Using Cognitive Task Analysis in Primary Care: Transformation through Innovation

Presented by: Tanya Barber, Research Coordinator, University of Alberta - EnAct

Background & Objective: Transforming health care necessitates engaging with people who work in and use the health care system. What we think are the issues can be different from what is happening and what solutions are needed. Our objective was to adapt and use Cognitive Task Analysis (CTA) to help bring primary care transformation to scale.

Approach: We conducted multiple CTA studies in partnership with researchers, Toward Optimized Practice and the Patient and Community Engagement Research. CTA is a structured set of tools or qualitative methods from the cognitive science and systems engineering literature with a long track record of successfully understanding team functioning in high-stakes settings. CTA digs deeper into the thinking involved in the way people/teams do their work. We also used co-design and purposeful sampling. Participants included family physicians and primary care patients.

Results: Adapting CTA for use in primary care saved time and energy by finding solutions that make sense to those who work in and use primary care: 1) A national organization believed over ordering tests for low back pain was because physicians weren’t aware of guidelines, we found other external drivers were pressuring physicians to over order; 2) A research team wanted to create a risk calculator for knee osteoarthritis but physicians/patients wanted an app that would assist with communication and self-management; 3) Discovering how care teams manage change differently helped find practical, scalable solutions and supports; and 4) Knowing the characteristics of an effective change agent allows us to look for and potentially train those traits when identifying new change agents.

Conclusions: Partnering has helped provide insights around team functioning, how teams adopt change, and understanding patients beliefs to ensure we build initiatives that meet their needs. Using CTA led to an overall impact of real, practical solutions that health care teams and policy makers can use to improve patient care.
The uptake of the pharmacy-dispensed naloxone kit program in Ontario: a population-based study

Presented by: Beatrice Choremis, Student, Ontario Drug Policy Research Network

Background Naloxone is a life-saving antidote for opioid overdoses. In June 2016, the Ontario government implemented the Ontario Naloxone Program for Pharmacies (ONPP) to enhance access to naloxone. We examined the initial uptake of naloxone through the ONPP and characteristics of the individuals receiving and pharmacies dispensing naloxone kits.

Approach We conducted a population-based study of all Ontario residents who received a naloxone kit between July 1, 2016 and March 31, 2018. This involved 1) a cross-sectional analysis of monthly rates of kits dispensed; and 2) a descriptive analysis of all individuals and pharmacies who accessed and dispensed naloxone, respectively. We stratified individuals according to their opioid exposure as: prescription opioid agonist therapy (OAT) recipients, prescription opioid recipients, those with past opioid exposure and those with no/unknown opioid exposure.

Results Naloxone dispensing through the ONPP increased considerably from 1.9 to 54.3 kits per 100,000 residents over the study period. In this time, 2,729 community pharmacies dispensed 91,069 kits to 67,910 unique individuals. Uptake was highest among prescription OAT recipients (40.7% of individuals dispensed at least one kit), compared with 1.6% of prescription opioid recipients, 1.0% of those with past opioid exposure and 0.3% with no/unknown opioid exposure. Naloxone dispensing was highly clustered among pharmacies, with 55.6% of Ontario pharmacies dispensing naloxone, and one-third (33.7%) of kits dispensed by the top 1.0% of naloxone-dispensing pharmacies.

Conclusion Overall, the ONPP launch led to a rapid increase in the number of naloxone kits dispensed in Ontario. Although the program successfully engaged people who take OAT, efforts to increase uptake among others at risk of opioid overdose appear warranted. Opportunities for expanding pharmacy participation should be identified and pursued.
Meaningful inclusion of LGBTQ perspectives on primary health policy

Presented by: Jacqueline Gahagan, Full Professor, Dalhousie University

Background and Objectives: Lesbian, gay, bisexual, transgender and queer (LGBTQ) populations experience poorer health outcomes as compared with their age matched heterosexual, cisgender peers. The extent of the burden of poor health outcomes is not well understood in the context of Nova Scotia as the province does not systematically collect data on the health needs and outcomes of LGBTQ populations. The objective of this study was to collect data on these historically marginalized populations in an effort to inform and realign our primary health and health policy priorities and actions.

Approach: Following a series of community consultations, an online survey was developed to examine the key primary health care and policy relevant issues facing both LGBTQ populations and health care providers in Nova Scotia, Canada.

Results: A total of 283 surveys were completed by LGBTQ respondents and an additional 109 were completed by health care providers. A number of key primary health issues which were highly rated as key primary health priorities among LGBTQ respondents were seen as less salient from the perspective of health care provider respondents.

Conclusion: Both intersectionality and health equity remain key theoretical frameworks needed to help situate and contextualize the needs and experiences of LGBTQ populations in relation to primary health. Addressing the primary health issues facing these populations will require active inclusion of both LGBTQ populations and health care providers.
Life Courses of Amerasians in Vietnam: A Qualitative Analysis of Emotional Well-Being

Presented by: Bernice (Man Ying) Ho, Student, Queen's University

Background Information and Objectives

The Vietnam war left behind a legacy of mixed-race children known as Vietnamese Amerasians, who had difficulty integrating into their post-conflict societies. While studies have examined the social and psychological outcomes for Amerasians who immigrated to the U.S., knowledge on the long-term implications of being an Amerasian child and then adult in Vietnam is limited. Furthermore, studies often used quantitative mental-health screening instruments, which is systematically unable to capture their broader experiences.

Approach

To address the paucity of knowledge about life courses of Amerasians who remained in Vietnam, we used SenseMaker®, a mixed methods data collection tool, to interview adult Amerasians living in Vietnam and to subsequently identify where resources will be most beneficial and cost-effective. 26 narratives out of a larger (n=336) cross-sectional study, met the inclusion criteria of being first-person stories from Amerasians in Vietnam about “Emotions”. Only 16 were audible for translation, further line-by-line coding and qualitative analysis.

Results

The results indicate five universal themes amongst participants: Discrimination, Poverty, Identity, Importance of Family, and Perception of Circumstances. Experiences of discrimination were broad and sometimes systemic, affecting family life, the pursuit of education, and employment opportunities. Poverty was also an overarching theme and was perceived as a barrier to a better life, as a source of misery, and as a source of disempowerment. The resulting cycle of poverty, in which under-educated, resource-constrained Amerasians struggled to educate their own children, was evident. The negative emotional impact of not knowing one’s biological roots was also significant. Although there was a decrease in perceived stigma over time and some Amerasians were satisfied with their current lives, years of experiencing discrimination undoubtedly negatively impacted emotional well-being.

Conclusion

The results from this study highlight a need for community programs to address the stigmatization and discrimination associated with Vietnamese Amerasians as well as call for support in facilitating international searches for their biological fathers.
Background and Objectives: Patient experience is one of the three elements of the Triple Aim Framework for high-performing health systems. Communication with providers is a key driver of patient experience, and has been shown to be associated with patient outcomes. To date, no studies have compared the experience of patients in children’s and adult hospitals. Our objective was to compare survey responses of communication with providers, from children’s and adult hospitals across two metropolitan areas in Alberta.

Approach: Telephone surveys were conducted using two validated instruments (Canadian Inpatient Experiences Survey – Inpatient Care [adults], Child Hospital Consumer Assessment of Healthcare Providers and Systems [parents of children]). Responses to seven questions pertaining to overall care and communication with nurses/doctors were examined. Responses were reported as percent in “top box”, as represented by the most positive answer choice (“9 or 10” out of 10 for overall care, “always” for communication questions). Logistic regression was used to calculate odds of reporting a “top box” response by hospital type, while controlling for respondent age, education level, health status, and length of stay.

Results: From October 2015 to March 2018, 43,512 surveys (40,354 adult, 3,158 child) were obtained from 9 adult and 2 children’s hospitals. For the overall rating of care, 76.1% and 59.2% of responses were rated as “top box” for children’s and adult hospitals, respectively. A higher overall rating of care was associated with older respondent age, lower level of education, better self/parent-reported health, and shorter length of stay. When compared with adult hospitals, higher raw percentages of “top box” responses were observed at children’s hospitals for all communication questions. After adjusting for the demographic and clinical factors, respondents from children’s hospitals had significantly higher odds of reporting a “top box” response on all questions (aORs ranging from 1.79 [doctor listening] to 3.12 [overall rating of care]).

Conclusion: Our results showed that overall care and elements of communication with nurses and doctors were rated higher in children’s hospitals. Future qualitative studies may help to reveal causal factors associated with our findings. The potential relationships between communication with providers and patient outcomes may also be explored.
Parents’ preferences for follow-up visits for children living with type 1 diabetes

Presented by: Maude Laberge, Assistant Professor, Université Laval

Background and objectives

Although patients may initiate a visit to a health care provider, follow-up visits are often based on recommendations from providers.

For parents of children with type 1 diabetes (T1D), children have scheduled visits every three months. These visits are scheduled regardless of how well controlled the diabetes is. Our study examines how benefits and burden from the parents’ perspective could affect their preferences in regards to the frequency of regular follow-up care.

Approach

We developed an online patient survey, which was distributed to parents of children living with type 1 diabetes in the province of Quebec, Canada. The survey was available in French and English, and distributed through diabetes clinics, on social media groups and forums for parents of children with T1D. The survey was developed in collaboration with a parent of a child with T1D to ensure that it was appropriately reflecting the services in regular follow-up care and that the language was understandable and clear. We conducted a Poisson regression on parents’ preference on the number of months that should separate two follow-up visits.

Results

A total of 272 parents answered the survey throughout the province of Quebec. The mean child age was 7.3 (sd 5.0) and the mean number of years with the diagnosis was 6.6 (sd 4.0). The majority (59%) had an insulin pump; 15% of children had other health conditions. The average preferred interval reported was 4 months.

The number of years that the child had lived with the diagnosis, being in a higher income group, and being a single parent were associated with a preference for spacing out follow-up visits. Reporting receiving helpful information and a child having co-morbidities were associated with preferring shorter time between visits.

Conclusion

Preferences of parents in the frequency of follow-up visits vary and are sensitive to the benefits perceived from the visits and the associated burden. Health services could be adapted to reflect children’s needs and patients’ preferences.
Patient and Primary Care Provider Perspectives on Facilitated Relay to Enhance Use of Statins

Presented by: David Campbell, Post-doctoral Fellow, St. Michael's Hospital

Background and Objectives

Statin medication use remains suboptimal among individuals with diabetes. Facilitated relay (FR), a quality improvement strategy, has been shown to enhance guideline concordant care in some clinical contexts. FR is when clinical information is collected from patients and transmitted to providers by a means other than the existing medical record. The objective of our study was to explore the perspectives of patients and primary care providers regarding a FR intervention to increase statin use.

Approach

We conducted individual semi-structured interviews with primary care providers (n=17) and two focus groups with a convenience sample of patients (n=7/5). Proceedings were recorded, transcribed, and analyzed in duplicate using thematic analysis facilitated by NVivo 12 software.

Results

Providers proposed a variety of interventions to improve statin use including electronic record audit solutions, provider-directed education, and patient-oriented campaigns. Patients expressed the importance of clear communication and rapport with their providers in influencing them to take statins. Patients preferred solutions that engaged them in the management of their lipids through enhanced transparency of results (i.e. an online patient portal). Providers were also generally supportive of sending results and materials directly to patients. Both parties provided positive feedback on the proposed FR intervention. The most important considerations for FR messaging included: brevity, simplicity, use of graphics and colors, and the reputation of the signer/sender.

Conclusion

Providers and patients described several suggestions for enhancing the use of statins. Importantly, a lab-based FR strategy would be welcomed by both patients and providers. These findings support further testing of an FR intervention which may enhance providers’ ability to successfully engage patients in cardiovascular risk reduction through statin therapy.
Exploring Mental Healthcare Needs and Challenges of Refugee Women in Winnipeg

Presented by: Sanjida Newaz, MSc Student, University of Manitoba

The UN Refugee Council reports that 68.5 million people were forcibly displaced in 2017. Since 1959 approximately 700,000 refugees have resettled in Canada; 2016 being a record year of welcoming 58,437 refugees. Women refugees may have unique mental healthcare needs due to their vulnerability to gender-based violence and abuse. The study will assess the mental healthcare need, availability of support, and barriers in accessing health services among recently arrived and resettled refugee women in Winnipeg.

The research question of this study is what the health system can do better to address the mental health needs of refugee women in Winnipeg. Semi-structured interviews will be conducted with refugee women and service providers/decision makers in Winnipeg. Interviews with refugee women will focus on their lived experience and service accessibility issues. Interviews with service providers and decision makers will focus on policy measures, exploring options for community-based preventative and healing programs which are more culturally appropriate.

The interviews will be analyzed using qualitative inductive analysis and coded for themes based on recurring issues. The analysis will include three steps - familiarization with the data, coding phase and developing conceptual themes. Data analysis will provide information on the kinds of help refugee women need, the help available and the ways they now get help. Forthcoming results from this study can be used to identify the existing gaps in services, alternative ways of developing services, and support for refugee women.

As the refugee women arrive to safety and protection in Canada, language, socio-economic barriers and cultural differences become prevalent. By involving refugee women, decision makers and service providers, this research will generate ideas and provide important policy recommendations for service improvements.

Notes: Interviews for this study have been scheduled in the months of January and February 2019. The researcher’s aim to complete the data analysis by April 2019, therefore can be presented at the conference. Literature review and ethics approval for this study are complete.
Healthcare Reforms in Manitoba - An Overview of the Changes and Implementation Challenges

Presented by: Sanjida Newaz, MSc Student, University of Manitoba

In the fall of 2017 the Government of Manitoba announced some major healthcare policy reforms to eliminate ‘waste’ in the system and improve efficiency and responsiveness. Significant changes include closure of ERs, urgent care facilities and clinics, service cuts at hospitals, layoffs and repealing provincial health insurance for international students. This study provides an overview of the changes, the probable impacts on patients and the positions taken by the key pressure groups.

News releases and key reports of the ministry and regional health authorities, provincial budget, relevant media articles and news, the evolution of provincial healthcare system were studied. Special attention was given to the two consulting reports based on which the policy reform decisions were taken. The new organization named ‘Shared Health’ was created to co-ordinate healthcare services in the province as per the recommendations of the reports.

Manitoba’s healthcare system and governance model seemed overly complex considering the size of the province, therefore a reform was must. However, many changes in a short time such as creation of a new organization, closure and cuts in frontline healthcare services created a chaotic environment and confusions all around. Many argue that the focus was more on ‘cost savings’, not considering the current and future health of Manitobans. The topics considered for analysis are:

- Why the reforms were necessary and what was wrong in the past system
- The changes and expected savings
- Impacts on the healthcare access, resource supply and demand in the delivery system
- The opinions of key pressure groups and media actors as the government implements the reform agenda

While the Government initiatives in reducing bureaucracy and improving efficiency in the system was a timely step, many believe that the process has been rushed. The excessive overtime hours worked by nurses raises big concern. Patients won’t have the same healthcare access as before which can impact their health.
Career Options and Professional Integration of Internationally Trained Physicians in Canada

Presented by: Mohammed Rashidul Anwar, Student, University of Manitoba

Many internationally trained medical graduates (IMGs) who immigrate to Canada end up driving taxis or working in other survival jobs, significantly below their education and skill set. Unfortunately, the skills and experiences of these professionals remained unused in the Canadian healthcare. This study explores the barriers faced by IMGs to obtain licensure, alternate career options for IMGs in healthcare and provides recommendations on what both the IMGs and Canada can do better for mutual benefits.

A literature review of both peer-reviewed articles and grey literature was conducted through a three stage extensive search -

- Published articles in various database using a combination of MeSH terms and keywords relevant to the topic
- Internet search for grey literature using same keywords as well as review of the websites of key stakeholder organizations and relevant federal/provincial government websites. The search also included organizations that serve immigrants and IMGs.
- Reference lists of retrieved articles and reports to identify additional articles.

