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FINALISTS FOR THE WILLARD AND PHOEBE THOMPSON AWARD

Fall in Community-Dwelling Older Adults: A Systematic Review of Assistive Technology and In-Home Modifications

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Background/Purpose: Fall-related injuries can reduce older adults' independence and result in personal and economic burden. The type and use of assistive technologies as well as home modifications likely influences fall reduction and injury prevention. This effect is poorly understood. We sought to detail the contributions of assistive technology and in-home modification on falls, fall frequency, fall severity and fall location within the homes of community-dwelling older adults through a systematic review.

Method: From 3 databases (Medline; CINAHL; Web of Science Core Collection) 3920 articles were sourced and assessed using inclusion and exclusion criteria. The outcome variables of interest were fall frequency, fall location, injury, mortality, and hospitalization. Two independent reviewers screened each study and completed data extraction. Reporting is in accordance with PRISMA 2020.

Results: Twenty-two studies met the criteria. The most frequent assistive technologies and home modifications reported were canes (n=4), walkers (n=4), handrails (n=9), and grab bars (n=15). Their influence on falls depends on a variety of factors including fall history, history of assistive device use, and whether the device was present at the time of the fall.

Discussion: Our findings may provide a basis for more intentional prescription of ambulatory assistive technologies and evidence-based recommendations of home modifications to prevent falls among community-dwelling older adults.

Conclusion: This systematic review provides an understanding of how fall-related outcomes vary with the use of assistive technologies and home modifications in different areas of the home of community-dwelling older adults. Study protocol registration (PROSPERO ID: CRD42022370172).

Biological Sex Differences in the Post-Prandial and Orthostatic Hypotensive Response in Older Adults

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Background/Purpose: Postprandial hypotension (PPH) and orthostatic hypotension (OH) are more prevalent in older adults due to factors such as increased cardiac comorbidities, a blunted sympathetic response, and polypharmacy. PPH and OH can lead to increased risk of falls, fractures, and mortality in older adults. This study evaluates the association between biological sex, PPH, and OH in Canadian older adults.

Method: We recruited 95 older adults (52 females, 43 males) over the age of 65 who were referred to a geriatrics clinic at an academic center. Subjects underwent a 90-minute meal test for PPH, and their supine and 3-minute standing blood pressures (BP) were obtained for OH.

Results: Postprandially, female participants were more likely to experience a greater maximum SBP decrease (29 ± 5 vs. -4 ± 5, $p < 0.001$) and mean SBP decrease (8 ± 3 vs. -6 ± 4, $p = 0.007$) compared to male participants. However, the number of participants experiencing PPH did not differ between males and females ($\chi 2 = 1.263$, $p = 0.261$). For OH, there were no significant differences between female and male participants

in SBP decrease (6 ± 3 vs. 0 ± 2, p = 0.110), DBP drop (-3 ± 1 vs. -5 ± 1, p = 0.301), or the number of participants experiencing OH ($\chi 2 = 3.343$, p = 0.067).

Discussion: Female participants had a greater drop in postprandial BP. However, there were no significant associations between biological sex and the number of people developing PPH. The female or male sex was also not significantly associated with orthostatic BP drops in older adults.

Conclusion: Although female older adults had greater postprandial BP responses, biological sex was not significantly associated with developing PPH and OH in older adults.

Keeping Older Adults Out of Hospital: Outcomes of Community Paramedicine Programs

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Background/Purpose: Older adults are frequent users of acute care systems and are more likely to experience iatrogenic harms caused by hospitalization. Community Paramedicine (CP) programs have emerged as a type of hospital avoidance intervention to improve healthcare system sustainability and patient health outcomes amidst the aging population. The purpose of this scoping review is to examine the outcomes of CP programs that aim to reduce emergency department (ED) visits and hospitalizations among community-dwelling older adults.

Method: A systematic search of CINAHL, EMBASE, MEDLINE, and Cochrane databases was conducted. Out of the 1096 articles gathered, 16 underwent full-text review and 12 were included.

Results: The 12 articles selected encompassed 9 studies conducted in Canada, UK, and USA. Among this study sample, two categories of CP programs emerged: reactive and preventative. The reactive programs reported health utilization as a primary outcome through lower ED attendance rates, lower hospital admissions, and less time spent in ED. The preventative programs reported health utilization as a primary outcome through lower EMS call volume and lower ED attendance rates. The secondary outcomes reported by reactive programs included high patient and caregiver satisfaction whereas preventative programs reported improved health outcomes such as reduced blood pressure and improved QALYs.

Discussion: Though most articles noted decreased ED presentations, reporting measures varied significantly and the full impact of CP on health resource utilization is unclear. Results on patient health outcomes, user satisfaction, and cost-effectiveness of the intervention were limited.

Conclusion: CP programs show promise for reducing hospital use among older adults. Preventative CP programs may also function as a feasible population health strategy to improve patient health outcomes, however, further large-scale longitudinal studies are needed to determine their impact, effectiveness, and sustainability.

Nudging Interventions to Promote Vaccination: A Systematic Review and Meta-Analysis

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Background/Purpose: Despite the efficacy of vaccines to prevent diseases, vaccine hesitancy is a common and international public health issue. Given the disproportionate impact viruses such as COVID-19 have had both directly and indirectly on older adults, finding new interventions to increase vaccination rates is important. Nudging is an innovative strategy that uses behavioural theory to predictably influence outcomes without restricting choice. Although it has been used in other sectors, its use in healthcare has been limited. We sought to determine if nudging is effective in increasing vaccination rates.

Method: We searched MEDLINE, EMBASE, and PsycINFO for Randomized Controlled Trials investigating the effects of nudging interventions on actual and intended vaccination rates compared to usual care. Citation screening, full-text review, data abstraction and risk of bias assessment were conducted in duplicate. A random-effects model meta-analysis was conducted.

Results: Of 1741 citations, 66 underwent full-text review, 35 met inclusion criteria and 33 studies were meta-analyzed. Nudging interventions increase the odds of vaccination or vaccination intent by 1.23 (95% CI 1.16-1.31, I^2 89%, p<0.00001).

Discussion: Nudging interventions are associated with a modest, but significant increase in actual or intended vaccination rates. On a population-level, this may represent a clinically significant increase in the absolute number of people receiving the health benefits of vaccinations and contribution towards herd immunity. Given their low cost and ease of implementation, nudging interventions should be actively considered to reduce the burden of infectious diseases on older adults, our communities and our healthcare systems.

Conclusion: Nudging interventions modestly increase vaccinations rates and represent an important intervention to supplement other public health efforts to combat vaccine hesitancy for COVID-19, influenza, and other vaccine-preventable diseases in vulnerable populations.

Development of a Professionalism Curriculum for Geriatrics Residents

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Background/Purpose: Professionalism is universally accepted as a core medical competency; however, few residency programs include professionalism education in their formal curriculum. We developed a longitudinal curriculum on professionalism and related competencies for geriatrics residents at the University of Toronto. This study describes the development and initial outcomes of the Professionalism Plus (PP) curriculum.

Method: We used the CanMEDS framework and collaborated with local content experts to develop learning objectives and workshops for a two-year longitudinal curriculum. Topics included personal-professional identity, physician well-being, communication, collaboration, and leadership. Opportunity for self-reflection was common across all sessions. Graduated residents from 2018-2020, who had attended some but not all of the sessions, were invited for interviews to obtain further feedback. Interview transcripts were analyzed using thematic analysis to identify emergent themes.

Results: Thirty written evaluations of the seven individual workshops were analyzed. The average teaching effectiveness score was excellent: 90%. Seven of thirteen eligible graduated residents (53%) were interviewed. Four key themes emerged: (1) PP provided a unique opportunity for self-reflection that enhanced participants' understanding of themselves; (2) participants gained a sense of community; (3) the facilitator played an essential role in establishing a safe environment; and (4) participants did not link PP to any change in their medical practice as they felt it was delivered too late in training, there was not enough curricular time to be impactful, or it was too removed from clinical practice.

Discussion: Our curriculum was successful at increasing self-reflection and building community among residents, two important mediators of physician well-being and improving professional behaviour.

Conclusion: A formal program evaluation is underway. We are hopeful that the full two-year curriculum will have a greater impact on practice than what was reported in this pilot.

Introducing Animatronic ("Robotic") Pets for Residents Living with Dementia in Long-term Care: Practical Delivery Implications for Recreation Staff

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Background/Purpose: Therapeutic, non-pharmacological interventions involving animatronic ("robotic") cats and dogs are frequently delivered within long-term care (LTC) settings. To date, researchers have focused on therapeutic impacts for residents living with mild-to-moderate dementia. The objective of this project, however, was to explore practical considerations for introducing robotic pet programming into a LTC setting for this resident population.

Method: Data from longitudinal qualitative group interviews and ethnographic observations were synthesized and triangulated to understand and evaluate practical approaches to facilitating robotic pet programming for residents living with dementia in LTC. Two group interviews with recreation staff (n=4-6) from a care facility in Calgary, Alberta, were conducted to compare perspectives before and one month after the program's introduction. Researchers also observed program delivery during this period.

Results: Recreation staff and researchers noted a range of resident responses to robotic pets, from strong attachments to disinterest. Offering residents opportunities to briefly "take care of the pets" to assist staff enhanced engagement for some residents. Staff and researchers noted anxiety when residents were disinterested in robotic pets or were ready for an interaction to end. Intake assessments establishing past trauma related to animals could suggest exclusion from the intervention, yet a history of pet ownership was not necessary for a resident to benefit from robotic pets.

Discussion: Robotic pet programming may enhance quality of life for many but not all LTC residents living with dementia. How staff deliver the intervention can influence resident response. An awareness of prospective challenges will help mitigate unintended negative experiences for some residents.

Conclusion: Understanding the practical implications of introducing robotic pets into care settings will help enhance robotic pets' therapeutic potential for residents living with mild-to-moderate dementia.

FINALISTS FOR THE RÉJEAN HÉBERT CANADIAN INSTITUTES OF HEALTH RESEARCH - INSTITUTE ON AGING PRIZE

Cholinesterase Inhibitors and Falls, Syncope and Accidental Injuries in Patients with Cognitive Impairment: A Systematic Review and Meta-Analysis

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Background/Purpose: To conduct a systematic review and meta-analysis on the effects of commonly prescribed cholinesterase inhibitors (ChEIs) on falls and related adverse events (syncope, fracture, accidental trauma) in patients with neurocognitive diagnoses.

Method: Embase, MEDLINE, Cochrane Central Register of Controlled Trials, Cumulative Index of Nursing and Allied Health Literature and AgeLine were systematically searched without language restriction through January 2022 to identify all randomized controlled trials of ChEIs (donepezil, galantamine, rivastigmine). Inclusion criteria consisted of studies reporting falls and related adverse events in adults aged ≥ 19 years, with a diagnosis of Alzheimer disease, vascular dementia, Lewy body dementia, Parkinson's disease dementia, frontotemporal dementia, traumatic brain injury and mild cognitive impairment. Risk of bias was assessed using the Cochrane risk of bias tool. For each outcome, the pooled odds ratio (OR) and the 95% confidence interval (CI) was calculated using random effects models.

Results: In total, 55 studies (31 donepezil, 14 galantamine, and 10 rivastigmine) were included after meeting eligibility. Data were extracted by two independent reviewers. The pooled ORs comparing ChEIs showed an overall reduced risk of falls (0.84 [95% CI=0.73-0.96, P=0.009]) and increased risk of syncope (1.50 [95% CI=1.02-2.21, P=0.04]) among ChEI users. There was no statistically significant association with ChEI use and the risk of accidental injury or fracture. There was minimal heterogeneity among the studies for falls, syncope and fracture, and moderate heterogeneity for accidental injury (I^2=47%, P=0.003). No significant publication bias was observed.

Discussion: Our study demonstrates that ChEIs are associated with decreased falls risk and an increased risk of syncope.

Conclusion: These results may help clinicians better evaluate risks and benefits of ChEIs, especially in the absence of other effective and widely available treatments for cognitive impairment.

Validation of the Mild Behavioral Impairment Checklist in a Pre-Dementia Clinic Sample

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Background/Purpose: The Mild Behavioral Impairment Checklist (MBI-C) assesses general and domain-specific neuropsychiatric symptoms (NPS) in non-demented older adults to ascertain dementia risk. It consists of 34 questions in five domains of apathy, depressed mood/anxiety, impulse dyscontrol, social inappropriateness, and psychotic symptoms. The Neuropsychiatric Inventory Questionnaire (NPI-Q) is a widely used assessment tool for NPS in dementia consisting of ten questions in one domain. We determined the validity and reliability of the MBI-C in clinic patients with subjective cognitive decline and mild cognitive impairment, in comparison to the NPI-Q.

Method: Participants were recruited through a tertiary Cognitive Neurology Clinic in Calgary, Alberta, Canada and completed the MBI-C (n=178) or NPI-Q (n=427). Exploratory factor analysis of the MBI-C and NPI-Q was conducted to group questions into factors/domains to assess their validity. Significant questions and factors were retained. Internal consistency was measured using Cronbach's alpha.

Results: The MBI-C demonstrated a five-factor structure with 29/34 questions loading in factors matching pre-specified groupings. MBI-C factors had high internal consistency (>0.80). The NPI-Q had a one-factor structure with 9/10 questions loading and lower internal consistency (<0.80). Furthermore, MBI-C and NPI-Q scores were positively correlated.

Discussion: Anhedonia and appetite disturbance were identified to be features of apathy rather than depressed mood/anxiety, related to decreased interest, motivation and drive. The MBI-C is a valid and reliable five-factor questionnaire with convergent validity with the NPI-Q in pre-dementia populations. The MBI-C can detect NPS domain groupings, while the NPI-Q is indicative of a global NPS score.

Conclusion: The MBI-C and NPI-Q are complementary instruments, both capable of capturing NPS along the cognitive spectrum, but for pre-dementia patients, the MBI-C appears to provide a more detailed, internally reliable assessment of NPS.

Clinical Use of Personal Amplifiers: A Scoping Review

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Background/Purpose: Older adults with hearing loss have a poorer understanding of the information shared with them by care providers, and higher mortality rates, even after controlling for age and comorbidities. Personal amplifiers (PAs), such as Pocketalkers™, are one tool for improving older adults' access to care.

Method: We summarized research on the clinical use of PAs through an established five-step scoping review methodology to identify articles published in English after 1980 which reported empirical outcomes relating to PA use in clinical settings. From 4234 reviewed articles, 106 full texts were reviewed and 13 were included for analysis.

Results: The 13 papers selected for analysis included three surveys on clinicians' awareness and use of PAs, one comparison of the acoustic output of a PA relative to the 'reversed stethoscope' technique, and nine interventions wherein PAs were provided to patients with hearing loss. Results demonstrated improved communication with PA use, but low clinician awareness and a tendency for the devices to be underused and misplaced. Across the papers, there was wide variation in the terms used for these devices (e.g., "amplification device", "deaf-aid communicator", etc.). Six of the thirteen papers were led by geriatricians, and nine were published within the last eight years.

Discussion: A new and growing body of scholarly work demonstrates that PAs improve communication with older patients. Barriers to uptake include lack of awareness, and challenges with PA availability and distribution. These barriers require further study, and this research would be simplified by aligning around a single term for this class of devices.

Conclusion: PAs can improve healthcare accessibility for older adults with hearing loss. Selecting a common term encompassing Pocketalkers™ and devices like them may facilitate progress within this growing area of research.

Early Sodium Monitoring Does Not Reduce Hospital Visits with Hyponatremia in Older Adults Starting Antidepressants: A Retrospective Cohort Study

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Background/Purpose: The BEERS criteria and guidelines published by the Canadian Coalition for Seniors Mental Health and the Canadian Academy of Geriatric Psychiatry recommend close serum sodium monitoring when starting or changing doses of SSRIs or SNRIs in older adults due to the risk of hyponatremia.

Method: Retrospective cohort study of (n=417,808) Ontarian adults aged 66 and older starting selective serotonin reuptake inhibitors (SSRIs) or selective norepinephrine reuptake inhibitors (SNRIs) between April 2013 and January 2020. We compared rates of hospital visits with hyponatremia (sodium <135) among those who did or did not have serum sodium testing done in the first week after starting their medication. Propensity-score overlap weighting was used to minimize confounding by indication in GEE models.

Results: In overlap propensity score weighted models, people who had sodium testing in the week after starting their SSRI/SNRI were 2.37 times (95% CI, 2.22-2.53) more likely to present to hospital with hyponatremia in the subsequent seven weeks than those who did not get early sodium monitoring. Hospital visits with hyponatremia in the seven weeks following SSRI/SNRIs occurred in 6,109 (1.5%) people but were associated with a median of four (IQR 1-11) day stays in hospital. Days from drug start to hospitalization with hyponatremia was highly variable (median 25 days, IQR 13-39), and most sodium levels measured in the community (median 131, 126-135) were misleadingly normal compared to those at the time of hospital visit (median 126, IQR 121-130).

