce available evidence and lack of normative comparisons does not allow conclusions to be drawn about the strength or nature of the relationship. Excluded studies suggested that the term "frailty" is often used without clear definition, or is treated as synonymous with functional impairment or advanced age.

Our review suggests that caregivers of frail older adults experience burden which may differ from that of other caregiver populations. The scarce evidence does not allow conclusions to be drawn or to inform clinical practice. Given the salience of physical frailty and burden, there is ample space for further research.

Medical Trainees' Experiences with Complex Patients

R. Joseph, L. Lingard, S. Cristancho, L. Diachun. University of Western Ontario.

Geriatric patients present with medical, psychiatric, functional and social complexity. With the anticipated demographic shift, there is a greater need for clinicians who can manage such complexity. Training future physicians to navigate the complexity of clinical decision-making is in fact a newly recognized aspect of the CanMEDS Medical Expert Role. This study explores how medical trainees conceptualize clinical complexity, how well-prepared they feel to handle complexity and how complex encounters influence residency selection.

In this qualitative study, 20 third and fourth-year medical students engaged in a 2-part interview process. First, students drew 2 rich pictures which represented complex patient scenarios: 1 exciting and 1 frustrating scenario. Second, the pictures were used to guide a semi-structured interview. Interview transcripts were analyzed using constructivist grounded theory principles.

Descriptions of complexity fall under 3 categories: systemic/institutional complexity, medical complexity and complexity of the patient's social history. Categories for systemic/institutional complexity include active engagement and navigating the system. These are key processes which distinguish how clinical complexity is perceived; when actively engaged and able to successfully navigate the system, students perceived the case to be complex and exciting versus complex frustrating. These processes also influence residency selection, as feelings on complexity and systemic pressures are connected to students' specialty preferences.

The social process of learning, in relation to systemic/institutional complexity, appears to surpass medical complexity in how strongly it affects trainees, from how they experience complex patients to the choices that result from these encounters.

Complexity is a multi-faceted phenomenon. Ensuring that students feel engaged and supported in their encounters with geriatric patients is important for motivating trainees to pursue care of the elderly. These insights may benefit medical educators, as they strive to build a workforce capable of managing the aging population.

Medical Student Attitudes Towards Geriatrics

S.T. Chen[1], J. Kushner-Kow[1], C. Yen[2], S. Yu[3]. [1]University of British Columbia, [2]National Taiwan University, [3]Taipei Medical University.

The global aging population is increasing annually. However, the interest in a career involving geriatrics care is not keeping up with the increase in population. The lack of geriatrics interest leads to a decrease in willingness and quality of care for the elderly. Geriatrics knowledge, geriatrics experience, and personal demographics have been found to be associated with geriatrics attitudes in health care professionals. In Canada, personal demographics is an important factor because 20% of Canadian Medical student identify as Chinese or South Asian. The purpose of the study is to analyze medical student attitudes and compare the factors that affect these attitudes.

In our study, we compared the attitudes of medical students at University of British Columbia in Canada and National Taiwan University in Taiwan. The similarity between these two countries in its elderly population and health care system provides them as two countries for comparison. We utilized a 5-10 minutes online questionnaire to obtain data on pre- medical factors (demographics and

experiences), career choice factors, current geriatrics attitudes, and geriatrics knowledge.

The study results will be presented comparing positive attitude scores between UBC students of Taiwanese and non-Taiwanese descent vs. Taiwanese students. Statistical differences in attitudes will be presented from analyzing geriatrics experiences and geriatrics knowledge.

Western individualist values lower chances for intergenerational interaction whereas Eastern collectivist culture promotes duty of caring for older family members. Asians have a more negative geriatrics attitude whereas those more assimilated into Canadian culture will exhibit a more positive attitude towards geriatrics.

By understanding the attitudes that UBC medical students have throughout the four years of medical school and comparing this with medical students in Taiwan, we can better dissociate the influences pre-medical and medical experiences have on attitudes.

Psoas Muscle Area Predicts Length of Stay in Older Adults Undergoing Cardiac Surgery

J. Zuckerman[1], M. Ades[1], L. Mullie[1], A. Trnkus[1], J. Morais[1], J. Afilalo[1], J-F. Morin[2], Y. Langlois[2], F. Ma[2], M. Levental[2]. [1]McGill University, [2]Jewish General Hospital.

Frail patients are at high risk for morbidity and mortality following cardiac surgery. Low muscle mass is a core component of the frailty syndrome that is neglected by frailty scales. Psoas, lumbar and thoracic muscle areas (PMA, LMA, TMA) are radiographic correlates of muscle mass that can be measured from routine computed tomography (CT) images. The objective of this study was to evaluate the association between muscle mass derived from CT scans and postoperative length of stay (LOS) after cardiac surgery.

The perioperative clinically-indicated CT scans of cardiac surgery patients were analyzed to measure cross-sectional lean muscle areas on axial slices at the level of the L4 vertebra (PMA, LMA) and T4 vertebra (TMA) using the CoreSlicer.com software. Linear regression and correlations were used to measure the association of PMA, LMA and TMA with the Short Physical Performance Battery (SPPB) and postoperative LOS adjusted for the predicted risk of prolonged LOS determined by a composite variable from the Society of Thoracic Surgeons risk model.

Eighty patients were included with a mean age of 69.2 ± 10.0 years. SPPB was correlated with PMA ($r=0.66$, $p<0.0001$), LMA ($r=0.43$, $p=0.02$), and TMA ($r=0.47$, $p=0.0001$). LOS was correlated with PMA ($r=-0.44$, $p=0.01$), LMA ($r=-0.44$, $p=0.01$), and TMA ($r=-0.27$, $p=0.04$). After adjusting for the predicted risk of prolonged LOS, only PMA remained independently predictive of LOS ($\beta=-2.15$, 95% CI -3.90 to -0.39). Sensitivity analysis adjusting for individual covariates yielded similar results.

Further research is warranted to validate PMA as a prognostic marker and therapeutic target in this vulnerable population.

Low PMA is a marker of physical frailty that is associated with increased length of stay in older adults undergoing cardiac surgery.

The TIME (This Is ME) Questionnaire: a Tool for Eliciting Personhood and Enhancing Dignity in Nursing Homes

L. Pan[1], H. Chochinov[2], G. Thompson[2], S. McClement[2]. [1]University of Manitoba, [2]CancerCare Manitoba.

This study aimed at evaluating the effectiveness of the TIME (This Is ME) Questionnaire in eliciting personhood and enhancing dignity; specifically investigating the residents' and health-care providers' perspectives in the nursing home setting.

Six nursing homes in a Canadian urban center were involved in the study, including both for-profit and not-for-profit organizations. Residents completed both the TIME Questionnaire and a feedback response questionnaire; health-care providers offered feedback both through a questionnaire or participation in a focus group.

Cognitively well residents (n=41) and nursing home health-care providers (n=22) participated. 100% of the residents indicated the summary was accurate. 94% stated that they wanted to receive a copy of the summary, 92% indicated they would recommend the questionnaire to others, 72% wanted a copy of the summary to be placed into their medical chart. Overall HCPs' agreed that they have learned something new from TIME, and that TIME influenced their attitude, care, respect, empathy/compassion, sense of connectedness, as well as personal satisfaction in providing care.

A descriptive prospective study of the TIME questionnaire using both quantitative and qualitative methods. While residents endorsed the value of TIME as a dignity enhancing intervention, their feedback suggested that these responses were less uniformly held than among HCPs.

The TIME Questionnaire is a viable tool for HCPs to elicit personhood and enhance dignity centered care.

Promoting Geriatrics: Adopting a Telehealth Model to Serve an Ageing Population

M. Hafeez[1], R.M. Naqv[2]. [1]Athabasca University, [2]Victoria Hospital.

Studies are warranted to examine innovative solutions that instill a patient centric healthcare model for physically disable patients. Alternatives such as telehealth are available to address the needs of an ageing Canadian population through enhancing collaboration, accessibility and timely delivery.

In this two-phase study, several peer reviewed articles were assessed to evaluate risks and opportunities related to Telehealth. The findings were then corroborated through an online survey to assess geriatricians' perceptions of telehealth.

In phase 1, studies highlighted disparity in healthcare accessibility with 40% of Canadian rural emergency departments located more than 300 km from a major tertiary care centre. Findings from a recent survey conducted by Telehealth Canada found a 45.7% aggregate growth in clinical telehealth session across Canada with 60% utilization rate in Ontario. Barriers included risk of information loss, technology implementation and policy development. In phase 2, surveys were distributed to Ontario geriatricians (N = 26) of which 78% expressed an interest in offering telehealth services. Consultations and follow-up were among the most popular telehealth services offered. Key barriers to telehealth implementation entailed communication and scheduling constraints.

Rural EDs and Royal Flying Doctor Service continue to present costs and accessibility barriers. With 120% increase in facility endpoints since 2010, telehealth deems further exploring. Common perceptions of telehealth's importance and limitations highlight the level of interest expressed by geriatricians. Technology and nursing support are also identified as important implementation factors when enabling telehealth in Canada.

The findings can be used to highlight numerous benefits presented by telehealth, address challenges related to its implementation and confer common perceptions of geriatricians and their respective patients.

POSTER ABSTRACTS

The Risks of Major Hemorrhage and Supratherapeutic Anticoagulation Among Older Adults Receiving Oral Antibiotics and Warfarin: a Systematic Review & Meta-Analysis

K. Leung, E.J. Park, L. Charles, J. Triscott, P. Tian, B. Dobbs. University of Alberta.

Warfarin remains the mainstay therapy for stroke prevention and venous thromboembolism, accounting for over three-quarters of the anticoagulants prescribed in Canada. However, warfarin has multiple drug interactions including with antibiotics, which increase the risk of major hemorrhage. Currently, most drug compendia on warfarin interactions are primarily informed by case series and reports. To date, no meta-analysis has systematically quantified the risks of hemorrhage and supratherapeutic anticoagulation using population-based studies.

Database searches of MEDLINE and EMBASE (1980-2016) were conducted without language restriction. Studies were included if they were randomized controlled trials, cohort or case-control studies that examined the risks of major hemorrhages requiring hospitalization or supratherapeutic International Normalized Ratio $\geq$ 5.0 among individuals over age 65 concurrently taking antibiotics and warfarin. The most adjusted effect estimates were pooled using Dersimonian-Laird random effects models.

Eight cohort studies (n=260,842) and five case-control studies (n=124,200) were included. The antibiotics significantly associated with hemorrhages included cotrimoxazole (RR=3.18, 95%CI: 2.64–3.83), quinolones (RR=2.22, 95%CI: 1.64–3.00), macrolides (RR=1.87, 95%CI: 1.54–2.26), amoxicillin (RR=1.77, 95%CI: 1.53–2.04), but not nitrofurantoin (RR=1.26, 95%CI: 0.69–2.31). The few studies that reported INR excursions were limited by heterogeneity. However, cotrimoxazole (RR=8.11, 95%CI: 1.56–42.19) and macrolides (RR=2.62, 95%CI: 1.01–6.84) were consistently associated with supratherapeutic anticoagulation.

Antibiotics vary in their risk of major hemorrhage among warfarin users, and judicious selection of antibiotics during acute illness coupled with close monitoring for bleeding is necessary. Greater research is needed regarding the effects of antibiotics on INR because early detection and intervention for over-anticoagulation can prevent hemorrhages.

Older adults are at increased risk for adverse drug interactions, and a better understanding of warfarin interactions with common antibiotics will enable safer prescribing practices.

Teaching Residents to Teach—a Review

S. Ngo. Queen's University.

Effective teachers are better learners and have improved clinical competency. Formal teaching curriculum improve residents' teaching skills and confidence. This paper looks at how residents are taught to teach and how these methods can be applied to Family Medicine Care of the Elderly (CoE) programs.

A Medline search was performed using the terms "teaching" and "internship and residency". The search was limited to English papers, studies with an intervention and excluded participants who were medical students, fellow or faculty. Studies newer than 2009-2014 were the focus as recent reviews looked at articles up to 2009.

2,450 articles were reviewed and 33 were relevant. Teaching curriculum was heterogeneous in delivery, duration of curriculum and frequency of pedagogy delivery. All the programs included a didactic teaching session, readings and taught residents specific microskills. Six studies reviewed principles of adult education. 3 studies had relapse or maintenance strategies, using spaced education handouts, reminder pocket cards or guided sessions. One study evaluated a teaching elective rotation. All the teaching methods were evaluated, however few evaluated whether the program improved student learning (Kilpatrick level 4).

It is unlikely that one program will fit the needs of all residents. Ideal programs would be greater than 2 hours in length, include principles of adult learning, microskills and feedback from faculty and learners.

CoE programs are 12 months in duration, so time is a limiting factor in delivering resident as teacher programs. At Queen's University, CoE residents are given the junior attending role on several rotations and provided with feedback from faculty and learners. Teaching interventions in CoE setting warrant further study.

Geriatric Certificate Program (GCP): Interdisciplinary Education Improves Self-Perceived Confidence and Competence in Geriatric Workers

M. Kafato[1], A. Patel[2], D. Jewell[3], S. Marr[4]. [1]University of Western Ontario, [2]Hamilton Health Sciences, [3]St. Peter's Hospital, [4]McMaster University.

With the growing aging population, the complexity of medical problems and chronic diseases, including dementia and physical disabilities, has increased. GCP was developed as a quality improvement program to offer practicing health care providers an opportunity to develop knowledge, skills and attitudes in geriatrics-specific areas including assessment, behaviour management, and geriatric best practices. This study provides a preliminary program evaluation, examining the impact on self-reported changes in knowledge, skills, and competence.

GCP graduates completed online evaluation surveys upon successfully completing program-specific requirements, which included multiple choice examination.

292 individuals have registered in GCP, including nurses (36%), non-regulated health professionals (34%), regulated health professionals (16%), students/residents (6%), educators (4%), physicians (3%), and pharmacists (1%). 56 individuals have graduated to date; 55 completed a survey. Mean ratings (5-point scale) indicate the program is perceived as highly relevant (4.1 ± .61) and useful in enhancing clinical practice (4.2 ± .58). A large majority of graduates (98%) sustained or improved self-perceived competence in providing geriatric care after participating in GCP. 100% of GCP graduates reported gaining new knowledge (n=55) and skills (n=54). Graduates reported feeling more informed on how to better serve geriatric populations, and indicated use of learned skills including application of standardized assessment tools, supportive evidence-based strategies for persons with responsive behaviours, therapeutic communication skills, and comprehensive care planning. Program and travel costs in absence of financial employer support were identified as a barrier.