Recommendations were provided from the findings of literature search and the author’s personal experience as IMG.

The study reviewed, analyzed and summarized the following:

- Routes available for IMGs to become practicing physicians in Canada
- Challenges faced by the IMGs towards the journey of licensure
- Alternate career options
- What Canada Can Do Better?
- Making sure IMGs are aware of their actual chances of obtaining licensure as they consider immigrate to Canada
- Increased residency spots
- Expansion of provincial licencing programs and alternate careers as physician/clinical assistants
- Fast-track educational programs for IMGs recognizing their skills and experience
- IMG bridging programs for non-regulated healthcare jobs and employer outreach
- Increased funding for IMG support organizations
- Developing a system of tracking IMGs after entering Canada and a single hub or portal to provide information about licencing and alternate career options.

The ‘brain waste’ of these IMGs is a matter of great regret. Successful integration of IMGs into healthcare and making best use of their education and trainings will bring great benefit to Canadians.
Dietitians’ perceptions of leadership skills: Reflections and considerations for curriculum development

Presented by: Billie Jane Hermosura, Dietitian / PhD Candidate, University of Ottawa

Background: New competency areas create opportunities to explore how current curricula may meet these requirements and identify learning gaps that must be addressed through curricular redesign or development. “Leadership” is anticipated to be a new competency for dietitians in Canada, however few studies have specifically explored experiences of dietitians in leadership. The primary objective of this pilot study was to gather information on dietitians’ perceptions of their roles as “leader” and considerations for curriculum development.

Approach: The participants (n=17) were recruited through purposive sampling. The selection criteria included dietitians who demonstrated leadership or worked in a leadership capacity, and were affiliated with the University of Ottawa’s School of Nutrition Sciences program as educators, preceptors, or graduates of the dietetics program. Semi-structured interviews were conducted based on an interview guide, using Critical Incident Technique. Each interview was approximately 30 minutes in duration, and interviews with all participants were conducted by the researcher. The researcher transcribed the interviews verbatim. A content analysis approach was used for coding and generating themes.

Results: The themes were categorized into three sections: Dietitians’ perceptions on role as leader, Situations that required leadership skills, and Teaching leadership skills. Dietitians perceived a leader to be self-directed, work effectively with others, set goals, create connections, and see the “big picture”. These perceptions of effective and successful leadership in dietitians closely relate to the domains and capabilities of the LEADS leadership framework. All participants thought leadership skills can be taught in undergraduate curriculum. Exposure to concepts in undergraduate training is essential to begin socializing students to various practice competencies.

Conclusion: To improve our understanding of how health providers, such as dietitians, function as part of a health system, it becomes essential to understand their experiences in the workforce. More research is needed in this area to better inform the training needs of future dietitians, and other allied health professionals.
Diabetes mellitus and risk of perinatal mental illness: A population-based cohort study

Presented by: Hilary Brown, Assistant Professor, University of Toronto

Background and objectives: Perinatal mental illness affects one in five women. Pre-pregnancy diabetes mellitus has been identified as a potential risk factor for perinatal mental illness, but it is unclear which disease factors drive this association. Our objectives were to (1) examine the overall association between diabetes and perinatal mental illness and (2) identify how pre-pregnancy disease severity, complexity, and management in women with diabetes affect their risk of perinatal mental illness. Approach: We performed a population-based study of 15- to 49-year-old women with (n=14,186) and without (n=843,818) pre-pregnancy diabetes with a singleton livebirth and no recent mental illness (2005-2015, Ontario). The outcome was mental illness diagnosed between conception and 365 days postpartum. Latent class analysis was performed to identify groups of women with diabetes according to severity (duration, pre-pregnancy HbA1c, insulin pump use), complexity (complications, comorbidities), and management (diabetes monitoring, continuity of care). Modified Poisson regression was used to estimate risk of perinatal mental illness in women with vs. without diabetes and in each diabetes group vs. women without diabetes. Results: Women with diabetes were more likely than those without to have perinatal mental illness (18.2% vs. 16.0%), even after accounting for age, parity, income, rural residence, and remote history of mental illness (adjusted relative risk [aRR] 1.11, 95% confidence interval [CI] 1.07-1.15). The latent class analysis identified three groups with diabetes, described as uncomplicated and not receiving regular diabetes care (class 1); complicated, with longstanding diabetes, and receiving regular diabetes care (class 2); and complicated, recently diagnosed, and receiving regular diabetes care (class 3). In multivariable analyses, class 1 (aRR 1.13, 95% CI 1.08-1.18), class 2 (aRR 1.10, 95% CI 1.01-1.19), and class 3 (aRR 1.10, 95% CI 1.02-1.18) were each associated with increased risk for perinatal mental illness relative to women without diabetes. Conclusion: Risk for perinatal mental illness did not vary by latent class, suggesting that women with diabetes are at risk regardless of the severity of their medical illness. They could benefit from primary preventive strategies initiated before pregnancy and screening in pregnancy to reduce their risk of perinatal mental illness.
Exploring patient and family physician perspectives on initiation and adherence to statin therapy

Presented by: David Campbell, Post-doctoral Fellow, St. Michael's Hospital

Background

Despite their proven efficacy to reduce cardiovascular disease, statin medication use remains suboptimal. Less than 50% of individuals at high risk for cardiovascular disease take statin therapy despite their widespread availability and safety. Our objectives were to explore the perspectives of family physicians and patients with regards to the barriers to initiating and adhering to statins, as well as the facilitators and strategies to increase statin use.

Methods

In this qualitative study, we conducted individual semi-structured interviews with family physicians (n=17) and two focus groups with patients (n=7/5) in Alberta, who were chosen via convenience sampling. Interviews were digitally recorded and transcribed verbatim. Interview transcripts were analyzed in duplicate using thematic analysis techniques and was facilitated by NVivo 12 software. Interviewers asked participants about why patients may or may not initiate or adhere to statins, as well as strategies used to increase initiation and adherence.

Results

Physicians described facing a variety of barriers including not having adequate tracking systems or clinical decision support, confusion regarding conflicting guideline recommendations, and patient aversion. Patients were averse to taking statins for a variety of reasons, including: fear of side effects fuelled through peers and the media, struggling with a substantial pill burden, not understanding their need for statin therapy, and/or being unconvinced of the potential benefits of statins. Physicians described several strategies to help patients continue therapy: determining reasons for nonadherence; attempting health behaviour changes with reassessment of lipid levels; and, attempting a different statin or lower dose. Patients expressed that seeing improved lab results as an outcome of therapy, and being engaged in the management of their lipids were key facilitators to adherence.

Conclusion

Although statins are efficacious, effective, and safe, there is significant underuse of these medications. We identified several important barriers to statin use at the individual patient level as well as at the prescriber level. Patients and prescribers offered insight into several potential strategies to encourage statin initiation and adherence.
Validation of an algorithm to detect new onset of atrial fibrillation after cardiac surgery from administrative data.

Presented by: Jonathan Bourgon Labelle, Student, Université de Sherbrooke

Introduction: Postoperative atrial fibrillation (AF) is a frequent complication of cardiac surgery. While discharge diagnostic codes (DDC) could be used to assemble large cohorts of patients to better understand the determinants and outcomes of this complication, the lack of a “present-on-admission” indicator in many jurisdictions currently prevents differentiating between new onset AF and chronic comorbid AF. This study aims to create and validate an algorithm capable of identifying patients with new onset AF following cardiac surgery.

Method: First, a reference standard was established by manually reviewing the medical charts of 976 cardiac surgery patients from two large university health networks in Quebec. Then, various combinations of discharge and procedure codes from the current and previous hospitalizations from the past year, as well as different look-back windows (e.g. 1, 3 or 6 years) were used to generate the algorithm. The accuracy of this algorithm, overall and per site, was assessed in comparison with the reference standard, and estimates of sensitivity, specificity, positive (PPV) and negative (NPV) predictive values were generated along with their 95%CI.

Results: 324 cases of new onset of AF were identified after manual chart review. The final algorithm achieved acceptable validity, with sensitivity of 70.4% (95%CI: 65.1–75.3), specificity of 84.4% (95%CI: 81.3–87.1), PPV of 69.1% (95%CI: 63.8–74.0) and NPV of 85.1% (95%CI: 82.2–87.8). This algorithm was based solely on discharge diagnostic codes and used a look-back window of 1 year to exclude patients known for prior episodes of AF. The accuracy of this algorithm did not improve with the inclusion of selected procedure codes (e.g. maze procedure), nor by using longer look-back windows (e.g., 3 or 6 years). Finally, significant differences in the accuracy of the algorithm across sites was observed on sensibility and on NPV, most likely attributable to variations in coding practices.

Conclusion: An algorithm based solely on DDC from the current and previous hospitalizations over the past year can accurately identify patients with acute episodes of AF. However, future work must include more clinical information, like that contained in computerized dictations of ECG reports, to improve the algorithm’s validity.
Primary care effect modification of a transient association between home care nursing and same-day emergency department visits

Presented by: Aaron Jones, PhD Candidate, McMaster University

A previous case-crossover study found a transient association between home care nursing visits and same-day emergency department (ED) visits. The objective of this study is to examine modifiers of this effect including access to afterhours primary care, primary care enrollment models, and various clinical characteristics of the home care patients.

We replicated and expanded the previous case-crossover study in a retrospective cohort of home care patients indexed to home care clinical assessments in Ontario from 2014-2016. As previously, days with ED visits after 5 pm were selected as cases and matched with control days from the previous week within the same patient. The association between home care nursing and same-day ED visits was estimated using conditional logistic regression. Effect modification of this association was examined using the interaction term approach. Modifiers included: afterhours primary care utilization, primary care enrollment model, wound care, IV care, and use of a urinary catheter.

A total of 11,545 cases were identified and matched with 53,699 control days. The odds ratio (OR) between home care nursing and a same-day ED visit was 1.27 (95% CI: 1.21 – 1.34). This effect was smaller among patients who had utilized more afterhours primary care in the previous year (Interaction OR: 0.94 per afterhours visit, 95% CI: 0.92-0.96) while controlling for overall primary care utilization. The effect was also smaller among patients receiving nursing for wound care (Interaction OR: 0.88, 95% CI: 0.85-0.93). The effect was considerably larger among patients with an indwelling urinary catheter (Interaction OR: 1.51 95% CI: 1.42 – 1.62).

Greater utilization of afterhours primary care was associated with a reduction in the likelihood of same-day ED visits while use of a urinary catheter was associated with a substantial increase. Better access to afterhours care and timely care in the community for catheter-related problems could prevent ED visits.
Planning for equitable access to choice of maternity care provider across the Champlain LHIN

Presented by: Caroline Chamberland-Rowe, PhD Candidate, Telfer School of Management - University of Ottawa

Background & Objectives: Evidence of unmet demand for midwifery services within the Champlain Local Health Integration Network (LHIN) has raised local concerns regarding women’s access to their maternity care provider of choice. This project aims to engage local stakeholders in Ontario’s Champlain LHIN in a collaborative health human resource planning process to elicit the structural conditions that would be necessary to equitably support women’s access to the full range of maternity care providers.

Approach: This project adopts a community-based participatory research approach using a mixed methods design, and encompasses two major components:

- a quantitative geospatial mapping exercise to assess women’s access to the full range of maternity care providers across the Champlain LHIN and identify any persistent inequities in women’s access on the basis of geography and, or, socioeconomic marginalization; and
- a qualitative participatory system dynamics modelling exercise employing individual and focus groups interviews to explore the factors that are enabling or restricting choice of maternity care provider at the local level, and identify locally-relevant policy solutions to address barriers of access.

Anticipated Results & Impact: The geospatial analysis will enable the identification of underserviced areas where women’s choice of maternity care provider is restricted by issues of health human resource service capacity and, or, geographic access. The system dynamics modelling exercise will enable the production of a regional stock and flow diagram representing a cohesive and dynamic model of the interacting workforce, organizational, and system-level factors affecting women’s autonomy in choosing a maternity care provider within the Champlain LHIN. Together, these complementary exercises will build upon the existing body of knowledge on the health human resource implications associated with achieving equitable, appropriate, and effective coverage of maternity care services. They will also contribute to our understanding of the social, political, economic, and geographic factors shaping women’s reproductive autonomy and choices.

Conclusions: This project will present innovative methods that leverage promising practices in health human resource planning to address key challenges in the field and provide decision-makers within the Champlain LHIN with evidence to support better alignment of health human resource supply, distribution, and mix with women’s choices and needs.
Costs and benefits of quality improvement strategies in long-term care: a rapid review and synthesis of the economic literature

Presented by: Asif Khowaja, Postdoctoral Fellow, UBC

Background/objectives: Quality improvement (QI) in long-term care is central to improve health outcomes and promote safety behavior in the workplace. Expressing the value of non-technical skills aiming at ‘cultural change’ through QI strategies is critical to policy decisions. This study aimed to identify emerging cost drivers and benefits (i.e., health and non-health indicators) to guide the economic evaluation of a province-wide QI initiative (namely Call for Less Antipsychotics in Residential Care—CLEAR) in British Columbia (BC).

Approach: A rapid review of the economic literature was conducted. The articles were retrieved from three electronic databases including PubMed, EconLit and Google Scholar. Studies focused on QI in the elderly population, published from January 2008 to December 2018, and available in the English language were considered eligible. Key search expressions/terms were used with a combination of QI costs, outcomes, benefits, cost-effectiveness, and long-term care. We applied a Consolidated Health Economics Evaluation Reporting guideline to critically appraise the quality of studies included in the review.

Results: The search identified 1847 articles, of which 92 were screened and 9 met the eligibility criteria. The financial costs were categorized into three groups: (i) developmental, (ii) program implementation, and (iii) healthcare-related. The terms ‘Quality of life-QoL’, ‘Health-related Quality of Life-HRQoL’ and ‘Quality of Care-QoC’ were interchangeably used to report the benefits. A majority of studies (n=7) analyzed indicators related to QoC (i.e. reduction of adverse events). Almost all studies reported a public payer perspective, and a discount rate ranging from 0 to 5%. This review also highlighted a number of methodological challenges such as poorly defined baseline, constantly changing culture/behavior, modification in the clinical practice guideline/policy change, complex nature of the intervention, lack of appropriate comparator, varying duration of implementation, and inadequate sample size.

Conclusions: The economic literature of QI strategies focusing on ‘cultural change’, particularly in the area of long-term care is scarce. This review identified important knowledge gaps and research needs regarding societal costs, and standardized HRQoL indicators. Methodological considerations highlighted in this review provides valuable directions for future economic studies evaluating the cost-effectiveness of QI strategies (such as the case of CLEAR initiative in BC).
From performance management to capacity building for health system transformation: embracing relational work

Presented by: Élizabeth Côté-Boileau, PhD Candidate, University of Sherbrooke

Background and objectives

As part of the latest health system reform in Quebec (April 2015), the Ministry of Health and Social Services has mandated the implementation of Integrated Performance Management Systems (IPMS) province-wide. However, numerous studies have shown that mandated performance management tools (PMTs) tend to produce unintended effects and off-target performance results. Our research aims to understand how relational work contributes to the appropriation of mandated PMTs and fosters better alignment between visions, decisions and outcomes.

Approach

We are currently conducting organizational ethnographic case studies in two integrated health and social services centres (IHSSC) in Quebec. Each of the two cases embeds three governance levels: strategic, tactical and operational. While this study focuses on the tactical level of IHSSC, we pay attention to the interactions between all three governance levels. Data are collected through documents review (n=56), non-participatory observations (≈150 hours), and 3) semi-structured interviews with managers (n≈40). Data is analyzed using the process analysis approach, which allows us to understand how relational work interacts with the reform context to influence appropriation of IPMS.