Discussion: Routine sodium monitoring in older adults starting SSRIs/SNRIs does not reduce the incidence of hospital visits with hyponatremia or lead to earlier detection.

Conclusion: Monitoring for symptoms of hyponatremia in older adults recently started on SSRIs/SNRIs is a likely higher yield and should be recommended in future guidelines.

Diagnosis of Urinary Tract Infections (UTIs) in Hospitalized Older Adults in Alberta

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Background/Purpose: Urinary tract infections (UTIs) are one of the most common infections reported in the older adult population in communities and institutions. The diagnosis of UTI is based on clinical and microbiological features. Treatment of UTIs consists of antibiotics tailored to the bacteria present in the urine culture. We aimed to establish the degree to which hospitalized older adults who were given a clinical diagnosis of UTI had documented supporting evidence for that diagnosis and determine the proportion of older adults treated with antibiotics and the complications experienced by patients.

Method: A single-center retrospective cross-sectional study of older adult patients (n = 238) hospitalized at University of Alberta with an admission diagnosis of UTI was performed.

Results: 44.6% (n = 106) of patients had a true diagnosis of UTI based on clinical and microbiological findings while 43.3% (n = 103) of patients had asymptomatic bacteriuria. 48.1% (n = 51) of patients with true UTI had delirium while 60.2% (n = 62) of patients with asymptomatic bacteriuria had delirium. 98.0% (n = 233) of patients were treated with antibiotics, with 15.9% (n = 37) of those patients experiencing complications including diarrhea, *C. difficile* infection and thrush. History of dementia was significantly associated with diagnosis of UTI (p = 0.003).

Discussion: These findings will allow for initiatives to educate clinicians on the importance of UTI diagnosis in an older adult population and appropriately prescribing antibiotics to prevent unwanted complications.

Conclusion: Diagnosis of UTI based on clinical symptoms, signs and microbiology is very poor in a hospitalized older adult population and delirium is not a good indicator of UTI. As a result, a majority of older adult patients end up receiving unnecessary antibiotics, increasing risk of complications.

Burden of Respiratory Syncytial Virus (RSV) Among Older Adults Hospitalized with Acute Respiratory Illness

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Background/Purpose: The burden of RSV is well understood among children, but impact on adults is less well understood. This issue is relevant given that RSV vaccines for adults are in development, and decisions makers will benefit from evidence about the burden of RSV in this population to inform recommendations for their use and jurisdictional procurement. Here we aimed to compare outcomes of RSV vs. influenza vs. other acute respiratory illness (ARI) in older adults admitted to Canadian hospitals.

Method: The Serious Outcome Surveillance (SOS) Network collects annual data on patients' frailty, severity of illness and mortality during hospitalization with ARI. We used SOS data from 13 sites, between 2012-2015. Patients admitted with respiratory symptoms were eligible for enrollment, and underwent a nasopharyngeal swab for RSV and influenza A/B. Patients were grouped as RSV positive, Influenza A/B positive and negative. Primary clinical outcomes were mechanical ventilation, ICU admission, mortality and adjusted analyses were performed using baseline frailty index.

Results: 7,635 patients were included, of which 4,027 (42.7%) had a negative respiratory virus test result, 3,277 (42.9%) had laboratory-confirmed influenza, and 331 (4.3%) laboratory-confirmed respiratory syncytial virus (RSV). Median age overall was 76 years, and 52.4% were female. Of the 331 RSV cases, 21 (6.3%) required mechanical ventilation, 43 (13.0%) required ICU admission and 12 (3.6%) died. There were statistically significant differences in all clinical outcomes when comparing RSV vs. Other ARI and RSV vs. Influenza.

Discussion: RSV was associated with substantial burden of illness and severe outcomes in hospitalized older adults.

Conclusion: Prevention of RSV, including through vaccination, could be an important tool to reduce adverse outcomes in the population of older adults.

FINALISTS FOR THE DR. JACK & DR. ASA AWARD

Alternate Level of Care Patients Waiting in Hospital Incur More Healthcare-Associated Adverse Events Than Long-Term Care Residents: A Cohort Study Comparing London, Ontario Hospitals and Long-Term Care Homes

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Background/Purpose: A growing number of Canadians await long-term care (LTC) placement while in hospital and are designated Alternate Level of Care (ALC) to emphasize lack of acute medical issues. A stigmatizing narrative paints ALC patients as "bed blockers" rather than symptomatic of systemic shortcomings, and patient-centred ALC studies are lacking. ALC patients are at risk of healthcare-related adverse events while in hospitals, and these are ostensibly avoidable.

Method: In this retrospective cohort study, we compared rates of healthcare-associated adverse events between 144 ALC patients awaiting LTC placement while at two tertiary care centres in London, Ontario to 150 residents of a LTC home within the same catchment area, during 2015-2018. Medical charts were reviewed for nosocomial infections and non-infectious adverse events such as delirium and falls. A negative binomial regression model, with a time offset to account for different follow up times, was used to assess the rate of adverse events, adjusting for age and sex.

Results: ALC patients incurred around twice as many healthcare-associate adverse events, with incidence rate ratio (IRR) of 2.13 (95% CI 1.70-2.67, p <0.01) compared to LTC patients. ALC patients incurred 4.9 adverse events per 100 patient days, while LTC patients incurred 2.63 per 100 patient days. There was no significant between males and females. For each one year increase in age, the rate of adverse events increased by 2% (1.01 to 1.04, p<0.01)

Discussion: Acute care hospitals are maladapted to needs of ALC patients, with greater risk of both nosocomial infections and non-infectious adverse events while waiting for LTC, compared to similar patients already in LTC.

Conclusion: Efforts should be directed at improving senior-friendly care for ALC patients while addressing the systemic factors leading to a growing ALC population.

Improving Referral Processes for Outpatient Geriatric Services Through Qualitative Interviews and Surveys with Stakeholders: The Gerihub Quality Improvement Initiative

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Background/Purpose: Outpatient specialized geriatric services, including clinics, day hospital programs, and multidisciplinary rehabilitation services, remain highly-valued in healthcare systems prioritizing comprehensive care for the aging population. Resource constraints, inefficient infrastructure, and increasing demands can limit accessibility of these services and lead to delay in care.

Method: In this Quality Improvement (QI) initiative, we collected qualitative data from stakeholders at two academic institutions (University Healthy Network and Sinai Health) in the process of amalgamating services into a centralized "GeriHub". We aimed to obtain feedback on referral management, wait times, and work experience. Semi-structured interviews were conducted with 9 geriatricians and 5 administrators. Surveys were disseminated via SurveyMonkey platform to frequent referrers to geriatric services. Interviews and surveys were transcribed and analyzed for themes using NVivo software.

Results: Geriatricians highlighted valuing streamlining of referrals for both internal and external referrals, scheduling flexibility with capacity for urgent referrals, and prioritizing reduction of wait times to an ideal of 3 months. Administrators highlighted need for standardizing referral processes, well-defined roles with dedicated personnel, and open access to referral information and status. Referrers valued simple referral forms, receiving communication back with referral status, and short wait times.

Discussion: Stakeholders including clinicians, administrators, and common referrers to these services are well placed to inform change ideas. Ours valued centralization and simplification of referral management and triage, and lowering patient wait times was a shared priority. Stakeholder input was integrated into re-structuring of services and following roll-out, wait times were reduced from 12 months to 4 months.

Conclusion: At a time of critical burden in health systems, optimizing processes for timely access to geriatric services can prevent downstream resource utilization and improve patient outcomes.

Interventions Associated with Reduced Depression and Depressive Symptoms for Older Adults Living in Long-Term Care: A Systematic Review and Meta-Analysis

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Background/Purpose: Depression and depressive symptoms are managed with non-pharmacological and pharmacological interventions. We aimed to summarize the efficacy of non-pharmacological and pharmacological interventions for treating depression and its symptoms in older adults living in long-term care (LTC).

Method: We searched six electronic databases and grey literature sources to identify randomized controlled trials (RCTs) describing pharmacologic or non-pharmacologic interventions in the English language. Trials were included if they measured depression as an outcome for persons living in LTC. Abstracts and full texts were reviewed in duplicate. Long-term care, resident demographics, interventional and control conditions, and mean depression scores were extracted. Risk of bias was assessed using the Cochrane Risk of Bias tool for RCTs.

Results: One hundred and eight-two studies were included from 9359 title and abstract records screened, with 135 studies included in meta-analysis. Forty-one studies had participants with clinically relevant depressive symptoms at baseline. The average participant had a mean age range between 69.9-89.2, was female (range 0-100%), and did not have dementia (range 0-100%). Interventions associated with reduced depressive symptoms compared to usual care included animal therapy (standard mean difference {SMD}, −0.57 [95% confidence interval {CI}, −0.81 to −0.33]), cognitive behavioural therapy (SMD, −2.53 [CI, −4.11 to −0.95]), exercise (SMD, −0.73, [CI, −1.12 to −0.33]), group reminiscence therapy (SMD, −0.63 [CI −0.98 to −0.29]), individual reminiscence (SMD, −0.68 [CI, −0.93 to −0.43]), and music therapy (SMD, −0.34 [CI, −0.56 to −0.12]). Eighty-five percent of studies were at high risk of bias.

Discussion: A number of non-pharmacological interventions are associated with reduced depressive symptoms in older adults living in LTC.

Conclusion: Further trials of pharmacological interventions in LTC and in residents experiencing clinically relevant depression at baseline are warranted.

Experiences of Driving Cessation in Persons with Dementia: Cultivating Acceptance During the Transition to Non-Driving

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Background/Purpose: Dementia is associated with many life transitions such as driving cessation, which can significantly impact one's identity and emotional wellbeing. Despite recognition that persons with dementia (PWD) experience difficulties with driving cessation, few studies have examined the experiences of PWD, particularly PWD living in rural communities who may be particularly disadvantaged. Our objective was to explore the experiences of PWD with driving cessation including how they approached and managed this transition.

Method: In-depth semi-structured interviews were conducted with 7 current drivers and 3 former drivers with dementia residing in Saskatchewan. Five participants lived in rural communities. Participants described their experiences with driving cessation or the prospect of driving cessation. Data was examined using interpretive phenomenological analysis (IPA).

Results: Although driving cessation was described by participants as isolating and devastating with losses in independence and sense of security, they also showed a high level of self-awareness and acceptance. PWD emphasized driving cessation as their choice based on self-knowledge, altruism, and highlighted positive aspects such as relief from the responsibilities of driving or worries about potential vehicle collisions. Other strategies included being receptive to support, being positive, and living in the present moment. Participants valued having a culture of open conversations with their family and friends. PWD who resided in rural settings identified difficulties related to the lack of alternative modes of transportation available and the stigma of dementia, but also indicated positive aspects such as walking proximity to services and the support of community members.

Discussion: These participants shared how they would manage and/or accept the transition into driving cessation.

Conclusion: Understanding factors that cultivate acceptance can help inform the development of supportive strategies for PWD and ease the emotional impact.

Alternate Level of Care Patients—Understanding Influent Factors and Optimizing Care Trajectory

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Background/Purpose: The large influx of patients in hospital due to the COVID-19 pandemic required, among other challenges, optimizing care trajectory for patients with an alternate level of care (ALC) status. We aimed to characterize ALC patients and risk factors for ALC status, and built an integrated model to analyze the trajectory of ALC patients and discuss solutions to reduce their burden.

Method: A case-control design was used to compare 60 ALC and 60 non-ALC patients admitted to the geriatric department of the Centre Hospitalier de l'Université de Montréal (CHUM) in 2021, collecting medical and sociodemographic data. We used direct statistical analyses to compare groups and univariate analyses to identify risk factors for ALC.

Results: ALC patients were less autonomous for ADLs (22% performed 5 or 6 ADLs vs. 43%, $p=0.028$). Both groups were comparable in terms of previous mobility and neurocognitive disorders. ALC patients were more likely to receive a new diagnosis of neurocognitive disorder or behavioral or psychological symptoms (37% vs. 15%, $p=0.008$). Up to 25% of ALC patients were admitted despite presenting no active medical condition (vs. 3% of non-ACL patients, $p=0.002$). Total length of stay was longer for ALC patients (31 vs. 12 days, $p<0.001$) with a longer delay before orientation determination (18 vs. 8 days, $p<0.01$).

Discussion: The care trajectory of ALC patients is complex, involving interaction of prehospital, hospital, and posthospital factors, some of them possibly differing from non-ALC patients. A proportion of ALC admissions might be avoidable with sufficient prehospital resources, and the fluidity of their trajectory could benefit from solutions regarding orientation at discharge.

Conclusion: No unique risk factor can be identified for ALC status, as a global vision is essential to maintain fluidity of care trajectory.

Validity and Reliability of the Remote Version of the Fit-Frailty App for Assessing Frailty in Older Adults Attending a Geriatrics Outpatient Clinic

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Background/Purpose: The Fit-Frailty App is a comprehensive measure of frailty utilizing fully guided smartphone/tablet technology and scored using the Rockwood Frailty Index method. The in-person version includes physical performance measures and interactive cognitive screening. The remote Fit-Frailty assessment is self-reported and uses proxies for performance/interactive items. The purpose of this study was to determine the validity and reliability of the remote Fit-Frailty App administration in older adults attending an outpatient geriatrics clinic.

Method: A convenience sample of older adults attending a geriatrics clinic was recruited during 2021. The in-person Fit-Frailty assessment was administered by a study nurse in during clinic; participants who consented to further telephone follow-up (FU) were administered the remote version by a trainee within 7 and 14 days. Caregivers assisted with self-report items for participants with cognitive impairment (identified via MOCA/SMMSE). To examine criterion validity (i.e. agreement between the in-person vs. remote assessment) and intra-rater reliability (first remote FU vs. second remote FU), intraclass correlation coefficients (ICC) and 95% confidence intervals were calculated (SAS version 9.4).

Results: Overall, n=75 (mean age 79.0, SD 7.08; 52% female), n=56 and n=53 participants completed in-person, FU1, and FU2, respectively. The mean scores on the Clinical Frailty Scale, SMMSE, and Geriatric Depression Scale at baseline were 4.19 (SD 1.50; mild frailty range), 23.8 (SD 5.52), and 3.48 (SD 3.07), respectively. For criterion validity, the ICC was 0.840 (95% CI = 0.830-0.853) and for intra-rater reliability 0.911 (95% CI = 0.911-0.912) indicating excellent reliability.

Discussion: The remote Fit-Frailty App administration had a strong relationship with in-person assessment and had excellent reliability.

Conclusion: Remote assessment offers several potential advantages including triaging for severity of frailty, assessing home-bound seniors, and tracking change over time via remote follow-up.

FINALISTS FOR THE EDMUND V. COWDRY AWARD

Changes in Delirium Rates and Antipsychotic Use Among Hospitalized Older Adults in Ontario After the Onset of the COVID-19 Pandemic

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Background/Purpose: The COVID-19 pandemic may have impacted delirium as a result of increased incidence from COVID-19 infection and from disruptions to hospital visitor policies. We sought to describe the extent to which pandemic-related changes affected delirium rates and related medication prescribing.

Method: We performed a population-based study of older adults (>65yo) hospitalized in Ontario before and during the COVID-19 pandemic (Jan. 1 2017–Mar. 31 2022). We calculated the weekly rates of delirium and new antipsychotic and benzodiazepine prescriptions per 1000 admitted population and assessed changes in rates throughout multiple COVID waves. We compared pandemic rates to projected rates calculated based trends for 3 years before pandemic onset.

Results: Among the 2,128,411 older adults hospitalized over 5-years (50.4% female, mean age 78.9 [8.3]), the adjusted rate ratio of delirium (incidence 3.8% pre-COVID-19) increased to 1.15 (95% CI 1.11–1.19) of expected during the pandemic. The largest monthly increases occurred in April/May of 2020, April/May of 2021 and January 2022, mirroring waves of increased hospitalization. Antipsychotic prescribing rates increased by 1.28 (95% CI 1.19–1.38) and benzodiazepines by 1.37 (95% CI 1.20–1.57) when compared to expected trends.

Discussion: There was a temporal association between the pandemic onset and rapid rises in delirium rates, antipsychotic and benzodiazepine prescriptions for hospitalized older adults. The largest observed increases coincided with pandemic waves when a disproportionate number of older adults were hospitalized with COVID-19. Rates recovered but remained elevated above expected when provincial COVID-19 infections were low, suggesting that pandemic-related factors, such as hospital visitor restrictions may have played a role in delirium onset and pharmacologic management.

Conclusion: Post-pandemic planning must consider the long-term impacts of higher delirium rates and increased sedative-hypnotic prescribing on the future cognitive health of older adults.