This program provides a significant and valuable opportunity for capacity building in geriatric workers, using core competencies to advance interdisciplinary best practice use.

This program will develop a workforce that is better prepared, supported, and can more confidently and competently meet the needs of the aging population.

ReCoM: The Development of the Resident Communication Manual

R. Kyle, R. Naqvi. University of Western Ontario.

Residents receive minimal education on formal communication techniques throughout their training. However, many studies indicate that the way in which information is presented to patients significantly impacts their perception of risks and benefits.

ReCoM uses tangible examples, personal experience, and evidence-based methods such as the shared decision making model to address the common communication problems faced by residents in their everyday practice. Using a real life example of the dramatic influence presentation of statistics can have, we address how statistics can be used to practice evidence-based medicine and preserve patient autonomy based on individualized goals. The evidence behind the shared decision making model is presented, as well as a practical approach to using it in everyday practice. Using code-status discussions as a familiar geriatric example, a mock conversation is presented, both in text and in video, to demonstrate how this approach can help to facilitate a difficult discussion with patients. The conversation is then reflected upon, along with common patient responses, in order to facilitate understanding its relevance to a multitude of situations a resident encounters. The manual also addresses some of the common knowledge gaps around survival, outcomes and the process of resuscitation itself.

Results surrounding the efficacy and readability of the manual are currently being compiled. Surveys have been distributed to key staff physicians and residents. Final results of the survey should be available by March 2016.

The objective of this project was to produce a manual that will provide guidance to junior residents on communication strategies in order to improve their skills during difficult conversations.

Written in colloquial language, ReCoM is a functional reference for residents.

A Systematic Review of Geriatric Models of Care for Rural and Remote Populations: Lessons for the Development of a Geriatric Outreach Model of Care for Remote Canadian First Nations Populations

K. Krause[1], S.K. Sinha[2], J.E. McElhaney[3], J-A. Clarke[3]. [1]University of Toronto, [2]Mount Sinai and the University Health Network Hospitals, [3]Northern Ontario School of Medicine.

The ratio of geriatricians to older adults in Canada stands at 1:20,914. This, however, does not accurately reflect the significant lack of access to culturally safe and appropriate geriatric care in rural areas and in particular remote First Nations Communities. Our objective is to inform the development of a new Geriatric Outreach Model of Care for remote First Nations populations, we performed a systematic review of the existing evidence around the development of geriatric models of care in rural and remote populations

Articles indexed in MEDLINE, CINAHL, and EMBASE describing geriatric models of care for rural or remote populations were identified. A qualitative approach identified key components of each model, while their inclusion and reported subjective value were used to postulate their relative importance and impact within each model.

Nine of 704 initially identified studies were included. Our analysis identified 7 distinctive model components: community investment, local model oversight, environmental awareness, provider education, continued patient-provider contact, and model integration. Provider education and frequent patient-provider contact were most frequent (7/9 models). Only 2/9 models included in-person contact between a geriatrician and patient.

Our review has helped to identify 7 essential components of existing geriatric outreach models of care for rural and remote populations and provided additional insight on the value each appears to contribute towards the success of these models.

These findings will help inform the creation of an evidence-informed Geriatric Outreach Model of Care for Remote Canadian First Nations Populations.

The Canadian Geriatric Society's Core Competencies: Their Place in the Undergraduate Medical Education Curriculum at the Schulich School of Medicine & Dentistry

A. Burrell[1], L.L. Diachun[2]. [1]Schulich School of Medicine & Dentistry, [2]St. Joseph's Health Care London.

The purpose of this study was to examine how the CGS core competencies (GCCs) are addressed in the undergraduate medical education (UME) curriculum at the Schulich School of Medicine & Dentistry (SSMD).

This was a quality assurance project, including quantitative and qualitative components. Geriatric objectives in the curriculum from the 2014-15 year at SSMD were mapped to the GCCs. Lecture materials were reviewed, to determine whether each objective was "not covered", "somewhat covered" or "well covered".

In the UME curriculum at SSMD, 19 out of the 20 GCCs appeared in the objectives. Of these, 17 were covered in didactic lectures, while two were addressed only in clinical rotations. As there is no dedicated geriatric block, the GCCs were distributed across the first three years. However, 11 of the 20 competencies were covered in didactic lectures during the first block of medical school. Additional geriatric objectives, not part of the GCCs, (fitness to drive, elder abuse, and geriatric psychiatry) were recurrent themes in didactic lectures.

Of the 19 core competencies identified in the curriculum, 17 were covered in didactic lectures. The objectives were reviewed and each competency had objectives that were "well covered" or "somewhat covered" in lectures. Two competencies were identified only in core clerkship rotations. Extent of coverage would be subject to variations in patient exposure and preceptor teaching, and may therefore not be reliably covered.

Nineteen of the 20 GCCs appeared in the undergraduate medicine curriculum at SSMD. Seventeen of those were reliably covered through didactic lectures, while the remaining two depended on exposure during clerkship rotations. Next steps include evaluation of student knowledge regarding the GCCs at completion of medical school.

Patterns in Benzodiazepine Use in a Long Term Care Facility: a Quality Control Study

A. Moreau[1], N-S. Tremblay[1], J.M. Villalpando[2], M-A. Bruneau[2]. [1]University of Montreal, [2]Institut de Gériatrie de Montréal.

In long term care, previous research has shown that 30 to 50% of the elderly consume benzodiazepines. However, it is well known that this type of drug has numerous adverse effects, especially in older patients (cognitive

impairment, falls, fractures, delirium, etc). Many organizations have published pharmacology guidelines stating the dangers of these drugs and encouraging physicians to limit their use. In 2014, a rapid survey of the benzodiazepine use in IUGM (Institut Universitaire de Gériatrie de Montréal) have shown that 28% of its residents use these drugs for insomnia. A more detailed study was needed to describe the pattern of use of these psychoactive substances in our facility.

We conducted a quality control study in early autumn 2015 at IUGM. The file of every patient in long term care that had at least one active prescription of benzodiazepine in the pharmacy records on June 1st of 2015 was analyzed for the study. A total of 140 patients were included. Every file was reviewed for medical conditions, demographic information, patterns of use as well as the side effects of the investigated drugs.

We discovered that 44% of the residents consume benzodiazepines. The majority was prescribed on as needed basis. The main reasons for the prescriptions were: agitation, anxiety, insomnia and resistance to care.

These results showed us that many prescriptions of these drugs are potentially inappropriate.

Many residents in our long-term care facility consume benzodiazepines without proper indication. An educational intervention for the physicians and staff must be made to help them choose more appropriate treatments for the indications noted above.

A Workshop to Help Residents Individualize Medical Reasoning to Choose Proportionate Means in Long-Term Care

A. Moreau, N. Caire-Fon. University of Montreal.

It has been shown that medical students feel less prepared to look after older adults in long term care than in the acute setting. Students also have trouble individualizing their medical conduct to each patient in the nursing home context. A survey conducted locally with senior family medicine residents, supported these findings. Individualizing medical reasoning to choose proportionate means is the daily work of physicians treating patients in nursing homes, we chose to call this process the proportionate approach. Since this skill is a requirement of the family medicine residency program we believed that it should be taught in a more explicit way as opposed to the current implicit (informal) learning methods.

We chose to create a workshop to answer this need.

First, the literature was reviewed to characterize the decision-making process involved in the proportionate approach. Since literature in this field is lacking we worked with a long term care multidisciplinary team (including doctors and pharmacists) to reflect on their daily work to complete the theory on this competency. Second, we created the workshop based on the best teaching practices. Once our work finalized, it was presented to medical educators of the University of Montreal for comments.

A 45 minutes group activity and an observation chart were created.

We think that the workshop and the chart will help residents to achieve a higher level of competency ("knows how" level of the Miller pyramid) to better prepare them for their work in long-term care.

Medical residents need explicit guidance to achieve a higher level of competency in using a proportionate approach in long term care. Research and teaching on this topic is lacking and should be pursued.

An Educational Intervention to Reduce Benzodiazepine Use in a Long-Term Care Facility: a Prospective Interventional Study

A. Moreau, N-S. Tremblay, J. Manuel, M-A. Bruneau. University of Montreal.

In long term care, 30 to 50% of older people consume benzodiazepines. In a quality control study conducted in the previous year at IUGM (Institut de Gériatrie de Montréal), we observed that 44% of our residents have this kind of prescription. Many were receiving these drugs for inappropriate indication in elderly (anxiety, agitation and insomnia). We decided to take action on this problem by conceiving an educational intervention aimed at the orderlies, nurses, pharmacist and the physicians at our facility.

We are conducting and evaluative research on a program to reduce the use of benzodiazepines in our establishment. First, we reviewed the literature on benzodiazepine withdrawal in the elderly to create an educational clinical intervention with a multidisciplinary approach. We will give a formal course to the physicians on February 11th 2016, followed by on-site teaching capsules for the nurses and orderlies. We also created cue cards to help the physicians determine the appropriate and alternative treatments to the symptoms the benzodiazepine were treating. A data collection has already been made on the patients using benzodiazepines earlier in 2015 at our facility. In March 2016, these patient file will be reanalyzed to measure the impact of our intervention at one month. The process will be done again 2 months later to evaluate the long term results of the program.

The preliminary results (from the 1 month follow-up) will be presented at the convention. The preliminary results will be discussed at the conference.

Primary Progressive Aphasia: a Report on 2 Cases

J. Triscott[1], R. Camicioli[2], B. Dobbs[2], P.G. Jaminal Tian[2], M. Tanner[3]. [1]University of Alberta, Glenrose Rehabilitation Hospital, [2]University of Alberta, [3]Glenrose Rehabilitation Hospital.

Primary Progressive Aphasia (PPA) is a clinical syndrome with speech deficits as initial presentation. With increasing prevalence of dementia in the aging population, the diagnosis of PPA may be missed. We will describe 2 cases of Primary Progressive Aphasia in older adults and review relevant literature.

This is a report of 2 cases of Primary Progressive Aphasia.

Case 1. An 83-year-old lady had a 3-year history of progressive language difficulties with no behaviour symptoms. Her speech was fluent but had pauses and difficulty in word finding. On examination, the MMSE was 7/30, GDS was 4/15, and there was a mild deficit in short-term memory and a mild impairment in visual-spatial abilities. She had diabetes and hypertension. The CT scan showed cortical and medial-temporal atrophy.

Case 2. A 65-year-old male had a 2-year history of dysphasia: he had difficulty expressing himself and needed cueing. This progressed to difficulties in memory and calculation. He could write short notes but struggled with paragraphs. The PET Scan showed an advanced neurodegenerative disorder with preservation of metabolism at the posterior cingulate gyrus.

Both cases were managed with cholinesterase inhibitors, speech therapy, referral to geriatric psychiatry, and caregiver support.

Primary Progressive Aphasia is diagnosed using Mesulam's criteria (2001): Language difficulty as the most prominent clinical feature; language deficits as the principal cause of impaired daily living activities; and aphasia as the most prominent deficit at the symptom outset. There are 3 variants described by Gorno-Tempini et al. (2011): Nonfluent/agrammatic variant, semantic variant, and logopenic variant. Diagnosis is made clinically with imaging support or definite-pathologic-diagnosis.

Primary Progressive Aphasia is a syndrome that needs to be differentiated from other geriatric syndromes to ensure appropriate and supportive care.

Seniors Community Hub

M. Abbasi, S. Khera, B. Dobbs, S. Kennett, P.G. Jaminal Tian. University of Alberta.

Frailty and chronic complex conditions have the biggest impact on our health care system. However, the current health care system is fragmented and not senior friendly. Coordinated, comprehensive interventions are needed to better manage frailty and multiple co-morbidities. We will develop and implement an interdisciplinary, integrated geriatric program targeting frail seniors within a primary care network.

The Seniors Community Hub (SCH) has: (1) Community-based, inter-professional, team-based care with family physicians working along-side with specialists; (2) Joint care planning and assessment of care needs; (3) Case managers; (4) Clinical records that are shared with interdisciplinary teams.

We will identify frailty using the Clinical Frailty Scale, support family physicians in providing team-based care, enable chronic disease management nurses to act as navigators, and enhance geriatric skills among allied health professionals through workshops. Caregivers will be supported by tapping into existing community programs.

We will describe the characteristics of the patients served in terms of demographics, frailty levels, and interventions and services provided. We will evaluate the impact of educational workshops on knowledge, attitudes, skills, and practices of healthcare professionals attending the workshops. Further, we will explore the impact of the SCH on hospital admission rates, emergency department visits, and patient-caregiver satisfaction.

The goal of SCH is to promote a collaborative relationship between family physicians, specialists, inter-professional multidisciplinary teams and community support services with active involvement of patients and their caregivers. SCH will be guided by the concept of the Patient-Centred Medical Home and, as such, align with current primary care reform.

The development and implementation of an interdisciplinary, integrated SCH is central to the provision of quality, efficient, and coordinated care for frail seniors in community.

Factors Contributing to Older Adults' Ability to Self-Manage Their Care Following Discharge from the Emergency Department to the Community: a Qualitative Study

S. Marr[1], D. Simpson[1], L.M. Hillier[2], S. Vinson[3], S. Goodwill[3], D. Jewell[3], A.A. Hazzan[3]. [1]McMaster University, [2]St. Joseph's Health Care London, [3]St. Peter's Hospital.

Poor self-management contributes to seniors' risk for poor outcomes following an Emergency Department (ED) visit. The purpose of this study was to identify the factors that contribute to seniors' ability to self-manage their health following an ED visit.

Interviews were conducted with 26 seniors and 25 caregivers of seniors who were discharged from the ED of

a large urban hospital, Hamilton, Ontario. Questions were asked about their ability to follow through on treatment recommendations (enablers, barriers) and needed supports. Inductive analysis was used to identify reoccurring themes in the data.

Six major themes were identified as factors contributing to seniors' ability to self-manage: understanding of post-discharge expectations, understanding of the health condition(s), caregiver availability, support for caregivers, patient resistance to accept treatment recommendations, and external factors (transportation, affordable housing, weather). Age differences and differences between patients and caregivers were evident. Patients were less likely than caregivers to indicate challenges with self-management and to identify needed supports. Older (>81 years) patients and caregivers were less likely to raise concerns about self-management. Needs for community-based services (home exercise programs, seniors groups) and advocacy support for caregivers to facilitate recommendation compliance were identified.