Results

Preliminary results show that the influence of relational work in the appropriation of the mandated IPMS unfolds in three phases: 1) delivering performance, 2) building a collective identity, and 3) embracing a new vision. In phase 1, relational work allows managers to use the IPMS to develop new operational capacities oriented to deliver financial performance. Phase 2 shows that the IPMS serves as a proxy for generating new structural capacities through identity work. By developing new collaborations to root performance-oriented attitudes, beliefs and behaviors, managers became able to align IPMS design with performance goals. Phase 3 shows that relational work allows managers to develop conceptual capacities as they make sense of the IPMS as a tool to materialize a new vision of value-based performance management.

Conclusion

We support that relational work triggers the development of new structural, conceptual and operational capacities that allow managers to appropriate PMTs. This study brings new knowledge on how healthcare managers can embrace relationships of trust, power and accountability to develop new capacities through the appropriation of mandated management tools in reform contexts.
Organizational ethnographic case studies in healthcare: are we tacking the right turn to methodological development in qualitative research?

Presented by: Élizabeth Côté-Boileau, PhD Candidate, University of Sherbrooke

Background and objectives

New forms of organizational ethnographies are attracting increased interest in healthcare research, such as focussed ethnography, inter-organizational ethnography, multi-sites ethnography, and rapid ethnography. These are often applied in combination with case study designs. However, the methodological argument that supports why and when this combined methodology has greater potential, is currently underdeveloped. We explored the methodological potentialities and limitations induced by combining organizational ethnography and case study designs to conduct in-depth empirical research in healthcare.

Approach

We conducted a four-phase scoping review based on the framework of Arksey & O’Malley (2005). First, we identified our research question as: “what are the potentialities and limitations of organizational ethnographic case studies used in healthcare research?”. Secondly, we scoped relevant papers through seven electronic databases (MEDLINE, Academy Search Complete, Buisness Source Complete, CINAHL, PsycINFO, SocINDEX and ERIC) from July to September 2018. Thirdly, we selected relevant papers through a two-processes screening: we first screened each article by title and abstract, and then by full-text. Finally, we extracted data and summarized and reported our results.

Results

We included 24 peer-reviewed articles published from 1979 to 2018. A thematic analysis revealed that methodological potentialities and limitations of organizational ethnographic case studies applied to healthcare contexts are generally distributed among nine characteristics: 1) multiplicity of data, 2) depth and plurality of cases, units of analysis, perspectives and contexts, 3) skills, 4) credibility, 5) feasibility, 6) researcher’s role, 7) theoretical development, 8) generalization of results, and 9) ethical considerations. We argue that combining these two methodologies offers more methodological power when the research question: 1) is exploratory, 2) targets a specific organizational or social phenomenon that can only be explored through human experiences in various empirical contexts, and 3) can not be validly answered without considering the researcher’s reflexivity.

Conclusion

Combining organizational ethnography and case study appears as an improved methodology to grasp the complexity and richness of organizational actors’ experience in healthcare contexts. Further methodological developments could consider the reflexivity of research participants, to empower the role of organizational and policy actors in producing knowledge for health system improvement.
On defining ‘actionable’ high-cost health care use: Results using the Canadian Institute for Health Information Population Grouping Methodology

Presented by: Maureen Anderson, Researcher, Saskatchewan Health Quality Council

Background: A small proportion of the population consumes the majority of healthcare resources. High-cost health care users (HCU) are a heterogeneous group. We aim to use a population segmentation method to provide actionable information on high-cost healthcare use at a provincial level.

Methods: The Canadian Institute for Health Information (CIHI) Population Grouping methodology was used to define mutually exclusive and clinically relevant groups, including health system non-users. High-cost users (≥ 90th percentile of healthcare spending) were defined both in the general provincial population, and, within specific health profile groups. Following univariate and bivariate analyses, multivariable logistic regression models of risk factors associated with high-cost use were constructed.

Results: Results are complete; however, as per the Master Data Sharing Agreement between the Saskatchewan Ministry of Health and the Saskatchewan Health Quality Council, we cannot provide details of results until the requisite Ministry of Health review period is concluded (approximately end of February 2019).

Conclusion: Model results point to specific, actionable information within clinically meaningful subgroups to reduce high-cost health care use. Population segmentation methods, and more specifically, the CIHI Population Grouping Methodology, provide specificity and actionable information to inform interventions aimed at reducing healthcare costs.
Proposing BetterCare for Seamless Transitions in Care: Integrating the Provincial Co-ordinated Care Plan into Sunnycare: Sunnybrook Hospital’s Electronic Health Record

Presented by: Ivy Cheng, Health System Impact Fellow, Sunnybrook Health Sciences Center

Background/Objectives: Advance care planning (ACP) and goals of care (GOC) discussions allow patients (or substitute decision makers (SDM)) to document patient preferences in advance of needing end-of-life care in accordance with their wishes. Currently, Sunnybrook ACP documentation is inconsistent and not always readily accessible. The primary objective is to provide care aligned with patient preferences at end-of-life. Secondary objectives include improving patient experience, decreasing the number of ED visits, avoidable hospital admissions and hospital deaths.

Approach: Study design will be a quality improvement study of oncology patients (prognosis less than 3 months attending outpatient palliative care clinics) after incorporating a coordinated care plan (BetterCare) into the electronic health record. Performance metrics will be: 1) Percentage of BetterCare plans with completed ACP 2) Emergency Department visits 3) Avoidable Hospital Admissions 4) Alignment of Care with Patient’s ACP 5) Patient Experience and 6) Use of Community Resources. Success will be measured by ACPs within BetterCare, decreased ED visits, hospital admissions, hospital deaths and increased patient experience, use of community resources and care aligned with patient preferences in ACP/GOC.

Results: By late 2019, it is anticipated that BetterCare will be available through Sunnycare. The aim will be to make CCPs and ACPs an integral part of the patient’s electronic health record, and through MyChart, allow for real-time communication and data collection to help inform patients’ Circle of Care of their preferences. It is hypothesized that BetterCare-enrolled palliative patients will have fewer avoidable overall hospital visits (particularly at end-of-life), increased community care, improved patient experience and die in their preferred location.

Conclusion: If we are able to pilot the first digital co-ordinated care plan with community access via MyChart, it could be adopted provincially and extended to other patient populations with life-limiting illnesses requiring palliation.
The Business Case for a Reactivation Center in the North Sub-region of Toronto Central Local Health Integrated Network

Presented by: Ivy Cheng, Health System Impact Fellow, Sunnybrook Health Sciences Center

Background/Objectives: Between 2017-18, Ontario spent 1.1 billion dollars on hospitalized patients waiting for alternate level of care (ALC) beds. To improve value for care, the Ministry of Health invested into community Reactivation centers. The goal is to transition ALC patients back into the community outside of hospital. The objective is to determine the return on investment of a Reactivation center (Pine Villa) compared to staying in hospital (Sunnybrook Health Sciences Center).

Approach: This is a before-after observational study of Reactivation patients. Costing will be from the government payer perspective. The following data will be collected: 1) Hospital length-of-stay (LOS) 2) Hospital days waiting for Reactivation 3) Reactivation Unit LOS 4) Final destination of Reactivation patient compared to anticipated 5) Associated costs and 6) Averted costs. Primary outcome is the cost consequences before and after Pine Villa. Secondary outcomes include hospital LOS, Reactivation unit LOS, percentage of ALC hospitalized patients eligible for Reactivation and final destination of Reactivated patients compared to anticipated. A sensitivity analysis considering value-for-care opportunities will be performed.

Results:

Pending. It is expected that reactivation centers will provide a positive return on investment compared to staying in the hospital.

Conclusion:

Assessing Reactivation centers as a business case is a pragmatic and valuable method for evaluating quality improvement initiatives in a learning health system.
Cost-effectiveness and efficacy of recruitment strategies used in a large pragmatic clinical trial targeting low-income seniors: A comparative descriptive analysis

Presented by: Sravya Kakumanu, Student, University of Calgary

Clinical trials often fail to reach recruitment goals within the allotted time and budget, undermining the value of these resource intensive studies. Despite the widespread acknowledgment of the issue, recruitment continues to be challenging. Our objective was to evaluate the effectiveness and costs associated with various recruitment strategies used in a pragmatic clinical trial testing the efficacy of free preventive medications and personalized education to reduce the risk of cardiovascular events in low income seniors.

A total of 14 unique strategies were used in the Assessing outcomes of enhanced Chronic disease Care through patient Education and a value-based formulary Study (ACCESS). These were grouped into five overarching strategies: ‘health care providers’, ‘mail’, ‘media’, ‘seniors outreach’, and ‘word of mouth’. For each strategy, we assessed the number of participants screened and enrolled, as well as the demographic characteristics of those participants, and the costs associated with the strategy. Further investigation of the ‘media’ strategies was undertaken to determine duration of sustained interest after each media release.

Approximately 20% of the ACCESS operational budget was spent on recruiting the first 4013 participants ($349,800 CAD), giving an average cost per enrolled participant of $87 CAD. Most participants were recruited by ‘pharmacies’ (n=1217, 30%), giving a moderate cost per enrolled of $124. ‘Paid media’ strategies, including radio advertisements, recruited 85 participants, and had the highest cost per enrolled ($806), whereas ‘word of mouth’ (476 participants, $5) and ‘unpaid media’ (e.g. community newsletters) (265 participants, $4) had the lowest. Each strategy was found to reach different target subgroups: participants enrolled from ‘senior’s outreach’ had the lowest baseline quality of life and income, while participants from the ‘coronary angiogram registry’ and ‘word of mouth’ were the oldest and had the lowest educational attainment, respectively.

Overall, enrolment seemed more likely if participants were personally contacted, making ‘health care providers’ and ‘word of mouth’ especially successful. ‘Media’ strategies were less effective, short lasting, and costlier. No strategy was singularly effective in recruiting our targeted groups; emphasizing the importance of using diverse strategies to reach recruitment goals.
Using a qualitative approach to verifying quantitative assumptions for causal inference: An application in primary health policy evaluation

Presented by: Nadia Sourial, PhD Student, Department of Family Medicine, McGill University

Objectives

Three theoretical conditions (consistency, positivity and exchangeability) are required to make valid causal claims. However, there is little specificity on how to rigorously assess these conditions. This study compares a “usual” vs qualitative approach to assess these conditions in the context of an evaluation of Family Health Teams (FHTs) in Ontario.

Approach

The “usual” approach was based on knowledge obtained from the literature and colleagues/experts. The qualitative approach was based on semi-structured interviews and a focus group with patients, clinicians, researchers and managers. A snowball technique was used to select participants. Eighteen (18) semi-structured interviews with patients, clinicians, researchers and managers knowledgeable about FHTs as well as one focus group with 14 staff members and managers from the local health integrated network and Alzheimer Society were conducted. A summative content analysis of the transcribed interviews was conducted. Information on causal conditions obtained from the “usual” vs qualitative approach were compared.

Results

While a substantial amount of information was obtained through the “usual” approach, assessment of the plausibility of the causal conditions remained vague or incomplete. A higher degree of precision and detail was attained through the qualitative approach. For consistency, we found additional evidence of heterogeneity in the implementation and functioning of FHTs as well as changes over time, confirming the need to consider multiple versions of the exposure in the causal evaluation. For positivity, we clarified the selection criteria applied in determining allocation into the FHT exposure group and found no apparent violations to this condition. For exchangeability, we uncovered additional potential confounders and predictors of the outcome from the qualitative interviews which will enable a more accurate and precise evaluation of FHTs.

Conclusion

This study demonstrated a novel approach to verifying assumptions for causal inference using qualitative methods, expanding the scope and potential of mixed methods. Results demonstrated how qualitative methods can be used to better inform and strengthen quantitative analyses, specifically for the evaluation of health policies using the causal inference framework.
Are hospital nurse staffing characteristics associated to postoperative cardiac events and deaths among patient undergoing surgery? A systematic review

Presented by: Jonathan Bourgon Labelle, Student, Université de Sherbrooke

Adequate hospital nurse staffing could potentially reduce preventable cardiac complications (CC) occurring after surgery. While numerous studies have been conducted over the recent years on the topic, to the best of our knowledge, there’s currently no systematic summary of this evidence. Such summary is needed to guide nurse staffing decisions. This study aimed to address this knowledge gap by synthesizing scientific evidence on the association between surgical nurse staffing characteristics and postoperative CC including death.

A systematic review was undertaken according to PRISMA criteria. Specific keywords related to nurse staffing characteristics (e.g. nurse staffing levels, levels of nurse education and experience, attributes of the work environment) and post-surgical complications were combined and searched on CINHAL, PsychInfo and Medline. Only quantitative studies based on a surgical population and published since 1995 were included. The methodological quality of retrieved studies was assessed using Joanna Briggs Institute’s Checklists. A standardized data collection tool was conceived to systematically extract and synthesize relevant data from the retrieved studies. Given the important methodological heterogeneity across study, meta-analysis could not be done.

44 cross-sectional studies, mostly from North America and Europe were included. While 42 studies had mortality as the outcome (variously defined as in-hospital mortality (n=17), 30-day mortality (n=19) or failure to rescue [i.e., death following potentially preventable hospital-acquired complications] (n=25)), only 10 studies (22.7%) were interested in CC (mostly operationalized as a composite of different CCs) (n=9). Evidence showed that improved nurse staffing levels (n=16/33, 48.5%), higher levels of nurse educational preparation at the baccalaureate degree (n=9/15, 60.0%) and greater work experience (n=8/8 100%) are related to reduced in-hospital and 30-day mortality. Interestingly, failure-to-rescue appears especially sensitive to nurse staffing (n=14/22, 63.6%), nurse education (n=6/9, 66.7%) and work environment characteristics (n=5/6, 83.3%) Mixed results have been observed for association between nurse staffing and CC.

There is cross-sectional evidence that better nurse staffing is associated with lower mortality and failure to rescue rates among surgical patients. Longitudinal studies are required to better ascertain these associations and to identify safe staffing practices and thresholds. Evidence regarding specific CC is more limited, which warrants further investigation.
Exploring the Alternate Level of Care (ALC) Issue in Prince Edward Island (PEI): A Mixed-Methods Approach

Presented by: Hailey Arsenault, PhD Student, University of New Brunswick (Saint John)

Background and Objectives

Patients characterized as alternate level of care (ALC) are individuals with outstanding concerns related to their health that are kept in acute care despite not being acutely ill. This suspension in patient care trajectory impacts general patient flow, continuity of care, and the patient’s quality of life. The objective of this mixed-methods study is to better understand the current population of ALC in Prince Edward Island (PEI).

Approach

An interdisciplinary, mixed-methods study will be conducted. Administrative data will be collected from Health PEI and descriptive statistics will be conducted to understand the prevalence of ALC in the province. This dataset will include information related to the types of ALC on PEI and geographical where it is most prominent.

For the qualitative portion, approximately 15 ALC patients and caregivers will be recruited through Health PEI and interviewed. Front line health workers (e.g. care providers) will also be interviewed to better understand the culture of ALC in the province.

Results

The protocol for this study will be presented to provide the background context of ALC, and more broadly, the healthcare system, in PEI. The details of the implementation of this interdisciplinary mixed-methods process will be discussed, along with the possible anticipated results stemming from both the quantitative and qualitative portions of the study.