Associations Between Anterior Quadriceps Muscle Thickness as Measured by Point-of-Care Ultrasound with Standard Gait Measures

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Background/Purpose: Gait parameters and sarcopenia both predict falls risk which is one of the major causes of both mortality and morbidity among older adults. Our objective was to evaluate whether anterior thigh muscle measured by point-of-care ultrasound (PoCUS) is significantly associated with standard gait measures.

Method: All subjects were referred from ambulatory geriatric medicine clinics at an academic center. Quadriceps muscle thickness was measured by a portable ultrasound device. Gait variables were measured by the patient in comfortable walking shoes walking for 6 minutes. The primary response variables were gait variables, and the predictor variables were age, biological sex, body mass index, and MT. Univariate and multivariate regression analyses were performed.

Results: A total of 150 participants were recruited from geriatric medicine clinics (65 women, 84 men). The mean (SD) age of participants was 80.03 (6.03) (median age 80 years, 65 to 94 years). Muscle thickness was measured in 149 participants and the mean (SD) was 1.91 (0.52) (median 1.82 cm, 0.96 to 3.68 cm). Among all the gait variables, average swing time and average stance time were correlated significantly (both $P = .01$) with muscle thickness. Muscle thickness was negatively associated with step time variability percent ($P = .005$). Muscle thickness ($P = .046$), age ($P = .025$), and gender ($P = .047$) had a statistically significant association with present step time variability.

Discussion: PoCUS showed significant associations with average swing time, average stance time, and step time variability all of which are predictive of future falls risk.

Conclusion: Although more work needs to be done, PoCUS is a reliable and feasible muscle measurement method, which could lead to faster clinical decision-making and falls risk assessment.

Effect of a Home-Based Exercise Program on Subsequent Falls Among Older Adults with Cognitive Frailty: Secondary Results of a Randomized Clinical Trial

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Background/Purpose: Cognitive frailty is characterized by concurrent physical frailty and mild cognitive impairment, and it is associated with increased fall risk. Whether exercise can reduce falls in older adults with cognitive frailty is unknown. We examined the effects of a home-based exercise intervention on subsequent falls among community-dwelling older adults with cognitive frailty and a history of falls.

Method: A secondary of a 12-month randomized controlled trial among older adults aged ≥ 70 years with a fall in the last 12 months. Participants were randomized to either 12 months of home-based exercise (EX; n=172) or usual care (UC; n=172). For this analysis, we only included participants who were classified as cognitively frail based on a Short Physical Performance Battery (SPPB) score ≤ 9/12 and a Montreal Cognitive Assessment score < 26/30. Our primary analysis examined the effect of EX on self-reported falls over 12 months. The secondary analysis examined whether higher exercise adherence, or dose, benefitted physical frailty among the EX participants.

Results: At baseline, 192 participants were classified as cognitively frail (EX=93; UC=99). Falls rates were lower in EX participants vs. UC participants (IRR=0.65; p=0.042). At 12 months, in the EX group, SPPB score was significantly higher among participants with high adherence vs. those with low adherence (estimated mean difference: 1.22; p=0.004).

Discussion: Exercise is a promising strategy for reducing subsequent falls in older adults with cognitive frailty and a history of falls. Greater exercise adherence, or dose, may reduce physical frailty in this population at high risk for disability.

Conclusion: Preventing falls is critical in "adding life to years" in older adults by reducing both morbidity and mortality. Our findings highlight the importance of exercise in the management of older adults with cognitive frailty.

The GERAS Virtual Frailty Rehabilitation Program to Build Resilience in Frail Older Adults during COVID-19: A Randomized Feasibility Trial

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Background/Purpose: Evidence on alternative modes of delivering rehabilitation to prevent or reduce the risk of becoming frail among vulnerable older adults is limited. Our randomized feasibility trial aimed to understand the feasibility

of a virtual rehabilitation program for frail older adults during the COVID-19 pandemic.

Method: Participants were randomized to either a multimodal or socialization arm. Over a 12-week intervention period, the multimodal group received virtual care including, twice-weekly exercise in small group physiotherapy-led live-streamed sessions, nutrition and protein supplementation, and medication consultation via videoconferencing, and once-weekly phone calls from student volunteers while the socialization group received only once-weekly phone calls from the volunteers. The RE-AIM framework was used to evaluate the feasibility of the program.

Results: The program reached 33% (n = 72) of eligible older adults (n = 220). Adoption rates from different referral sources were community self-referrals (60%), community organizations (33%) and healthcare providers (25%). Implementation rates varied from 75% – 100% for different aspects of program delivery. Participants adherence levels included virtual exercise sessions 81% (75 – 88%), home-based exercise 50% (38 – 62%), protein supplements consumption 57 days (46 – 67 days) and medication optimization 38% (21 – 59%). Most participants (85%) were satisfied with the program.

Discussion: The GERAS virtual frailty rehabilitation (VFR) study for community-dwelling older adults living with frailty was feasible in terms of reach of participants, adherence to implementation and participant's satisfaction with the program. However, the pandemic context may have presented a challenge to some aspects of the program including adoption in some settings and participants' adherence to some intervention components.

Conclusion: The VFR program could be feasibly delivered to improve access to care for socially isolated older adults where barriers to in-person participation exist.

Could Canada Reduce Dementia by 40% by 2040?—Potential Modifiable Lifestyle Risk Factors for Low Cognition and Dementia

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Background/Purpose: In Canada, over 500,000 older adults are living with dementia and its prevalence is projected to reach over one million in 2031. Cognitive impairment in aging is a multifactorial process involving several modifiable risk factors. However, there are no Canadian studies estimating the population impact of modifiable risk factors for low cognition and dementia in Canada. The purpose of this study is to estimate the potential population impact of modifiable risk factors in middle-aged and older Canadian adults.

Method: The population attributable fraction (PAF) of 12 modifiable lifestyle risk factors was calculated using baseline data from the Canadian Longitudinal Study on Aging Comprehensive Cohort (n=30,009). The 12 risk factors were: less education in early life; hearing loss, traumatic brain injury, hypertension, excessive alcohol, and obesity in midlife; smoking, depression, social isolation, physical inactivity, diabetes, and sleep disturbance in later life. The PAFs were calculated using Leven's formula and then weighted by communalities using the Principal Component Analysis.

Results: The overall weighted PAF of 12 risk factors for dementia was 49%: less education 4.0%, hearing loss 6.9%, traumatic brain injury 4.8%, hypertension 2.2%, excessive alcohol 1.1%, obesity 6.9%, smoking 1.4%, depression 4.4%, social isolation 0.4%, physical inactivity 11.3%, diabetes 2.6%, and sleep disturbance 3.4%.

Discussion: The estimated PAF of 12 risk factors differs in the Canadian population as compared to the global estimate reported in the Lancet Commission report (49% vs. 37%). The risk factors that contributed the most to dementia were physical inactivity, hearing loss, and obesity in Canada. Moreover, excessive alcohol, smoking, and social isolation had substantially less contribution to dementia

Conclusion: Nearly 50% of dementia cases in Canada can be prevented by modifying 12 lifestyle risk factors.

POSTERS

Short Term Enablement and Planning Suites: A Pilot Study

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Background/Purpose: Alternate level of care (ALC) is a term used to describe hospitalized patients who no longer require acute care services, yet cannot be discharged because they have complex discharge needs and are waiting for alternate disposition or living arrangements. The purpose of this study is to a) provide a transitional care space for hospitalized ALC patients and support acute care flow; b) provide ongoing discharge planning within an independent home-like setting, and identify the most appropriate place of discharge disposition.

Method: Island Health established Short Term Enablement and Planning Suites (STEPS), a partnership between Assisted Living, Long-term-Care and Community Health Services. STEPS utilizes unoccupied suites within a local assisted living facility, subsidized by the health authority regardless of use. It provides intensive case management, reconditioning, and assessment within an independent-like living setting to determine the most appropriate level of required care at discharge.

Results: Between September 2020 and December 2022, 50 ALC patients were transferred from Cowichan District Hospital to STEPS. Patients had an average clinical frailty scale of 6. The median length of stay at STEPS was 108 days

(interquartile range: 82 -152). 66% (n=33) were discharged to original place of disposition, whereas 20% (n=10) and 14% (n=7) were discharged to a higher level and lower level of care respectively. 18% (n=9) were readmitted to hospital during their stay at STEPS.

Discussion: Functionality assessment of ALC patients in hospital, where patients are bed-bound with limited mobility can be different than an independent home-like setting. Patients may require more or less levels of care, and can impact their final place of disposition.

Conclusion: Transitional care spaces are an effective and safe alternative for hospitalized ALC patients, and allow for appropriate assessment and discharge planning.

Evaluating a Geriatric Outreach Program for Older Persons Experiencing Homelessness

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Background/Purpose: Geriatric syndromes occur at a higher prevalence in older (55+) persons experiencing homelessness (PEH). Shelters often do not have the capacity to address their complex needs. As a result, older PEH may benefit from accessible, specialized geriatric outreach services. An evaluation aimed to determine implementation quality, impact, barriers, and facilitators of a geriatric medicine outreach program for older PEH.

Method: Starting in June 2020, a geriatrician performed comprehensive geriatric assessments (CGAs) in Toronto, Canada at a shelter and a transitional residence for older PEH. [AC1] An outreach counselor was hired in Nov 2021. A process evaluation using Durlak and Dupre's framework was completed via chart reviews and qualitative interviews with patients, clinicians, and partner-site staff. The Consolidated Framework for Implementation Research (CFIR) and the Theoretical Domains Framework (TDF) guided interview questions. Descriptive statistics were used for chart-review data and interviews were analyzed using thematic analysis.

Results: From June 2020 until Oct 2022, 99 individuals received a CGA. Of those assessed, 55% were 70 years or older, 59% had cognitive impairment and 72% were 4 or higher on the Rockwood Clinical Frailty Scale. Twenty-one percent of individuals were either recommended Long-Term Care (LTC) assessments or on LTC waitlists. Interviews suggested the program was well-received. Themes included the following benefits: identification of undiagnosed/undertreated issues, optimized care for complex individuals, assistance in care transitions, and capacity building amongst clinicians and site staff. Interviewees felt the outreach counselor enhanced the program.

Discussion: High rates of clinical frailty, cognitive impairment and LTC recommendations highlight the urgent need for senior-friendly shelter initiatives and homelessness prevention efforts specific to older adults.

Conclusion: A geriatric medicine outreach program was perceived to enhance the health and well-being of older PEH.

Temporal Trends in Frailty over a Decade of Transcatheter Aortic and Mitral Valve Procedures

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Background/Purpose: Transcatheter Aortic Valve Replacement (TAVR) indications have expanded over the years from patients with prohibitively high surgical risk to those with low risk. We sought to assess whether the prevalence of frailty among TAVR patients changed with the evolving eligibility spectrum and if it was comparable between TAVR and Transcatheter Mitral Valve Repair (TMVr).

Method: We performed a post hoc analysis of 405 patients (mean age 81.0±7.2, 44% females) who underwent TAVR or TMVr at McGill University Health Centre from 2013 to 2021. Frailty was measured using the Fried phenotype before the index procedure. Ordinal logistic regression was used to determine the association between calendar year and patient frailty after adjusting for age, sex, and Charlson Comorbidity Index.

Results: The mean Fried score (and frailty prevalence) in TAVR patients was 1.8±1.2 (26.0%) from 2013-2015, 1.4±1.2 (18.4%) from 2016-2018, and 1.2±1.0 (9.8%) from 2019-2021, with an annual 0.13-point reduction (95% CI -0.21 to -0.05; P=0.002). The decline in frailty scores was independent of age and comorbidity scores, which remained fairly constant throughout, while the STS predicted risk of mortality declined from 4.9% to 4.0%. The mean Fried score was similar between TAVR and TMVr (1.3±1.1) when matched for calendar years.

Discussion: Expanded indications for TAVR in lower-risk patients have been associated with a decreasing prevalence of frailty from 1/4 initially to now 1/10, approaching the general population prevalence in this demographic. Similarly, for TMVr, a growing group of older non-frail patients is being referred.

Conclusion: These trends may also reflect the increasing acceptance and comfort with transcatheter procedures over the years.

Barriers and Facilitators to Care of Frail Older Adults in the Long-Term Care Setting

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Background/Purpose: In earlier work, we developed a clinical pathway for frailty in long-term care (LTC) in response to the need for guidance on the topic of palliative care delivery to frail older adults. The purpose of the present study was to evaluate the barriers and facilitators to implementing the proposed clinical pathway.

Method: Semi-structured interviews were completed with physicians, nurse practitioners, registered nurses, allied health, care partners, and residents with care experience in LTC. Framework analysis methods that leveraged behaviour change theories were used to analyze the interview data and produce practice-oriented findings.

Results: Twenty-eight interviews were completed. Seven themes were identified including resident characteristics related to frailty, frailty detection and diagnosis, frailty treatment and care planning, frailty and prognosis conversations, palliative and end-of-life care, communication amongst LTC stakeholders, and the LTC environment. All codes were labelled as barriers or facilitators and assigned to a primary domain within the Theoretical Domains Framework. Codes were then mapped to the Behaviour Change Wheel, so that behavioural interventions targeting the identified barriers can be developed.

Discussion: The lack of clinical recognition of frailty in the LTC setting was a key barrier to clinical pathway implementation. There is a need for education about frailty and its consequences and for frailty to be linked to prognosis and care decisions. Few treatment options were described to directly manage frailty in residents. An early palliative approach to care is needed to address frailty in LTC.

Conclusion: Identifying barriers to implementing the clinical pathway allows for the incorporation of behavioural interventions to address these barriers within the pathway implementation strategy. Implementing this pathway into LTC has the potential to improve care and outcomes for residents of LTC.

Compositions of Time-Use 24-Hour Activity Cycle Behaviours in Older Adults with Mild Cognitive Impairment: Associations with Brain Structure

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Background/Purpose: People with mild cognitive impairment (MCI) are at greater risk for dementia. Physical activity (PA), sedentary behaviour, and sleep constitute the 24-hour activity cycle (24-HAC) and are independently associated with brain health. However, it is unclear how one 24-HAC behaviour relative to the others (i.e., compositions) is associated with brain structure in older adults with MCI. We thus examined the associations between 24-HAC behaviours compositions and gray matter volume in this population.

Method: A cross-sectional analysis of 95 community-dwelling older adults (aged 55+ years) with MCI. The MotionWatch8© assessed 24-HAC behaviours (5-7 days), and compositional data analysis identified 24-HAC behaviours compositions. Gray matter volume was quantified with FreeSurfer using T1-weighted magnetic resonance imaging. Linear regressions adjusted for age, sex, body mass index, and Montreal Cognitive Assessment determined the association between 24-HAC behaviours compositions and gray matter.

Results: Higher composition of moderate-to-vigorous PA was associated with higher right (β=0.02, p=0.019) and left precuneus (β=0.02, p=0.030), right inferior-temporal (β=0.03, p=0.002), and right posterior-cingulate (β=0.01, p=0.036) volume. Higher composition of light PA was associated with lower left entorhinal (β=-0.03, p=0.001), right pars orbitalis (β=-0.02, p=0.022), left caudal middle-frontal gyrus (β=-0.04, p=0.036), and right fusiform (β=-0.05, p=0.041) volume. Higher composition of sedentary behaviour was associated with lower right inferior-temporal (β=-0.05, p<0.001) volume. No associations were found for sleep compositions.

Discussion: Greater moderate-to-vigorous PA compositions may attenuate cortical atrophy in regions prone to neurodegeneration and subsequent cognitive decline. While greater sedentary behaviour compositions may increase cortical volume loss, light PA and sleep compositions do not have the expected protective effects.

Conclusion: Among the 24-HAC behaviours, greater moderate-to-vigorous PA and sedentary behaviour compositions may exert the greatest effects on gray matter volume in older adults with MCI.

Frailty, Cognitive Impairment and Incident Major Neurocognitive Disorders: Results of the Nuage Cohort Study

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Background/Purpose: This study aims to compare the Fried physical model and the CARE deficit accumulation model for their association with incident major neurocognitive disorders (MNCD) and to examine how the addition of cognitive impairment to these frailty models impacts the incidence in community-dwelling older adults.

Design: Elderly population-based observational cohort study with 3 years of follow-up. Setting: Community dwellers. Subjects: A subset of men and women (n=1,259) who participated in the "Quebec Longitudinal Study on Nutrition and Successful Aging" (NuAge).

Methods: Fried and CARE frailty stratifications into robust, pre-frail and frail groups were performed using the NuAge baseline assessment. Incident MNCD (i.e., Modified Mini Mental State (3MS) score <79/100 and Instrumental Activity Daily Living (IADL) score <6/8) were collected each year over a 3-year follow-up period.

Results: A greater association of the CARE frail state with incident MNCD was observed with an increased predictive value when combined with cognitive impairment in comparison to Fried's one, the highest incidences being observed using the robust state as the reference. Results with the Fried frail state were more heterogeneous, with no association with the frail state alone, whereas cognitive impairment alone showed the highest significant incidence.