Both seniors and caregivers require greater community-based support following an ED visit to ensure they understand the health condition and understand and follow through on recommendations made in the ED. Identified needs for services currently available suggest there may be a lack of knowledge of available services and need for system navigation support.

The use of senior-friendly strategies in the ED (recommendations in writing, confirmed understanding of recommendations, including follow up) and greater access to community supports may enhance self-management following an ED visit.

How Do Older Adults Decide to Visit the Emergency Department?

S. Marr[1], D. Simpson[1], L.M. Hillier[2], S. Vinson[3], S. Goodwill[3], D. Jewell[4]. [1]McMaster University, [2]St. Joseph's Health Care London, [3]St. Peter's Hospital, [4]Hamilton Health Sciences.

Seniors account for a high number of Emergency Department (ED) visits, yet little is known about how they decide to visit the ED. The purpose of this study was to determine what seniors do prior going the ED and how they decide to visit the ED.

Adults over 65years of age visiting a large urban hospital ED (Ontario) over a three-month period completed a survey prior to discharge in which they were asked to identify what they did to manage their health prior to visiting the ED and whether someone had suggested the visit. Follow-up telephone interviews were conducted with a subsample to learn how they decided to visit the ED

Surveys were completed by 264 patients, 116 caregivers (N=392; N=12 unspecified). The mean age of patients was 79 years; over half were female (53%). While 40% of patients consulted with friends or family, and 24% called 911, fewer consulted their primary care provider (20%), specialist (5%), home care provider (12%), Telehealth nurse (3.1%) or walk-in clinic (1%) before visiting the ED. For 85% of patients it was suggested by at least one person that they visit the ED, 35% of whom were health care providers; 25% of patients decided on their own. Interviews (with 26 patients, 25 caregivers) revealed that patients often go to the ED when unsure whether symptoms are emergent or they cannot access primary care.

While older adults rely on others to help them decide whether to visit the ED, only a small proportion consult with health care providers in doing so.

Opportunities exist enhancing senior's decision-making process regarding ED visits and access to community-based health care to avoid ED visits.

The Diagnostic Yield of Implantable Cardiac Monitors in Older Versus Younger Patients Presenting with Syncope

K. Chu, C. Seifer. University of Manitoba.

Syncope is common in both younger adults and the elderly. Arrhythmia as a cause of syncope can be detected using implantable cardiac monitors (ICM), which allow for long term rhythm monitoring to try to achieve symptom-rhythm correlation. Our purpose was to compare the diagnostic yield of ICMs in patients ≥ 65 years of age to patients < 65 years.

We did a retrospective database review of all patients who received an ICM and were followed at a tertiary cardiac device clinic between 2005 and 2015.

A total of 98 patients were included, 65 patients ≥ 65 years (33 female and median age 79.9 years) and 33 patients < 65 years (13 female and median age 48.8 years). Of the patients ≥ 65 years, 29 patients (44.6%) had a rhythm recorded during symptoms. Bradycardia treated with a permanent pacemaker was the attributable rhythm in 83%. Of the patients < 65 years, 18 patients (54.5%) had a rhythm recorded during symptoms; 50% had bradycardia needing a permanent pacemaker.

The diagnostic yield of ICMs in older patients with suspected arrhythmic syncope is high and comparable to younger patients. Permanent pacemaker implantation is higher in older patients.

Long-term rhythm monitoring should be considered in older patients with unexplained syncope as it frequently impacts patient management.

Why Residents from Assisted Living Facilities are Admitted to Hospital from the Emergency Department

E. Losier[1], A. McCollum[1], M. Howlett[1], P. Jarrett[1], P. Nicolson[2], R. McCloskey[3]. [1]Dalhousie University, [2]Horizon Health Network, [3]University of New Brunswick.

Little is known about admissions to hospital for residents of assisted living facilities such as special care homes (SCHs). These facilities provide assistance with activities of daily living but not regular nursing or medical care. The purpose of this study was to evaluate the reasons for hospital admission of SCH residents in a tertiary emergency department (ED) with 56,000 annual visits.

The community of reference had a population of 30,000 aged 65 years and older and 785 SCH beds. We performed a retrospective chart review of SCH residents seen in the ED and who were admitted to hospital over a one year period. Reasons for ED visit and hospital admission were analyzed using descriptive statistics.

There were 785 SCH residents (mean age 78.4 years), 111 (14%) of whom visited the ED 344 times (3.1 times per resident). Over one third (36.6%) of SCH ED visits resulted in admission, compared to the overall ED admission rate of 13.4%. The most common presenting complaints resulting in admission were shortness of breath (21.9%), weakness (10.9%) and abdominal pain (7.0%). The average length of stay was 17.4 days.

SCH residents seen in the ED were admitted to hospital at a rate three times higher than the total ED admission rate. Almost 40% of SCH admissions were due to complaints of shortness of breath, weakness, or abdominal pain.

Residents of assisted living facilities are admitted to hospital more often from the ED than the general population. Further study may determine if improved community health care in the SCH environment would lead to decreased hospital admission rates. Focus on the most common complaints may provide the best opportunity for improved outcomes.

Frailty as a Predictor of Functional Stability in Older Patients Undergoing Transcatheter Aortic Valve Replacement (TAVR)

W. Alkeridy[1], K. Balogh[1], A. Hill[1], S.B. Lauck[2], J.G. Webb[2]. [1]University of British Columbia, [2]St. Paul's Hospital.

The management of aortic stenosis by transcatheter aortic valve replacement has well documented medical outcomes. However, there is limited data on functional outcomes. Transcatheter aortic valve replacement (TAVR) is a minimally invasive procedure that avoids sternotomy and cardiopulmonary bypass. TAVR is the standard of care in higher surgical risk patients. The TAVR population is primarily elderly, more frail than surgical patients, and burdened with multiple other comorbidities.

Our hypothesis is that TAVR procedure is not associated with significant functional decline and that preoperative frailty will be a predictor of functional and medical outcomes at one month and one year post-operatively.

Our study is a retrospective data review of patients with symptomatic, severe aortic stenosis with prohibitive or very high surgical risk who were selected to undergo TAVR between June 2012 and November 2015 at Vancouver General Hospital and Saint Paul`s Hospital. Data was recorded in an administrative data base. Pre-morbid status, intraoperative events, and post-operative outcomes have been collected as part of usual care.

Our primary endpoint is functional stability following TAVR procedure, based on post-operative activities of daily living and gait speed recorded at 30 days and 12 months. Secondary outcomes are hospital re-admissions and mortality at 12 months post-operatively. Subjects serve as their own controls with their pre-operative measures.

Preoperative indices and peri-procedure characteristics will be investigated as predictors of postoperative outcomes. Our results are pending.

This study will add to the growing body of literature on the impact of frailty on surgical outcomes. Our conclusions will depend on our results.

Aging in Rural Communities: Exploring the Barriers and Solutions to Healthy Aging in Rural Southern Alberta

C. Hoggard. University of Calgary.

By 2036 likely one in five Albertans will be 65 years or older. Alberta's Continuing Care Strategy focuses on the concept of seniors "Aging in Place" and recognizes the medical system needs to focus on chronic community care rather than acute care. While this model aligns with the desires of senior Albertans and makes fiscal sense, there are unique implications to the 23% of rural Alberta seniors.

This projects aim was to identify barriers to successful "Aging in place" for rural southern Alberta seniors as well solutions to these barriers.

A critical review of Keating et al in 2011 which summarized the social barriers to aging in rural Canada was compared with reports of eleven key healthcare stakeholders in rural Southern Alberta.

An EMBASE MEDLINE search was performed September 17 2014, followed by a Grey Literature review between October 30th to November 6th 2014 to identify solutions to these barriers.

Nine barriers were identified from interviews: transportation/geographic isolation, social isolation, compulsory volunteerism, lack of services (health care and

non-health care), housing, caregiver burnout, community uniqueness and communication.

Nine papers met inclusion criteria and purposed solutions yet addressed only three of the identified barriers. The Grey Literature search revealed multiple small solutions to all identified barriers.

Many solutions exist to mitigate barriers to successful "Aging in place" in rural southern Alberta, however, the services are often small, fragmented, lack supporting evidence and funding leaving them vulnerable to collapse. Without a platform to streamline services, critically examine strategies and share successful pilot projects it is unlikely they will grow meet the demands of the future.

Without a platform to streamline services, critically examine strategies and share successful pilot projects it is unlikely they will grow meet the demands of seniors the future.

An Innovative Approach to Falls Risk Management & Geriatric Assessment—a Community Partnership

V. Ewa[1], L. Paton[2], C. Grolman[2], A. Lamerton[2], D-L. Taylor[2], S. McGuire[2]. [1]University of Calgary, [2]Alberta Health Services.

An integrated home program incorporating an existing Falls risk Management team and the Geriatric Consult service (GCT) was developed to provide care to complex home care clients. The objectives of this program was to provide in home comprehensive geriatric assessment in addition to a focussed falls risk assessment for high risk patients with the goal of reducing acute care utilization and support functional independence at home for patients and their caregivers. In the first year of the program 601 referrals were received of which 546 were seen.

An evaluative study of the Integrated home care geriatric consult team using data from acute care utilization of enrolled clients over a 1 year period and qualitative data from semi structured interviews of integrated home care case mangers and caregivers 50 % of referrals to the GCT were falls specific; There was a 51% decreases in ED visits post referral; 17% decreased ED utilization 6 month post referral; 7% decrease Acute Care admission 3 months post referral. Caregiver reports suggest improved overall quality of life and satisfaction with program.

The GCT service provides a unique service in the healthcare system. The ability to provide in home assessment to frail elderly patients who are home bound enables access to comprehensive geriatric care. Continuity of care is achieved by bridging communication between the home care case managers, who attend GCT rounds and community based physicians.

Successful components for implementing this model include: interdisciplinary fall risk in-home assessment with a comprehensive geriatric assessment; timely and effective communication of client recommendations; and facilitation of fall risk strategies to ensure client safety and quality of life.

Strategies to Facilitate Driving Decision-Making and the Transition to Non-Driving in Older Adults and Persons with Dementia: a Mixed Methods Scoping Review

G. Naglie[1], S. Sanford[1], D.H. Cameron[2], M.J. Rapoport[3]. [1]Baycrest Health Sciences, [2]Sunnybrook Health Sciences, [3]University of Toronto.

Driving is a marker of independence and an important aspect of quality of life for older adults. Driving decision-making is a significant challenge facing persons with dementia, their family, caregivers, and healthcare providers. This review aimed to identify specific strategies that facilitate the transition to non-driving.

We conducted a scoping review to inform the design of an intervention that supports drivers with dementia and their caregivers make decisions about driving, and transition to non-driving. A literature search was performed using the databases MEDLINE, CINAHL, Cochrane Central, Embase and PsycINFO, from 1994-2014 to identify articles pertaining to driving cessation (DC). Data were extracted and findings were synthesized across qualitative and quantitative papers.

The initial search yielded 476 records. Of these, 110 pertained to DC in older adults. Following exclusion of non-research related records, 93 papers were included in the review; 42 quantitative, 31 qualitative and 3 review papers. Evidence from these studies was complemented by 17 editorials. Broad themes include the importance of: advanced planning, acceptance and adaptation; control, autonomy and shared decision-making; social support for drivers and their families; and the promotion of community access and diverse approaches to mobility.

There is a dearth of findings specific to persons with dementia, but existing studies suggest that approaches should target challenges associated with the illness, including reduced insight which impacts the decision-making process, and the increased need for social and other supports given new dependencies.

The findings suggest that interventions that normalize DC and promote advanced consideration of supports required by drivers and their families can ease the transition to non-driving. The review also calls for greater attention to factors that frame variations in experiences of decision-making and adaptation to non-driving.

Events Preceding Unplanned, Short-Stay Emergency Department Visits by 35 Long-Term Care Residents

G. Naglie, J. Karuza, A. Berall, Z. Hyatt-Shaw, T. Patel, M. Hohmann, A. Uy, C. Cameron, K. Banipal, S. Kalidindi. Baycrest Health Sciences.

Acute care transfers present risks of adverse effects on long-term care (LTC) residents and increased healthcare resource usage. As part of an ongoing capacity building initiative to reduce potentially preventable emergency department (ED) visits, Baycrest examined circumstances surrounding unplanned, short-stay ED visits of its LTC residents.

We conducted retrospective chart reviews of 35 unplanned ED visits less than 24 hours by 35 residents of Baycrest's 472-bed LTC home. These visits were randomly sampled from 108 visits that occurred between April 2014 and March 2015. We examined the 7 days prior to and the 3 days following the transfer. Collected data included: presenting symptoms, clinical evaluations, diagnostic inquiries and therapeutic interventions at Baycrest, as well as hospital investigations and diagnoses.

Symptoms precipitating the transfer and their accompanying assessment occurred, on average, 2.4 days prior to transfer, with the median time for residents experiencing symptoms and assessment being the day prior to transfer. Registered practical nurses, registered nurses and physicians conducted evaluations in 83%, 60% and 20% of residents before transfer, respectively. Before transfer, at least one diagnostic test or intervention was conducted in 34% of residents; 63% of residents received at least one ED investigation (other than blood work) or intervention. Falls (21%), respiratory (15%), cardiovascular (15%) and urinary (18%) issues accounted for 69% of hospital diagnoses.

Transfers occurred soon after the symptoms arose, suggesting that earlier detection of changes in status may be helpful in reducing ED transfers.

The findings from this initial study of ED visits by LTC residents help inform topic areas for education of point-of-care staff as well as considerations for making specific interventions (e.g., suturing) available in LTC, which may help reduce subsequent ED transfers.

Preliminary Findings from the Uptime in Hospital Study: How Long do Older Patients Spend Sedentary During Hospitalization?

B. Clarke[1], O. Theou[1], K. Rockwood[1], K. Mallery[2], M.M. Maclean[2], J.Blodgett[2]. [1]Dalhousie University, [2]Nova Scotia Health Authority.

Older adults are at great risk of functional decline during hospitalization. The purpose of this study was to investigate how long older patients spend sedentary per day during hospitalization and how sedentary time is associated with mortality.

Currently 104 patients (82±8 years, 57% women) have been recruited within 48 hours of admission to the QEII Health Sciences centre in Halifax, NS either through the Emergency Department, under the care of Internal Medicine, or at the Geriatric Assessment Unit. Time spent sedentary (lying down and sitting) was objectively measured 24 hours per day until hospital discharge or for a maximum of 2 week using ActivPAL inclinometers.