Conclusion

This study aims to provide information that will inform patient navigation, patient flow, discharge planning and quality of life for all patients in acute settings in PEI. Moreover, this interdisciplinary healthcare research has the potential to help design and re-evaluate primary health care programs and policy in Prince Edward Island.
Health system administrators worldwide are implementing electronic medical records (EMR) to improve the quality and efficiency of health care delivery. Primary care EMR adoption rates in Quebec are among the lowest, compared to the other provinces and territories, as well as most OECD nations. Little research has sought to understand, from a historical perspective, the policy decisions surrounding EMR implementation. This research aims to understand the policy decisions and actions surrounding the implementation of EMRs in Quebec primary care. An interpretive qualitative case study design is used. This research involves two consecutive phases. In Phase 1, data from Quebec policy documents and reports (1991-2018) will be exhaustively retrieved and analyzed to develop a narrative that encompasses policy actors, decisions, actions and events related to the implementation of EMR in Quebec primary care over the last three decades. In Phase II, results from Phase I will be triangulated with data from semi-structured interviews with key policy decision makers over the period considered and inductively analyzed with the aim of further understanding the rationale behind their policy decisions. Initial results from Phase I will be presented and discussed. The knowledge gained from this research on policy decisions and the culture of policy decision making in Quebec could help improve EMR implementation in Quebec and may be useful in improving the success of future health policy initiatives.
Evaluation of the Colonoscopy Quality Management Program Physician Reports

Presented by: Kaileah McKellar, Evaluation Lead, College of Physicians and Surgeons of Ontario

In December 2017, the Quality Management Partnership, a joint initiative between Cancer Care Ontario and College of Physicians and Surgeons of Ontario, disseminated the first annual Colonoscopy Quality Management Program (QMP) physician reports to over 900 endoscopists in Ontario. These reports provided physicians with specific measures about the quality of their colonoscopy practice in comparison to peers and targets; they are one of the many tools the QMP uses to foster continuous quality improvement.

Following their release, the Quality Management Partnership undertook an evaluation of the physician reports to assess their impact and to gather feedback from the field to support ongoing improvements. While the evaluation focused on the usability and use of the reports, it also evaluated the resource package that accompanied the reports. We used a mixed methods approach which included an online survey and interviews with report recipients. Interviews focused on physicians’ reactions to their report and associated resources, and how the report was used. Analysis drew from Payne and Hysong’s model for impact of performance feedback on physician-patient management behaviour.

The survey response rate was 34% (n=245). Approximately half of the survey respondents (54%) agreed their report helped identify performance improvement opportunities and almost half (47%) reported taking action based on their report. Approximately 20% of respondents reported using the accompanying physician learning plan template, and approximately 30% reported using at least one of the resources on the quality improvement resource sheet that was included in the report package. The majority (53%) of survey respondents reported discussing their report with colleagues; additional analysis showed that engaging in conversation about the report was correlated with taking action based on the report. However, some endoscopists were hesitant to discuss their reports as they perceived the content to be private and personal.

The results demonstrate the Colonoscopy QMP Physician Reports are a useful tool in providing performance information to endoscopists and can be utilized by physicians to identify their areas of improvement. This evaluation demonstrates the utility of audit and feedback in colonoscopy in Ontario.
Improving Health Care for Children with Medical Complexity through the use of Health Administrative Data: A Scoping Review

Presented by: Sydney Breneol, PhD Candidate / Registered Nurse, Dalhousie University

Background: Children with medical complexity are primarily understood as those with life-long complex chronic conditions requiring high levels of specialty care. Emerging evidence has revealed a disjuncture between our current health care system and the care needs of this population. The aim of this scoping review is to examine how health administrative data are informing the design of health service practice and policy recommendations for children with medical complexity and their families.

Approach: To ensure a systematic and replicable process, this scoping review followed methods outlined by the Joanna Briggs’s Institute Methodology for Scoping Reviews. A search strategy was implemented across three electronic databases (PubMed, CINAHL, and EMBASE) and was supplemented by hand searching three high-impact pediatric journals within the previous five years. This review considered studies that examined all children and youth with medical complexity as their population of interest, regardless of the specific health concept under study. Only studies describing the use and analysis of routinely collected health administrative data were included in this review.

Results: Of the 5989 citations retrieved, 60 articles met the inclusion criteria. Four of the included studies combined the use of health data with family reports by the way of surveys, focus groups, or interviews. A variety of terminologies and patient identification methods were used across studies. Eleven studies showed promising results in improving the health care delivery and health outcomes for this population through the implementation of clinical complex care programs. Most other studies included in this review focused on identifying population prevalence and characteristics, health system utilization, and associated economic costs. Most all articles discussed the relevance of their results to clinical practices, administrative processes, policy development, and/or research initiatives. Strengths and limitations to using health data for research in this area were discussed.

Conclusion: It is critical that we begin to improve our health system to address the care needs of children with medical complexity and their families. These results demonstrate clear value in using health administrative data to help inform health program, policy, and research initiatives.
Impact of a Provincial Pediatric Insulin Pump Program on Type 1 Diabetes Health Outcomes: A Population Based Cohort Analysis

Presented by: Heather Higgins, Masters student, University of New Brunswick

A number of provincial government programs fund insulin pump devices for patients with type 1 diabetes (T1D), each with different eligibility and age criteria. Current evaluations of Canadian pediatric insulin pump programs are limited, and there is yet no study on the transition experience into adulthood. This study will provide the first comprehensive evaluation of the New Brunswick-Pediatric Insulin Pump Program (NB-PIPP) and provide a baseline of evidence on program equity and effectiveness. Analyses will use a longitudinal population-based cohort design, using several linked administrative health data sets from 2012/13 to 2015/16. The population will include all children and adolescents with diagnosed T1D in New Brunswick (N= 300). Logistic regression will be used to assess the risk of hospitalization for those who are in the NB-PIPP compared to those who are not in the NB-PIPP, as well as the risk for hospitalization for participants in the NB-PIPP as they transition out of the program. Results will provide insight on the participation of those in the NB-PIPP, and whether participation influences risk of hospitalization among pediatric T1D patients in New Brunswick. This binary outcome will reveal whether individuals were hospitalized over a three-year follow-up period. All hospital stays for acute and chronic complications of diabetes will be included. Results will be presented in terms of odds-ratios, using the Wald test to gauge the significance of each independent variable, with the level of confidence set at p < 0.05. Confidence intervals will be estimated at 95% using bootstrap replications. Descriptive statistics on demographic variables and areal socioeconomic measures will provide summaries about the population of T1D involved in the study. Understanding how the NB-PIPP currently impacts health outcomes will inform stakeholders and contribute to evidence-based policy. This baseline of evidence will provide insight on continued financing of medical supplies into adulthood, as well as reducing hospitalizations and overall costs to the healthcare system.
Background and objectives: Growing costs of cancer treatment pose a substantial economic burden on health care systems and patients and their families. In Canada, studies have estimated the magnitude of the direct costs paid by the government, which has supported concerns about the sustainability of the current expenditure. There has been less focused research on the burden of cancer care on patients and their families and on how this burden differs by cancer site and patient subpopulations. The disparate evidence on the out-of-pocket cost burden has limited opportunities to mobilize efforts within the cancer control system to improve the supports available for patients. The objective of this study was to review the literature on out-of-pocket costs associated with cancer in Canada, compare with estimates from other OECD countries, and better understand the methods used to measure the economic burden of cancer.

Approach: We conducted a comprehensive literature review of studies published in the academic and grey literature from 2008 to 2018, searching the main electronic databases. This was supplemented with key-informant interviews. Results were analyzed using a narrative synthesis. Quality appraisals were conducted on retrieved studies. Results: Seventy-eight studies were included, 18 (23%) from Canada, and ten key-informant interviews were conducted. Breast cancer was most commonly studied. The average monthly out-of-pocket expenditure reported in Canadian studies was CDN$380, with prescription medicines and transport representing the highest cost categories followed by aides and equipment. Most studies used patient surveys. Few studies measured costs using longitudinal data or measured out-of-pocket costs in proportion to income; yet these were identified by key informants as crucial for understanding the affordability and impact of out-of-pocket costs. Fewer studies investigated how patients coped with financial hardship or the long-term impact on household-level economics.

Conclusions: The economic burden of cancer was measured inconsistently across OECD studies. However, we found evidence that cancer patients in Canada face high out-of-pocket costs. Our results support the need for national PharmaCare and, potentially, a re-definition of what is classified as essential care and universally covered under the Canada Health Act. Existing data sources should be leveraged to better understand policy options.
Economic Evaluation of Whole-of-Government Approaches to Mental Health and Addictions: Is a New Paradigm Required?

Presented by: Jenn Green, PhD student, McMaster University

Background and objectives: The economic costs of mental health and addictions (MHA) in Canada are estimated to be $50 billion and $38.4 billion per year, respectively. Major MHA reform and increased investment have been recommended. Whole-of-government approaches to addressing ‘wicked’, solution-resistant MHA challenges and a lack of whole system accountability are increasingly being adopted internationally, necessitating understanding their cost-effectiveness. This research explores whether effective economic evaluation frameworks exist and/or are being utilized for intersectoral initiatives.

Approach: A review of current published international white and gray health economics and policy literature was conducted to identify issues and considerations in the economic evaluation of whole-of-government approaches to MHA interventions. The core issues are outlined, particularly those within the context of current health technology assessment guidance for health decision-making, which recommend as its reference case a cost-utility analysis that values health using quality-adjusted life years (QALYs), considers costs from the health care payer perspective, and weights all outcomes equally. This is followed by discussion on the potential ways forward within this emerging policy context.

Results: The economic evaluation of whole-of-government MHA exists at the intersection of three challenges to current methods: 1) the meaningful assessment and inclusion of broader recovery-oriented well-being and welfare outcomes; 2) incorporating a societal perspective that is equally inclusive of non-health externalities; and 3) evaluating intersectoral interventions within complex systems. Current guidance for economic evaluation may therefore not fully achieve its intended purpose for whole-of-government MHA interventions. Various potential solutions have been proposed, including: valuing well-being rather than health, using monetary-based measures (e.g., willingness-to-pay) to value outcomes in a cost-benefit analysis, and using techniques that are better able to manage decision-making within the complexity of multiple criteria and outcomes outside of simple multiplicative relationships, such as multiple-criteria decision analysis (MCDA) and ordinal (e.g., logit/ranking/discrete choice) methods.

Conclusion: Whole-of-government interventions for MHA will not be simple, and will require similarly complex economic evaluations. There are advantages and disadvantages to each proposed solution but regardless, these overarching principles are of importance: stronger stakeholder, particularly consumer/persons with lived experience, involvement; continuous improvement of evaluation methods; and maintaining meaning for decision-makers.
“Spotlight on Caregiving in Ontario”: a co-design success with The Change Foundation and the Patient Advisors Network

Presented by: Carolyn Canfield, Adjunct Professor, UBC Faculty of Medicine

Canada’s unpaid caregivers contribute $26-$72 billion/year, estimated by averaging 11-30 hours/week valued at minimum wage. Evidence shows that support for caregivers decreases healthcare system usage by patients, and reduces health impacts like depression and frailty in caregivers. Arguably, caregiving is the health workforce sector least studied by health economists, and yet represents the very heart of what patients and families value most: each other’s wellbeing. Our project explores the unseen experience of caregiving in a significant expansion of co-design as an organizational partnership for health policy research in Canada.

The research seeks to understand:

- who caregivers are caring for;
- what tasks caregivers are responsible for;
- where caregivers are turning for information and support;
- how caregiving impacts lives of both the caregiver and the care receiver;
- how caregivers feel about their role as part of the healthcare team;
- what additional supports or information could help caregivers in their role.

Highlights from the initial survey of 800+ Ontario caregivers include:

- Though 90% of caregivers speak English as their primary language, only 67% of those cared for speak English as their first language.
- Caregiving does not only happen during the day. More than half say they at least occasionally stay up at night to provide care.
- Half of caregivers admit to feeling overwhelmed and a strong majority wish there was somewhere they could go for advice and to ensure they were using all available resources.
- 45% of caregivers say cost was the biggest barrier to getting additional support, followed by 32% who said it was lack of information.
- Over two-thirds of caregivers believe that the person they are caring for would be in a worse situation if they were unavailable to provide care.
- Most caregivers manage their caregiving duties by requesting or making special work arrangements: 39% left work early, 35% took days off, 34% took time off during the day, and 25% went late to work.

Continuing partnership with the Patient Advisors Network, the Advisory Panel of Caregivers and the interactive website will help to propel caregiving into the spotlight as a neglected urgent priority that underpins every setting of patient care.
Meeting the needs of the population: how physician care varies in urban vs. rural settings?

Presented by: Shanna DiMillo, Senior Data and Research Analyst, Royal College of Physicians and Surgeons of Canada

Background and objectives

In Canada, approximately 17% of the population reside in small communities outside of medium/large metropolitan areas (2016). However, a small fraction of physicians (8%) practice in rural areas including 14% of family physicians and 2% of specialists (2016). The misalignment between population and physician workforce distribution underscore the need to study how health care needs are met in rural and remote areas. This study describes how physician services vary across geographic settings.

Approach

The Canadian Institute for Health Information’s National Physician Database was used to analyze all fee-for-service care delivered in eight provinces (2002/03-2015/16). Analysis centred on volumes and types of care delivered to small and large communities. Geographical areas were defined using statistical area classifications, including census metropolitan areas (CMA, with population >= 100k), tracted (population = 50-99k) and untracted (population = 10-49k) census agglomerations (CA) and metropolitan-influence zones (MIZ, with population < 10k). Analysis was stratified by physician characteristics (e.g., practice location, specialty, age, sex), patient characteristics (e.g., age, sex), and service type (i.e., broad and detailed National Grouping System categories).

Results

In 2015/16, approximately 80% of physician services were delivered in CMA, as compared to 12% in CA and 5% in MIZ. The number of physicians providing services in MIZ has increased marginally (2% growth since 2002/03) compared to 48% physician workforce growth in CMA. Smaller communities have a breadth of specialists, but family physicians were the largest group, accounting for 86% of physician services in MIZ. Certain disciplines practised intensively in large urban centres. For example, oncologists conducted 98% of their services in CMAs. Some procedures were performed by different providers depending on the geographic location. For instance, in CMAs, colonoscopies were typically provided by gastroenterologists (45% of procedures) or general surgeons (41%). In MIZ, general surgeons conducted the majority of colonoscopies (71%).

Conclusion

The physician’s detailed scope of practice across communities provides vital insight into how health care is provided to diverse populations. Understanding the type of care physicians provide in different settings can help inform physician recruitment and efforts to align training and continuing professional development with practice realities in rural settings.
**The Lived Experiences of Middle Eastern Immigrant Women during their Cancer Survivorship Journey**

Presented by: **Enam Alsrayheen**, Student, University of New Brunswick

**Background and objectives:** Cultural beliefs and values influence cancer survivorship (CS) experiences and outcomes. The number of Middle Eastern immigrant women (MEIW) living in Canada has significantly increased; however, there is little known about their CS journey. This study aims to understand the lived-experiences of MEIW in New Brunswick (NB) during their CS journey. The results of this study will enhance healthcare providers’ understanding of MEIW’s cultural beliefs and attitudes towards health and illness during their CS journey.

**Approach:** A descriptive phenomenological approach is used to conduct this qualitative study. The sample for this study is a snowball sample of eight MEIW who are between the ages of 20 and 65, diagnosed with cancer within the last five years, reside in NB, and able to speak English or Arabic. A detailed description of each participant’s CS journey is collected through an unstructured in-depth interview. Each participant is asked one interrogatory statement "As a Middle Eastern immigrant woman in Canada, please describe your lived experiences during your cancer survivorship journey." Data is analyzed using Giorgi’s descriptive phenomenological method.

**Results:** The preliminary results of this study have identified that religious spirituality and social support have helped participants to maintain control of their life during the CS journey. Family and friends provide the primary source of social support for MEIW in this study. Participants have described that, as immigrant women, the CS journey is challenging. Participants have described how the cancer care process, lack of social support from healthcare providers, and cancer outcomes have affected their psychological health and family well-being.

**Conclusion:** The results of this study will be of interest to healthcare professionals and administrators who work with MEIW. The findings of this study are expected to add to the discussion on culturally competent care for this group of immigrant women and guide improvements to patient-oriented cancer care in NB.
How does adherence to guideline recommended diabetes management impact health service use of older people with type 2 diabetes in Ontario, Canada?