Discussion: In the NuAge participants, we reported that both the CARE and Fried frailty models are associated with incident MNCD, and that the CARE frail state (based on the Rockwood model) was superior to predict MNCD. Furthermore, the association of the CARE frail state with cognitive impairment increased the predictive value of MNCD.

Conclusion: The association of the CARE frail state with cognitive impairment increased the predictive value of MNCD, suggesting that the CARE frailty model may be of clinical interest when screening MCND in the elderly population.

Clinical Pharmacology Training in an Interprofessional Hybrid Virtual Model of Care

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Background/Purpose: In 2018, prior to the COVID-19 pandemic, we conducted a needs assessment through an online survey to investigate the self-perceived knowledge, gaps, and barriers to virtual care of postgraduate physician learners. Respondents anticipated that they would use virtual care (VC) in their future practices and identified an interest in education in the appropriate use of VC. Based on the results, we built a training experience for residents from multiple specialties to learn skills in virtual care in geriatric clinical pharmacology, in an interprofessional setting.

Method: To understand this VC-based interprofessional medical education model, we collected quantitative information about the specialties and duration of training of residents who have completed this program. We describe learning goals and pedagogical methods used in the implementation of this training experience.

Results: One hundred and fifteen trainees completed rotations in this model of care. Facilitators for learning included a rotation focused on pharmacology, expert supervision by multiple specialists, common orientation with interprofessional team members, a collaborative teaching model with resources pooled from multiple universities and continuous quality improvement based on feedback from residents Physician trainees experienced a hybrid of in-person and VC clinical experiences. During the first wave of the COVID-19 pandemic (March 2020-September 2020), there was no interruption in education or clinical training with this model which temporarily transitioned to an entirely VC experience (March 2020-September 2020).

Discussion: This VC-based geriatric interprofessional medical education model with teaching contributions by faculty from multiple universities resulted in a robust training experience for resident physicians from various specialties and pharmacy trainees in Ontario and, more recently, across Canada.

Conclusion: Intentional design of learning experiences based on resident input can help build a rigorous training program

The Comprehensive Assessment of Neurodegeneration and Aging (COMPASS-ND): Baseline Data Release

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Background/Purpose: COMPASS-ND is the longitudinal clinical observational study of the Canadian Consortium on Neurodegeneration and Aging (CCNA). The breadth of diagnostic groups across the dementia spectrum in this study is unique.

Method: 32 Canadian sites in 7 provinces, recruited 1158 participants who completed 4–5 visits: screening, clinical, neuropsychology, MRI, and (optional) lumbar puncture.

The extensive clinical and neuropsychological assessments were harmonized with other Canadian observational studies of aging and dementia, including ONDRI, CIMA-Q, and CLSA. Genetic Analyses are completed at the Clinical Genomics Centre, Toronto.

Results: Participant counts by diagnostic group included: cognitively unimpaired (148), subjective cognitive decline (142), mild cognitive impairment (MCI; 284), MCI with silent vascular lesions (147), Alzheimer's disease (113), mixed dementia (87), frontotemporal dementia (44), Parkinson's disease (PD) (84), PD-MCI (45), PD dementia (12), and Lewy Body disease (43). The Canadian Dementia Imaging Protocol (CDIP) was developed and acquired by 1,079 participants. Biosamples of 1,075 participants have been distributed to core labs for single molecular array (SIMOA) biomarker analyses, including Amyloid β1-140, Amyloid β1-42, NfL, GFAP, P-tau-181. Cerebrospinal fluid from 12.5% participants yielded measures for Aβ1-42, Total Tau, Phosphorylated-tau181, and Alpha synuclein.

20 autopsies were completed with 201 participants consenting to brain donation. Full baseline data (including alphanumeric, imaging, and biofluid analyses) will be released by April 2023. CCNA researchers have identified 169 protected projects listed on LORIS, with 34 publications to date.

Discussion: Data access requests are formally approved by the Data Access Subcommittee. Open access is anticipated by April 2024, and Time 2 follow-up data is being collected. Funding application for Time 3 data collection is anticipated in 2023.

Conclusion: COMPASS-ND data and biosamples will be open access to the research community for years to come.

Increasing Connect Care Problem List Utilization Amongst Geriatric Physicians

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Background/Purpose: Problem Lists (PL) were routinely used by all Geriatric physicians prior to the implementation of a new electronic medical record (EMR) system, Connect Care. However, despite having a dedicated PL navigator within Connect Care, its uptake has been minimal. This study aimed for 80% of all patients admitted to Geriatrics (Acute Care of the Elderly (ACE) unit) or seen in consultation by the Geriatric Assessment Team (GAT) at the University of Alberta Hospital, should have their PL reviewed and/or updated using the PL navigator at all transitions of care (ACE unit) or at the time of initial consultation (GAT).

Method: The study was conducted from March to November 2022. Initial physician feedback revealed a variety of reasons for poor PL navigator uptake which formed the basis for the intervention, which was a formal education session for physicians which addressed these reasons, presented during a divisional meeting. Physician feedback was also collected post-intervention.

Results: One education session was held, and attended by all physicians. Average time for updating the problem list was 7.8 mins. Run charts revealed data shifts towards increased PL review at patient admission and PL incorporation into ACE patients' notes, but decreased at transfers of care and with new GAT consults. However, there was a trend towards increased problem duplication.

Discussion: The intervention was positively received, but led to minimal change in behavior, and a trend towards increased problem duplication between the PL and past medical history. Shifts were most noticeable for ACE patients, suggestive of this being the best target for further intervention.

Conclusion: Although the study did not meet its aim, there was evidence of possible changes in behavior. Further exploration of existing barriers is required to improve PL uptake

Evaluation of a Wound Care Curriculum/Teaching Enabler by Geriatric Residents

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Background/Purpose: Wound Care management is important topic for those who treat older adults. A curriculum/teaching tool was developed to aid with teaching wound care. Our purpose is to find out what residents think of this tool.

Method: Residents attended a geriatric academic session on wound care and were emailed the curriculum/teaching enabler

prior to the session. After the session, a survey was emailed to ask them their thoughts about this enabler.

Results: 8/16 learners responded to the survey; 5 geriatric residents, 3 geriatric fellows and one in the care of the elderly program. 4 rated themselves as being satisfied, whereas 4 rated themselves very satisfied with the tool being used with the teaching. Learners rated that the enabler helped increase their knowledge a moderate (2), considerable (3) and a great deal (3). Confidence in having an approach was found to be a moderate to a great by all 8. 4 felt that this be very helpful and 4 felt that this would be extremely helpful to keep this handout for use in the future. Most found it moderately (4) helpful to have during the session without the need to take notes, whereas 3 found it very helpful and 1 found it extremely helpful. Learners felt that this type of tool would be very (6) or extremely (2) helpful in other subjects. Learners felt it was very (5) or extremely (3) appropriate for their level of training. Comments were positive.

Discussion: This could be used in sessions to aid with the learning of wound care and subjects.

Conclusion: The curriculum/teaching was well received by the learners in an education session geared towards geriatric fellows, residents and care of the elderly.

Work Ability and Associated Factors in Older Workers at a Public University

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Background/Purpose: To evaluate the work capacity of middle-aged and older workers at a public university and its associated factors.

Method: Cross-sectional study that selected, by stratified random sampling, middle-aged and older workers. In the first stage, two data collection instruments were applied, questionnaires on sociodemographic factors, lifestyle, labor factors and psychological factors of the participants and the Work Ability Index. The second stage comprised the assessment of functional capacity through the 10-meter walk test and the handgrip strength test. Data were analyzed using STATA.

Results: The sample consisted of 138 participants, 50.72% of whom were women aged between 45 and 73 years (74.29% aged 59 years or less). The results indicated 29.71% of participants with moderate or low work capacity, 39.02% for men and 60.98% for women. Four variables were associated with low or moderate work ability: monthly income (OR = 2.13; 95%CI = 1.01-4.47) and BMI (OR = 5.70; 95%CI = 1.95-16.53) in the general sample; monthly income (OR = 3.69; 95%CI = 1.34-10.19) and physical and mental demands at work (OR = 4.05; 95%CI = 1.11-14.00) for women in stratification by sex; and BMI (OR = 5.86; 95%CI = 1.69-20.00) and handgrip strength (OR = 3.26; 95%CI = 1.13-9.42) for middle age in the stratification by age.

Discussion: The results showed factors associated with work ability (income, BMI and work demands) as demonstrated in the literature. The analysis by sex was not significant, probably due to the greater number of women in the sample.

Conclusion: The study showed that the factors associated with impaired work ability comprise some social and personal determinants. Future analyzes that look for other factors associated with impaired work ability will be necessary.

Neighborhood Walkability is Associated with Brain Health

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Background/Purpose: Evidence shows that neighborhood walkability, an aspect of the built environment, can impact cognition. However, few studies have examined the neural correlates underlying these effects. Thus, the objective of this study was to determine how neighborhood walkability may be associated with neuroimaging markers of cognitive function.

Method: This was a cross-sectional analysis of baseline data from a randomized controlled trial and a prospective cohort study. We included 76 community-dwelling older adults with mild cognitive impairment—individuals at high risk for dementia. Neighborhood walkability was assessed with the Neighborhood Environment Walkability Scale (NEWS-CFA version). Neuroimaging markers included cortical thickness, hippocampal volume, and white matter hyperintensity (WMH) volume. Partial Pearson correlations determined the associations between NEWS-CFA subscales and neuroimaging markers controlling for age, sex, education, and length of stay at residence.

Results: Higher neighborhood walkability in relation to perceptions of greater traffic and crime safety was significantly correlated with greater cortical thickness ($r=-0.26$, $p=0.03$; $r=-0.29$, $p=0.01$), left hippocampal volume ($r=-0.26$, $p=0.03$; $r=-0.24$, $p=0.04$), and right hippocampal volume ($r=-0.27$, $p=0.03$, $r=-0.34$, $p<0.01$). Additionally, greater cortical thickness was associated with better neighborhood aesthetics ($r=0.28$, $p=0.02$). WMH volume was not significantly associated with any NEWS-CFA subscales ($p>0.05$).

Discussion: Our results extend prior research linking greater perceived walkability to better cognitive function by highlighting the association between perceived safety of the environment and brain regions (i.e., cerebral cortex and hippocampus) sensitive to aging and neurodegeneration. To our knowledge, this has not been shown previously.

Conclusion: In designing neighborhood environments to promote health outcomes, we need to better understand the needs and perceptions of individuals. Our results suggest that safety and aesthetics of a neighborhood is an important factor to consider in promoting brain health via the built environment.

Patient Perspectives of a Fall-related Emergency Department Visit during the Covid-19 Pandemic: A Qualitative Study in Northern Ontario

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Background/Purpose: Falls are a leading cause of injury-related Emergency Department (ED) visits and hospitalizations across Canada, and can result in decline in function and quality of life for an older adult. The COVID-19 pandemic placed severe strain on EDs and hospitals across Canada, and may continue to do so in the future. Understanding the older adult's experience in the ED after presenting with a fall during a COVID-19 surge may help generate hypotheses and ideas about how to provide optimal care in the midst of pandemic-related healthcare system disruption.

Method: A purposive sampling strategy identified 9 participants (8 women,1 man) over age 65 in a medium-sized population centre in Northern Ontario, Canada. Semi-structured interviews were performed and qualitative thematic analysis of the data was completed.

Results: Three main themes were identified: (1) perceived insignificance of a fall, (2) interaction with the healthcare system in under-resourced communities, and (3) complex care navigation and fragmentation within the healthcare system.

Discussion: Participants were uncertain about the significance of a fall. Post-fall care was directed by the participant, and little coordination or education was provided at the point of contact with the health care system. Participants were hesitant to present to the ED. They expressed vulnerability when reflecting on their experience, and acknowledged the systemic pressures experienced by their healthcare workers during the Covid-19 pandemic.

Conclusion: Further inquiry into the knowledge and perceptions of older adults' regarding the consequences of a fall is needed in Northern Ontario. Older adults would benefit from education and post-fall related coordination of care in the emergency department, integrating care with outpatient providers. Despite pandemic Covid-19 health care system disruption, older adults in our study retained empathy for health care workers.

Addressing the Well-Being of Long-term Care Workers with a Focus Psychological Self-Care

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Background/Purpose: Even before the pandemic, healthcare workers were more likely to experience chronic stress and burnout, compared to other sectors. The *National Standard of Canada for Psychological Health and Safety in the Workplace* identifies 13 psychosocial factors that organizations can use to promote mental health. Two additional factors have been identified specific to healthcare workers – (1) psychological self-care and (2) protection from moral distress. The Mental Health Commission of Canada recently published a report that presents policy change considerations to better support the mental health and well-being of health-care professionals in Canada's long-term care sector by enabling these two psychosocial factors.

Method: This project included: a review of academic and peer-reviewed literature, and semi-structured interviews with seven professionals in the long-term care sector.

This report supplements a larger exploration of various types of health-care workplaces. Both studies were conducted between November 2021 and February 2022.

Results: Published in October 2022, *Examining Two Psychosocial Factors in Long-Term Care During the COVID-19 Pandemic* includes contextual information about the challenges faced in the sector before and during the pandemic and five policy change considerations.

Discussion: Psychological health and safety in the workplace are critical for enabling a workforce to use its training, skills, and expertise to contribute to society as valued and respected employees. By prioritizing adequate resourcing, strategies for staff retention, and creating stability in the workforce, organizations can create strong and inclusive teams that contribute to a culture that supports psychological self-care for workers.

Conclusion: The significant stressors the long-term care sector have faced throughout the pandemic have emphasized the need for increased attention to psychological self-care and protection from moral distress.

Depression Screening Tools in Older Adults of Diverse Cultural Backgrounds: A Scoping Review

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Background/Purpose: Understanding the cultural conceptions of depression can guide its identification and management. We aimed to identify the scope of knowledge regarding depression screening tools in culturally diverse older adult populations.

Method: We performed a scoping review following PRISMA guidelines. We searched EMBASE, MEDLINE, and PsychINFO electronic databases. Independent reviewers screened titles and abstracts for inclusion/exclusion. Inclusion criteria: mean age ≥ 65 years, English language, validated depression screening tool, and identified ethnicity of sample. Exclusion criteria: participants with cognitive impairment, selective study populations (e.g. malignancy), victims of trauma, and caregivers.

Results: The search produced 7330 unique citations and 632 met inclusion criteria. After full text review, 435 citations were included. Sixty-one countries were represented. Most studies were conducted in the USA (192), followed by South Korea (56), China (59), Hong Kong (24), and Japan (17). Eleven studies were performed in Canada. One-hundred-forty cultural/ethnic categories were reported. Thirty-three depression screening tools were identified. The most commonly used screening tool was the Center for Epidemiologic Studies-Depression Scale (188, used in 43.2% of all studies), followed by the Geriatric Depression Scale (164, 37.7%) and the Patient Health Questionnaire (61, 14.0%). Canadian studies favoured the GDS (58%) and often used translated versions of the GDS for non-English speaking participants.

Discussion: We explored the scope of knowledge regarding depression screening tools in culturally and ethnically diverse populations. Knowing which screening tools have been studied in diverse populations may guide the selection of the most appropriate tool and improve patient-centred care.

Conclusion: Despite broad clinical use, not all commonly used depression screening tools have been studied in the ethnic and cultural groups in which they are utilized. It is important to be aware of the limitations of such screening tools.

Older Adults Perception of Frailty

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Background/Purpose: Clinically, the term frailty is a state of decreased physiological reserve. Clinicians diagnose frailty as an opportunity to identify and mitigate risks. In contrast, many older adults associate the term frailty with negative stereotypes of aging. We aimed to describe older adults' perceptions of the clinical concept of frailty and its usefulness when discussing their health.

Method: Older adults 65 years and older were recruited from two outpatient clinics, and a geriatric inpatient rehabilitation unit from Sept 2018 to June 2019. Semi-structured interviews were conducted to explore interviewees' perceptions of the term and the clinical concept of frailty. The Edmonton Frailty Scale (EFS) was performed on each participant. Using interpretive description, analysis was done through line-by-line coding and then data was explored for patterns based on frailty status and other demographic factors.

Results: A total of 23 individuals were interviewed (66 to 90 years old). Physical and/or cognitive decline, decreased function, poor mood, negative mindsets were associated with frailty. Most participants indicated that they would have a negative emotional reaction if told they were frail. Some participants saw no utility in the frailty term, while others saw it could initiate health improvement behaviours. In contrast, if a clinician disclosed, they were in a state of increased risks, more participants associated this with a medical diagnosis and had a neutral emotional reaction. Many participants saw this disclosure as an opportunity to discuss mitigating strategies.

Discussion: The older adults' perceptions of frailty were complex. The frailty term was seen as stigmatizing, but the concept of increased vulnerability was more commonly seen as a medical condition.

Conclusion: Clinical communication around frailty may be more acceptable to older adults if structured around the concept of increased vulnerability.