On average, patients remained in the hospital 17.3 (SD 18) days and 14 patients died during their hospital stay. On admission 35 could walk independently. Across all days, patients were sedentary an average of 22.7 (SD 22.5) hours per day and there were no differences in sedentary time by day of the week. Patients were the most sedentary during the evening and night time. Sedentary time was a significant predictor of mortality even after controlling for age, sex, frailty, and mobility status at admission. Among those participants who died, sedentary time did not change during the first five days of hospitalization. Among those who were discharged from hospital, a gradual decline in sedentary time was noted with the largest decline observed during the first 3 days of hospitalization.

Hospitalized older patients spend most of their day sedentary even when they can walk independently. Sedentary time during hospitalization increases risk for mortality.

Future studies need to investigate whether using devices to track sedentary time in routine practice will improve clinical care for older patients.

Recurrent Purpura in an Older Adult

L. Sirisegaram. University of Calgary.

Background/Purpose: Case-study regarding an older adult with proven HSP had a recurrent episode a year later.

Methods: Interview of the patient, case file review.

Results: Pathology confirmation of recurrent HSP, photographic evidence of the evolution of the episode, treatment regimen and final fatal outcome of the episode.

Discussions: Exploring the impact of recurrent HSP within the older adult population, specifically upon the changes inherent in the immune system associated with older age, and the impact of HSP upon the frailty of the patient.

Conclusions: HSP presentation in the older adult has profound implications of patient's immunity, frailty, mobility and overall affect.

Stroop Interference in Alzheimer's Disease: an fMRI Study

A. Garcia, A. Luedke, J. Fernandez Ruiz, D. Munoz. Queen's University.

Alzheimer's disease (AD) is associated with changes in selective attention and response inhibition, commonly measured using the Stroop task. While increases in neural activity have been reported in healthy aging as a means of compensation, whether AD results in increased activity remains unclear. The goal is to elucidate the relationship between inhibitory control and the brain in AD using fMRI and Stroop interference.

34 controls (mean age 67.1 ± 9) and 16 mild AD participants (mean age 74.6 ± 7.6) completed a rapid event-related version of the Stroop task. We contrasted incongruent minus congruent conditions at stimulus onset to investigate neural activity related to Stroop interference within each group. Verbal responses were recorded, and Stroop interference (incongruent RT – congruent RT), and number of errors were calculated.

Behavioural: The AD group had significantly greater Stroop interference $t(-5.52)$ $p < 0.05$, with an average of 296.76 ± 102.32 ms compared to 138.83 ± 73.50 ms in the controls. The AD group also made more incongruent errors compared to controls $t(-4.38)$ $p < 0.05$.

fMRI: Controls had increased activity relating to the incongruent condition than AD in areas including the anterior cingulate cortex, dorsolateral prefrontal cortex, orbitofrontal cortex, precuneus, and inferior frontal gyrus.

The controls had activity related to areas involved in inhibition, while the AD group had less activity, suggesting the ability to compensate is altered with the disease. This is in line with the behavioural data, which revealed a significantly greater Stroop interference in AD.

Controls seem to have a compensatory mechanism by which to maintain cognitive function on a task of inhibition, whereas AD has reduced neural activity and altered behaviour (greater Stroop interference and more errors), suggesting altered inhibition.

Geriatric Evaluation and Management in the Emergency Department

J. Shimizu[1], B. Dobbs[1], P.G. Jaminal Tian[1], A. Sheikh[2]. [1]University of Alberta, [2]University of Saskatchewan.

Frail older adults have complex geriatric needs that make assessment and management in the Emergency Department (ED) challenging. In addition, geriatric issues often go unrecognized in the ED setting leaving underlying factors unaddressed. The Geriatric Evaluation and Management in the ED (GEM-ED) project aims to develop and assess a geriatric intervention designed to improve the care of older adults presenting to the ED.

The GEM-ED service is a novel intervention providing geriatric assessments to older adults in a community hospital ED setting. The GEM-ED service is being evaluated through collection of demographic data of assessed patients, reasons for referral, identified geriatric syndromes, and recommended community interventions. Patient/caregiver surveys during ED visit and at two weeks assess patient experiences in the ED and follow through with recommendations.

To date, the GEM-ED service has assessed 360 older adults, 49% of which are 85 years or older. 76% live in independent home living and 22% in some form of supportive living. The most common referral reasons have been falls/mobility issues, cognition, and assessment of home supports.

Older adults presenting to the ED are often medically complex, requiring increased supports in the community. This project aims to target this challenging population and, through its evaluation, direct future interventions.

The GEM-ED service is filling a need for geriatric assessment and intervention of older adults in the ED, identifying geriatric issues and establishing links to community supports and services.

An Ounce of Prevention: a Study Protocol for Intensive Resistance Training to Optimize Health in Older Adults Exhibiting Signs of Preclinical Disability

C. Nowak, A. Tang, J. Richardson, S. Phillips, D. Shkredova. McMaster University.

It is critically important to identify older adults who are at risk for functional decline. Placing a focus on prevention allows older adults to live longer, healthier lives in their homes free of disability. Resistance training (RT) has the potential to slow the rate of functional decline linked to aging. Higher training intensities have been used with healthy older adults to achieve greater gains in strength, but the feasibility and effectiveness is less established in at-risk, older adults with preclinical disability where conservative protocols are typically employed. Higher intensity RT may be an innovative and effective strategy to reduce the risk and impact of future disability and falls that threaten the independence of older adults in Canada.

This protocol will outline a current pilot single-blind randomized controlled trial being conducted at two sites (Mississauga and Collingwood, ON). It will compare two arms of RT, high (HI) and low intensity (LOW), with respect to strength, balance, falls risk and quality of life in adults 60+ identified as having preclinical disability. Both

arms are 12-week, twice-weekly programs supervised by a physiotherapist. The HI group will focus on compound multi-joint movements (e.g. squats, step ups) at 85%+ of their estimated 1 repetition maximum (1RM). The LOW group will employ single-joint exercises at an intensity of 60-70% of 1RM.

With a focus on preventative care, determining optimal dosage of RT to prevent functional decline in at risk older adults could lead to improved quality of life and disability-free years in community dwelling older Canadians. Higher intensity training could result in greater gains in strength balance and quality of life thereby providing health professionals with an effective strategy for prevention of disability.

Evaluation of Measuring Change in Frailty Status Following a Goal-Oriented, Multidisciplinary Primary Care Plan in Community-Dwelling Older Adults

B. Clarke[1], O. Theou[1], K. Rockwood1, G. Park[2], M. McMillan[3]. [1]Dalhousie University, [2]Fraser Health Authority, [3]Nova Scotia Health Authority.

Identifying and responding to frailty should begin in primary care where health professionals can consider both the medical and social context of their patients. The purpose of this study was to examine the feasibility of first measuring and then mitigating frailty in community-dwelling older adults.

Fifty-one community-dwelling people (82.0±7 years, 64.7% females) from two sites participated: 33 from Fraser Health (Vancouver) and 18 from Capital Health (Halifax). A goal-oriented, multidisciplinary primary care plan was employed and frailty was assessed before and after the intervention. A 56-item frailty index was constructed based on a comprehensive geriatric assessment (CGA) at both time points. Analysis was stratified by age (younger group ≤ 81 years, older group 81+ years old) and sex.

Frailty status was identified for all patients except for one who was missing more than 30% of the CGA items. Ten patients were not followed up and for two patients we were unable to identify their frailty status due to CGA missing data. The mean frailty score at baseline was 0.26 (SD=0.10, 0.07-0.52); 70% (N=34) were identified as frail (0.21+ score). On average patients' frailty score decreased by 0.032, which is equivalent to having 1.8 deficits less at the follow up; frailty levels were reduced for 79% of the patients. Frailty levels were reduced significantly for both the younger and the older group but when analysis was stratified by sex the change was significant only for females.

This pilot study showed that it is feasible to assess frailty within the primary care setting by using a CGA and that a goal-oriented multidisciplinary primary care plan could mitigate the effects of frailty.

Future research should test this intervention in a controlled clinical trial.

Collaborative Dementia Care in Primary Care: How Collaborative is it?

L. Lee[1], F. Molnar[2], L. Hillier[3], T. Patel[4], K. Slonim[5]. [1]McMaster University, [2]University of Ottawa, [3]St. Joseph's Health Care London, [4]University of Waterloo, [5]Centre for Family Medicine Family Health Team.

There is much support for collaborative models of dementia care to ensure well integrated and coordinated quality care. The purpose of this study was to explore the clinicians' perception of collaboration among health care providers (HCP) providing dementia care.

Prior to participation in a dementia training program, participants completed an online survey in which they were asked to rate their level of collaboration (5-point scale; 1=not at all to 5=extremely collaborative) with various HCP and community-based dementia services and the extent to which these collaborations have been challenging (5-point scale; 1=not at all, 5=extremely challenging).

Surveys were completed by 200 HCPs; 38 physicians, 75 nurses, and 87 allied health professionals (AHP). On average, clinicians had been in practice for 11.5 years. Collaboration ratings were highest in working with nurses (M=3.9), family physicians (M=3.8), and social workers (M=3.7) and lowest for home care managers (M=2.9), geriatric specialists (M=2.7), and community responsive behaviour resources (M=2.6). AHPs had significantly (p=.004) higher ratings (M=3.4) of the collaborations with the Alzheimer Society than physicians (M=2.8) and nurses (M=3.2); other ratings did not vary by discipline or by years in practice. Mean ratings reflected that clinicians perceived their experiences in working collaboratively with other health care professionals (M=2.5) and with community agencies (M=2.6) as somewhat challenging.

HCP tend to perceive collaboration among colleagues in primary care as moderately collaborative, but less so with specialist and community-based services; collaborations were perceived as somewhat challenging suggesting an opportunity to enhance collaborative care.

Further study to identify why collaboration is perceived as suboptimal can inform the development of strategies to improve collaborative dementia care.

Three Exercise Interventions to Improve Sarcopenia and Frailty Indices among Community-Dwelling Older Adults with High Osteoporotic Fracture Risks

D-C. Chan. National Taiwan University Hospital Chu-Tung Branch.

To examine the effects of different exercise interventions on sarcopenia and frailty indices among community-dwelling older adults with high osteoporotic fracture risks.

One hundred and thirty-nine high risk subjects on osteoporotic fractures or fall were enrolled. Among them, 30 from Chang Gung Health and Culture Village (CGHCV) were assigned into video game exercise group (XBOX) and 109 from National Taiwan University Beihu Branch (NTUH-BB) were randomized into integrated care group (IC, n=55) and muscle extremity exercise group (MEE, n=54). Major outcomes included muscle mass, grip strength, walking speed, lower leg extension power, and frailty indicators by Dr. Fried and colleague at baseline and after 12-weeks of intervention.

Mean age was 74.8±7.8 years for the entire cohort. After 12-weeks of training, walking speed (1.3±0.3 m/s vs. 1.4±0.3 m/s, $p<0.05$), leg extension power (23.2±5.0 kg vs. 27.5±5.4 kg, $p<0.001$), chair-stand test (12.8±4.1 times /30 sec vs. 14.8±4.6 times/30 sec, $p<0.001$), timed up-and-go test (9.6±2.9 sec vs. 8.0±2.4 sec, $p<0.001$) were significantly improved. Also, one of the 5 frailty indicators, percentage of low energy expenditure, changed from 7.2% to 0.7% ($p<0.05$). However, appendicular skeletal muscle index (ASMI) (7.3±1.2 kg/m^2 vs. 7.3±1.1 kg/m^2, $p=0.167$) and hand grip strength (16.6±7.2 kg vs. 17.2±7.0 kg, $p=0.134$) were similar at two assessments. Among the three groups, energy spent for moderate physical activity significantly improved in IC and XBOX groups and the percentage of non-frail participants in IC group were significantly decreased ($p<0.05$) when compared to MEE group at follow-up ($p<0.05$).

All three types of exercise programs may have different impacts.

Three types of exercise showed positive effects on several sarcopenia and frailty indices for older adults with high osteoporotic fracture risks.

Scale Construction: Developing Reliable and Valid Measurement Instruments for Age-friendly Health Care Institution

T-T Liu, S-J Liao, C-C Lin. Mennonite Christian Hospital, Hualien City.

This study is to describe the process for developing reliable and valid measurement instruments that can be used in age-friendly health care institution. The scale is effectively and conveniently for assessment of elderly inpatients' opinion about the hospital's age-friendly policies.

We enrolled 330 elderly inpatients with the age of 65 y/s and older from a regional teaching hospital. A structured questionnaire was used to conduct the face-to-face interview by a trained nurse case management. Description, content validity, test-retest reliability and regression analyses were performed for the reliability and validity of scale construction.

The CVI value is 1.0 in surface validity and the expert's validity CVI is 0.97. We performed the test-retest reliability for scale stability and ranged from 0.707 to 0.963, an average of 0.824. The correlation coefficient between the four dimensions of questionnaire about age-friendly health care institute, ranged from 0.58 to 0.75; high positive correlation ($p<0.05$). Factor analysis revealed the internal consistency of Cronbach's α coefficient values except "management policy" of 0.72, the other three sets of items greater than 0.8; Regression analyses showed that factors of "communication & services", "medical care procedure", "number of chronic diseases" and "physical environment" may predict the overall satisfaction of age-friendly policies with a significant positive impact ($p<0.05$).

The items of management policy are less than other sets of items and increase items may probably improve the internal consistency of Cronbach's alpha.

To construct a structured questionnaire with good reliability and validity testing for age-friendly health care institutions, can be used to evaluate the elderly residents satisfaction with the hospital services and to improve health care quality of elderly inpatients.

To Explore the Satisfaction of Elderly Resident in Age-Friendly Health-Care Hospital

S-J Liao, T-T Liu, C-C Lin. Mennonite Christian Hospital, Hualien City.

The needs of elderly health care increase with age, particularly in elderly inpatients. The study is to evaluate the satisfaction of elderly inpatients for aged-friendly healthcare institution, there is four dimensions include "management policy", "communication & services", "medical care procedure" and "physical environment".

The study employed a questionnaire and enrolled 330 elderly inpatients (> 65 years) from a regional teaching hospital in the eastern Taiwan. Description, functional assessment, GDS, Mini-cog and regressive analyses were performed to predict the impact on age-friendly institution satisfaction.