Presented by: Beverley Essue, Senior Health Economist, Canadian Partnership Against Cancer

Introduction Diabetes is common and costly, affects many older Canadians and imposes a substantial economic burden on the healthcare system, patients and families. Effective management of diabetes, proscribed in the Diabetes Canada Clinical Practice Guidelines, is critical for controlling diabetes progression and minimizing adverse outcomes. However, research suggests that patients’ adherence to the recommended self-management guidelines is sub-optimal. This study aimed to investigate the relationship between guideline adherence and health system outcomes among elderly patients. Approach: This was a retrospective cohort study. We identified older (71 years and over) prevalent diabetes cases in 2014, using the Ontario Diabetes Database. They were linked to eight years of health service use data. Three patterns of diabetes guideline adherence were examined from 2008 to 2014: a) total number of adherent years, b) number of consecutive adherent years, and c) largest gap in adherence. A logistic regression model, developed using backward elimination, was used to examine the relationships between each pattern of adherence and diabetes-related ED or acute care hospital admissions from 2014 to 2016. Results: The linked cohort included 128,669 prevalent cases with diabetes. 73.8% were diagnosed between 2003 and 2006 and 54.4% had more than one co-morbidity. The mean number of years adherent to recommended guideline care was 4.08 years (SD:2.4), the mean number of consecutive years of adherence was 3.6 years (SD:1.9) and there was a mean gap in adherence of 1.9 years (SD:1.75). Adherence to cardioprotective pharmacotherapies (65.7%) and requirements for creatine testing (52.5%) and HbA1 testing (49.8%) had the highest rates of adherence over the six-year period. When the final models accounted for relevant co-variates there was a greater likelihood of having a diabetes-related ED or acute care admission with each additional year of adherence (OR:1.13, 95%CI:1.11-1.16), with each additional consecutive year of adherence (OR:1.11, 95%CI:1.09-1.13) and as the gap in adherence decreased by one year (OR:0.96, 95%CI:0.94-0.99). Conclusion: This study confirmed sub-optimal levels of adherence to guideline recommended care in an older population in Ontario and found the consistency of adherence to the guidelines investigated in this study did not reduce the likelihood of adverse outcomes. These findings suggest that an emphasis...
Assessing the Impact of Opioid Prescribing Guidelines for Dentists in Ontario, Canada

Presented by: Qi Guan, PhD Student, University of Toronto

Background and Objectives:
Dental opioid prescribing guidelines were introduced in November 2015 in Ontario, Canada, which suggested limits on opioid prescription duration and quantity. As dentists are the second highest prescribers in this province, we sought to examine the impact of these guidelines on their prescribing patterns.

Approach:
We conducted a population-based, time series analysis on Ontarians who received a prescription opioid from a dentist between July 1, 2012 and September 30, 2017. We report the rate of individuals dispensed prescription opioids per 100,000 population, and the population opioid exposure in total morphine milligram equivalents (MME) per 100,000 population, monthly over the study period. We used interventional autoregressive integrated moving average (ARIMA) models to examine the impact of the dental opioid prescribing guidelines on prescribing patterns.

Results:
Overall, the rate of individuals dispensed prescription opioids remained stable over the study period (range from 161 to 140 per 100,000 population between July 2012 and September 2017), while the volume dispensed decreased by 23.2% between January 2016 and September 2017 (from 20.7 MME to 15.9 MME per 100,000 population). The dental opioid prescribing guidelines had a significant impact on the volume of opioids dispensed to dental patients (p=0.01).

Conclusion:
The introduction of dental opioid prescribing guidelines in Ontario significantly impacted prescribing practices, signalling increased prescribing awareness among dentists. Future studies should examine frequent prescribers and long-term opioid use among dental patients.
If you build it, they will come: a comparison of smoking cessation treatment models in Ontario by demographics, health status and healthcare service utilization.

Presented by: Dolly Baliunas, Project Scientist, CAMH

Background and objectives: From its inception in 2005, the STOP program has used 11 treatment models to reach Ontario smokers. Little was known about the sociodemographics, health status, and healthcare utilization of patients served by these models. In order to describe and compare the patients that sought treatment via each of these models, we linked STOP enrollment data to administrative healthcare service utilization data.

Approach: 132,506 STOP enrollments were linked to administrative health databases (96% linkage rate). After validity exclusions and limiting to first enrollment the sample consisted of 107,302 unique Ontario patients who initiated smoking cessation treatment between 18 Oct 2005 and 31 Mar 2016. Comparisons of patients served by each model were made. Healthcare service utilization and total healthcare cost were measured for the 2 years up to enrollment. Prevalent physical health conditions were measured by algorithm based on administrative health data, and prevalent mental health conditions were measured by self-report. Personal sociodemographic variables were measured via self-report and neighbourhood sociodemographic characteristics by linkage to indexes by patients’ residential postal code.

Results: Females outnumbered males in each model except in the Addiction Agency (AA) and Hospital models. The median age was 47 and the Web model was the youngest (median 39). SES was highest in the Pharmacy, Phone and Web models, and lowest in the Community Health Centre, Nurse-Practitioner Led Clinics (NPLC) and AA models. In the two years prior to enrollment: median healthcare costs were $2740 and highest in the AA model with a median of $9,393. Services used varied by model. COPD and hypertension were the most common physical health conditions in each model, but ranged from 14% in the Web model to 31% in Family Health Teams. NPLC and AA models had the highest prevalence of anxiety and depression (>50%). The Phone model had the lowest prevalence of each of the mental health comorbidities.

Conclusions: Given the varying patient populations served by these models, tailored programming might best serve the needs of Ontario smokers.
Development of two hierarchical algorithms identifying the 65+ community-dwelling population in the provincial administrative database in Quebec

Presented by: Claire Godard-Sebillotte, geriatrician/PhD candidate, McGill University

Background and objectives: Persons 65+ account for nearly 40% of hospitalized adults and 50% of hospitalizations’ costs, while forming only 15% of the population. Service use patterns differ between community-dwelling and institutionalized older persons. Studying health service use requires differentiating these sub-populations. In the Quebec (Qc) health administrative database, no differentiation existed. Our aim was to develop two algorithms to differentiate the community-dwelling and the institutionalized 65+ populations using the Qc health administrative database.

Approach: Iterative process involving repeated exchanges with key stakeholders. Key stakeholders were researchers and data analysts knowledgeable about provincial health administrative databases, researchers and managers knowledgeable about Qc long-term care (LTC) and support services offerings, and clinicians. The Qc Integrated Chronic Disease Surveillance System was used to develop the algorithms. It is a linkage of five health administrative databases: health insurance registry, hospitalizations, physician claims, drug services and mortality. This system covers 99% of the older population of Quebec.

Results: Two hierarchical algorithms were developed. The first one aimed at identifying persons 65+ admitted to LTC facilities (collective dwellings with 24/7 nursing care). Persons were identified if they met at least one of three criteria: 1) being classified as institutionalized in the drug services database, 2) being admitted to or discharged from the hospital from a LTC facility, 3) receiving a service billed by a physician in a LTC facility. The second algorithm had one additional criterion and aimed at identifying the community-dwelling population (i.e. the persons currently living at home). This population was identified as neither having been admitted to a LTC facility, nor being waiting for LTC admission in an acute care hospital; also known as being in alternate level of care.

Conclusion: Differentiation of community-dwelling and institutionalized older persons in Qc administrative health database is critical to studying health service use and to enable cross provincial comparisons. Further research will be needed to validate these algorithms.
Rural emergency care 360°: mobilizing healthcare professionals, decision-makers, patients and citizens to improve rural emergency care in the province of Quebec, Canada

Presented by: Richard Fleet, Professor, Université Laval

Background and objectives: Emergency departments (EDs) represent an important safety net for rural populations in Canada. In the present context of growing needs and limited resources, policy-makers need evidence to inform their choices about allocation of emergency care and services in remote areas. We present preliminary data from a large ongoing study that used innovative methods to mobilize patients, citizens and other stakeholders to describe rural emergency care in Quebec and engage in its improvement.

Approach: A participatory, mixed-methods approach was adopted and the protocol was published (BMJ Open) for this study of all rural EDs in Quebec (N=26). Various stakeholders (decisions-makers, healthcare professionals, patients and citizens) participated in semi-structured interviews about challenges and solutions for improving care and services. Transcripts were analyzed thematically. A statistical analysis of data on EDs (resources, visits, transfer, etc.) was also conducted.

An expert panel will prioritize the solutions that emerged and propose implementation strategies. A touring conference is planned to disseminate results and foster mobilization. Questionnaires will be developed to evaluate the impact of knowledge transfer on EDs actors.

Results: Rural EDs treat more than 300,000 patients/year, with 20% of their cases of high acuity. Approximately 3.5% of cases were transferred to urban centres, which for most EDs (60%) were more than 150 km away. Forty percent of rural EDs did not have access to a CT scan, 31% had no access to a surgeon and 38% had no ICU.

A total of 185 persons participated in the interviews. Ongoing thematic analysis confirms that rural EDs face challenges primarily related to recruitment and retention, medical transfers, and access to specialties. Solutions proposed include administrative autonomy, expanded practice and technological solutions.

The expert panel will meet this winter to produce a comprehensive list of solutions and resources tailor-made for Quebec’s rural EDs.

Conclusion: This is the first study in rural Canada to involve multiple stakeholders and patients in locally relevant and sustainable improvements to emergency care. This research experience, involving large-scale mobilization, could serve as a model for improving performance in all areas of our health and social care system.
Asthma is a high-prevalence condition in Canada, affecting more than three million people and generating over $1 billion in annual drug sales. This analysis focuses specifically on combination inhalers for long-term asthma control, a sub-class of medicines that makes up half of total anti-asthmatic drug sales.

Unlike other therapeutic classes dominated by blockbuster drugs, combination inhalers have not experienced the “patent cliff” phenomenon. Although the top-selling medications in this sub-class have reached the end of their patent life, no generic alternatives have been approved for market in Canada. Not only does Canada continue to pay brand-name prices in this space, but the prices we pay far exceed the levels prevailing in other countries. In fact, this sub-class tops the list of therapeutic areas with the greatest cost implications due to higher prices in Canada compared to foreign markets.

This study provides insight into the issues surrounding this class of anti-asthmatics, reporting on sales, utilization, and price trends in Canada and internationally, including the seven countries the Patented Medicine Prices Review Board considers when reviewing the prices of patented medicines, as well as other Organisation for Economic Co-operation and Development (OECD) countries. Capturing data from the Canadian Institute for Health Information (CIHI) NPDUIS Database and IQVIA MIDAS™ and Private Drug Plan databases, the analysis centres on 2017 and provides a retrospective look at trends since 2012.

These findings will inform policy discussions on the price and reimbursement of these drugs at both the public and private payer levels.
Transitions of care in Ontario end-of-life patients: the impact of inpatient palliative care on receipt of post-discharge home care services

Presented by: Mudathira Kadu, PhD Student, University of Toronto- Institute of Health Policy, Management & Evaluation

Background and objectives

The most common care transition for individuals near the end of life is from home-to-hospital-to-home. Yet, gaps of knowledge exist on the impact of inpatient palliative consultation on continuity of palliative care after discharge. The objective of this study was to evaluate whether receipt of inpatient palliative consultation is associated with increased likelihood of receiving palliative home care and physician visits after discharge.

Approach

This was a retrospective cohort study of decedents in Ontario from April 1, 2014 to March 31, 2017. The index event was the first hospital discharge within 6 months of death. The primary exposure was the receipt of inpatient palliative care. The outcomes of interest were either a palliative home care or palliative physician visit, or acute care readmission, within 21 days of the index hospitalization. Multinomial logistic regression was used to determine the association between exposure and outcomes, adjusting for socio-demographic, clinical, facility-level and prior healthcare utilization factors. Sensitivity analyses varying the timing of the index event were conducted.

Results

Of the patients discharged at the index hospitalization (N=59,008), only 2% (N=1,176) received inpatient palliative consultation. Compared to those that did not receive consultation, they were older (73.2 years ± SD: 13.9 vs. 70.9 ± SD:13.4), less likely to have 5+ (of 17) chronic conditions (34.4% vs. 47.5%). Within 21 days of discharge, 19.4% received palliative home care; 8.1% of these patients had received inpatient palliative consultation at the index hospitalization. In the regression analysis, after adjusting for: clinical, sociodemographic, prior utilization and facility factors, those that received inpatient palliative consultation had 12.4 (95% CI: 10.4-14.8) greater odds of receiving palliative home care than those that did not. The odds of readmission within 21 days of discharge was 0.99 (95% CI: 0.75,1.31) and not significant at the p < 0.05 level.

Conclusion

Receiving inpatient palliative consultation is strongly associated with receipt of timely community-based palliative care at the end of life. Improving access to inpatient palliative care could help reduce gaps in care transitions back into the home for end-of-life patients who are hospitalized.
The Relationship Between Life Satisfaction and Ambulatory Care Sensitive Conditions

Presented by: Eric De Prophetis, Student, IHPME, University of Toronto

Background: Life satisfaction (LS) and other measures related to happiness have been shown to be inversely related to negative health outcomes such as morbidity and mortality. Ambulatory care sensitive conditions (ACSC) are conditions for which timely and effective outpatient care can prevent acute episodes. Therefore, this research project aims to test the hypothesis that poor life satisfaction is associated with an increased risk of preventable hospitalizations. Methods: A prospective population-based cohort study of adult Ontario participants pooled across five cycles (2003-2012) of the Canadian Community Health Survey (CCHS). Data was then linked to health administrative data held at the Institute for Clinical and Evaluative Sciences. Estimations of weighted distributions of demographic, socioeconomic, health status and behaviour characteristics according to ACSCs and life satisfaction were calculated. Cox proportional hazards models associated with baseline life satisfaction were used to calculate the risk of hospitalizations for ambulatory care sensitive conditions. Joint effects models were used to test to see if this relationship varied by socioeconomic status (SES). Results: After combining cycles of the CCHS and linking to administrative databases, it was determined that 3,037 individuals had an event within the study timeframe. Men, the elderly and those with lower household income were more likely to be hospitalized with an ACSC. After controlling for age, sex, SES, and lifestyle factors (i.e. smoking status) poor LS had a strong adjusted relationship with hospitalizations for ACSCs (HR = 2.42, p < 0.001). Furthermore, the joint effect of individuals who had the lowest levels of LS and household income were at an increased risk of being hospitalized for an ACSC (HR = 3.8, p < 0.001). Conclusions: This study demonstrates that poor LS is associated with hospitalizations for ACSCs and that this relationship is experienced more severely for those who are more socioeconomically disadvantaged. Therefore, initiatives that improve life satisfaction may be effective at reducing the burden of preventable hospitalizations.
The influence of personality factors on intentions to use a computer vision system to automatically detect and monitor pain behaviour in long-term care residents

Presented by: Natasha Gallant, Health System Impact Fellow, Saskatchewan Health Authority--Regina and Area

Background & Objectives. To address the lack of systematic pain assessment in long-term care (LTC) facilities, we are developing a computer vision system designed to automatically detect and monitor nonverbal pain behaviours in residents with severe dementia and limited ability to communicate. This study is aimed toward a better understanding of the factors influencing the likelihood of adoption of advanced technologies in LTC by examining the relationship of personality factors with intentions to use this system.

Approach. The Unified Theory of Acceptance and Use of Technology (UTAUT) proposes that intentions to use technology are influenced by performance expectancy, effort expectancy, social influence, and facilitative conditions. The influence of personality factors within the UTAUT has yet to be examined in LTC settings. Thus, nurses working in LTC facilities completed questionnaires measuring UTAUT constructs as well as personality factors (i.e., readiness for organizational change, technology readiness, five-factor model, locus of control). Statistical analyses involved multiple regressions testing whether personality factors explain variance in intentions to use the system independent of variables posited by the UTAUT model.