Insights into the Knowledge Gaps of Primary Care Providers Providing Frailty Care: A Qualitative Analysis of Econsult Questions Submitted To Specialists

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Background/Purpose: Little is known about primary care provider (PCP) knowledge gaps and learning needs related to frailty care. An analysis of electronic consultation (eConsult) data was done to identify possible knowledge gaps of PCPs caring for older adults with frailty. The identified knowledge gaps could then provide learning objectives for future continuing medical education (CME) activities.

Method: This is a qualitative analysis of frailty-related eConsults submitted by community-based PCPs between 2019-2020. Electronic consultation is a secure, web-based platform connecting PCPs to specialists. Data generated on this platform contains patient-specific questions submitted by PCPs who provide care for older adults living with frailty. Of 8,003 cases about older patients (≥65 years), eConsults were selected by an algorithm which identifies "frailty" cases based on previous work. Only eConsults with high relevance for CME by rate PCP users were considered. Deductive and inductive thematic analyses were conducted with a content expert to identify themes emerging from PCP questions.

Results: We identified 126 CME-relevant eConsults about older patients with frailty. Thematic saturation occurred after analysis of 60 cases. Three themes emerged 1) PCPs advocated for patient and caregiver preferences and were often independent in care coordination and various forms of assessment (case context).2) For frail older patients with multimorbidity, particularly in the setting of recent decline (triggering event) 3) PCPs sought advice for medication management, diagnosis, and monitoring (knowledge area).

Discussion: By exploring PCPs' questions at the point of specialist inquiry, this study has elucidated how PCPs are providing care for older adults with frailty, when they opt to submit an eConsult, and in what areas they seek expertise from specialists.

Conclusion: The information from this study can help focus content for future CME events to PCPs.

Mapping the Caregiver Experience in a Canadian Province: Findings from the Saskatchewan Caregiver Experience Study

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Background/Purpose: With a growing number of informal caregivers providing care to older adults in Saskatchewan, the purpose of the Saskatchewan Caregiver Experience Study was to gather the experiences and perspectives of caregivers in Saskatchewan and identify their priority support needs.

Method: An online qualitative survey asked three open-ended questions regarding: (1) challenges experienced by caregivers; (2) positive aspects of caregiving; (3) support needs and priorities of Saskatchewan caregivers. Responses were analyzed in NVivo using content analysis.

Results: N=355 caregivers responded to the survey. The challenges Saskatchewan caregivers experience are exhaustion, self-doubt, navigating complex systems, living their own lives, and caregiving at a distance. Positive aspects identified by participants were related to the rewards of caregiving, having the ability and opportunity to care, ensuring quality care for the care recipient, and the experience of personal growth through being a caregiver. Support priorities of Saskatchewan caregivers were found to be help when they need it, an ear to listen and a shoulder to lean on, assistance in optimizing the care recipient's health, having healthcare professionals that care, and improved policies, legislations, and regulations.

Discussion: With a strained healthcare system, the voices of caregivers should be amplified, as they are providing support to the aging population in the community. Saskatchewan caregivers were eager to share their experiences, with many noting their appreciation for the opportunity to tell their stories via the survey. The online delivery of this qualitative study allowed for a wide response across urban and rural settings in the province.

Conclusion: Findings from the Saskatchewan Caregiver Experience Study can be used to create and implement support services and adapt policies to improve the experiences of caregivers in Saskatchewan and beyond.

Preliminary Evaluation of a Shared-Care, Primary Care-Based Interprofessional Program to Support Older Persons Living with Frailty in the Community

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Background/Purpose: Comprehensive Geriatric Assessment (CGA) is an effective intervention to support older persons living with frailty. In Canada, CGA is often provided through referral to hospital-based specialized geriatric services. However, access to CGA remains limited because of human resource shortages. Shared-care models, where geriatricians work alongside primary care providers, have shown promising results.

Method: The Complex Care Program (CCP) at New Vision Family Health Network in Kitchener, Ontario is supported by nurse practitioners, clinical pharmacists, family physicians, and a geriatrician. High-risk patients, identified using the standardized Assessment Urgency Algorithm or physician referral, undergo CGA using the self-report interRAI Check-Up. A mixed-methods evaluation was conducted to characterize CCP clients and assess program impact on care quality, appropriate prescribing, emergency department (ED) visits, and provider and patient experience.

Results: This analysis includes 76 patients. The mean age was 81.8 years and 71% were women. Median time in the program was 1.5 years. Patients had a high burden of multimorbidity, including 47% who had dementia. Patients were taking 12.8 medications on average. Following program admission, over 50% of patients were referred to community services and 83% received geriatrician assessment. On average, one medication was deprescribed and one optimized per patient. Overall, patients required fewer primary care visits. ED visit rates fell 50% from 1.325/100 patients annually to 0.675/100 patients. The program was well-received by patients, caregivers, and family physicians.

Discussion: A shared-care primary care-based program to support community-dwelling older adults living with frailty was feasible, acceptable, and associated with improved care quality, better prescribing, and fewer ED visits.

Conclusion: Geriatricians can effectively support CGA through shared-care models based in primary care. Future work includes assessing program scalability to other primary care settings.

Virtual GERAS DANcing for Cognition Exercise (DANCE) for Older Adults: A Feasibility Randomized Control Trial

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Background/Purpose: GERAS DANcing for Cognition and Exercise (DANCE) was developed with rehabilitation and geriatric medicine expertise for older adults (age 60+) looking to improve brain health or mobility. The primary aim of this study was to assess the feasibility of implementing a virtual model of GERAS DANCE.

Method: This study utilized a single-center, prospective, parallel-group randomized controlled trial (RCT) feasibility approach. We recruited 50 older adults. Participants were randomized to receive 6-weeks of virtual GERAS DANCE or usual care. The progressive dance curriculum was delivered for a 1-hour class twice weekly by a certified GERAS DANCE instructor through videoconference technology. The feasibility of the trial design was assessed using pre-defined criteria for process, outcomes, and acceptability.

Results: Our study recruitment period occurred over 8 weeks to recruit 50 older adults (mean age = 75.02(5.89) years, range: 63-92, 92% female). The enrollment-to-screening ratio was calculated as 25:103 and the retention rate of participants was 84%. Blinded assessors took an average of 41 minutes to conduct six standardized outcome assessments of cognitive and physical health. There was a 100% acceptance rate of participants to complete outcome assessments virtually, and electronic case report forms were determined to be 5x faster than paper-based manual data entry. The average class attendance of the study cohort was 77%. One adverse event was reported unrelated to the study intervention. The program had a high-fidelity score and adhered to the standardized curriculum.

Discussion: Pre-determined thresholds for feasibility were met for all outcomes providing evidence that virtual GERAS DANCE is feasible, well-accepted, and safe for older adults.

Conclusion: Future work will include a large mulisite RCT. Suggestions for future trials include increasing the diversity of participants and expansion of the virtual GERAS DANCE curriculum.

Prevention and Treatment of Traumatic Brain Injury-related Delirium: A Systematic Review

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Background/Purpose: Around 20,000 adults are hospitalized in Canada annually for traumatic brain injury (TBI). Delirium is an acute complication occurring in 46.3% to 69.4% of adults with TBI. We conducted a systematic review of the effectiveness of interventions to prevent or treat TBI-related delirium in the acute care setting.

Method: We searched five electronic databases to identify randomized controlled trials (RCTs), quasi-experimental, and observational studies (with treatment and comparator groups). Studies had to include adults with TBI, measure delirium as an outcome and occur in the acute care setting. Two reviewers independently screened and abstracted articles, and completed the risk of bias assessment. We implemented the PROGRESS-Plus framework to describe reporting of the social determinants of health. This review protocol was registered with PROSPERO (CRD42022308013).

Results: We identified 20022 citations, reviewed 301 in full text, and included eight studies in the descriptive synthesis. Individual studies found that rosuvastatin was more efficacious than placebo, aripiprazole was more efficacious than placebo, and dexmedetomidine was more efficacious than propofol and haloperidol for preventing TBI-related delirium. We did not identify any studies where tested interventions treated TBI-related delirium. Included studies had low-quality evidence. Participants' social determinants of health, including ethnicity, social capital, and time-dependent relationships, were poorly reported.

Discussion: Five intervention strategies were identified from eight included studies for preventing and treating TBI-related delirium: reorientation program, intervention bundle, dexmedetomidine, rosuvastatin and aripiprazole. The prophylactic pharmacologic strategies were shown to have the largest effect sizes but are limited by their small sample size and high concern for risk of bias.

Conclusion: Given the high prevalence and hypothesized unique pathophysiology of TBI-related delirium. Further research is required to assess the effectiveness of interventions in a larger adult TBI population.

Career Determining Factors Influencing a Geriatrician's First Position: The Methodology of a Survey of Subspecialty Trainees and New Geriatricians

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Background/Purpose: The 2021 Canadian Geriatric Society (CGS) Human Resource Committee (HRC) paper projected a significant shortfall of geriatricians in 2030 particularly in rural and remote communities. At the CGS Strategic Retreat (May 2022), the CGS executive endorsed the development of a survey of newly graduated geriatricians and subspecialty residents to determine the factors influencing their choice of their first practice position/location.

Method: A consensus working group (1 medical student, 1 internal medicine trainee, 1 subspecialty trainee, 3 new geriatricians, and 2 senior geriatricians) used a literature search and career planning knowledge to create a list of "career-determining factors". These were grouped into domains by group consensus. An anonymous RedCap survey is used for data gathering and descriptive analysis. The emailed survey is available in English and French to new geriatricians who graduated in 2021 & 2022 (~60) and subspecialty trainees graduating in 2023 and 2024 (~60).

Results: The literature search yielded 7 papers from 1996 – 2020 but none were specific to geriatric medicine (GM). The 7 domains with specific factors of importance were: location (geography, cost of living, family, language, spouse/partner), practice (community, academic, outreach, inpatient/outpatient), colleagues (GM, Geriatric Psychiatry, other), support and space (secretary, team, triage, outpatient clinic, office), non-clinical opportunities (teaching, research, admin), income model (7 options), lifestyle (call, work life balance, group, vacation/parental/illness leave, culture) and recruitment (2).

Discussion: This study is the first in Canada to examine factors and their relative importance influencing the choice of trainees and new geriatricians in accepting their first practice position/location.

Conclusion: This survey will inform future trainees of the factors that others have considered when career planning. The results will also inform underserved communities of factors that could attract geriatricians to their community.

A Systematic Review and Qualitative Analysis of Geriatric Models of Care for Individuals Living with HIV

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Background/Purpose: Advances in HIV treatment have reduced mortality rates and consequently increased the number of individuals that are 50 years of age or older living with HIV, who are considered older adults living with HIV (OALWH). However, there have been significant gaps in HIV treatment and prevention campaigns for OALWH. Moreover, a gold-standard model of care for the OALWH remains undefined. Developing evidence-based Geriatric-HIV models of care can support an accessible, equitable, and sustainable HIV health care system that supports healthy aging in the OALWH population.

Method: Guided by Arksey & O'Malley (2005), a scoping review was conducted to explore existing geriatric models of care of OALWH and to determine key components of care, identification of gaps in the literature and provide recommendations for future research. Five databases and the grey literature were systematically searched. Titles, abstracts and full texts of the search results were screened independently by two reviewers. Data were analyzed using a qualitative case study and key component analysis approach to identify necessary model components.

Results: 5702 studies underwent title and abstract screening, with 154 entering full-text review. 15 peer-reviewed and 6 grey literature sources were included. We identified three main models of care components that may impact geriatric care to HIV populations: Collaboration and Integration; Organization of Geriatric Care; and Pillars of Care. Most articles included aspects of all three components.

Discussion: To provide effective geriatric care to OALWH, health services and systems are encouraged to use an evidence-based framework and should consider incorporating distinct models of care characteristics that have been identified in the literature.

Conclusion: Future directions include further study into Geriatric-HIV models of care in different settings, and their impact on healthy aging in the OALWH population.

Evaluation of a Primary Care Based Senior's Mental Health Virtual Community Case Conference

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Background/Purpose: Access to medical care for seniors over the course of the COVID-19 pandemic has been challenging. In East Toronto a group of providers including family physicians, nurse practitioners, home care services, community mental health supports established with geriatric psychiatry in the fall of 2021 a monthly hour long virtual "Primary Care Senior's Mental Health Collaborative" to discuss complex cases.

Method: A formal evaluation of the monthly virtual rounds was completed for the nine month period, Jan. 1/22 to Sept. 30/22. Case review (data collected prospectively over the time course) and anonymous survey of participants.

Results: *Patient profile:* 14 patients were presented for case review. 13 were over 65 years of age, 71% were female, 79% lived alone. 43% had unstable housing (ie. at risk of eviction), and 43% had unsafe housing. 50% of patients had unclear capacity for medical, personal care, or financial decision making. 42% had a primary care provider. *Participant survey:* Survey of participants (n=26, representing. 31% response rate). 15% from primary care, 46% from home care agencies, 42% from community support agencies. *Key benefits*: improved collaboration across sectors (78% of respondents), improved access to mental health care for clients (47%), avoid/delay eviction (26%), led to a change in approach to care (50%). Qualitative material from participants also collected, indicating "improved access to expertise and resources".

Discussion: The monthly virtual primary care mental health collaborative in East Toronto has been effective in supporting a vulnerable seniors' population and establishing a seniors' mental health community of practice.

Conclusion: A monthly virtual seniors' mental health case conference grounded in primary care is an effective adjunct to support delivery of specialized geriatrics services.

Trauma Informed Care in Seniors

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Sinai Health.

Background/Purpose: Trauma is a common experience in our society. 25% of women experience intimate partner violence over the life span, and over the life course 70% of older patients will have experienced at least one traumatic event. Approximately 20 - 40% of trauma survivors will develop Post-Traumatic Stress Disorder. Trauma informed care is an organizational level approach to patient care which has been demonstrated to improve access and outcomes of medical care.

Method: Literature review and series of three case presentations from hospital, long term care, and community settings.

Results: The types of traumatic experiences over the life course will be presented. This will be discussed in the context of emerging physical, cognitive and social frailty associated with aging. Case studies from hospital, long term care, and community will illustrate nuance of trauma presentation in the elderly. Fundamental components of trauma informed care will be described, along with a model of implementation in the long term care setting.

Discussion: The COVID-19 pandemic has highlighted the vulnerability of seniors in the face of a terrible illness and a difficult to navigate health care system. A trauma informed care approach is an evidence based approach to care which has been demonstrated to improve access to care, and can be implemented in health care settings supporting seniors. Adopting a trauma informed care approach has been demonstrated to improve the care of all patients, not just those who have experienced trauma.

Conclusion: A trauma informed care approach for seniors can be imbedded in all our systems of health care for the elderly.

Comparison of Anthropometry and Activity Profile Between Sarcopenic and Non-Sarcopenic Older Adults: A Cross-Sectional Study

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Background/Purpose: Compare anthropometry data and activity profile between sarcopenic and non-sarcopenic older adults.

Method: This is a cross-sectional study carried out in the city of Parnamirim, Rio Grande do Norte, Brazil. The study included 95 older adults. Anthropometric variables were: height, weight, BMI and waist circumference. A Fitbit Inspire HR smartband was used to measure the activity variables, collecting information on average, minimum and maximum heart rate, number of steps and active time, for a period of six consecutive days. Quantitative data were presented in median and interquartile range, while categorical data were presented by simple and relative frequency. The Mann-Whitney test was performed for comparison between groups with calculation of the respective effect sizes (ES). The level of statistical significance adopted was $p< 0.05$. Analyzes were performed using SPSS® software.

Results: The sample consisted of 17 sarcopenic and 78 non-sarcopenic subjects. When comparing sarcopenic and non-sarcopenic patients, there were statistically significant differences for the variables height (ES = 0.35), weight (ES = 0.53), BMI (ES = 0.38) and waist circumference (ES = 0.46). For the activity variables, only for the maximum heart rate variable there was no statistically significant difference.

Discussion: Anthropometry is an indirect measure of lean mass and muscle strength and many studies have pointed out that certain anthropometric measurements can be used as a simple and quick screening for cases of sarcopenia. Likewise, inactivity is one of the most important factors for loss of muscle mass and strength in any age group. Low levels of physical activity result in muscle weakness which, in turn, will lead to reduced mass and reduced strength.

Conclusion: Anthropometric and activity indicators were related to sarcopenia in Brazilian community-dwelling older people.

Correlation Between Total Body Water Distribution, Basal Metabolic Rate and Physical Performance Variables in Community-dwelling Older People in Brazil: Results from Pro-Eva Study

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Background/Purpose: Increasing age is associated with a decrease in several body elements such as Basal Metabolic Rate (BMR), total body water distribution (TBW), intracellular and extracellular water (ICW and ECW). Studies have shown these components are related to strength and muscle quality, however, there is a gap about the correlation between BMR and water variables with physical performance measures (Grip Strength [HGS], Gait Speed [GS] and Short Physical Performance Battery [SPPB]). In this sense, the aim of this work is to verify the relationship between body composition variables evaluated by bioimpedance analysis (BIA) (BMR and body water distribution) and physical performance measures (HGS, GS and SPPB).