The results showed: young-old (65~74): 166(50.3%), old-old (75~84): 102(30.9%) and oldest-old (85+): 62(18.8%). Mean age is 75.4±7.8 years, male of 53.3%; ADL: disability 113(43.3%); IADL: disability 195(59.1%); GDS: GDS<5: normal 225(70.1%), GDS ≥ 5, 96(29.9%) (GDS ≥ 5 mild depression 69(21.5%), GDS ≥ 10 moderate to severe 27(8.4%)); Mini-cog: positive (53.8%). The global elderly resident's satisfaction to the age-friendly health care institution: Very satisfy: 51.8%, satisfy 46.4%, general 6(1.8%) and no found of any un-satisfy elderly resident.

Occupation is self-employed, catholic believer and more numbers of chronic diseases with higher the satisfaction toward age-friendly policies. The three dimensions of "medical care procedure", "communication & services and physical environment" all have positive significant impact on age-friendly institution satisfaction.

The proportion of elderly depressive symptoms up to 30% and need prevent from depressive disorder. The three dimensions of "medical care procedure", "communication & Service and physical environment" have positive correlation with significant impact ($p<0.05$). There is relatively higher proportion of disability of ADL (43.3%) and IADL (59.1%) in elderly inpatients.

The model of Age-friendly hospital can be highly satisfied by the elderly inpatients so the services need to generalize more hospital healthcare service.

Predictive Factors of Perceived Health Status Among Elderly Inpatient in East Taiwan

T-T Liu, C-C Lin, S-J Liao. Mennonite Christian Hospital, Hualien City.

Aging is a global trend, and Taiwan is one of the world's fastest aging nations. Meanwhile our country will be reached the aged-society in 2017. This study aims to explore the factors influencing the self-rated health status of elderly inpatient.

This study collected from August 2014 to March 2015 elderly residents of a regional teaching hospital of a total of 330 patients were recruited. These factors include age, sex, education, occupation, work status, number of chronic diseases, ADL, IADL function, cognitive function, depression symptoms and the various family factors include marital status, religion, residence status, living alone and perceived economic status.

53.6% had poor perceived health status. Aged 65 to 74 years (50.3%), 75 to 84 years (30.9%) and the mean age was 75.4±7.8 years. Sex: Men (53.3%), education level revealed 78.1% were elementary school and 56.7% were ADL intact, 40.9% were IADL intact, 32.1% had poor perceived economic status, 53.8% of participants were impaired cognition by Mini-Cog assessment. The mean GDS score was 3.4±3.9; 8.4% had depression, and 29.9% were at high risk of depression at baseline.

Functional deterioration was noted in most of the elderly inpatients. The correlation analyses between perceived health status and economic status, ADL, IADL have significantly positive correlation and cognitive function; depressive symptoms have significantly negative correlation with perceived health status.

The perceived economic status and depressive symptoms can predict the perceived health status of elderly inpatients. Improving the economic situation, supply related-social resources and early started with rehabilitation program intervention, assessment of cognitive function and depressive symptoms with good management could improved the perceived health status of elderly inpatient.

Evaluation of End of Life Clinical Plan to Older Medical Patients in a Geriatric Step-Down Hospital

J.K. Hay Luk, F. Chan. Fung Yiu King Hospital, Hong Kong.

The End of Life Clinical Plan for Inpatients (EOL-CPi) was developed to foster dignified deaths in older patients admitted to a geriatric step-down hospital. We performed a study to evaluate its effectiveness in enhancing dignified deaths.

A retrospective study in which all in-patients with age ≥ 65 who were under EOL-CPi between 4 June 2012 and 3 June 2014 were reviewed.

128 patients with an average age of (mean ± SD) 87.7 ± 7.6 were studied. The average duration of EOL-CPi was 4.15 ± 6.5 days. Their chief diagnoses were advanced dementia (49.2%), active cancers (26.5%), neurodegenerative diseases (11.7%), organ failure (8.6%) and stroke (4%). In the last 24 hours before deaths, 99.2% of patients were pain free, not agitated and without excessive secretion. After EOL-CPi, there were significant reductions (pre-EOL-CPi vs. post-EOL-CPi) in intravenous antibiotics: 87.5% vs. 55%, $p<0.001$; broad spectrum antibiotics: 61% vs. 36%, $p<0.001$; blood product transfusion: 10% vs. 2.3%, $p<0,05$; physical restraints: 28% vs. 9.3%, $p<0.001$; blood tests: 82% vs. 14%, $p<0.001$; haemoglucostix monitoring: 40% vs. 15.6%, $p<0.001$. Use of oxygen was reduced from 8 L/min to 6.7 L/min ($p<0.001$) and number of regular medications dropped from 5.1 to 2.7 per patient ($p<0.001$). 92% family members were able to say goodbye to their dying relatives; 95% had procedure after death discussed and implemented; 95% family members were given information about procedure after death; 93% had family emotions handled.

This study filled in the knowledge gap by demonstrating the effectiveness of a clinical plan in enhancing EOL care for older Chinese patients in a geriatric step-down hospital.

A tailor-made end of life clinical plan could be useful to guide clinical team in fostering dignified deaths among dying older patients in a geriatric step-down hospital.

Recommendations for the Management of Geriatric Patients Visiting Emergency Department and Risk of Death: a Pre/Post Quasi-Experimental Pilot Study

O. Beauchet[1], J. Chabot[2], E.J Levinoff[2], C.P. Launay[3]. [1]McGill University, [2]Sir Mortimer B. Davis Jewish General Hospital, [3]Lausanne University Hospital, Switzerland.

Whereas health status and a higher risk of death have been associated to prolonged length of hospital stay (LHS), the effects of Mobile Geriatric Teams (MGT) recommendations on risk of death remain to determine. Because of a significant geriatric and gerontological recommendations-related decrease of LHS previously reported, we hypothesized that these recommendations could also decrease the risk of death in geriatric patients visiting emergency department (ED). The aim of this study was to examine the effects of geriatric and gerontological recommendations visiting an ED on risk of death in the first year following the ED visit.

A total of 131 geriatric patients who visited Angers University hospital ED were prospectively included in this pre/post quasi-experimental study. They were separated in three groups matched on age and gender: two intervention groups (11 patients with geriatric recommendations and 23 patients with gerontological recommendations) and one control group (97 patients without any recommendations). Intervention was provided upon the participant's ED admission. Incident mortality was collected via the administrative registry of Hospital before patients' discharge and via a systematic phone call 12 months after the ED visit. Age, gender, place of living, number of daily drugs taken, cognitive decline, and reason for ED admission were used as co-variables.

Multiple Cox regression model showed that gerontological recommendations were associated with a lower rate of mortality (adjusted Hazard Ratio [HR] = 0.12, p=0.038) but not geriatric recommendations (adjusted HR=9.94, p=0.905). Living at home was associated with a greater risk of death (adjusted HR=2.55 with p=0.020). Kaplan-Meier distributions of mortality confirmed that patients who received gerontological recommendations had a lower mortality rate compared to those who did no received recommendations (p=0.005) and those who received geriatric recommendations (p=0.015).

Our findings show that gerontological but not geriatric recommendations were associated with a lower risk of mortality. This finding is consistent with previous published studies. Indeed, recently a systematic review, which examined the effects of interventions performed in geriatric patients visiting ED, reported that greater intensive interventions lead to greater reduction of adverse outcomes compared to simple interventions. In our case, we can consider that gerontological recommendations are more intensive than geriatric because these recommendations involve a combination of medical (i.e., the same as geriatric recommendations) and social recommendations corresponding to the establishment of formal and appropriate home-help services.

Gerontological recommendations for the management of geriatric patients visiting ED reduced the risk of death during the year following the hospital discharge. Further research is required to confirm the result of this pilot study and should be based on multicentre randomized controlled trial.

Age Effect on the Prediction of Risk of Prolonged Length Hospital Stay in Older Emergency Department Visitors: Results from a Large Prospective Geriatric Cohort Study

O. Beauchet[1], C.P. Launay[2], E.J Levinoff[3]. [1]McGill University, [2]Lausanne University Hospital, Switzerland, [3]Sir Mortimer B. Davis Jewish General Hospital.

With the rapid growth of visits to the ED in elderly individuals, hospitalization after an ED visit is expected to be even greater in the future. Hospitals need to confront this new issue.

To examine the age effect on the performance criteria (i.e., sensitivity, specificity, positive predictive value [PPV], negative predictive value [NPV], likelihood ratios [LR], area under receiver operating characteristic curve [AUROC]) of the 10-item brief geriatric assessment (BGA) for the prolonged length of hospital stay (LHS) using artificial neural networks (ANNs) analysis.

Design: Observational prospective cohort study.

Setting: Angers University Hospital, France.

Subjects: A total of 1117 geriatric ED visitors hospitalized in acute care wards after ED discharge.

Methods: The 10 items of BGA were recorded during the ED visit and before the discharge to acute care wards. The top third of LHS defined the prolonged LHS. Analysis was successively performed on participants categorized in 4 age groups: aged >70, >75, >80 and >85 years. The ANNs analysis method was conducted using the modified multilayer perceptron.

There was a trend for older inpatients (p=0.0699) and a significant greater prevalence of temporal disorientation (p<0.001) in participants with prolonged LHS compared to those with short LHS. Regardless of the age group examined, values of criteria performance were high (sensitivity>89%, specificity>96%, PPV>87%, NPV>96%, LR+>22; LR-<0.1 and AUROC>93), with the best balance performance being reported amongst participants aged 75 and over (sensitivity=89.7 %, specificity=97.8%, PPV=93.4, NPV=96.5, LR+=41.0; LR-=0.1 and AUROC=93.7).

The findings show that age effect on criteria performance of the 10-item BGA for the prediction of prolonged LHS was minimal. Whatever the age group, prolonged LHS was accurately predicted with high values and good balance between criteria. These findings suggest that the 10-item BGA combined with ANNs analysis may be used as a screening tool as well as a diagnostic tool to detect early older ED visitors at greater risk of prolonged LHS after their ED discharge to acute care wards, regardless of their age.

Age effect on the performance criteria of the 10-item BGA for the prediction of prolonged LHS using MLP was minimal; in all cases, prolonged LHS was accurately predicted with a good balance between criteria, suggesting that this tool may be used as a screening as well as a diagnostic tool of prolonged LHS regardless of age of older ED users.

Understanding Alternate Level of Care (ALC)—More Than Just the Number of Beds

J. Basran. University of Saskatchewan.

Long wait times in emergency departments (ED) and poor patient flow is a critical health system issue. ALC patients, those who do not require the intensity of care an acute care bed unit can provide, have a significant impact on patient flow. Currently, the ALC data consists of mainly the % of beds that are ALC, but lack information about the patient characteristics and unmet needs of these patients. Data is also lacking on the inefficiencies in the ALC process

Saskatchewan Health partnered with eHealth, Health Quality Council, and CIHI to address this problem using lean methodology. A group of clinicians, health records personnel and health information technologists from every region was assembled for a Rapid Process Improvement Week (RPIW). An ALC form was developed which collected ALC patient characteristics, the various factors contributing to why they were ALC, as well as process measures.

The pilot found over 50% (CIHI estimated 30%) underreporting since only Long Term Care (LTC) patients were being captured as ALC. Almost 2/3 of the medicine unit was ALC patients, of which ½ were waiting for LTC. Most patients had on average 5 reasons to be ALC, in particular reduced mobility (70%), unable to manage personal care (40%), and cognitive impairment (40%). Process metrics revealed that of the entire inpatient LOS, only 1/3 was for active care and 2/3 was ALC LOS.

After several adjustments, ALC data collection is next being rolled out in 5 health regions. The original region used the ALC data to develop an ALC reduction strategy with clear gaps identified and the use of dynamic modeling to determine which initiatives will have the most impact on patient flow.

The key to the success of the project was the high level of collaboration.

Cost-Savings, Evidence-Based Teaching, Evidence-Based Wound Care: Creation of Wound Care Stewardship Committee at Baycrest Centre for Geriatric Care

C. Ott, A. Bandali, S. Calabrese, A-M. Shin, A. Davignon, K. Ho, G. Dolezel, C. Lee, M. Lavigne. University of Toronto.

Baycrest Centre for Geriatric Care delivers care in a hospital based program of 250 beds including rehabilitation, behavioural neurology, mental health, complex continuing care, palliative care and transitional care, as well as long-term care home of 472 beds.

The main types of ulcers treated include pressure ulcers, diabetic foot ulcers, arterial ulcers and arterial ulcers. At this site, the main ulcers treated are pressure ulcers which have impact on quality of life and significant health system expenditures.

In 2011, a Pressure Ulcer Prevention, Assessment, and Management program was launched to develop an evidence-based approach to preserving skin integrity and wound management. Prevalence and Incidence studies were undertaken yearly. Education towards ward staff took place—"Wound Warriors" for nursing, "Wound Whisperers" for personal support workers. Continuing education meeting for family physicians. Wound Care rounds occurred up to 2x/week involving teaching at the bedside.

Product lines were streamlined but not removed. Intent was to build competency among the health-care workers involved.

Our prevalence rates were 10.17-12.65% for years 2011, 2012, 2013 and 2014 in both the long term care and hospital for stage II and greater ulcers. The prevalence rates for hospital 14.73 to 19.63% whereas in the long-term care they were 8.54-9.81%.

In 2010 wound care supply expenditure for both the hospital and long-term care was $147, 858.83. In 2013 it had decreased to $82,039.62. In 2014 it had decreased even further to $65,319.38.

The wound are prevalence rates themselves did not change much meaning that we were treating about the same number of wounds. This approach could be trialed at other healthcare sites. Other areas of possible savings have also been identified in this process which may lead to further processes.

By implementing an evidence-based education, we were able to reduce the costs of wound care supplies by 55.82%.

Falls Risk Screening of Older Adults in ED

S. Prasad[1], M. Ostrowski[2], D. Dowsett[2], B. Graham[2], N. Rivard[2], T. Snyder[2], T. Boshart[2]. [1]McMaster University, [2]St. Mary's General Hospital.

The majority of older adults seek treatment in the emergency department (ED) within 48 hours of having a fall therefore the implementation of falls risk screening and initiation of falls-related interventions for this population is essential (Miller et al., 2009). Falls Risk Screening was implemented

in the ED of one of three Ontario acute care community hospitals serving a population of over 525,000 people. An average of over 130 patients are seen and treated each day in this ED.

The ED patients are screened for falls risk by the triage nurse using a tool that was developed from the guideline created by the American Geriatric Society, American Academy of Orthopaedic Surgeons and British Geriatric Society (2001).

Over 20% of the patients who presented to the ED of this hospital were found to be ≥ 70 years of age and of this population, 43% screened positive for falls risk. In a sample of 145 ED patients who were ≥ 70 years of age and screened positive for falls risk, 96% were discharged home and only 26% had documented evidence of any actions taken as a result of the screening.