Results. One hundred and twenty LTC nurses completed the set of questionnaires. On average, nurses were 39.60 (SD = 11.831) years of age and worked in LTC for 10.70 (SD = 10.358) years. The full model comprising of UTAUT predictors accounted for a significant amount of variance in intentions to use the system, F(4, 115) = 18.712, p < .001, R² = .394. Furthermore, readiness for organizational change, F(5, 110) = 3.658, p = .004, R² Change = .086, consolidated framework for implementation research, F(5, 110) = 2.408, p = .041, R² Change = .060, and locus of control, F(3, 111) = 3.863, p = .011, R² Change = .057, scores predicted intentions to use the system independent of the contribution made by UTAUT predictors.

Conclusion. Findings from this study will be used to develop an intervention to maximize the probability of the successful implementation of advanced healthcare technologies in LTC facilities. Thus, targets for intervention could include nurses’ readiness for
Background

Accurate and timely identification of heart failure cases among hospitalized patients is essential for improving patient outcomes, health services delivery, and for research. The use of structured and unstructured components of electronic health records (EHR) for case derivation may improve case detection when compared to administrative data. We sought to identify studies using electronic health records for heart failure (HF) case derivation.

Approach

Embase, Medline, PubMed, and Google scholar databases were utilized. Search terms were developed around three spheres: 1) EHR related terms, 2) Case finding related terms, and 3) HF-related terms. ICD-10 descriptions were used to develop search terms related to HF. Inclusion criteria included studies focusing on human subjects, 2) involves the use of EHR system for case finding, and 3) published between year 2000 to Present. Studies involving only administrative data for case derivation were excluded, with the exception of studies that linked EHR data to administrative data.

Results

Total of 18 studies were identified: 11 studies published from inpatient settings and 7 published from primary care settings; 17 published in the United States. All studies included either structured components (e.g. demographics, problem list, laboratory data, medication) and/or unstructured components (e.g. discharge notes, progress notes) for case derivation. Studies varied in their analysis techniques; 5 utilized machine learning, 6 utilized statistical techniques, and 3 employed natural language processing. Three studies assessed their algorithms against the established Framingham Risk Score and 1 study against Seattle Heart Failure Model. Studies concluded that EHR derived definitions and models achieved relatively high receiver operating curves values (range 0.75 to 0.90) for sensitivity and performed better, with about 10% improvement in area under the curve. Further results are forthcoming.

Conclusion

Heart failure case algorithms varied to some degree between studies, but demonstrated that EHR is a powerful source for case definition development. Literature review demonstrates that having an accurate case algorithm development is an essential first step before attempting risk adjustment analysis.
The power of Knowledge Mobilization to strengthen health systems for youth

Presented by: Lisa Lachance, President/PhD (Trainee), Wisdom2Action/Dalhousie University

Background:

Young people who experience social marginalization, adverse experiences, complex needs or multiple service use, experience mental illness at higher rates than their less vulnerable peers (Farmer et al., 2001; Newton et al., 2012). Young people may use formal clinical services to address mental health concerns but are also likely to require the services of non-profit organizations (NPOs) to address issues of housing, employment, education, recreation, and other social determinants of health, essential in supporting the well-being of young people (Ungar, Liebenberg, Dudding, Armstrong & van de Vijver, 2013). The quality of programs that youth access is critical to ensuring a positive impact on young people (Yohalem & Wilson-Ahlstrom, 2010). NPOs often have limited access to, and internal capacity to use, research or evaluation information, which means their programs do not benefit from emergent and evidence-based approaches (Mitchell, 2011). Over the past few years, there have been several efforts to overcome these internal and external barriers and ensure that NPOs are well placed to respond to the complex mental health needs of youth in Canada.

Methods: Wisdom2Action (wisdom2action.org) was funded by Canada’s Networks of Centres of Excellence as a Knowledge Mobilization network from 2011-2018 with $2.6 million Cdn in funding. W2A uses the PARiHS framework to plan projects to gather, contextualize and facilitate the uptake of best and promising promises in the youth-serving sector and thus support the mental health and well-being of children and youth in challenging contexts.

Findings: This presentation will include examples of how to do KM in the informal youth-serving sector, including embedding youth engagement in practice, facilitating the use of evidence-based practice through organization-to-organization mentorship, knowledge sharing videos, innovation funding and more. Evaluation results from programs will be shared.

Implications for health systems research and policy: Community-based organizations are often excluded from implementing health systems planning due to a number of internal and external barriers. Yet, strengthening their programs is important for population-level health outcomes.
Creating a national standard for post-secondary mental health policies and services

Presented by: Lisa Lachance, President/PhD (Trainee), Wisdom2Action/Dalhousie University

The Mental Health Commission of Canada is embarking on a two-year project to develop a National Standard on Psychological Health and Safety for post-secondary students. Like the Standard developed for the workplace, it will act as a voluntary guideline to help Canada’s academic institutions promote and support students’ psychological health and safety, and support students’ success.

As one of the project key steps, a literature review was undertaken by Dr. Heather Stuart and her team at Queen’s University. This work shares information on emerging and promising practices related to psychological health and safety of post-secondary students. A summary is available and you can access the full report by sending an email to studentstandard@mentalhealthcommission.ca

Wisdom2Action is working with MHCC to undertake Nova Scotia consultations for this standard. This presentation will be an opportunity to share early results of this process.
Background and objectives

Canadian hospitals have traditionally been funded through global budgets, which have some advantages, notably in terms of administrative simplicity and financial predictability. However, the drawbacks of this funding mechanism – lack of incentives for productivity and efficiency – may have contributed to long wait lists for some procedures, and to the development of patient-based funding (PBF) models. The objective is to analyze and compare approaches to introducing PBF in Ontario and Quebec in the past 15 years.

Approach

This is a descriptive study that consists of documenting the approaches and experiences of the two provinces with the introduction of PBF. We collected documentation, both published and unpublished from various sources, including presentations made in academic events and internal government reports. We conducted a review and we extracted key elements from the collected documentation: context, policy objectives, dates in which they were implemented, strategies to achieve objectives, characteristics of the funding, results and unintended consequences. We conducted a SWOT (strengths, weaknesses, opportunities, threats) analysis of the approach in each province.

Results

In both provinces, PBF models were introduced in response to the First Ministers commitments in the 2003-2004 Accords to reduce wait times in key service areas: surgeries, cancer prevention and treatment and imaging. The funding models introduced were slightly different, although both provinces developed activity-based funding models (ABF) as a strategy to increase capacity that could lead to reducing wait lists. Quebec’s list of included surgeries was more extensive and not limited to those targeted in the Accords. This first phase (2004 to 2012) included a pay-for-results (PfR) element in that organizations received incentives for achieving volume targets. The second phase was the development of funding models that included quality elements. Service integration differ and present specific challenges to the development of integrated funding models.

Conclusion

Both provinces intend to move towards integrated funding models. Each funding model was developed with specific objectives: increase capacity, quality, access and/or appropriateness within the specific services. Evaluation of the programs first implemented have lead to adjustments mainly in terms of the pricing or funding conditions.
Spinal cord injury and medication management: A descriptive qualitative study exploring the experiences of community-dwelling adults in Ontario

Presented by: Lauren Cadel, Student, University of Toronto

Background and Objectives: Individuals with spinal cord injury or dysfunction (SCI/D) frequently experience secondary complications and multimorbidity, which are often treated with multiple medications (polypharmacy). Polypharmacy has been linked to negative health outcomes, highlighting the importance of optimal management. However, there is a lack of research on experiences with medication management and SCI/D. The aim of this study was to explore the attitudes, beliefs and experiences of persons with SCI/D pertaining to prescribed and unprescribed medications.

Approach: Using a social constructivist approach, this descriptive qualitative study explored the experiences of community-dwelling adults with SCI/D. For inclusion, participants were required to meet the following criteria: adults (18+ years of age); at least one year post-injury; residing in Ontario; English speaking and cognitively able to give consent. Participants were recruited through local organizations and purposeful snowball sampling. Nineteen in-depth, semi-structured interviews were conducted by telephone. The interviews were audio-recorded, transcribed verbatim and analyzed using inductive thematic analysis. Interviews were conducted until thematic saturation was reached.

Results: Of the 19 participants, 11 were male and 8 were female, with an age range from 36 to 76 years (median age of 57 years); 14 participants had traumatic SCI and 5 had non-traumatic spinal cord dysfunction. All but three participants were taking five or more medications, which included prescription medications, over-the-counter medications and natural health products. Despite the majority of participants reporting adequate ability to manage their medications, each went through a complex process to integrate medication management strategies into their everyday life. The three main themes identified were: (1) disruptive nature of medications; (2) fear of change; and (3) self-management: playing a role in medication management.

Conclusion: Medication management is complex and multifaceted. Based on the findings from this study, recommendations for future research, practice and policy will be suggested. These recommendations identify approaches to optimizing medication management, with the goal of improving both quality of care and quality of life for persons with SCI/D.
Spinal cord injury and polypharmacy: A scoping review

Presented by: Lauren Cadel, Student, University of Toronto

Background and Objectives: Persons with spinal cord injury or dysfunction (SCI/D) are at risk of developing secondary complications and multimorbidity. Due to the nature of these complications, many persons with SCI/D are on multiple medications (polypharmacy). Polypharmacy has been linked to negative outcomes; however, there are several limitations to our knowledge on the topic for this population. The purpose of this scoping review was to map the scope of the literature on polypharmacy among individuals with SCI/D.

Approach: Five electronic databases were searched for relevant literature. Keywords, such as spinal cord injuries, multiple medications and polypharmacy were searched using Boolean operators, wild cards, proximity operators and truncations. For inclusion, studies were required to meet the following criteria: (1) individuals with SCI/D who were prescribed or taking multiple medications; and (2) published between January 1, 1990 and July 31, 2018. The initial search identified 1,459 articles, with 1,098 remaining after the removal of duplicates. Following the title and abstract screen, 81 full-texts were reviewed, and 18 met all the eligibility criteria for inclusion in the review.

Results: Of the 18 studies included in this scoping review, less than half defined polypharmacy. Definitions varied in the types and number of medications. The most common threshold for polypharmacy was five medications (n=4 articles), but other definitions had thresholds of nine medications (n=1) and ten medications (n=2). Older age, higher level of injury and greater severity of injury were factors related to polypharmacy. Negative clinical outcomes related to polypharmacy were also identified; these outcomes included: drug-related problems (e.g. intoxication caused by drug interaction, adverse drug events) and bowel complications (e.g. antibiotic-associated diarrhea and constipation). Only one of the included articles qualitatively explored participants’ beliefs about medications.

Conclusion: This scoping review identified a paucity of research on polypharmacy post-SCI/D, highlighting a need for future research. To improve the state of knowledge, there is a need to better understand factors and clinical outcomes related to polypharmacy in persons with SCI/D and to explore experiences of persons with SCI/D, caregivers and clinicians relating to polypharmacy.
Patient and caregiver experiences on care transitions for adults with a hip fracture: A scoping review

Presented by: Amanda Everall, Research Officer, Leslie Dan Faculty of Pharmacy, University of Toronto

Background and Objectives

Individuals with hip fracture injuries frequently experience multiple care transitions as they require treatment from a diverse range of professionals across multiple settings. Inadequately managed care transitions can lead to hospital readmissions and poor patient outcomes. The purpose of this scoping review was to explore what is known in the literature about the experiences, perspectives, and attitudes of patients with hip fracture and their caregivers during a care transition.

Approach

Keywords were used to search seven electronic databases and grey literature for articles published between January 1, 2000 and July 3, 2018. The following keywords were combined using Boolean operators, truncators, wild cards, and proximity operators: hip fracture, care continuum, transitional care, patient transfer, care transitions. The reference lists of included studies and review articles were also searched. The search yielded 1107 articles after the removal of duplicates. Two reviewers independently screened titles and abstracts and identified 140 articles that met the inclusion criteria for full-text review. Eleven studies met the inclusion criteria and data was charted using Microsoft Excel.

Results

Based on the findings from this review, the most commonly reported challenges that patients and caregivers encountered during care transitions were: (1) lack of information sharing; (2) role confusion; and (3) disorganized discharge planning. The most commonly reported suggestions in the literature to improve care transitions were: (1) increasing written communication; (2) offering a patient representative role; (3) using technology for knowledge dissemination; and (4) increasing geriatrician involvement. The research gaps identified in this scoping review include the limited number of studies exploring the lived experiences of patients with hip fracture and their caregivers during care transition, as well as inconsistencies in reporting sociodemographic and clinical characteristics of the study populations.

Conclusion

This scoping review identified that the experiences of caregivers and patients with hip fracture during transitions in care have not been widely studied. This review provides a foundation to guide future research, policies and practices that improve care transitions for patients with hip fracture and their caregivers.
Measuring Agreement on Multimorbidity across Data Sources: A Comparison of Administrative and Self-Report Data

Presented by: Lauren E. Griffith, Associate Professor, Department of Health Research Methods, Evidence, and Impact, McMaster University

Background and Objectives: While many researchers have examined agreement between self-reported and administrative data on individual chronic conditions (CCs), few have examined the implications for measuring multimorbidity. We used data from Ontario to examine agreement between administrative and self-reported CCHS data for 12 individual CCs, the overall number of CCs, and the constituent CCs. We further examine the impact of individual CCs on the agreement on the overall number of chronic conditions between the two data sources.

Approach: We used self-report data from 71,317 Ontario participants aged 45+ from four cycles of the Canadian Community Health Survey (CCHS) linked with provincial administrative databases. The prevalence of individual CCs and the overall number of CCs was estimated using administrative data and self-reported clinical diagnosis. Agreement for each of 12 CCs was assessed using Kappa and Phi statistics. We then examined agreement between data sources on the absolute number of CCs, and agreement on the number and constituent CCs which we called “perfect agreement”. Jackknife methods were used to assess the impact of each CC on perfect agreement.

Results: Individual CC agreement ranged from κ=8.9 (stomach ulcers) to κ=77.6 (diabetes). The average number of CCs was higher using administrative data (1.87) compared to self-report (1.64). There was agreement between the two data sources on the number of CCs for 37.5% of participants; 26.9% had perfect agreement and 10.6% agreed on the number but not constituent CCs. Perfect agreement decreased as the number of CCs increased, varying from 28.4% for one CC to 3.2% for five or more. The impact of each condition on multimorbidity perfect agreement depended on both the individual conditions’ agreement and prevalence. For example, removing Alzheimer’s disease (κ=42.78, prevalence=1.1%) from the CC list had the smallest impact, increasing agreement by 0.1%, whereas removing arthritis (κ=30.22, prevalence 44.8%) increased it by 13.4%.

Conclusion: Multimorbidity agreement was low and decreased as the number of CCs increased. Our results show that measuring agreement on multimorbidity is more complex than for individual conditions. Our results have potential implications for interpreting multimorbidity prevalence measures, estimates of its impact in clinical research, and comparing results across studies.
Factors affecting medication adherence for persons with spinal cord injuries: A clinical conceptualization

Presented by: Sara Guicher, Assistant Professor, University of Toronto

Background and Objective: Individuals with spinal cord injuries (SCI) often take multiple medications (i.e. polypharmacy) to manage their secondary complications and chronic conditions. Clinicians play a supporting role in assisting individuals with SCI with their medication self-management, including medication adherence. Therefore, the purpose of this study was to explore clinicians’ experiences and perceptions of factors that impact medication adherence for this population.

Approach: Telephone interviews were conducted to explore clinicians’ experiences with medications management for individuals with SCI. Participants were recruited through clinical organizations and researchers’ personal contacts. Participants were purposefully selected for diversity in profession and were required to be English speaking and to have provided care to at least one individual with SCI. Interviews were qualitative in nature with open-ended, semi-structured questions. Data were transcribed and coded using NVivo 11. Data display matrices were used in a constant comparative process for descriptive and interpretive analysis.