Method: Cross-sectional study was performed with older adults in Parnamirim (Rio Grande do Norte/RN/Brazil), aged over 60 years and of both sexes, from PRO-EVA Study. Sociodemographic and anthropometric data were collected using a semi-structured questionnaire. Body composition data were collected through BIA and physical performance variables were collected through physical tests. For data analysis, SPSS 20.0 was used. To verify the correlation between the variables, Spearman's test was used.

Results: 709 older people with a mean age of 70 years were evaluated (60.8% were women). We observed a positive and significant correlation among all variables, with emphasis on a positive and significant between the BMR ($r=0.66$; $p>0.001$) and ICW ($r=0.71$; $p > 0.001$) measurements with the HGS.

Discussion: BMR and water variables are positively correlated with physical performance measures, like previous studies, which show a relation between ICW and EWC with HGS and GS.

Conclusion: Therefore, we can infer that body composition measures evaluated by the BIA can be used as a screening for low HGS, GS and physical performance, may be an alternative way to evaluate these components.

Point-of-Care Ultrasound Measures of Muscle Mass in Older Adults with Type 2 Diabetes

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Background/Purpose: Diabetes and sarcopenia often coexist in older adults, suggesting a possible bidirectional association. Available bedside measures of muscle mass consist of bedside ultrasound (MT, quadriceps muscle thickness) and bioelectrical impedance analysis (BIA). We examined the association between ultrasound measures and BIA measures of muscle in older adults with measures of strength, performance, and frailty in older adults with diabetes.

Method: 81 subjects (age >= 65; mean age 80.8±0.6 years, 27 women, 53 men) were recruited sequentially into a cross-sectional study from geriatric medicine clinics. Each subject had Lean Body Mass (LBM, by BIA, in kg), grip strength, gait speed, Cardiovascular Health Study index (frailty) and MT (in cm) measured. All initial models were adjusted for biological sex.

Results: In our final parsimonious models, only MT (as opposed to LBM) showed a significant correlation with grip strength (Standardized Beta = 0.217±0.078; p=0.007) and frailty (Standardized Beta = 0.276±0.109; p=0.013). Neither MT nor LBM showed a significant association with subject performance (gait speed).

Discussion: Unlike BIA, bedside ultrasound measures of muscle thickness showed strong associations with both grip strength and frailty in the older adult population with diabetes. Neither BIA nor MT measures of subject muscularity showed any association with our performance indicator (gait speed).

Conclusion: This suggests that bedside measures of MT might be a more clinically useful modality to assess muscularity in this patient population.

Medications in the Last Year of Life in Persons Living with Dementia

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Background/Purpose: Polypharmacy is common in people living with dementia (PWD) and increases risks of adverse drugs events, functional decline, hospitalization, and mortality. Little is known about polypharmacy at the end of life, as few evidence-based guidelines provide direction for management and even more rarely for those with dementia. We investigated polypharmacy in the last year of life comparing three groups: community-dwelling PWD, community-dwelling older adults without dementia and PWD living in long-term care (LTC).

Method: Retrospective case-control study of older adults, matched on age, sex, and date of death, who died between Jan/01/2019, and Jan/01/2021 in Nova Scotia. We linked data from Medical Services Insurance (dementia diagnosis/comorbidities), Drug Information System (drug data), CIHI's Discharge Abstract Database (comorbidities) and Patient Registry (death). We performed logistic regression in an adjusted analysis examining risk factors for polypharmacy.

Results: There were 3,208 PWD, 3,209 persons without dementia and 3,213 PWD in LTC with Charlson Comorbidities Indices of 2.86, 1.98 and 1.57 respectively ($p<0.001$); mean ages ranged from 84.7-84.78 years with 52% females. The mean duration of a polypharmacy episode was 53 days. Over half experienced at least one episode of polypharmacy in the last year of life. People living in the community without dementia had lower odds of a polypharmacy episode (OR 0.89; 95% CI: 0.78-1.00) and those with higher comorbidity burdens had higher odds of polypharmacy (1.03; 95% CI: 1.00-1.05). PWD in LTC had the highest odds of polypharmacy, although this was non-significant in the adjusted model.

Discussion: PWD, in their last year of life, have received little attention in the deprescribing literature.

Conclusion: Location and comorbidities may guide optimal medication management, if the benefit of deprescribing can attenuate the reduction in quality of life that commonly accompanies polypharmacy.

The Dementia Resources for Eating, Activity, and Meaningful Inclusion (DREAM) Toolkit: Co-Designed Training and Resources to Promote Wellbeing of Persons with Dementia

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Background/Purpose: While promoting health and wellbeing of persons living with dementia (PLWD) and their families is a priority, there are few Canadian resources co-developed with PLWD to support their wellbeing. The Dementia Resources for Eating, Activity, and Meaningful inclusion (DREAM) project aims to increase the physical activity, healthy eating, and wellbeing programs/services accessible to PLWD by

co-creating tools and resources with PLWD, care partners, community service providers, clinicians, academics, and other expert stakeholders.

Method: We co-developed the DREAM toolkit using a 5-step participatory process: 1) engagement of the DREAM Steering Team; 2) prioritization of information/actions; 3) iterative co-design of the toolkit; 4) usability testing; and 5) implementation and evaluation. The DREAM Steering Team confirmed that training community health and service providers to meet the needs of PLWD was a priority. PLWD and family care partners were a second target audience. We drafted, critically reflected on, and evolved content areas for the toolkit related to dementia, physical activity, and healthy eating. An environmental scan identified existing, high-quality resources aligned with these content areas; new resources were drafted to meet gaps. Iterative co-design occurred by reviewing and providing feedback on resources through virtual meetings and email until the toolkit was considered ready for usability testing.

Results: The DREAM toolkit: a website, seven learning modules (diversity of dementia, rights of PLWD, dementia-inclusive practices, two on physical activity, two on healthy eating and mealtimes), a learning manual, six videos, nine handouts, and three wallet cards, which are freely available online.

Discussion: Mutual respect and frequent, clear communication were key to an effective virtual co-design process.

Conclusion: Our vision is that through the DREAM toolkit, community health and service providers can provide inclusive wellness programs and services to benefit PLWD.

Pearls for Successful Implementation of an Inpatient Geriatric Medicine Consultation Service in a Community Hospital Setting

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Background/Purpose: Inpatient comprehensive geriatric assessment (CGA) reduces mortality, length-of-stay and hospital-associated harm in older adults. Our community hospital identified a need for an inpatient geriatric consultation service (GCS). We describe the design, implementation, evaluation and continuous quality improvement of an inpatient GCS.

Method: The GCS was newly staffed by 1.0 full time equivalent (FTE) nurse practitioner and 1.0 FTE geriatrician. An existing 1.0 FTE clinical nurse specialist (CNS) coordinated implementation and educational aims. Quality improvement methodology was used during the initial 4-month implementation phase. Weekly plan-do-study-act cycles gathered qualitative and quantitative data on performance and allowed iterative evaluation and evolution of the clinical service. We captured demographic and clinical data via the hospital electronic medical record (EMR) and analyzed using descriptive statistics at 6-month intervals.

Results: Over the first 12 months of operation, the service provided 409 consultations. The mean age was 80 years and 49% were female. The median Rockwood Clinical Frailty score was 5/9. The most frequent issues addressed in consultation were delirium, falls and medications. Geriatricians saw 67% of consultations whereas the nurse practitioner saw 50%. The average time from admission to referral was 5.9 days and on average consults were provided within 1 day of referral.

Discussion: The GCS fulfilled the hospital's aim to provide CGA to frail older adults. The success and subsequent dissemination of our results locally have led to further quality improvement initiatives to improve senior-friendly hospital care at our institution. The implementation team has evolved into a Geriatric Steering Committee. Key facilitators for implementation included robust planning phase, senior leadership buy-in, EMR decision-support and CNS-led project coordination.

Conclusion: Our model can serve as a guide for implementation of geriatric services across other medium-large community hospital settings.

Home Care Responsiveness After an Unplanned Hospitalization: Will my Patient Get More Home Care?

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Background/Purpose: Older home care clients who are hospitalized and then return home may require increased home care to mitigate risks of adverse health outcomes, functional decline, and readmission. We examined the responsiveness of publicly-funded home care by measuring change in home care services before and after an unplanned hospitalization.

Method: A retrospective analysis in Nova Scotia (NS) and the Winnipeg Regional Health Authorities (WRHA) of clients age 60+ years, admitted to home care in 2011-2013 with a hospital admission within 31-365 days (898 in WRHA; 1,024 in NS). We calculated service visits and hours (personal care and nursing) in each 30-day window pre and post-hospitalization. Measures associated with significant change in service hours (by Home Support Workers (HSWs) or nurses) were used in the multivariate model, adjusted for age and sex.

Results: The WRHA cohort were more likely to be older and male. More NS clients experienced hospitalization. The proportion of clients re-assessed post-hospitalization (within 90 days) differed by cohort, (38% in the WRHA, 26% in NS). Mean HSW hours per week were higher in the NS cohort both before (5.90h/wk) and after hospitalization (8.85h/wk) with significant increases in both WHRA (2.3/wk) and NSH (3.0/week). Similarly, mean nursing hours increased significantly after hospitalization. Length of hospital stay, dependency in toileting or transfer, ALC status, and Parkinson's, cancer, or dementia diagnosis, were associated with increased home care intensity post-hospitalization.

Discussion: Our research provides evidence of home care responsiveness in two jurisdictions, reflected by increased intensity of home care post-hospitalization

Conclusion: Home care remains a cornerstone in returning home from hospital among frail older individuals, but may suffer from low rates of comprehensive assessment during this critical time.

Use of a Self-Report Electronic Comprehensive Geriatric Assessment by an Interprofessional Integrated Care Team to Support Older Adults Living with Frailty: A Pilot Project

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Background/Purpose: Comprehensive geriatric assessment (CGA) is effective in supporting older persons with frailty, though access remains limited by human resource shortages. We investigated the feasibility and acceptability of a self-report CGA instrument to support care planning by an Integrated Care Team (ICT).

Method: The primary-care based ICT included nurse practitioners, family physicians, pharmacists, community paramedicine, home care, community support services, geriatricians, and hospice palliative care. Non-urgent Kitchener-Waterloo patients waiting to see a geriatrician were invited. Those agreeing were sent a secure link to a validated self-report instrument, the interRAI Check-Up, which measures cognition, mood, pain, function, falls, assessment urgency, and health instability. Assessments were reviewed at weekly case-conferences to develop an initial care plan. The project was evaluated with mixed-methods.

Results: Over 6 weeks from February to March 2022, 138 of 445 wait-listed (mean 200 days) patients were contacted. Twenty did not participate, most of whom had been institutionalized, hospitalized, or died. Check-Ups were completed for 97 (80% without additional nursing assistance) and pharmacist assessments for 107. Medication recommendations were made for 95% of patients, and 80% received new community service referrals. Twenty-seven patients were re-triaged as urgent and seen by the NP and geriatrician, 26 of whom were discharged to primary care without further geriatrician follow-up. Patients, informal caregivers, and providers agreed strongly that the program was beneficial.

Discussion: The ICT pilot demonstrated the acceptability of a self-report instrument to support interprofessional care planning for patients awaiting a geriatrician for CGA. The ICT will re-launch in 2023 with sustainable funding from Ontario Health West.

Conclusion: Community-dwelling patients referred for CGA can be efficiently supported by a primary care-based interprofessional team guided using an electronic self-report instrument and pharmacist assessment.

Senior's Health Pilot Project—A Learning Approach

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Background/Purpose: Learning Clinical Units (LCU) represent an innovative strategy where interdisciplinary teams (including researchers, clinicians, healthcare managers and patient partners) work together to address complex health problems and help bridge the Research-Clinical Practice gap. In 2019, Vitalité Health Network (New Brunswick, Canada) implemented its first LCU to identify and address main gaps in seniors' healthcare. We undertook a process evaluation to assess the implementation processes of our Senior's Health LCU pilot project.

Method: Semi-structured interviews were conducted in 2021 with key stakeholders. Data were collected on seniors' healthcare gaps identification and prioritization, clarity of roles and responsibilities, project management, and implementation barriers and strengths. In addition, perceived overall implementation process satisfaction was measured among all participants.

Results: Participants reported being generally satisfied with the implementation process. Participants appreciated the interdisciplinary aspect of the project, especially the participation of researchers and patient partners. Implementation barriers identified were the large number of meeting attendees, lack of human and financial resources, and lack of physician engagement. Although, the COVID-19 pandemic negatively

impacted the project timeline, several improvement recommendations were identified by participants, including the importance of offering support to the LCU teams, promoting physician engagement and ensuring that patient partners actively participate in all project milestones.

Discussion: Results from this study highlight the importance of interdisciplinary collaborations and health organization infrastructures that support innovation, research, evaluation, and best practices implementation.

Conclusion: Lessons learned from the Senior's Health LCU pilot project assessment provided crucial information to improve ongoing projects, develop knowledge transfer strategies, as well as inform future Learning Health Systems initiatives at Vitalité Health Network.

Enhancing Minds in Motion as a Virtual Program Delivery Model for People Living with Dementia and their Care Partners

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Background/Purpose: The Alzheimer Society of Ontario's Minds in Motion (MiM) program improves physical function and well-being of people living with dementia (PLWD) and their care partners (CP) (Regan et al., 2019). With the COVID-19 pandemic, there was an urgent need to transition to a virtual MiM that was similarly safe and effective, initially offered ad hoc by local Societies. The purpose of this study is to describe the standardized, virtual MiM and evaluate its acceptability, and impact on quality of life and physical and cognitive activity of participants.

Method: Survey of ad hoc virtual MiM practices, a literature review, and feasibility among Societies informed the design of the standardized MiM program: 8 weeks of weekly 90-minute sessions that included 45-minutes of physical activity and 45-minutes of mental and social stimulation in each session. Participants completed a standardized, virtual MiM at one of 6 participating Alzheimer Societies in Ontario, as well as assessments of quality of life, physical and cognitive activity, and program satisfaction pre- and post-program.

Results: 111 PLWD and 90 CP participated in the evaluation (average age of 74.6±9.4 years, 61.2% had a college/university degree or greater, 80.6% were married, 48.6% of PLWD and 75.6% of CP were women). No adverse events occurred. MiM participants rated the program highly (average score of 4.5 out of 5). PLWD reported improved quality of life post-MiM ($p=0.02$). Altogether, participants reported increased moderate activity levels ($p=0.03$), vigorous activity levels ($p=0.02$), and cognitive activity levels ($p=<0.01$).

Discussion: NA

Conclusion: The virtual MiM program is acceptable, safe, and effective at improving quality of life for PLWD and physical activity levels among CP. Additional recruitment strategies may be needed to engage more male CP, single PLWD, and PLWD/CP with lower education.

Older People Experiencing Homeless with Complex Needs in Alberta: A Systems Perspective and Policy Analysis

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Background/Purpose: Older homelessness in Alberta is growing. Many Older people with experiences of homelessness (OPEH) have complex health challenges (physical and mental illness, addiction). They face barriers to care, both individual and structural. Historically, Alberta has developed impactful approaches to housing and social supports for marginalized groups. This review was undertaken to study relevant policy and system structures to identify how best to support OPEH with complex needs.

Method: Identification, selection and analysis was undertaken of 1) government reports, 2) academic and grey literature, and 3) a select list of expert interviews (n=7) to report on the different factors that shape the health and social outcomes of OPEH with complex needs in Alberta.

Results: Four policy pillars shaping the outcomes of OPEH with complex needs in Alberta were identified: 1) the housing and homelessness sector; 2) continuing care in Alberta; 3) federal and provincial approaches to harm reduction; and 4) the operation of Canadian federal Indian policy

Discussion: Five recommendations to improve the health and social outcomes of OPEH in Alberta were generated: 1) consolidating current approaches to enumerating OPEH in Alberta using the age of 50 as a standard metric; 2) Freezing the age of eligibility for Old Age Security payments at 65; 3) Fully integrating harm reduction services within facility-based networks of continuing care in Alberta; 4) Acknowledging the risks of reliance on home-based continuing care for older people who are unhoused; 5) Grounding emergent strategic frameworks to address OPEH within consideration of federal Indian policy and the unique causes and contours of Indigenous homelessness.

Conclusion: Centralized health services and historic success with supporting others experiencing homelessness uniquely position Alberta to be a leader in system change to support the needs of OPEH.

Using Grab Bars Increases Postural Stability of Older Adults When Rising from a Toilet

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Background/Purpose: Older adults, especially females, are 28% more prone to falls when standing up from a toilet (the U.S. Centre for Disease Control and Prevention). This study investigated the effects of adding a bilateral grab bar to a toilet on the sit-to-stand movement in older females.