This information was used to enhance existing documentation and processes and to educate staff regarding potential actions that could be taken to help reduce the risk of falls for older adults upon ED discharge.

Falls are a major concern in the older adult population. Opportunities exist to help and support ED patients who are ≥ 70 years of age and at risk for falls as well as the ED staff who care for them.

Evaluating a New Approach to Managing Responsive Behaviours in Long-Term Care Homes

J. Mah[1], R. Casem[2], J. Reguindin[2]. [1]University of Ottawa, [2]Baycrest Health Sciences.

In Canada's aging population, over half of all clients living in long-term care (LTC) facilities have a diagnosis of dementia. Most of this population will experience behavioural and psychological symptoms of dementia. A lack of understanding of responsive behaviours (RB) results in escalation of behaviours reduced quality of life, negative health outcomes and increased caregiver burnout.

In 2012, the Long Term Care Behaviour Support Outreach Team (LTC BSOT) was created to facilitate capacity building among front line LTC workers caring for residents with responsive behaviours. The goal of LTC BSOT is to coach LTC staff and collaborate with other resources to build a sustainable behavioural support model in each LTC home, which subsequently improves the quality of life of seniors with responsive behaviours.

This evaluation project looked at capturing the current assessment and follow-up processes that constitute the work of the LTC BSOT team with the goal of process improvement.

Three methods of data collection were used:
1. Semi-structured interviews
2. Go, Look, See – "Gemba" Walk
3. Focus group with LTC BSOT team

The results were organized into a detailed process map with variables collected from registered nurses, personal support workers, physicians and clinical educators that make up the LTC BSOT.

While the data collection is still ongoing, this model of responsive behaviour intervention has never been evaluated before. The quality improvement focus of this evaluation will lend to further education of the front line care staff to understand common responsive behaviours, how to adapt in future situations, and to reduce responsive behaviours in clients.

Correlating Nocturnal Heel Pressure to Morning Heel Perfusion Using Sensors

F. Knoefel[1], L. Carreau[2], A. Dewan[2], S. Bennett[3], R. Goubran[3]. [1]Bruyère Continuing Care, [2]Saint-Vincent Hospital, Bruyère Continuing Care, [3]Carleton University.

Pressure ulcers develop when ongoing pressure is applied to skin, causing capillary compression, decreased oxygenation, and skin breakdown. They typically occur in cases of reduced mobility, and pre-existing vascular and skin conditions, and cause significant morbidity/mortality. New pressure mat technology provides the ability to monitor pressure continuously. Infra-red (IR) cameras can help identify micro-circulation patterns.

Data from a 64-year-old female Complex Continuing Care in-patient with stroke, dialysis, and high risk of developing an ulcer (MDS 2.0 – Pressure Ulcer Risk Scale score: 6) was collected over some 120 days. A fiber-optic based, pressure- sensitive mat (S4 Sensors Inc.) was placed under the mattress below the feet. An IR camera (FLIR Systems Inc.) was used to capture morning skin temperature at the heels.

Thermal contours were formed for each IR image using custom software (SB). The mat data was converted to mean sum of pressures (SoP) and the standard deviation (StDev). The SoP represents the amount of pressure and the StDev the amount of limb movement.

The morning of August 12th, 2015 this patient showed a significantly lower skin temperature over the L heel than the R (26 C vs. 28 C). Corresponding mat data showed a larger SoP and lower StDev.

This project found a correlation between reduced mobility (mat pressure) and reduced skin temperature (IR images). We believe that this is the first time these 2 sensors have been combined to show the link between limb mobility and micro- vascular circulation.

If replicated, mat sensors may provide a novel, automated way of measuring pressure ulcer risk.

What Aspects of Dementia Care do Primary Care Clinicians Want to Learn More About? A Learning Needs Assessment of Memory Clinic Training Program Participants

L. Lee[1], L. M. Hillier[2]. [1]McMaster University, [2]St. Joseph's Health Care London.

Limited knowledge of dementia care in primary care is a well-documented barrier to optimal care. This study aimed to identify the learning needs of clinicians participating in an Ontario training program aimed at establishing primary care memory clinics.

In a pre-training online needs assessment, respondents were asked to rate the extent to which their professional training prepared them for dementia care (5-point scale: not at all - extremely well). They rated their interest in learning (5-point scale: not at all – very much so) various dementia related topics (clinic development, differentiation of dementia from delirium and depression, normal aging and mild cognitive impairment, assessment of executive functioning, differentiation of dementia types, drug and nondrug therapies, driving, communication) and were asked to identify additional topics of interest.

Surveys were completed by 134 physicians, 208 nurses, and 210 allied health professionals (AHP); N=552. Average time in practice was 12.9 years. Mean ratings of the extent to which formal education prepared them for dementia care were moderately low (M=2.8); ratings did not vary significantly by discipline but was negatively correlated with years in practice (r=-.150, p=.001). Mean ratings of interest in the dementia topics were all high, ranging from 3.9 for memory clinic development to 4.4 for differentiation of dementia types; ratings did not vary by years in practice but did vary by discipline, with nurses have higher ratings for most topics than physicians and AHPs. Additional topic areas were generated.

Clinicians reported that their formal education did not prepare them well for dementia care; they wanted greater knowledge in all areas related to dementia care.
Ongoing professional education should focus on all aspects of dementia care.

Mind-Body Connection: Association Between Physiological Conditions and Nature of Psychological Concerns

C. Scott, C. Young, C. Jacova. Pacific University.

Psychological literature supports a strong relationship between mental and physical health. With aging comes increases in physical issues that are not reflected in similarly increased mental health concerns. This raises questions about how psychological and physical health are related in older adults.

We qualitatively investigated psychological concerns and their associations with medical concerns among adults 50 years and over attending mental health clinics. This research utilized archival data from 142 individuals who attended clinics in Portland and Hillsboro, Oregon. We collected demographic and clinical data including physical concerns for each client. We also transcribed initial phone screen conversations between clients and clinicians and applied qualitative analytic techniques to code presenting complaints.

Overall, 61% of clients had physical concerns. By far the most frequent complaint theme among these individuals was depression whereas individuals with no physical concerns expressed anxiety, depression, and relational difficulty themes with similar frequency (48, 31 and 28% vs. 40, 40 and 41%). We also examined complaints within the most common physical concern types (pain 30%, cardiovascular 25%). Compared to those without the disorder, individuals with pain disorders reported more complaint themes of abuse and trauma (24 vs. 13%) while individuals with cardiovascular concerns reported more complaint themes of depression and anxiety (51 and 40 vs. 33 and 42%). We did not find similar associations between physical concerns and clinical diagnoses.

This research suggests there is a relationship between physiological conditions and the nature of psychological concerns among older adults.

Our findings highlight the importance of considering both physical and mental health when caring for older adults. Mental health professionals should be aware of their older clients' medical problems and of how these contribute to specific psychological experiences.

Defining Priorities for the Assessment of Competence in Care of the Elderly by Family Physicians—the Priority Topics

Lesley Charles[1], Chris Frank[2], Marcel Arcand[3], Sidney Feldman[4], Robert Lam[5], Pravin Mehta[6], Nadia Mangal[6], Tatjana Lozanovska[6], Tim Allen[6]. [1]University of Alberta, [2]Queen's University, [3]University of Sherbrooke, [4]Baycrest Health Sciences, [5]University Health Network, [6]CFPC.

With Canada's senior population increasing, there is a greater demand for family physicians with enhanced skills and added competency in care of the elderly (COE). The College of Family Physicians Canada has introduced Certificates of Added Competence (CACs) in five domains, one being COE. CAC awards will be based on the demonstration of specific competencies. The first steps of defining these competencies are a determination of the Priority Topics.

A modified Delphi technique was used with on-line surveys and face-to-face meetings. The Working Group (WG)

of six physicians, with enhanced skills in COE, acted as the nominal group, and a larger group of randomly selected practitioners from across Canada acted as the Validation Group (VG). The WG, and then the VG, completed electronic write-in surveys that asked them to identify the Priority Topics. Responses were compiled, coded and tabulated to calculate the frequencies of selection of topics. The WG used face-to-face meetings and iterative discussion to decide on the final topics.

There was as 19% response rate (41 of 212) from the VG. Most respondents from the VG are involved in teaching, and about one quarter are Program Directors. Half of them have more than 10 years of experience, and 45% have a focused practice. The correlation between the specific Priority Topic list identified by the VG and that identified by the WG is 0.68. The final list has 18 Priority Topics. There is an even higher correlation (0.89) for the generic skills of competence that were independently identified by the VG and the WG.

Defining the required competencies is a first step to establishing national standards in COE. The methodology used and the high correlation between the lists generated by the WG and the VG suggest that this Priority Topic list is valid for COE.

These 18 Priority Topics will be expanded with Key Features and will be the basis for awarding CACs.

Discovery Toolkit for Family Caregivers of Seniors: Facilitating Conversations, Encouraging Scholarship

L. Charles[1], J. Parmar[1], S. Brémault-Phillips[1], B. Dobbs[1], P.G. Jaminal Tian[1], M. Johnson[2]. [1]University of Alberta, [2]Covenant Health.

Family caregivers are an integral, yet increasingly overburdened, part of the healthcare system. In Canada, there is an estimated 3.8 million family caregivers caring for seniors. We have successfully held a CIHR-funded conference in 2014 on Supporting Family Caregivers of Seniors. Knowledge users and researchers from Alberta and across Canada, and various stakeholders, including those from the World Health Organization, discussed the state of family caregiver support and initiated research plans. We developed a Discovery Toolkit from learnings and resources in the Conference.

(1) Each speaker's slide deck was presented in a page containing six representative slides and a hyperlink to the full slide deck. (2) Evidence Summaries were shortened to a page. (3) Notes from discussions were subjected to thematic analysis and summarized. (4) A caregiver's account was presented as a personal communication to a government official. (5) Relevant articles, web pages, and organizations were collated and listed.

The toolkit is 44 pages long and designed for online viewing. It contains an executive summary and five parts: (1) Supporting Family Caregivers of Seniors with Complex Needs; (2) Voices of Family Caregivers: A Window into their Experiences; (3) Online Support for Caregivers of Seniors; (4) Support for Caregivers in End-of-Life Care; and (5) Research and Resources. The toolkit is free and is accessible to family caregivers, patients, and various stakeholders.

We will disseminate the toolkit to family caregivers, seniors, health-care providers, researchers, healthcare organizations and community organizations, and other stakeholders. Also, we will use parts of the toolkit to create an academic module for family physicians, health-care providers, and trainees.

This Toolkit is a timely resource on family caregivers.

Comprehensive Assessment of Neurodegeneration and Dementia (COMPASS-ND) Study: Implementing the Clinical Cohorts Platform

S. Das[1], Z. Mohades[1], T. Strauss[1], T. Campbell[1], M. Borrie[2], J. Fogarty[2], V. Whitehead[3], R. Pillon[3], J. Lindsay[4], S. Best[4]. [1]McGill University, [2]University of Western Ontario, [3]Jewish General Hospital, [4]Lawson Health Research Institute.

The Canadian Collaboration on Neurodegeneration and Aging (CCNA) is a national research study of people with cognitive impairment or dementia funded by CIHR and study partners engaging over 360 dementia researchers. Across the 3 themes of prevention, treatment, and quality of life are 20 teams with specific research questions. The 8 platforms supporting the teams include the Clinical Cohorts Platform; COMPASS-ND study.

- To recruit participants with various cognitive conditions
- Integrate experimental, clinical, 3 Tesla MRI imaging and genetic expertise
- Address the causes, identification, management, treatment, and prevention of cognitive conditions
- Collect biospecimens, imaging, genetics, and brain donation to support the 20 national research teams

Since July 2014, the Clinical Cohorts working group and Platform Implementation Team have worked between regular teleconference calls to confirm the clinical questionnaires and neuropsychological test battery. This has included collaborative alignment with two provincial cognitive impairment studies, one in Ontario (ONDRI) and one in Quebec (CIMA-Q) and also with the Canadian Longitudinal study of Aging. Inclusion/exclusion criteria for the 7 cohorts are defined and multiple research ethics board submissions have begun. Final selection and purchase of the laptop computers and recording technologies and distribution to the 40 recruitment sites is proceeding.

Recruitment of the 1,600 participants by diagnostic group include: subjective cognitive impairment [54 Canada-wide, 156 in Toronto and 90 in Montreal, for a substudy of diet and exercise and a substudy of cognitive intervention] (total 300); amnestic mild cognitive impairment (MCI) (400); MCI with subcortical vascular lesions (200); mixed dementia (200); Alzheimer's Disease (100); Parkinson's Disease/ dementia/LBD spectrum (200); fronto-temporal (FTD), 5 variants (200).

Competitive enrollment, funded on a per patient recruitment basis, will begin spring 2016.

Fahr's Disease: a Rare Cause of Neurocognitive Decline

G. Lee[1], K. Lechelt. [1]University of Calgary.

Idiopathic basal ganglia calcification or Fahr's disease is an uncommon cause of wide array of symptoms including movement disorders and neuropsychiatric disorders. It is characterized by brain calcinosis in many areas of the brain, most notably, basal ganglia. It is either familial autosomal dominant or sporadic condition and etiology is still yet to be fully elucidated. Treatment is limited to symptom management and prognosis is guarded. We present a case of Down syndrome patient with new onset dementia, ataxia and orthostatic hypotention with CT findings of basal ganglia calcification. We further discuss diagnostic challenge to rule out Alzeheimer disease.

A case report is presented and literature search of pubmed, ovid and embase using search term "Fahr's disease, Fahr's syndrome, idiopathic basal ganglia calcification, down syndrome and dementia, down syndrome and alzeheimer disease"

Case report presents a 59 year old man with Down syndrome with new onset of dementia, orthostatic hypotension and ataxia with CT head findings of diffuse bilateral calcification of basal ganglia.

Literature search returned 165 articles relevant 8 articles are selected for the case report.

Cognitive assessment in Down syndrome is challenging. Fahr's disease was diagnosed based on his functional decline, neurological findings and imaging while ruling out secondary causes of calcinosis. While this diagnosis is academic in nature, in other patients, implication of the diagnosis may impact family planning and genetic counseling. Current active research in genetic basis of the pathophysiology may offer treatment in the future.

Fahr's disease is a rare cause of dementia. No effective treatment is available currently. A further systematic review of reported cases and treatment tried to date combined with genetics research can help learn more about this entity.