Results: Thirty-two interviews were conducted from April to December of 2018. Clinicians identified 13 factors that impacted medication adherence for individuals with SCI. Clinical roles influenced the identification and emphasis placed on the impact of different factors. Factors were categorized into micro (medication and patient-related factors), meso (clinician-related factors) and macro (health systems-related factors) levels. Medication-related factors included side effects, effectiveness, safety and regimen complexity. Patient-related factors included knowledge and education level, preferences, expectations and goals, severity of injury and comorbidities, access to caregivers and use of adherence strategies (e.g. compliance packaging). Clinician-related factors included knowledge/confidence and trust and relationships with patients. Health systems-related factors included access to health care (e.g. transportation, wait times) and access to medications (e.g. cost, medication delivery, refill policies).

Conclusion: Clinicians identified an array of factors that influence medication adherence for individuals with SCI. Micro-level factors were the most abundantly discussed by all clinicians. Study findings indicate medication adherence is a complex concept. Thus, strategies to optimize medication adherence for individuals with SCI should be multi-faceted.
Patient and caregiver experience with delayed discharge from a hospital setting: A scoping review

Presented by: Sara Guilcher, Assistant Professor, University of Toronto

Background and Objectives

Delayed hospital discharge is a common health systems quality and safety concern, and results in reduced levels of treatment, placing patients at risk of functional decline, falls and hospital-related adverse events. Caregivers often take on an active role in hospital to mitigate the effects of reduced clinical care. This scoping review aimed to summarize the literature on patient and caregiver experiences with delayed hospital discharge.

Approach

Seven electronic databases and grey literature were searched for articles published in the past 20 years. Keyword searches were conducted using the appropriate Boolean operators, wild cards, proximity operators and truncations for combinations of the following words: delayed discharge, alternate level of care, patients, caregivers, experiences, perspectives, perceptions, satisfaction, expectations and attitude. The reference lists of included studies and review articles were also searched. The search yielded 4,725 articles after deduplication. Fifty-nine articles met the criteria for full text review and seven articles were ultimately included in this scoping review. Data were extracted and charted using Microsoft Excel.

Results

Most articles focused on patient experiences, with only two reporting both patient and caregiver experiences. Less than half of the articles reported patient living arrangements pre-hospitalization; however, all reported the planned destination post-hospitalization, which was almost always assisted-living or long-term care facilities. Few articles reported participant demographic data other than age and sex. Five themes were prevalent: 1) overall uncertainty (e.g. about diagnoses, hospital and placement processes, what questions to ask and who to ask); 2) mental and physical stagnation; 3) lack of engagement in decision-making; 4) initial surprise followed by resignation towards the situation; and 5) impact of hospital staff and physical environment on overall experience. Gaps identified included limited patient and caregiver context (e.g. sociodemographics), few longitudinal studies and small participant numbers.

Conclusion

Studies on the experiences of patients and caregivers during delayed hospital discharge are limited. This review provides a foundation to guide future research, policies and practices to improve patient and caregiver experiences with delayed hospital discharge, including enhanced communication with patients and families and programs to reduce deconditioning.
Exploring value propositions of virtual primary care for patients and providers

Presented by: Jamie Fujioka, Research Assistant, Institute for Health Systems Solutions and Virtual Care, Women’s College Hospital

Despite the virtualization of many services we use in our day-to-day lives, healthcare is lagging behind in using digital solutions to improve care. The Ontario Telemedicine Network is running a demonstration project across 5 local health integration networks to trial billable virtual visits with primary care practitioners. To date, over 200 physicians and 22,000 patients have registered for the service, with more than 6,200 virtual visits completed. Virtual visits are conducted over an online platform, and can be completed through audio, video, or secure messaging. 98% of visits have been secure messaging.

We have found that most of the virtual visits are conducted by approximately 20% of the providers, and it has been challenging to recruit clinicians. Successful implementation and spread of virtual visits requires balancing the trade-off between improved access and increased workload, as well as identifying areas of synergy, such as the increased convenience of eVisits. Through qualitative interviews, we have explored the various value propositions of virtual primary care visits for both providers and patients, in order to drive uptake.

Patient value propositions:

- Convenience: Easier access to clinician was of priority. Rapid response is not needed; rather, patients valued more the convenience of not having to take time off work, seek childcare, or drive long distances.
- Access: Can improve continuity and access to care for patients who have moved out of the area but still have the same PCP and homebound or low-mobility patients
- Urgent issues: Patients identified an interest in accessing a platform that would provide rapid responses for urgent issues, particularly after hours (not enabled by current model).

Provider value propositions:

- Efficiency: Increase the number of patients PCPs can see per day, while not overwhelming their workflow.
- Revenue: Increase provider revenue by increasing efficiency by enabling them to maximize their care bonuses, or paying them for previously unpaid (e.g. phone calls).
- Care quality: Enable clinicians to improve the quality of care they can deliver to their patients.

Developing a model that promotes physician adoption as well as patient-centeredness and improve quality is a significant challenge which will be explored in the continuation of the virtual primary care project.
A Qualitative Approach to Nursing Staff Shortages in Nova Scotia’s Rural Emergency Departments

Background: In Nova Scotia, rural residents experience barriers to access healthcare due to unplanned temporary emergency department (ED) closures. Nursing shortages are a persistent and complex reason behind closures underrepresented in research studies in this setting. This study aims to understand how ED managers experience a nursing shortage in the context of rural ED closures. Insights into the nursing shortage gained through this study can guide health human resource planning, and help build resilient EDs.

Approach: This is a qualitative study using descriptive phenomenology. The approach seeks to bring meaning to the phenomena of nursing shortages by rigorously examining its presentation in the lived experiences of the participants. In the study, researcher bias is suspended through a reflective process. Approximately 8-10 managers from rural EDs in Nova Scotia are expected to participate. Data will be collected through 1hr semi-structured online interviews with each participant. Interviews will be analyzed using the 7-step Smith-Colazzi-Keen method. Research participants will also be asked to co-generate recommendations with the research team based on study findings.

Results: This study is currently in the data collection phase, and results are expected by May 1st. It is expected that ED managers will have some shared experiences with nursing shortages in the study context and will be able to give detailed accounts of their experience. Due to the unbiased stance assumed by the researcher and the analysis method used, it is difficult to anticipate more detailed study results.

Conclusions: Findings from this study along with the recommendations co-generated by participants will be shared with decision-makers in the organization. It is expected that the results of this study will have implications for future ED staffing decisions and health human resource practices.
One of the keys to achieving better system and health outcomes depends on addressing the complexity of circumstances for people with both medical and social needs. People who have multi-morbidities including mental illness, are under-housed or homeless, and who lack other social supports are often underserved by the health system. The solution to this challenge is supporting these people better outside hospitals. We present concrete steps for stakeholders to work toward achieving this.

In collaboration with health and social care partners, we convened a one-day symposium in March 2018. Sixty-two people attended representing people with lived experiences, the hospital sector, the municipal and provincial governments, community support agencies and researchers.

The symposium included a moderated panel discussion featuring people with lived experience of homelessness and community-based support workers. Following sessions focused on sharing innovations in policy and practice. Breakout sessions highlighted meaningful solutions to engaging people with lived experience, organizational collaborations and policy-level innovations. Following the symposium, we analyzed the in-depth notes taken throughout the day to identify the four themes below.

These four themes represent the most important points of discussion during the symposium. Each theme includes specific action items that are targeted to service providers, organizational leaders and governments.

1. Employ people with lived experiences and work with them to co-design services. This includes supporting peer work, and that engagement of people with lived experiences must follow culturally safe, trauma-informed approaches.

2. Review or simplify institutional policies and rules that do not support people-centred care. This involves identifying operational rules that might interfere with people-centred care and innovation.

3. Look at novel ways of working together (Governance). This involves identifying concrete opportunities for collaboration across sectors.

4. Use innovative funding models that enable improved outcomes more efficiently. This involves better aligning funding.

While many of these points could be addressed immediately, we see a tension between two strategies for achieving these goals: identify best practices and implement them everywhere (“spread and scale”), or promote local innovation because local providers know best (“local design”). We believe strategies aligned with both approaches are necessary.
The effect of community water fluoridation on the dental health of recruits in the Canadian Armed Forces

Presented by: Alyson Mahar, Assistant Professor, Manitoba Centre for Health Policy

Background

Community water fluoridation is heralded as one of the most successful public health interventions of the previous century. However more recently, uncertainty regarding its effectiveness in reducing dental caries has led to the discontinuation of fluoridation in several Canadian municipalities. The aim of this study was to compare the dental caries experience of young adults who enrolled in the Canadian Armed Forces (CAF) in relation to residence in fluoridated communities (FC) and non-fluoridated communities (NFC).

Approach

The study population consisted of new members who enrolled in the CAF between 2006 and 2017 with a residential address in Canadian cities with known fluoridation status (n = 18,889). Odontogram data from enrolment dental examinations were used to calculate the number of decayed, missing, or filled teeth (DMFT) and tooth surfaces (DMFS) for each recruit. The average difference between recruits from water FC and NFC was determined using a linear regression model, adjusted for age, sex, rank, and median income quintile of their residential census tract. Effect modification by income and rank were investigated.

Results

The average recruit was 24 years old and had 5.52 DMFT and 10.50 DMFS. Adjusting for age, sex, rank and income, recruits residing in FC had 0.63 (95% CI 0.50, 0.76) lower DMFT and 1.51 (95% CI 1.18, 1.84) lower DMFS than recruits in NFC. The magnitude of the effect of water fluoridation was greater for recruits residing in lower income areas and was greater for non-commissioned members (NCM) than for officers. NCM in the lowest income quintile from FC had 0.64 (95% CI 0.35, 0.93) lower DMFT and 1.80 (95% CI 1.07, 2.52) lower DMFS than those from the lowest income quintile in NFC. For census tracts in the highest quintile, these differences were 0.23 (95% CI -0.75, 0.29) and 0.12 (-1.43, 1.19).

Conclusion

This study supports the effectiveness of community water fluoridation as a public health intervention using sample of young adults who recently enrolled in the CAF. Community water fluoridation is associated with reduced tooth decay and its benefits are particularly evident for NCM and for those from lower-income neighbourhoods.
A LIVING LABORATORY SUPPORTING INDIVIDUALS WITH COMPLEX CARE NEEDS: UNB’S CENTRE FOR RESEARCH IN INTEGRATED CARE

Presented by: Shelley Doucet, Associate Professor, University of New Brunswick

DOUCET, Shelley1,2,3, LUKE, Alison4, BINNS, Krystal5, SZYMANSKI, Victor6

1Jarislowsky Chair in Interprofessional Patient-Centred Care, UNB Saint John, NB; 2Associate Professor in Nursing and Health Sciences, UNB Saint John, NB; 3 Adjunct Professor, Dalhousie Medicine New Brunswick, Saint John, NB; 4 Research Associate, NaviCare/SoinsNavi; 5Program Coordinator, NB SPOR PIHCI Network; 6Knowledge Translation Officer, NB SPOR PIHCI Network

Background and objectives: Individuals with complex care needs require more healthcare services than the average population. These individuals have better outcomes if they have access to integrated services across settings and sectors. Although promising research initiatives are underway in New Brunswick, many have been undertaken independently of one another. It is critical to provide a platform to ensure effective collaboration among stakeholders in this field, hence the development of the ‘Centre for Research in Integrated Care’ (CRIC).

Approach: CRIC is a collaborative living laboratory that develops and evaluates integrated models of care that are patient-centred and meet the unique needs of individuals with complex health and social concerns. A living lab provides researchers, knowledge users, and patients a real life setting where innovative ideas can be explored and modified as needed throughout the research process. It also serves as a venue to make important policy advancements in an efficient manner. CRIC is a transformative teaching centre for research trainees and clinicians and provides training to promote the establishment of a team of highly impactful health researchers across NB.

Results: As a living laboratory, CRIC will create an ecosystem where diverse stakeholders can co-create knowledge and solutions to contemporary health and social problems that face this province and support research programs that transcend traditional disciplinary boundaries. The establishment of a formal centre will help attract new research funding, which will support ongoing and future research. There is a critical mass of stakeholders committed to this endeavor, with opportunities to not only nurture existing partnerships, but also create new partnerships in our region, across Canada, and beyond.

Conclusion: The sustainability of the NB health care system is dependent upon finding new ways to meet the needs of individuals facing complex health concerns. CRIC bridges the gap between researchers and clinicians by acting as a platform to foster innovative and integrated health services across settings and sectors.
Are Canadian HIV Care Settings Patient-Centered Medical Homes (PCMH)?

Presented by: Esther Shoemaker, Postdoctoral Fellow, Bruyère Research Institute

Background and Objectives:

HIV is now considered as a complex chronic condition that is often managed in primary care settings for people living with HIV and who are taking continuous antiretroviral therapy. The Patient-Centred Medical Home (PCMH) is a model to deliver such comprehensive, coordinated, and integrated primary care that promotes collaboration between primary and specialist care and allied services. Our study assessed the alignment of Canadian primary and specialist HIV care settings with the PCMH.

Approach:

We conducted an explanatory sequential mixed-methods study with representatives from HIV care settings across Canada. We used the PCMH assessment tool modified for the Canadian context and a semi-structured interview guide. We analyzed the survey data to evaluate the alignment settings with the PCMH, while we analyzed the interview data collected from a subset of survey respondents to further assess if and how settings implement the joint domains of patient oriented care as specified by the PCMH. The clinical attributes of HIV care settings and PCMH scores were collected and compared between primary care and specialist care settings.

Results:

Twenty-two settings completed the survey and 12 participated in follow-up interviews. Settings had a mean PCMH score of 8.06/12 (SD=1.53), indicating the basic elements of each PCMH domain have been implemented. Continuous team-based healing relationships had the highest score and quality improvement strategy the lowest. We found no significant differences between HIV primary and specialist care settings. The themes that arose from the interviews were: endorsement of the principles of the PCMH by all care settings; organizational structures of settings located in hospitals facilitating the implementation of the PCMH through existing technology, patient advisory boards, accessible care services; and dissonance between complex care needs and existing organizational structures in some settings, including high patient loads, limited clinic hours, and lack of electronic medical records (EMR).

Conclusion:

HIV care in Canada is reasonably well aligned with the PCMH model, irrespective of composition of care settings. We propose the need for improvements in the use of EMR, quality improvement initiatives, and accessible mental health services to achieve better care delivery and health outcomes among people living with HIV.
Using ICD-10-CA/CCI: What Every Analyst Needs to Know

Presented by: Denise Cullen, Program Lead: Classifications and Terminologies, Canadian Institute for Health Information (CIHI)

Background and objectives

To advance health care research, policy development, and decision-making, coded diagnostic and procedural data from the Discharge Abstract Database (DAD) and the National Ambulatory Care Reporting System (NACRS) are frequently used. Understanding how this data is collected and coded is critical to data analysis. However, there has historically been minimal support for researchers and analysts using data coded with Canadian classifications (ICD-10-CA and CCI). This poster presents an innovative course aimed at bridging this gap.

Approach

CIHI developed and maintains the ICD-10-CA and CCI classifications, and supports clients on extraction and interpretation of the related coded data. Drawing on extensive experience in client support for the use of coded data in health system analysis and performance reporting, as well as practical insights from hospital-based coding of data, a course was developed focusing on DAD/NACRS. The course encompasses the classifications underlying diagnoses (ICD-10-CA) and procedures (CCI), the Canadian Coding Standards that drive how data is coded, and an understanding of the relationship to various other DAD/NACRS data elements. The approach is online, interactive and user-centric.

Results

Using ICD-10-CA/CCI: What Every Analyst Needs to Know, released in April 2018, provides the researcher and analyst with an understanding of coding and classifications, factors to consider in case selection and data extraction, and questions to ask to ensure the right data is pulled and interpreted accurately. Additional tools are provided to support analysis, as well as handbooks for each of the classifications. Preliminary assessment indicates that feedback from users has been exceedingly positive. This course and the various tools provided is anticipated to have a positive impact on analysis and reporting. Continual evaluation of the course will be conducted over the coming months.