Method: Eight young (21.5±0.7yrs) and eight older (72.6±5.9yrs) females executed four sit-to-stand tasks on a normal toilet without (NT) and with grab bars (NTB). Surface electromyography (EMG) was recorded from the tibialis anterior (TA), soleus (SOL), medial (MG) and lateral gastrocnemii (LG), vastus medialis (VM) and biceps femoris (BF) of the dominant limb. Feet were positioned on the Pedar-X Insole system to measure plantar pressure distribution- and COP-related parameters. The ease of the sit-to-stand task, time to rise and postural stability were determined. A 2 (NT, NTB) × y 2 (young, old) repeated measures ANOVA was conducted.

Results: The COP velocity during rising declined with grab bars in young and older adults by 5% and 21%, respectively ($p=0.019$). In older adults, grab bars decreased the time between peak hindfoot to peak forefoot pressure by 8% ($p=0.03$) and the total time of rising by 5% ($p=0.005$). EMG in all muscles, except for TA and MG, was less with grab bars ($p<0.048$).

Discussion: Grab bars increased the ease of standing, decreased COP velocity, and decreased time to quiet stance. The decreased COP velocity shows increased postural stability and decreased forward fall risk. Reduction in EMG activity supports that the grab bars reduce task effort.

Conclusion: The difficulty and the high risk of falling associated with the sit-to-stand motion are reduced when a bilateral grab bar is attached to a standard household toilet.

Identifying and Eliminating Inefficiencies and Redundancies in a Specialized Geriatric Services Central Clinical Intake Service

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Background/Purpose: Increasingly Central Clinical Intake (CCI) services are being developed to streamline referral processes and information sharing, and support timely access to care. In central Ontario, CCI creates assessment reports for all new Specialized Geriatric Service referrals based on available health information. This quality improvement study aimed to obtain end-user perspectives on CCI assessment inefficiencies and redundancies.

Method: Surveys were completed by Geriatricians (N=11), Geriatric Psychiatrists (N=2) and Case Managers (N=8); 21/71 surveys were completed (30% response rate). Questions were asked related to helpfulness of a variety of attached and summarized documentation [consult notes/reports, Digital Health and Drug Repository (DHDR) medication lists], minimum requirements for investigations to accompany dementia and osteoporosis referrals, and priority flags (5-point Likert scales: not at all – extremely), preferences for report summaries or full reports for allied health functional assessments and hospital discharge summaries, and support for reducing detail or eliminating Emergency Department (ED) encounter summaries (5-point scale: not at all – completely support).

Results: While the majority of respondents (57%-77%) rated most of the attached documentation and summaries of relevant issues provided by CCI and requirements for investigations to accompany referrals, as 'very' or 'extremely' helpful, detailed summaries of ED encounters, DHDR medication lists, and priority flags were rated as minimally helpful. There was minimal support for eliminating ED encounter summaries. Most frequently, respondents identified a preference for full functional assessment reports (55%) and discharge summaries for admissions (48%).

Discussion: Findings provide important insights to inform changes to the CCI service to better meet the information needs of end users and can inform the development of new CCI services.

Conclusion: Identified CCI service improvements have the potential to result in service efficiencies and improve patient care.

Canadian Patient and Care Partner Perspectives on Diagnostic Biomarker Testing for Alzheimer's Disease

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Background/Purpose: The value of Alzheimer's disease cerebrospinal fluid (CSF) biomarker testing (i.e., amyloid-beta and tau proteoforms) in improving diagnostic accuracy and enabling timely diagnosis is well-established; however, there is limited information from the patient and caregiver perspectives regarding the impact of testing on their wellness and lifestyle decisions, and future planning.

Method: Within the 'Investigating the Impact of Alzheimer's Disease Diagnostics in BC' (IMPACT-AD BC) study (www.impactAD.org), we conducted phone interviews with a subset of patients (34/142) who underwent Alzheimer's disease CSF biomarker testing as part of routine care, and separate interviews with their nominated care partner (e.g., a family member or friend, n=31). Interviews were performed post-disclosure and responses subjected to thematic content analysis.

Results: Most patients reported positive post-disclosure health behavior changes, including increased physical exercise or encouragement to continue exercise (84%) and making or continuing healthy dietary practices (59%). Patients and care partners alike utilized the biomarker results in planning for the future, with majority of patients engaging in financial planning (58%). Care partners recognized their future caregiving responsibilities (37%), but also expressed relief in having added information on the patients' brain health to make decisions for the future (26%).

Discussion: Patients adopted/were encouraged to continue healthy lifestyle behaviors and both patients and care partners engaged in planning for the future as a result of testing. As such, this study has revealed how and why biomarker testing is of high value to individuals living with dementia and their family members.

Conclusion: We have learned that Alzheimer's disease CSF biomarker testing helps spur and guide positive lifestyle changes and future planning decisions among persons living with dementia and their families.

Network Analyses to Compare Multimorbidity Patterns Among Older Adults with Dementia Residing in Long-Term Care Homes and the Community

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Background/Purpose: Multimorbidity, the co-occurrence of multiple chronic diseases, is common among persons with dementia (PWD). Network analyses describe complex disease patterns through graphical displays grounded in empirical data. Our study compares patterns of multimorbidity among PWD residing in long-term care (LTC) and outside of LTC (non-LTC) using network analyses.

Method: Population-based data from outpatient claims, inpatient records, pharmaceuticals, and LTC records were obtained from the Manitoba Population Research Data Repository (project P2022-48). This retrospective cohort consisted of PWD ≥67 years who resided in Manitoba from 2015-2020. Chronic diseases were classified using the open-source Clinical Classification System. Networks, consisting of nodes (diseases) connected by edges (cosine index, which quantifies the strength of association between pairs of diseases), were stratified by residence location (LTC vs. non-LTC). Network properties, such as number of associations per disease (degree) and network connectivity (density), were reported. A community detection algorithm identified disease clusters and calculated associations within vs. between clusters (modularity).

Results: Of 15,583 PWD in Manitoba, 8,342 (53.5%) resided in LTC. The median number of co-occurring chronic diseases was similar among PWD in LTC (median: 7, Q1-Q3: 3-10) vs. non-LTC (median: 6, Q1-Q3: 4-10). Networks properties were similar for PWD in LTC vs. non-LTC: degree distribution (median: 10, Q1-Q3: 4-20, vs. median: 10, Q1-Q3: 5.25-17.75), network density (0.133 vs. 0.128), and modularity (0.228 vs. 0.270).

Discussion: Multimorbidity is common among PWD residing in and outside of LTC. Chronic diseases among PWD do not form easily distinguishable phenotypes or clusters, suggesting the need for comprehensive clinical assessments and individualized approaches for disease management.

Conclusion: Unique visual and analytical techniques demonstrated multimorbidity is highly prevalent and complex among PWD in LTC and non-LTC settings.

Association Between Exposure to Surgery Involving General or Regional Anesthesia and Risk of Dementia in Older Adults Compared to Non-Surgical Controls: a Population-based Retrospective Cohort Study

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Background/Purpose: Increasing evidence suggests that anesthesia is not associated with an increased long-term risk of developing dementia. The risk of dementia related to surgery remains unclear. We examined the risk of dementia after surgery when compared to a matched non-surgical control group.

Method: We conducted a population-based propensity matched retrospective cohort study using data from linked administrative databases. Community-dwelling individuals aged 66 years of age and older who underwent one of five major elective surgeries between April 1, 2007 and March 31, 2011 were included. Each surgical patient was matched 1:1 with a patient who attended an outpatient visit with a relevant surgeon and did not undergo surgery during the same time period. Two samples of patients were created: the General Anesthetic (GA)-control group and the Regional Anesthetic (RA)-control group. Patients were followed for up to 5 years following cohort entry. Cause-specific hazard models were used to estimate the hazard ratio (HR) and 95% confidence interval (CI) for the association between surgery and the hazard of incident dementia.

Results: 8,044 matched pairs in the GA-control group and 14,759 matched pairs in the RA-control group were included. Patients who underwent surgery with GA had a reduced risk of incident dementia compared to their matched non-surgical controls (HR=0.82; 95% CI=0.71-0.93; p=0.003); dementia incidence was also lower in patients who underwent surgery with RA when compared to their matched non-surgical controls (HR=0.67; 95% CI=0.61-0.74; p<0.001).

Discussion: Elective surgery with either GA or RA did not increase the rate of incident dementia when compared to matched non-surgical controls.

Conclusion: This study will help guide discussions around surgical decision-making and aid in informed decision-making around long-term cognitive outcomes and the risk of dementia in older adults considering elective surgical interventions.

Early Detection and Management of Frailty in Primary Care: Validation of the eFI-CGA in Electronic Health Records

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Background/Purpose: In older adults, frailty is common and associated with adverse outcomes. To promote early detection and management of frailty outside specialized geriatric services, we developed an electronic Frailty Index based on deficit accumulation in a Comprehensive Geriatric Assessment (eFI-CGA) from primary care electronic health records. Here, we compare the eFI-CGA assessments of family physicians (FP) and geriatricians (GM).

Method: Fraser Health and Nova Scotia Health are collaborating to validate the eFI-CGA. We enrolled community-dwelling adults aged 65+ years with mild to moderate frailty. An FP and a GM assessed each patient independently. Characteristics of the eFI-CGA were examined for each physician group using descriptive statistics and correlation analysis. FP-GM inter-rater reliability was tested using intra-class correlation coefficient (ICC, two-way mixed model for absolute agreement).

Results: The 97 participants were aged 83.6 (±6.4) years;; 63% were women, with 13.8 (±3.7) years of education; 39% lived alone. Mild cognitive impairment or dementia was present in 38% participants. The median clinical frailty scale (CFS) was 4 as rated by FPs and 5 by GMs. The mean eFI-CGA was 0.28 (±0.11) and 0.29 (±0.13) respectively. The CFS and eFI-CGA ratings were closely correlated (p<.001; r=0.63 for FP, r=0.70 for GM). The eFI-CGA for each was moderately correlated with age (p<.001; r=0.37 for FP, r=0.42 for GM). The average ICC value was 0.67 (95% CI=0.51-0.78) for CFS and 0.90 (CI=0.86-0.94) for the eFI-CGA (each p<.001). The ICC between FP and GM of 93% of the 56 individual CGA items were significant (p<.05); median ICC=0.64.

Discussion: Ongoing work will test these relationships in follow-up and outcomes evaluations.

Conclusion: Frailty assessments in primary care are largely comparable with geriatrician assessments.

Frailty and Cognition in Primary Care: Validating the Electronic Frailty Index based on the Comprehensive Geriatric Assessment (eFI-CGA)

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Background/Purpose: Frailty can be screened using the Clinical Frailty Scale (CFS) and quantified using a deficit

accumulation Frailty Index (FI). Higher degrees of frailty indicate greater risks of adverse outcomes, including dementia. To promote frailty assessment outside specialized geriatric services, Fraser Health and Nova Scotia Health developed and are validating an electronic Comprehensive Geriatric Assessment (CGA and eFI-CGA) for early detection and management of frailty. Here, we examined the characteristics and robustness of the eFI-CGA assessed at primary care and its association with cognitive diagnoses.

Method: Baseline eFI-CGA data were collected on community-dwelling, older, primary care patients. DSM-IV diagnoses were made of no cognitive impairment (NCI), mild cognitive impairment (MCI), and dementia criteria. To test robustness, multiple iterations of the eFI-CGA were generated, excluding cognitive measures. Data were analyzed employing regression and descriptive statistics.

Results: In this sample (n=273; age=81.3±7.9 years, women=65.6%; education=12.8±3.9 years, married=49.1%, live alone=43.6%, CFS=3.7±1.2), participants with MCI/dementia (25.6%) were older (p=.005) than those with NCI, but comparably educated, living alone and taking 7+ medications. Scores of the various integrations of the eFI-CGA were highly correlated (r's>0.996, p's<.001). The eFI-CGA iterations showed consistent distributions, age relationships, and eFI-CGA value ranges (0.07-0.70). The eFI-CGA also correlated with the CFS (r=0.65, p<.001). The NCI group showed the lowest mean eFI-CGA scores consistently across the iterations (F's>7.73, p's<.001) even when all the cognitive measures were excluded from the eFI-CGA construction. The eFI-CGA was modestly correlated with cognition (mini-cog/MoCA; r=0.26, p<.001).

Discussion: Characteristics of a primary care eFI-CGA were consistent with those widely reported for the FI. The eFI-CGA and cognition were significantly correlated, even with cognitive items removed from the eFI-CGA.

Conclusion: Ongoing work will test these findings with follow-up assessments and outcomes.

Incidence of Disability in a Cohort Study of Ageing Men—the Manitoba Follow-Up Study

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Background/Purpose: The incidence of disability is unclear in older men as there are few studies with regular measures of functional status. The objective is to determine the incidence of moderate to severe disability in ageing men.

Method: A cohort of 3983 men who qualified for air crew training was sealed in 1948, and has been followed to the present day. A questionnaire measuring quality of life and functional status was added in 1996 and subsequently annually since 2004. The annual response rate exceeds 80% each year. We defined disability as an impairment in 2 or more (of 5) basic activity of daily living (ADL), or 3 or more (of 8) instrumental ADLs, or admission to a nursing home. Death was considered as a competing risk, and we excluded those with missing data or non response for that year. The time of onset of disability was considered as the time of the survey response. We used data from the years 2004 to 2012.

Results: There were 899 participants who responded to the 2004 survey wave, of whom 811 did not have prevalent disability. The mean age was 84 years old at baseline, and 91 in 2012. The incidence rate of disability over the course of the observation period was 8.0 cases per 100 persons per year. The incidence rate rose from 4.3 cases per 100 persons per year in 2004 to 9.2 cases per 100 persons per year in 2012.

Discussion: These results were influenced by how missing data were considered, the competing risk of mortality, and the small numbers of participants without prevalent disability at very old ages. The generalizability is limited to ageing men.

Conclusion: The incidence of disability increases with age.

Involvement of Informal Caregivers in Preventing Falls in Older Adults with Cognitive Impairment: A Rapid Review

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Background/Purpose: The prevalence of falls and related injuries is double in older adults with cognitive impairment compared with cognitively healthy older adults. A growing body of literature shows that fall prevention interventions in the cognitively impaired are difficult to implement and that the feasibility and adherence to interventions depend on a number of factors including informal caregiver involvement. However, no systematic review exists on informal caregivers' involvement to prevent falls in older adults with cognitive impairment. Our objective is to determine whether the involvement of informal caregivers can reduce falls in older adults with cognitive impairment.

Method: Rapid review following Cochrane collaboration guidelines.

Results: Seven randomized controlled trials were identified involving 2,202 participants. We identified the following areas where informal caregiving may have an important role in fall prevention in older adults with cognitive impairment: 1) enhancing adherence to the exercise program; 2) identifying and recording fall incidents and circumstances; 3) identifying and modifying possible environmental falls risk factors inside patient's home; and 4) playing an active role in modifying lifestyle in terms of diet/nutrition, limiting antipsychotics, and avoiding movements risking falls.

Discussion: Informal caregiver involvement was identified as an incidental finding in these studies and the level of evidence ranged from low to moderate.

Conclusion: Informal caregiver involvement in planning and delivering interventions to reduce falls has been found to increase the adherence of individuals with cognitive impairment in fall prevention programs. Future research should address whether the involvement of informal caregivers may improve the efficacy of fall prevention programs.

A Scoping Review on the Diagnosis and Management of Vascular Parkinsonism

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Background/Purpose: Vascular parkinsonism (VP) is a form of secondary parkinsonism resulting from cerebrovascular disease. The relatively uncommon presentation of parkinsonism in primary care practice often leads to missed or delayed diagnosis. The objective of this scoping review is to identify the diagnostic criteria and management approaches for vascular parkinsonism as reported in literature.

Method: We searched Ovid MEDLINE, EMBASE, CINAHL, Cochrane Database of Systematic Reviews, Cochrane Central Register of Controlled Trials, and Web of Science for articles published until December 31, 2021. A title-abstract screening and full-text screening were done independently by two authors. We included articles that specified a criteria for diagnosis of VP and/or management approaches. Data extraction was done by one reviewer and verified by another reviewer.

Results: We screened 2480 citations and included 61 articles. 51 articles specified 20 different diagnostic criteria; 20 articles specified management approaches. Of the 20 diagnostic criteria, the most commonly cited was Zijlmans (2004) criteria which included parkinsonism, cerebrovascular disase, and a relationship between the two. The latest proposed criteria were by Rektor (2018) which specified categories of findings (i.e., obligatory findings, supportive findings, non-supportive findings) and three types of VP (i.e., acute/subacute post-stroke VP, insidious VP, and mixed neurogenerative parkinsonism and cerebrovascular disease). The management approaches in the articles had the following themes: (1) Imaging may be helpful but not specific; (2) Levodopa may not be helpful; (3) Control of cardiovascular risk factors and co-morbidities is recommended; (4) Multidisciplinary management is suggested.