Sudden Unexpected Cardiac Death on Monday in Younger and Older Men: a Prospective Cohort Study

P. St John, R. Tate. University of Manitoba.

In working age adults, sudden unexplained cardiac death may be more common on Mondays than on other days, but there is less evidence for this association in older populations.

Objective: To determine if sudden unexplained cardiac death is more common on Monday than other days, and to determine if there is an effect of age on this association.

We updated a previous analysis of a prospective cohort study—the Manitoba Follow-up Study (MFUS), an ongoing cohort study. In 1948, a cohort of 3,983 male aircrew who served in the Royal Canadian Airforce in World War Two was closed. These men live across Canada and have been followed since then with routine medical examinations conducted by each man's personal physician.

We considered death on Monday compared to other days of the week. We stratified analyses on age at death. Sudden unexpected cardiac death was coded in the same manner over the course of the study based on chart and death certificate review.

Sudden unexpected death was more common on Monday in men under the age of 60, but not in men over the age of 60. There was a strong gradient in the risk of sudden unexpected death on Monday across the age range: 44% of those who experienced sudden unexpected cardiac death before age 50, died on a Monday, compared to 26% of those between 50 and 60; 20% of those between 60 and 70; 24% of those between 70 and 80; and 10% of those over 80 years old ($p = 0.01$, chisquare test for trend). Younger men were also more likely to die from Ischemic Heart Disease on a Monday than older men. All cause mortality, and death from other causes on Monday did not show any differences between age groups.

The reason for this is not clear.

Younger men may be more likely to experience sudden unexpected cardiac death on a Monday, while older men are not.

Elder Abuse Awareness and Prevalence in Immigrant Muslim Communities Residing in Southwestern Ontario

R. Dawood[1], S. Naqvi[1], R. Naqvi[2]. [1]Western University, [2]London Health Sciences Centre.

Elder abuse is defined as an act, or lack of appropriate action, occurring within any relationship where there is an expectation of trust that causes harm or distress to an older person. The prevalence of reported elder abuse in the general Canadian population is approximately 10 percent.

Public perceptions of elder abuse have been documented for the Canadian population, however limited research has focused upon immigrant populations, particularly immigrant Muslims. Due to differing cultural practices, the prevalence of extended family systems, and other factors, immigrant Muslim perceptions about elder abuse may differ from the larger Canadian population and require further study.

An online survey was adapted from a collection of published surveys and elder abuse screening tools, including the Elder Abuse Suspicion Index (EASI). This adapted survey is to be disseminated among the Muslim population in Southwestern Ontario electronically and in person at local religious community centres.

The results of the surveys are expected in early 2016 and will be available to present at the CGS Annual Meeting in April. The results of this study will provide a better understanding of the prevalence and awareness of elder abuse in immigrant Muslim communities residing in Southwestern Ontario. This study aims to fill the gap that is present in elder abuse literature regarding elder abuse in immigrant Muslim communities, which may lead to further research regarding elder abuse in other immigrant communities across Canada.

The results of this study will be beneficial in that they will influence the practice of health care workers to improve the care of vulnerable seniors within this population.

The Association Between Sensory Loss and Social Function in Older Canadians

P. Mick[1], M. Parfyonov[1], W. Wittich[2], K. Pichora-Fuller[3]. [1]University of British Columbia, [2]Université de Montréal, [3]University of Toronto.

Social networks, social support, social participation and loneliness are important determinants of health in older adults. Hearing and vision loss are highly prevalent and may be modifiable risk factors for decreased social engagement since they interfere with communication and mobility. The objective of our study was to determine whether sensory losses were associated with social function in a nationally representative survey of Canadians aged 45-85 years.

A cross-sectional analysis of a nationally representative sample of adults aged 45-85 was performed. Data was obtained from the Canadian Longitudinal Study on Aging. Hearing and vision ability were determined from self report. Outcome measures included the Social Network Index, Medical Outcomes Study Social Support Survey, a composite measure of social participation derived from the Canadian Community Health Survey, and a single item pertaining to loneliness. Univariate and multivariate regression models were used to determine associations between hearing loss, vision loss, dual hearing/vision loss and the social outcomes.

Dual sensory loss and vision loss were independently and significantly associated with smaller social networks, low social support, reduced participation in social activities, and loneliness. Hearing loss was independently and significantly associated with low social support and loneliness. Hearing aid use moderated the association between dual sensory loss and lower social support.

The demonstrated associations may be mediated through reduced communication, mobility, or cognitive declines. The results corroborate previous cross sectional and longitudinal studies from other countries. Limitations include the cross sectional design, subjective exposure variables and possibility of unmeasured confounders.

Sensory losses were independently associated poorer social function. Future research is necessary to determine whether treatments for sensory loss improve social function and associated health consequences.

Long-Term Quality of Life Trajectories Predict Mortality in Older Airmen—the Manitoba Follow-Up Study

P. St John, D. Jiang, R. Tate. University of Manitoba.

Quality of life (QoL) predicts death, but it is not clear if the trajectory of QoL over a long time frame predicts death. Objectives: 1. To determine if a decline in QoL over a decade predicts death; and 2. To determine if any effect is due to declines in mental or physical QoL.

In 1948, a cohort of 3983 RCAF airmen was sealed. In 1996, there were 2,043 surviving participants, whose mean age was 76 years. At this time, a successful aging questionnaire was added, including the Short Form – 36 (SF-36), and administered regularly thereafter. Trajectories were determined for both the mental component (MCS) and the physical component (PCS). These were categorized as high, medium and low function based upon the trajectory of decline from 1996 to 2006, with high being those who maintained function. These categories were then used to predict death. Kaplan-Meier plots and Cox proportional hazards models were constructed.

After four years, the probability of survival for men in the high MCS group was 77% vs. 58% in the low group. The age adjusted hazard ratio (HR) was for mortality was 1.75 (95%CI 1.28, 2.39) for the low MCS group and 1.55 (95%CI 1.28, 1,88) for the moderate group. The four-year probability of survival for men in the high PCS group was 81% vs. 61% for the low group. The HR for mortality for the low PCS group was 1.89 (95%CI 1.47, 2.43) and 1.33 (95%CI 1.11, 1.60) for the moderate group.

Both mental health and physical health trajectories were independent predictors of death. A decline in QoL is a predictor of subsequent mortality.

Google Search Data for Health Promotion Behaviours and State-by-State Cardiovascular Risk

K. Madden. University of British Columbia.

Both unhealthy eating and lack of activity have been associated with a higher cardiovascular risk. Personal motivation tends to follow a seasonal pattern, usually in the form of New Year's resolutions. Using Google Trends search data for the US, we examined how state-by-state interest in both weight loss and increasing physical activity predicted rates of cardiovascular death, obesity, diabetes and stroke.

Internet search query data was obtained from Google Trends (2005 to 2014), after a standardized keyword search. Heart death, obesity prevalence, diabetes prevalence and stroke death were obtained from Center for Disease Control datasets. Time series analysis (every 2 weeks) was performed on search query data to determine both search volume (normalized to overall search intensity) and seasonality (cosinor analysis).

As expected, the seasonality of both weight loss and exercise searches showed a peak near the start each year. Strong seasonality for exercise searches was associated with a lower state-by-state diabetes prevalence (Standardized β -0.33±0.15, p=0.030), while strong seasonality for weight loss searches showed no association with any cardiovascular outcome.

Overall state-by-state search volume for both weight loss and exercise was associated with higher rates of all outcomes. Overall interest in both weight loss and exercise is associated with higher rates of negative cardiovascular outcomes, suggesting that interest in health promotion (at least as measured by Google search data) does not necessarily translate into reduced risk. Cyclic increases in interest in exercise, however was associated with a lower statewide rate of diabetes.

The Association Between Suicidal Ideation and Filial Piety: Findings from a Community-Dwelling Older Chinese Population

X. Dong[1], M. Simon[2]. [1]Rush University, [2]Northwestern University.

Background/AIMS: Suicidal ideation is a significant public health issue that may lead to suicide attempts and completed suicide in older adults. Very few studies have explored the cultural determinants of suicidal ideation among minority older adults. This study aimed to examine the association between filial piety expectation and receipt and suicidal ideation among U.S. Chinese older adults.

Method: Guided by the community-based participatory research approach, 3,159 community-dwelling Chinese older adults in the greater Chicago area were interviewed in person from 2011-2013. Independent variables are expectations and receipts of filial piety from older adult's perspective. Dependent variables were suicidal thoughts in the last 2 weeks and last year. Logistic regression analyses were performed.

Result: Of the 3,159 participants, 58.9% were female and the mean age was 72.8 years. After adjusting for age, sex, education, income, medical conditions, and depressive symptoms, every 1 point lower in filial piety receipt was associated with increased risk for 2-week suicidal ideation (OR 1.07, 95% CI 1.03-1.11) and 12-month suicidal ideation (OR 1.07, 95% CI 1.04-1.11). Lowest tertiles of filial piety receipt was associated with greater risk for 2-week suicidal ideation (OR 1.95, 95% CI 1.12-3.38) and 12-month suicidal ideation (OR 2.17, 95% CI 1.35-3.48). However, no statistically significant associations were found between filial piety expectations and 2-week and 12-month suicidal ideation.

Discussion: This study suggests filial piety receipt to be an important risk factor for suicidal ideation among U.S. Chinese older adults. Future longitudinal studies should be carried out to understand the temporal association between filial piety and suicidal ideation.

Future longitudinal studies should be carried out to understand the temporal association between filial piety and suicidal ideation.

Associations Between Quantitative Tractography at 3T MRI and Cognitive Function in Alzheimer's Disease

A. Garcia[1], W. Reginold[1], J. Itorralba[1], A.C. Luedke[1], O. Islam[1], J. Fernandez-Ruiz[2]. [1]Queen's University, [2]Universidad Nacional Autonoma de Mexico.

This tractography study aimed to assess the diffusion characteristics of white matter tracts in Alzheimer's disease and their cognitive correlates.

Diffusion tensor 3T MRI scans were acquired in twenty-four cognitively normal controls and sixteen participants with Alzheimer's disease. Participants completed neuropsychological testing including the Montreal Cognitive Assessment, Mini-Mental State Exam, Stroop test, Trail Making Test B, Letter Number Sequencing and Wechsler Memory Scale-III Longest span forward and Longest span backward. Tractography was performed by the Fiber Assignment by Continuous Tracking method. The superficial white matter, corpus callosum, cingulum, long association fibers, corticospinal/bulbar tracts, thalamic

fibers, and cerebellar fibers were manually segmented. The fractional anisotropy (FA) and mean diffusivity (MD) of these tracts were quantified and compared between cognitively normal controls and participants with Alzheimer's disease. In participants with Alzheimer's disease we correlated cognitive test scores and the MD and FA of tracts.

Alzheimer's disease was associated with greater MD in the superficial white matter tracts (AD: 0.001168±0.000218, controls: 0.001018±0.000150, p=0.011), cingulum (AD: 0.000848±0.000098, controls: 0.000794±0.000072, p= 0.045) and association fibers (AD: 0.000824±0.000052, controls: 0.000774±0.000049, p=0.003) and decreased FA in the corpus callosum (AD: 0.560±0.043, controls: 0.593±0.048, p=0.031). In the cingulum, increased MD was associated with worse performance on Trail Making Test B (p=0.034) and Longest span backward (p=0.021) and decreased FA was associated with worse performance on the Mini-Mental State Exam (p=0.042). In the corpus callosum, increased MD was associated with worse performance on Longest span forward (p=0.013).

Quantitative tractography can detect abnormalities in the superficial white matter, cingulum, corpus callosum and association fibers.

In Alzheimer's disease, quantitative tractography can detect abnormalities white matter tracts and its measures can relate to cognitive function.

A Networked Approach to Health Systems Design for Frail Older Adults

D. Daly, J. Ingram, R. Schwartz. Seniors Care Network.

In Central East [Ontario] Local Health Integration Network (CE-LHIN), Seniors Care Network (SCN) is responsible for improving the organization, coordination and governance of specialized geriatric services (SGS) for frail seniors. There are 5 core programs spanning hospital, community and long-term care. Since its inception, SCN has enabled all teams to utilize evidence-informed practices, facilitating knowledge translation and process standardization. This has positively impacted quality of care, patient volumes and transitions.

Seniors Care Network, created in 2011 as part of a newly funded comprehensive strategy, enhances outcomes and promotes better care for frail seniors. Establishment of Seniors Care Network has led to:

- A significant increase in dedicated funding for SGS (annual budget $17M)
- An increased synergy between SGS teams due to joint planning
- 180 clinicians providing care to frail seniors in SGS
- >27,000 direct patient encounters in 2014-15; consistently high patient satisfaction ratings;
- Emerging impact data showing ED diversion, change in treatment plans and appropriateness of admissions
- High recruitment and retention rates
- Emerging leadership roles on a provincial level

The regional structure has enabled system partnerships, growth in SGS programs, standardization of practice and increasing demand for affiliation with Seniors Care Network. This demand has been leveraged to create Primary Care Memory Clinics and new linkages with Primary Care. It has also enabled the identification of emerging priorities, enhancing the ability to advocate for vulnerable populations such as those experiencing substance misuse or mental health issues, aging with developmental delay, experiencing elder abuse.

Regional specialized geriatric service coordination enabled through SCN is an effective approach to planning, integrating, monitoring, quality improvement and evaluating services for frail seniors in CE-LHIN.

The Canadian Consortium on Neurodegeneration in Aging (CCNA)

D.B. Hogan, S. Nadeau, E. Doyle. Canadian Consortium on Neurodegeneration in Aging.

The Canadian Consortium on Neurodegeneration in Aging (CCNA) is pan-Canadian response to a global health priority. This submission provides a high-level overview of the consortium and how it functions.

Supported by the CIHR and a variety of international national, and provincial partners (see: http://ccna- ccnv.ca/en/partner-organizations/) the CCNA unites 350+ experts in age-related neurodegenerative conditions including Alzheimer's disease, vascular cognitive impairment, frontotemporal dementia, and Lewy body dementia. The primary objectives of the CCNA are to accelerate our understanding of how these diseases develop, their impact (on individuals, families, and the community as a whole), and what can be done to slow their progression and cope with them, if not prevent these diseases altogether. This team of investigators is supported by a culture of collaboration and a facilitating central administrative core.

Based on their area of research interest, CCNA researchers from across Canada are working in one of 20 teams grouped within 3 themes. Eight national platforms, 4 cross cutting programs, and central administration support these themes, teams, and researchers. Details on these components are available at http://ccna-ccnv.ca/en/.