Discussion: The diagnosis and management of vascular parkinsonism focus on the relationship of parkinsonism and vascular risk factors.

Conclusion: Awareness of VP and its diagnostic criteria and management approaches will be helpful in primary care.

How to Improve Understanding and Recall of Geriatric Medicine Clinic Visits: A Quality-Improvement Initiative

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Background/Purpose: Patient understanding of healthcare visits is often incomplete despite its importance for adhering to and engaging with management plans. Using a quality improvement framework, we aimed to improve the proportion of patients and/or caregivers in Geriatric Medicine (GM) resident clinics with self-reported "very good" to "excellent" understanding of their visit to 80% and the number of patients receiving a written after visit summary (AVS) to 90% within 4 months.

Method: Sequential PDSA cycles were implemented to understand the scale of the problem and evaluate and refine the improvement strategy. A standardized free-form template for AVS was implemented during or after GM visits in 8 resident clinics across 4 different academic sites in Toronto, Ontario. We collected AVS implementation statistics at each visit and measured patient understanding via telephone surveys.

Results: At baseline, a local audit demonstrated patients/caregivers had incomplete understanding of their visit with 61% (n=18) reporting "very good" to "excellent" understanding. Repeat telephone survey after AVS implementation showed achievement of 93% (n=15) reporting "very good" to "excellent" understanding. Resident feedback identified increased workload as a key barrier to sustainability. As such, a targeted approach to AVS use was implemented focusing on visits where significant changes in clinical management occurred. Repeat telephone survey showed that of 16 patients/caregivers, 81.2% reported "very good" to "excellent" understanding. Resident feedback indicated improved workload. There was no change in AVS use demonstrated on run charts.

Discussion: Evolution of the AVS protocol to a targeted approach improved provider workload without impacting patient experience. Residents reported a reduced workload, particularly of work perceived as low-value added, thus improving sustainability.

Conclusion: AVS implementation in GM resident clinics successfully improved patient understanding of their visits, exceeding this study's aim.

Innovative Living Environments for Seniors with Cognitive Problems: Strengths and Challenges

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Background/Purpose: With the aging of the population and the increasing prevalence of Alzheimer's disease and other major neurocognitive disorders affecting the elderly, conventional housing models are being questioned, which has contributed to the emergence of innovative living environments models. This study describe four innovative living environments for persons with a major neurocognitive disorders to have a better understanding of this type of housing model in Quebec.

Method: A descriptive research design, based on a multiple-case study, allows us to describe the perceptions of residents (n=35), family and loved ones (n=35), and staff members (n=58) over a 12-month period.

Results: Five major findings emerge from the data collected. The purpose of this presentation is to outline these findings, which are the strengths and challenges of these innovative living environments. The strengths related with the approach adapted to the needs of residents, the family atmosphere of the physical environments, the social interactions and occupational activities, the work organization in coherence with the rhythm and preferences of residents and the opening for decision-making and initiative. The challenges concerned the ongoing training, the risk management, the involvement of family and loved ones, the hiring and staff retention and the area of communication and follow-up.

Discussion: This study is in accordance with the international concerns to improve care and services for this clientele.

Conclusion: These data will help inform clinical staff, decision-makers and the scientific community about some of the innovative clinical and organizational practices to emphasize in the field of housing for seniors living with a neurocognitive disorder.

Nirmatrelvir/ritonavir is Effective in Adults of 65 Years and Over: A Pooled Analysis from Placebo Controlled Trials

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Background/Purpose: Older adults are at greater risk of adverse outcomes following COVID-19 infection. Nirmatrelvir/ritonavir (N/R) is an inhibitor of the coronavirus main protease which leads to the prevention of viral replication. Clinical efficacy and safety of N/R has been established in clinical trials. This sub-analysis examined the efficacy and safety of N/R in adults of 65 years and older (OA).

Method: Data from two interventional phase 2/3, double-blind studies which investigated 300/100 mg N/R administered orally b.i.d. for 5 days compared with placebo (P) were used. C4671005 (EPIC-HR), in non-hospitalized symptomatic adults with COVID-19 who were at increased risk of progressing to severe illness and study C4671002 (EPIC-SR) in non-hospitalized symptomatic adult participants with COVID-19 who were at standard risk of progressing to severe illness. The primary outcomes were hospitalization for the treatment of COVID-19, or death from any cause.

Results: 2468 adults (1229 N/R, 1239 P) of which 338 were OA (171 N/R, 167 P) participated. In the OA N/R group there were 2 (1.17%) hospitalizations and 0 deaths. For the P group there were 22 (13.17%) hospitalizations and 9 (5.39%) deaths, a difference from P (SE) -12.662 (2.807), 95% CI of difference -18.164, -7.159, $p < .0001$. In the entire sample, the most frequently reported treatment emergent adverse events (TEAE) in the N/R group were dysgeusia (5.6%), diarrhoea (3.3%) & nausea (2.0%). This aligned with the frequency of TEAE in post marketing surveillance of OA.

Discussion: In this pooled analysis of OA with COVID-19, a 5 day course of N/R, compared to placebo, was associated with fewer hospitalizations and all cause deaths. The most frequent AE were dysgeusia, diarrhoea and nausea.

Conclusion: N/R was effective & safe in OA.

Elucidating Canadian Older Adult Experiences Navigating a Virtual Fall Prevention Program During a Pandemic

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Background/Purpose: In response to COVID-19, the Fall Prevention Program (FPP) at Sunnybrook Health Sciences Centre was modified to include virtual components. We set out to uncover the experiences of this unique older-adult patient population to inform FPP quality improvement and appropriate incorporation of technology post-pandemic.

Method: FPP patients during the COVID-19 pandemic (February 2020 – February 2022) and their primary caregivers met inclusion criteria. Out of 18 eligible patients, 10 consented to participate in 20-minute semi-structured telephone interviews conducted and transcribed by a single interviewer who was not involved with patient care. Inductive coding was completed

by two independent coders. Themes were generated through collaborative analysis.

Results: Demographic questions characterized the participants (n=10) as 60% female, mean age 84 years, 60% living alone, and 70% university educated. Theme 1, *First steps first*, revealed the importance and essentials of a successful FPP highlighting health benefits, desired socialization, preferred program length, and individualized attention. Theme 2, *Strength and support influences adaptation*, highlighted participants' experiences overcoming barriers of virtual care and COVID-19 elaborating on protective factors that eased transition. Theme 3, *Finding balance between safety, effectiveness, and efficiency*, elaborated on participants' ideal combination of virtual and in-person components. Theme 4, *Standing together*, delved into attitudes of hope and necessary supports for success.

Discussion: Technology can both create and alleviate barriers necessitating individualized incorporation of virtual components informed by the patients themselves. These interviewed older adults revealed agreement on FPP necessity, increasing program length, one-on-one interaction, family involvement, and program flexibility for unique patient needs.

Conclusion: Incorporating virtual assessment prior to in-person exercises was largely favoured and should be considered as an appropriate use of technology post-pandemic.

Detecting Anxiety in Those with Parkinson's Disease: A Diagnostic Accuracy Study

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Background/Purpose: Anxiety is common among persons living with Parkinson's disease (PD), but we lack validated anxiety tools for use in the context of PD. Proper detection of anxiety is important to improving the quality of care for those with PD. We validated three anxiety tools for detection of anxiety compared to a reference standard, to determine which tool is accurate among a clinic population of persons living with PD.

Method: Participants were recruited from the CaPRI registry to complete three anxiety index tools (PAS, the PSWQ-A, and the HARS). The M.I.N.I diagnostic tool was administered as the gold standard diagnosis for anxiety. Administrators of the index tools and reference standard were blinded to one another's results.

Results: 110 participants had completed test results. 13.64% of participants met sufficient criteria to be diagnosed with at least one anxiety disorder, according to the M.I.N.I. Generalized Anxiety Disorder was most prevalent, demonstrated in 7.27% of participants. The PSWQ-A showed the best balance of sensitivity and specificity (SN and SP = 0.80) to detect overall anxiety in individuals with PD. In particular, it had the best sensitivity for generalized anxiety disorder (SN= 0.88).

Discussion: The full version of the PSWQ has shown high validity and similar diagnostic accuracy to the abbreviated version. The questionnaire has not been validated previously in those with PD, thus our results convey the PSWQ-A's validity for detecting anxiety in those with PD.

Conclusion: Anxiety is common among persons living with PD yet goes underdiagnosed and undertreated. There is a need for effective, validated anxiety detection in clinical settings to improve care for persons living with PD. Further research can investigate how the anxiety detection tools validated in our study perform clinically at bedside.

Development and Implementation of a Clinical Care Pathway for Frail Older Adults in Long-Term Care: Results of a Modified Delphi Procedure

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Background/Purpose: Frailty disproportionately affects older adults and is common among those living in long-term care (LTC). It is under-diagnosed and may vary in its presentation and progression, given the range of severity. As frailty progresses, palliative care approaches may help to relieve pain and other distressing symptoms. By optimizing symptom management, promoting caregiver involvement, and identifying frailty sooner, improved care can help improve residents' quality of life.

Method: An online, modified Delphi procedure was completed to create a clinical pathway focusing on early recognition of frailty and supporting earlier access to, and initiation of, palliative care for residents in LTC. After each round, median and IQR results were calculated for Likert responses. Key stakeholders and experts in the field, including healthcare providers and caregivers, helped to develop the frailty care pathway.

Results: 52 participants submitted complete responses for round one of the modified Delphi. 29 (55.8%) of respondents from round one submitted complete responses to the second, final, round. Respondent feedback from the first was incorporated into the second round. We identified 28 statements within five categories of priority: Detection of Frailty, Identify

Resident Needs and Contributors to Frailty, Illness Understanding and Communication of Prognosis, Coordinate Care Needs, and Manage Resident Needs and Symptoms. These informed the pathway.

Discussion: This resident-centered pathway highlighted the importance of caregiver involvement and multidisciplinary teamwork. Early identification, management, and care for older adults with frailty, as well as earlier access to palliative care, are critical to improving residents' quality of life.

Conclusion: Implementation of this pathway is crucial in LTC. As a next step, we have partnered with LTC facilities in Calgary, Alberta to implement and evaluate this pathway.

Association Between Postoperative Delirium and Adverse Outcomes in Older Surgical Patients: A Systematic Review and Meta-Analysis

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Background/Purpose: Postoperative delirium (POD) is a prevalent postoperative complication. This systematic review and meta-analysis aims to assess the incidence of POD and its outcomes in older non-cardiac surgical patients.

Method: Multiple databases were searched from inception to February 22, 2022. Inclusion criteria were non-cardiac and non-neurological surgical patients aged 60 years or older with and without POD with one or more adverse postoperative outcomes. For dichotomous and continuous outcomes, odds ratio (OR) and mean difference (MD) were computed, respectively, with a 95% confidence interval (CI).

Results: Fifty-four studies (20,988 patients, 31 elective studies, 23 emergency studies) were included. The pooled incidence of POD was 19% (95%CI: 16%, 23%) after elective surgery and 32% (95%CI: 25%, 39%) after emergency surgery. In elective surgery, POD was associated with increased mortality at 1-month (OR: 6.60; 95%CI: 1.58, 27.66), 6-month (OR: 5.69; 95%CI: 2.33, 13.88), and 1-year (OR: 2.87; 95%CI: 1.63, 5.06). Postoperative complications (OR: 2.16; 95%CI: 1.21, 3.85), unplanned ICU admissions (OR: 3.24; 95%CI: 2.15, 4.88), length of stay (LOS) (MD: 2.69; 95%CI: 1.87, 3.51), and non-home discharge (OR: 4.94; 95%CI: 2.92, 8.34) were higher in those with POD. In emergency surgery, patients with POD had greater odds of mortality at 1-month (OR: 3.56; 95%CI: 1.77, 7.15), 6-month (OR: 2.60; 95%CI: 1.88, 3.61), and 1-year (OR: 2.30; 95%CI: 1.77, 3.00) and prolonged LOS (MD: 1.78; 95%CI: 1.05, 2.51).

Discussion: We found a high incidence of POD in older adults after non-cardiac surgery. POD was associated with increased odds of mortality, postoperative complications, unplanned ICU admissions, increased LOS, and non-home discharge.

Conclusion: These findings support the wide ranging impact associated with POD in older non-cardiac patients. Prevention and perioperative management of POD may optimize surgical outcomes.

The Geriatrics Hub

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Background/Purpose: As the health care system faces a demographic surge in the geriatric population in the coming years, graduates must be equipped with the proper foundation to care for older adults. There are very few online resources for geriatric medical education; none targeting undergraduate learners. To complement the geriatric undergraduate medicine curriculum, the Geriatrics Hub, an online interactive resource, was created by the MD Program at the University of Toronto in 2021.

Method: Seven core topics were identified based on the Canadian Geriatric Society Aging Care 5M competencies for medical students. A literature search was conducted for review articles on various topics at the level of the junior learners. For the sub-topics with no articles, we identified online resources or developed self-learning modules. Students, residents, and faculty members have contributed to the development of these self-learning modules. Interactive cases were developed for geriatrics topics that are not well covered in the curriculum.

Results: The Geriatrics Hub is an interactive free online resource for geriatric medical education, to meet the needs for up-to-date, relevant and distilled resources to use for clinical reference by junior learners. It can be accessed at http://thehub.utoronto.ca/geriatrics/

Discussion: An online, user friendly resource such as the Geriatrics Hub will facilitate an increase in the geriatric content knowledge and hopefully encourage positive attitudes toward caring for older adults in junior learners. The goal for the hub is to allow undergraduate learners the opportunity to gain knowledge and skills in managing older patients, regardless of their future specialities.

Conclusion: We will be reviewing and updating contents on an annual basis. The Geriatrics Hub can be accessed by anyone, and hence has wider use beyond the University of Toronto.

ER2 Clinical Tool and Risk Screening of Incident Falls, Their Recurrence and Post-Fall Fractures in Older Women: Results of the EPIDOS Study

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Background/Purpose: "Emergency Room Evaluation and Recommendations" (ER^2) screens three risk levels (*i.e.,* low, moderate and high) of the occurrence of adverse outcomes in older emergency department users. This study aims to examine the association of ER^2 risk levels with incident falls, their recurrence and falls with fractures in older community dwellers.

Method: 7,147 participants of the EPIDémiologie de l'OStéoporose (EPIDOS) study—an observational population-based cohort study—were selected. ER^2 low, moderate and high-risk levels were determined at baseline. Incident fall outcomes (*i.e.,* >1, >2, post-fall fractures) were collected prospectively every 4 months over a 3-year follow-up period.

Results: The overall incidence of >1 fall was 26.4%, >2 falls 24% and falls with fractures 19.0%. An ER^2 low-risk level was associated with low incidence of all fall outcomes (Hazard ratio (HR) <0.80 with P<0.001), whereas ER^2 moderate and high risk levels combined, and ER^2 high-risk independently, were both significantly associated with high incidence of all fall outcomes (HR > 1.24 with P<0.001).

Discussion: The findings show a positive association between ER^2 risk levels and overall incidence of falls regardless of their type (*i.e.,* >1, >2 and falls with fractures), with a high-risk level associated with high incidence and a low risk level with low incidence.

Conclusion: ER^2 risk levels were positively associated with incident falls in EPIDOS participants suggesting that ER^2 tool may be useful for risk screening of falls in the older population.

Museum to Stay Young at Heart? Results of a Randomized Controlled Trial study

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Background/Purpose: Health benefits have been reported with artistic and cultural activities in older adults. Most previous studies used self-report questionnaires to assess health. Heart rate is an objective biomarker of autonomic nervous system which regulates physiological functions. The aim of this study was to compare the changes in heart rate collected in older adults participating in participatory art-based activities at the Montreal Museum of Fine Arts (MMFA, Quebec Canada) and in their control counterparts.

Method: Participants were a subset of older community dwellers recruited in a Randomized Controlled Trial (RCT): 27 in the intervention group and 26 in the control group (N=26). They participated in weekly participatory art-based activities carried out at the MFAM over a 3-months period. Heart rate was collected *via* smart watches Fitbit Alta HR. The outcomes were mean heart rate for active and inactive hours, and full day.

Results: Heart rate for full day and active hours were significantly slower in intervention group compared to control group (P=0.018 and P=0.028). Change in heart rate between before and after was only significant for full day heart rate in intervention group compared to control group (P=0.030). This change in heart rate was also significantly higher for full day compared to active hour in the intervention group (P=0.001).

Discussion: The results showed that the MFAM participatory art activity significantly reduced full day heart rate. Mixed results were shown for active hours and no effect was reported for non-active hours.

Conclusion: These results suggest that art-based activities at the MMFA may improve physical health and increase physiological reserves in Montreal older community dwellers.