The CCNA was launched in the fall of 2014. The first year has been spent in getting the enterprise launched. Each team is working hard on implementing their program of research. Among other accomplishments, a national cohort

study, the COMPASS-ND (which will consist of individuals with multiple morbidities, as well as mixed dementias) will shortly be launched.

The long-term criteria on which CCNA will be evaluated is how it has improved both the quality of life and the quality of services provided to individuals living with neurodegenerative diseases.

The CCNA is a national initiative for "the" public health crisis of the 21st century.

Ontario Senior Friendly Hospitals Environmental Scan: a Valuable Method to Monitor System-Wide Progress

B.A. Liu, A. Tsang, K. Wong. Regional Geriatric Program of Toronto.

In 2011, the Ontario Senior Friendly Hospital (SFH) Strategy was launched by the Local Health Integration Networks (LHINs) and Regional Geriatric Programs (RGPs). An environmental scan based on the five-domain Ontario SFH Framework highlighted promising practices and identified delirium and functional decline as priorities. Hospitals responded by addressing gaps and implementing strategies to improve care. In late 2014, we conducted a refresh of the SFH environmental scan to identify system-wide progress in SFH commitment and care.

A modified version of the original 2011 self-assessment survey was sent to 143 hospitals. Quantitative responses were aggregated and summarized and qualitative responses were clustered into themes by 3 reviewers.

The 2014 environmental scan was completed by 135 hospitals. Key findings include:

- 80% of hospitals have SFH strategic plan commitments (39% in 2011)
- 87% of hospitals have a committee/champion to coordinate SFH initiatives (31% in 2011)
- 94% of hospitals provide geriatrics training to their workforce (55% in 2011)
- 92% of hospitals have practices related to delirium (62% in 2011)
- 89% of hospitals have practices related to functional decline (49% in 2011)
- 64% of hospitals use senior-friendly design resources in physical environment audits (34% in 2011)

There has been significant progress in SFH care since 2011, though many areas for improvement remain. A hospital system committed to becoming senior-friendly needs to embrace this as a long-term quality improvement journey.

Monitoring progress in SFH care using a self-assessment environmental scan can empower providers, organizations and decision-makers by validating the long-term nature of this work, highlighting successes and innovation, supporting knowledge exchange and collaboration, and sustaining the engagement of organizations to support further improvement across the system.

Outcome of a Falls Prevention Program in a Geriatric Day Hospital Setting

D. Castino[1], T. Aggett[1], C. Brcko[1], S. Calabrese[1], J. Hall[1], S. Romeril[1], T. Izukawa[2]. [1]Baycrest Centre for Geriatric Care, [2]University of Toronto.

Injuries resulting from falls are the leading cause of hospitalization among Canadian seniors. A multi-factorial falls prevention approach including exercise for balance and strength has been shown to reduce falls.

This study investigates the impact of a Falls Prevention Program for frail older adults.

The Baycrest Day Treatment Centre ran a multi-factorial Falls Prevention Program from 2011–2014, including exercise, education and individualized therapy based upon patient identified goals. A retrospective chart review was carried out to review prospectively collected outcome measures.

The program was too short to collect meaningful falls data so substitute primary outcome measures were changes in the Berg Balance Scale Score and the 2 Minute Walk Test. Secondary outcomes include number of risk factors addressed, and percent goals met.

A preliminary analysis of 45 of approximately 100 participants revealed the mean age of the participants was 80 years, 76% were females and 89% were vulnerable-moderately frail. On average, participants experienced 2 falls in the 6 months prior to the program's initiation. On admission to the program, baseline data revealed an average Berg Balance Score of 46 and a 2 Minute Walk Test score of 96 m. At the program's completion, the average Berg Balance Score was 48 and the 2 Minute Walk Test was 105 m. Chart review is ongoing and further analysis will be available.

Falls Prevention Programs in a day hospital setting can improve balance, endurance and reduce the overall risk factors for falling in community-dwelling older adults.

We hope to identify factors that predict which patients benefited the most in order to be able to target future interventions.

Cognitive and Functional Impairment, but not Vitamin D Consumption, are Predictors of Post-Operative Delirium in Hip Fracture Patients

A. Try, O. Beauchet, J. Chabot, E. Levinoff. McGill University.

Hip fractures in the elderly population are associated with adverse post-operative outcomes like delirium. Risk factors for post-operative delirium include cognitive disorders. In addition to adverse bone effects, hypovitaminosis D is associated with adverse effects such as gait and cognitive disorders. Therefore, vitamin D supplementation may prevent adverse effects such as post-operative delirium. The purpose of this study was to examine whether pre-operative Vitamin D consumption was associated with post-operative delirium in patients with hip fractures. We hypothesized that patients with who were not taking vitamin D pre-operatively were at increased risk of developing post-operative delirium

This study was a retrospective cohort design of 106 elderly patients (i.e., >65) admitted to an orthopedic surgery ward for hip fracture after an accidental fall. Baseline mobility, cognitive impairment, functional status, number of medications, vitamin D consumption, psychotropic medication use and comorbidities were recorded. Post-operative complications, post-operative delirium and in-hospital psychotropic medication intake, were also assessed.

Pre-operative cognitive impairment (OR = 5.1 $p < 0.04$) and pre-operative functional status (OR = 3.6 $p < 0.04$) were both predictors of post-operative delirium. However, pre-operative Vitamin D consumption (OR = 0.48, $p = 0.23$) and baseline mobility status (OR = 2.6 $p = 0.17$) were not.

A significant association was demonstrated between pre-operative cognitive and functional impairment and post-operative delirium, but was minimally affected by vitamin D consumption.

This study supports the association between pre-operative functional and cognitive status and post-operative delirium. However, because cognitive impairment has been strongly linked to vitamin D levels, future prospective studies should investigate specifically whether pre-operative serum vitamin D levels have an association with acute post-operative delirium, as well as chronic outcome measures.

A Comparison of the Effectiveness and Safety of Intramuscular Olanzapine with Intramuscular Haloperidol in the Treatment of Acute Behavioural and Psychological Symptoms in Hospitalized Older Adults

K-T. Yeung[1], F. Wolfe[1], M. Lee[1], L. Zeng[2]. [1]North York General Hospital, [2]University of Waterloo.

Short-acting injectable antipsychotics are sometimes used to manage acute behavioural and psychological symptoms in hospitalized elderly patients with dementia or delirium when the oral route is not feasible. Although intramuscular (IM) haloperidol has frequently been used, IM olanzapine has recently become an alternative. The purpose of this study was to compare the effectiveness and safety of IM olanzapine and haloperidol prescribed to older adults in a community teaching hospital.

We conducted a retrospective chart review of all in-patients aged 65 years or older who received at least one dose of IM olanzapine or IM haloperidol between November 2010 and December 2012. Information on patient demographics, comorbidities, concurrent medications, treatment and adverse effects were collected. The two groups of patients were matched using the propensity score matching method. Treatment effects and adverse outcomes of the two groups were compared.

There were 397 and 72 patients who received IM haloperidol and IM olanzapine respectively. Effectiveness and safety parameters were not consistently documented, which limited the number of patients that could be matched. Desired treatment effect was achieved similarly (OR 1.34, $p=0.587$) in patients treated with olanzapine (71.0%) compared to those who received haloperidol (64.5%). There was a marginal trend of increase in the odds of adverse effects in patients who received olanzapine (23.3%) compared to those in the haloperidol group (11.6%), which barely escapes being significant at the conventional 5% level (OR 2.3, $p=0.0946$).

Results of this study indicate that IM olanzapine has similar effectiveness as IM haloperidol in the treatment of behavioural symptoms in hospitalized older adults. The trend in increased odds of adverse effects in the olanzapine group suggests that vigilant monitoring is warranted.

Sarcopenia Does Not Equate to Frailty: Comparing Subjects EWGSOP Sarcopenic Status and their Clinical Frailty Scale

C. Davis, A. Juby, S. Minmaana. University of Alberta.

The European Working Group of Sarcopenia in Older People (EWGSOP) classifies people as normal, presarcopenia, sarcopenia and severe sarcopenia depending on lean muscle mass, grip strength and gait speed. The Clinical Frailty Scale (CFS) classifies people into 9 possible levels. Prevalence of both increases with age. Some authors have implied that sarcopenia and frailty are two sides of the same coin.

Purpose: To compare Sarcopenic and Frailty classifications in a group of community dwelling elderly.

Seniors participating in an exercise intervention study were evaluated for their sarcopenic status. Blinded to this information, they were evaluated using the CFS and classified accordingly.

Data was obtained from 39 participants (6 men), average age 75.7years (67-90). Average MMSE 29.1 (22-30), MoCA

26.4 (18-30). 11 were normal, 11 were obese, the remainder various stages of sarcopenia. 24 were CFS 3 or higher. Poor correlation was found between EWGSOP sarcopenic status and CFS (R=0.43), lean muscle mass (appendicular lean mass/height2) and CFS (R=0.21 in women), EWGSOP grip strength cut-offs and CFS (R=0.46). However, good correlation was found between CFS and 6m absolute walk time (R=0.82) and gait speed (R=-0.61). This study is limited by fewer individuals in the sarcopenic or frail spectrum.

This study suggests there is poor correlation between sarcopenic status (as defined by EWGSOP criteria), absolute muscle mass or grip strength and CFS. However, there was good correlation with gait time and speed, suggesting that functional measures of muscle are more important than absolute muscle mass in the development of frailty.

Sarcopenia, as defined by EWGSOP does not equate to frailty as defined by CFS. The use of standardized definitions has important implications for research into potential therapeutic interventions.

Improving Family Medicine Residents' Knowledge of De-prescribing in the Elderly

L. Leung. University of Toronto.

De-prescribing is the process of titration/weaning and discontinuation of potentially inappropriate medications. The objectives of this study were to determine if an electronic module would be an effective tool to increase knowledge and confidence in de-prescribing and decrease perceived barriers in de-prescribing.

All Family Medicine residents at the Michael Garron Hospital were invited to participate in an anonymous survey and electronic module that presented principles of de-prescribing. Multiple choice questions based on the content were presented before and after the module to assess a change in score. Subjects were also asked to qualify their experiences using Likert scales. Statistical analysis was performed using SPSS.

26 of 37 residents participated in the study. The mean increase in scores after the module was 12% ((5.2%-18.9%), p=0.001). Of those who did not have confidence in de-prescribing, 93% versus 7% endorsed an increase in confidence after the module (p=0.012). Fewer residents cited "fear of harming the patient" (22 versus 14, p=0.021) and "medication started by a specialist" (25 versus 14, p=0.003) as barriers to de-prescribing after the module and 100% of subjects stated they would use the Beers Criteria in the future (p<0.001).

The module may be an effective tool to teach de-prescribing in residency and to decrease barriers to practicing this in a clinical setting. The impact on de-prescribing practices after the module was not studied in this project but merits further study.

Challenges Associated with Qualitative Research in Frail Heart Failure Inpatients: Understanding Perspectives of Patients and Caregivers on the Quality of Care and Discharge Gaps

M. Benzaquen, J. Li, G. Lemay. Nahid Azad University of Ottawa.

Heart failure (HF) is the most common cause of hospitalization in elderly patients. Understanding the patient and care provider's perspectives on the provision of optimal care is essential to quality improvement. Our objective was to determine the patient and caregivers' perspectives on HF care at the Geriatric Medical Unit to assist with the organizational and process changes needed to enable optimal HF care.

Nineteen consenting patients and their caregivers were interviewed (once in hospital and once post-discharge) in a semi-structured manner about their experiences & preferences. Chart reviews were used to collect demographics.

Difficulties experienced with interviewing patients:

- High refusal rate (due to fatigue, hearing issues, recovery, lack of appreciation of research, and family disinterest)
- Patients talked out of boredom and frequently went off topic
- Even well-established questionnaires were met with comprehension difficulties
- Almost all patients required hearing assistance
- Quality interaction with participants needed multiple attempts due to interruptions
- Selecting the appropriate environment
- Interview length pushed their capabilities
- Phone interviews were compounded with forgetfulness

It is crucial to plan strategies to conduct this research in frail elderly patients.

- Allow time for patients to adjust to environment Be patient
- Ensure optimized sensory (e.g., hearing aid)
- Engage the family
- Use visual cues and repetition to assist patients with cognitive impairment
- Conduct interviews in appropriate setting, stress the importance of research, make it personal, and tailor it to the patient's abilities and desires
- Attempt pilot study first
- Make interviews short and questions specific

Research in the elderly is not impossible but does present its unique challenges that must be met with the appropriate solutions.

Poor White Matter Integrity Predicts Fall Risk in Older Adults with MCI Early Findings of a Diffusion Tensor Imaging (DTI) Study

J. Snir[1], M Montero Odasso[1], R. Bartha[2]. [1]St. Joseph's Health Care London, [2]Western University.

Falls remain the leading cause of injury-related hospitalization among Canadian seniors. Both mild cognitive impairment (MCI) and gait variability have been shown to be independent predictors of falls in community-dwelling older people. In addition, individuals at risk for falls have been shown to possess white-matter (WM) abnormalities. Dual-task gait analysis (walking while talking tests) has been shown to be sensitive to identify fall risk in MCI individuals. Therefore in this study we investigate the WM abnormalities localization and correlation with dual-task gait decline to further elucidate their role in the risk of falling.

Sixteen patients with MCI, 50% with history of falls, received diffusion weighted imaging (DTI) on a 3T Siemens MRI scanner, comprehensive neuropsychological and neurological evaluation, and single-and dual-task gait testing using an electronic walkway (GAITrite systems). Analysis was performed using FSL analysis tool (Analysis Group, FMRIB, Oxford, UK) on baseline imaging data and gait parameters measured over a 3 years follow-up.

Low WM integrity in the corpus callosum (fractional anisotropy (FA)=-0.664; p=0.026), predicted poor dual-task stride velocity. Furthermore, the corpus callosum FA values significantly correlated with Stride velocity (0.629; p=0.038), counting gait velocity (0.696; p=0.017) and counting stride velocity (0.689; p=0.019). There was no significant correlation between aforementioned gait parameters and BMI, age and cognitive status.

Poor WM integrity in the corpus callosum predicted a 3 year decline in several gait parameters which are valid markers of fall risk. DTI measurements are affected early in older individuals experiencing gait decline.

Our findings and on-going research will help explain the high risk of falls recently described in older adults with MCI and aim to provide predictive power to detect patients more prone for falls and injury.