Conclusion

Understanding of data input processes and the structure and history of classification use in Canada makes for robust use of ICD-10-CA/CCI coded data. The course, Using ICD-10-CA/CCI: What Every Analyst Needs to Know, provides the necessary information and tools to promote better data, better decisions, and subsequently healthier Canadians.
Partnerships to Change Practice: Using an integrated knowledge translation approach to implement and evaluate nursing practice and policy changes

Presented by: Christine Cassidy, Postdoctoral Fellow, IWK Health Centre

Background and Objectives

Despite significant investment in health research, challenges remain in moving evidence into practice and policy. Integrated knowledge translation (IKT) aims to close this gap by promoting a collaborative model of research, where researchers and knowledge users work together to address complex health care problems. Over the past two years, our team of researchers, administrators and clinicians have used an IKT approach to design, implement, and evaluate nursing practice changes in acute pediatric care.

Approach

We use the Knowledge to Action Cycle as a framework to guide our implementation and evaluation projects. Our team first identifies the practice issue based on a review of patient and health system outcomes and selects an intervention from the empirical literature. Next, we use the Theoretical Domains Framework and i-PARIHS Framework to conduct a pre-implementation barriers assessment and tailor implementation strategies to the local context. Post-implementation, we use quantitative and qualitative methods to build an understanding of how the intervention is used in practice and evaluate the impact and sustainability of the intervention on patient and health system outcomes.

Results

We have used this IKT approach to implement three interventions on one pediatric inpatient unit, including a new model of care, early warning system, and handover tool. Similar factors influenced all implementation projects, regardless of the type of intervention, including the impact on clinical decision-making and interprofessional relationships. We are using this approach with two additional implementation projects on other units in the hospital. We are starting to see different contextual factors influencing implementation, including the unit’s culture of nursing practice, patient population, and physician buy-in. Future evaluation of administrative data using interrupted time series analyses will give us a better understanding of the impact and sustainability of the interventions on patient and health system outcomes.

Conclusion

Our theory-based, IKT approach has led to the development of relevant practice change questions for knowledge users and findings tailored to the practice setting. Additional research is needed to understand our partners’ experiences with IKT and the sustainability of this partnership for implementing and evaluating future nursing practice changes.
Background and Objectives: Frailty has been conceptualized as a state of increased vulnerability to stressors that allows for the assessment of variability in resilience in older individuals. Currently there is sparse population-based data on the burden (prevalence) and patterns (distribution) of frailty in Canada. This study assessed frailty from a population health perspective using data from over 50,000 participants of the Canadian Longitudinal Study on Aging (CLSA).

Approach: A Frailty Index (FI) was created based on the ratio of present to potential health deficits (n = 90) using baseline CLSA data collected on community-living Canadians aged 45–85 years. Multiple imputations were used to create 10 complete datasets for analysis. Using average FI, we examined how the burden and patterns of frailty differed by the characteristics identified in the Pan-Canadian Health Inequalities Report as social stratifiers associated with population health status. We further divided FI items into 3 domains (physical function, chronic conditions [multimorbidity], psychological/social factors) and examined the burden and patterns of these domain-specific indices across subpopulation partitions.

Results: The mean FI of the 50,324 CLSA participants was 0.13±0.08, increased with age, and was higher in women. Higher mean FIs were found among participants with low-income (0.20±0.10), who did not complete secondary education (0.17±0.09), or had had a low perceived social standing (0.18±0.10). FI was not associated with province of residence or urban/rural status. After simultaneously adjusting for subpopulation partitions, income explained the most heterogeneity in the FI with a similar pattern found in women and men. The heterogeneity with income was greater in the younger age groups compared to the older age ones. When examining the patterns by frailty domains, the heterogeneity appears to be driven more by psychological/social factors than physical function deficits or chronic conditions.

Conclusion: Frailty differed across population partitions associated with health inequality. After adjustment for other factors the greatest heterogeneity was found across income gradient. This disparity was similar in both sexes but more pronounced in younger participants and was driven primarily by the psychological/social factors used to calculate the FI.
Patterns of physician care at the end of life: Research in progress to describe continuity of care, using health administrative data in Ontario

Presented by: Michelle Howard, Associate Professor, McMaster University

Background and objectives: Initiatives across Canada are focusing on increasing access to palliative care services. There are not enough specialized palliative care clinicians and models of physician care vary widely depending on local circumstances. For these reasons, care may be fragmented, despite possible benefits of continuity. The ideal mix and continuity of care is not known. This study aims to describe continuity of physician care in the last year of life.

Approach: We will conduct a retrospective cohort study of the delivery of physician care for Ontario decedents age 18 years and older. Health administrative data at IC/ES will be used from 2010 to 2016. Indices of continuity will be used to describe physician care over the last months of life examining concentration of care by a single physician and sequential continuity of care. Continuity will be described for decedents overall and by trajectory - terminal (i.e. cancer), frailty, or organ failure, by proximity to end of life (e.g. last 6, 3, 1 months) and by geography (e.g. health region).

Anticipated Results: Over the study period, we expect to have data on over 300,000 decedents. We anticipate that there will be times in the last months of life where continuity of care may be low from the perspective of overall concentration with a single physician, and there will be sequential discontinuity. We also anticipate continuity may be lower at times for decedents with frailty or organ failure trajectories compared to terminal trajectories.

Conclusion: This descriptive study is part of a larger study examining the impacts of different patterns of physician care on end-of-life outcomes. Common indices of continuity of care have not previously been described in the last months of life for different dying trajectories, in Canada. The results will directly inform current Canadian and provincial palliative care health service reforms.
The Use of Narratives to Inform and Guide an Innovative Primary Health Care Intervention

Presented by: Karen James, Patient Partner, Bruyere Research Institute

Background

Narratives have been integral to health care in training, understanding patients’ experience, and sharing information among practitioners. These stories are a means to learn from others, reflect on practice, and work on the complex issues of patient care. Narrative takes many forms including case studies, patient accounts, reflective writing, and dialogue. We report on the use of narratives to inform the development and implementation of the Access Resources in the Community (ARC) navigation model.

Approach

The ARC intervention introduced a non-clinical patient navigation model in family medicine practices to help patients overcome barriers to access community-based primary health care resources (CBPHC) to achieve their health goals. Narratives were used in each phase of the ARC intervention: development, implementation, evaluation, and sustainability. Narrative forms were chosen to align with the audience, context, goals of each phase and desired outcomes including gathering information about patient access to PHC, enhancing understanding about vulnerable populations, communicating intervention activities, and disseminating scientific results.

Results

Interviews and focus groups with patients, primary care providers, and community service organizations helped us understand their lived experience with access to PHC and informed the development of a patient-centred navigation model. Patient stories, role play, and dialogue were integral to the training of patient navigators, and revealed their experience and emergent learning needs such as applying motivational interviewing skills. Navigators engaged in reflective writing to explore their knowledge, beliefs and values about vulnerable populations. Collaborative dialogue among advisory committee members, the research team and navigators guided each phase of the intervention. Case descriptions developed from the navigators’ practice revealed the interconnectedness of patients’ physical health, psychological and social needs, and shaped navigation activities. Patient stories were also essential to facilitate knowledge translation strategies.

Conclusion

Narratives can be used to effectively create a CBPHC innovation, improve implementation, and share knowledge, helping to bridge the gap between research and practice. In the ARC intervention, narratives enabled an understanding of multiple voices, offered insight and shaped future action for patient navigation training and services.
Background and objectives: To address the important number of patients without a family physician, the Quebec Ministry of Health created a centralized waiting list. Evidence shows that patients from disadvantaged neighbourhoods often stay longer on the waiting list (≥ 3 years) and face multiple barriers in connecting with a family physician. We present results from the evaluation of this innovative intervention implemented in two Quebec regions to facilitate the attachment of vulnerable patients through the centralized waiting list.

Approach: IMPACT is a 5-year Canada-Australia research program aiming to co-design, implement and evaluate interventions to improve access to primary healthcare (PHC) for vulnerable populations. In Quebec, a partnership of physicians, researchers and decision-makers developed a telephone support service offered by lay volunteers to help patients from disadvantaged neighborhoods on the centralized waiting list connect with their newly assigned family physician. The service helps patients prepare for their appointments and addresses access barriers.

Evaluation: Mixed-methods approach using interviews (n=19) and surveys pre/post intervention (n=59). Outcomes measures and themes were conceptualized & integrated based on Levesque et al.’s access framework (2013). Results: Outcomes are measures and themes conceptualizing access to PHC (Levesque, Harris, Russell 2013) including, in particular “approachability” and “appropriateness”. The service improved patients’ “ability to reach” and “ability to engage”: it helped patients access the right service at the right place at the right time. The personal approach of the navigation service, by a lay volunteer, creates the foundation for a positive and enduring patient-physician relationship, leading to decreased emergency department use for minor care, lower likelihood of unmet needs and increased likelihood of successful patient-physician attachment. Volunteers provide appreciated support to PHC clinics physicians and staff by alleviating feelings of work overload and contribute to fostering positive feelings in disadvantaged patients towards their newly assigned PHC clinics and physician.

Conclusions: Lay volunteers are a low cost resource that facilitate patient-physician attachment and enduring relationships between patients and family physicians. This intervention proves to be a particularly beneficial approach to improve access to PHC for patients from disadvantaged neighborhoods who may face barriers to accessing healthcare. Conclusions (50 words): Lay volunteers are
End-of-life conversations and older LGBT populations

Presented by: Jacqueline Gahagan, Full Professor, Dalhousie University

Background: Although many older populations can experience significant challenges with end-of-life preparations, older LGBT Canadians face the additional issues such stigma and discrimination, invisibility and marginality, and ‘going back into the closet’ when in need of formal health care as they age. This national, qualitative study sought to advance our understanding of the varied needs of older LGBT adults and determine how best to meet these needs.

Approach: Our national team undertook a series of focus groups with older LGBT adults in five Canadian cities (Vancouver, Edmonton, Toronto, Montreal and Halifax) to explore and understand their end-of-life decision making, the types of formal and informal information used to inform decision making, and the place of technology in facilitating access to information resources. Inclusion criteria for participants was 60 years of age or older, English or French speaking, having one or more chronic health conditions, and some internet experience. The data collected were used to develop an online intervention to address the unmet information needs of these populations.

Results: Overall, most participants spoke of a variety of challenges in finding safe, LGBT-friendly and accessible information on end-of-life processes, particularly in smaller cities with fewer formalized LGBT resources. Although the internet was regarded by many participants as a potentially important information access or entry point, there was fear of potential breaches of confidentiality when using certain types of social media sites. In addition, having one centralized, national and trusted source of end-of-life information relevant to older LGBT adults was seen as critically needed.

Conclusion: Canadian health policy makers and analysts are key individuals needed as part of the end-of-life preparations for older LGBT populations. Additional consideration of the ways in which older LGBTQ populations, who are oftentimes absent from the policy decision-making process, can be meaningfully connected to the ways in which health systems and services consider their information needs, is clearly warranted.
Assessing the Feasibility of a Navigation Intervention in Two Types of Primary Care Practices

Presented by: Andrea Perna, Research Associate, Bruyère Research Institute

Background and Objectives:
Despite the breadth of available community-based health and social resources, gaps in access to these resources remain. Notably, individuals with complex social barriers are limited in their ability to access services when they need them. A patient-centered navigation model may help to improve equitable Access to Resources in the Community (ARC) for primary care patients. The model was co-developed by researchers in partnership with regional health planners, primary and community care providers and patient representatives.

Approach:
We introduced the ARC navigation model in two types of primary care practices: an interprofessional Family Health Team (FHT) and a non-interprofessional Family Health Organization (FHO). Providers completed a standardized referral form with their patients to identify needs for health-enabling resources. Referrals were faxed to the ARC navigator who then helped the patient overcome barriers to accessing the appropriate community resource and reported back to the provider. The ARC navigator was at the practice weekly to meet with patients and consult with providers. We surveyed providers about their experience with the ARC model at the end of their participation.

Results:
22 FHT providers and 13 FHO providers consented to participate. FHO providers completed 101 referrals, whereas FHT providers completed only 30. Of those surveyed at the end of the study (8 FHT and 10 FHO), 8 FHO and only 5 FHT providers said they were interested “a great deal/quite a lot” in continuing to use the intervention. The implementation of the ARC navigation model was perceived to be smoother among FHO providers (7) compared to FHT providers (2), and the services offered by the navigator met the expectations of more FHO providers (9) compared to FHT providers (4). Finally, more FHO providers (6) thought that the ARC navigation model improved their patients’ access to care “a great deal/quite a lot” compared to FHT providers (1).

Conclusion:
Our findings indicate that the ARC navigation model may be more acceptable in non-interprofessional practices, perhaps because they do not have access to a multidisciplinary team that would enable more comprehensive care. A randomized controlled trial is underway to test the ARC navigation model more rigorously and across different settings.
Evaluating patient partnership within the Quebec’s SPOR Support Unit governance

Presented by: Audrey L’Espérance, Research associate and strategic advisor, Centre of Excellence on Partnership with Patients and the Public

BACKGROUND The Canadian Institutes for Health Research (CIHR)’s Strategy for Patient-Oriented Research (SPOR) supports a transformation of patients’ roles from research participants to active partners in research. However, the conceptualization and measurement of patient partnership in research is poorly developed, where complexity or weak study designs are cited as reasons for low reporting levels. Quebec SPOR SUPPORT Unit aims to build a sustainable research support infrastructure for patient-oriented research (POR) across the province through its Strategy on Partnership with Patients and the Public (SPPP), in collaboration with the four University Networks (McGill University, Université de Montréal, University of Sherbrooke and Laval University), each co-led by a patient-researcher tandem. One of the SPPP’s objectives is to support patient and public partnership science through evaluation and continuous improvement of patient partnership methods. METHODS The main objectives of the SPPP evaluation are to: (1) monitor and understand engagement practices; (2) assess the experience of partners; and (3) understand factors that influence perceived partnership success. Using a concurrent triangulation mixed-methods design, data will include document review, surveys, and semi-structured interviews. RESULTS Preliminary results from each phase will be reported to Quebec SPOR SUPPORT Unit levels to adjust and adapt the support given to research teams. Data will be reported back by a face to face workshop during which SPPP and IUHN members, including patient partners, will have the opportunity to share comments and discuss recommendations on how to best use evaluation results. Results regarding the patient partnership at the governance level will be presented. CONCLUSION The results of this evaluation will aim to continuously improve partnership support tools and partnership processes that are developed by the SPPP. In addition, the evaluation results communicated to the higher levels of governance within the Quebec SPOR SUPPORT Unit will help improve patient partnership practice across all levels of the organization, and mobilize change within Quebec research networks.
Housing as a key determinant of health for older LGBT adults

Presented by: Jacqueline Gahagan, Full Professor, Dalhousie University

Background and Importance: As the number of baby boomers to reach age 65 in Canada and other countries grows, our challenge is to determine how well existing policies and models can respond to the increase in the population of older adults. Recent Canadian data show that the growth rate of the population aged 65 years and older is approximately 3.5% (which is about four times the growth rate of the total Canadian population). However, by July 1, 2024, over 20% of the Canadian population will be 65 years or older (refs). The full extent of this shift in our population is not fully known but will likely create significant burdens on the health and social systems currently in place. A key concern in meeting the needs of the aging Canadian population is on housing models and policies and in determining how well these are serving the needs of more diverse and marginalized segments of older adults (55+) such as older lesbian, gay, bisexual and transgender (LGBT) populations.

Growing Need for Innovative Approaches to Housing: Despite policy discussions around 'healthy aging' and 'aging in place', many Canadian provinces have yet to create adequate housing models or policy options for our diverse and growing aging populations. A key and oftentimes overlooked and disadvantaged segment of the aging population, and the focus of this proposal, is older (55+) lesbian, gay, bisexual, and transgender (LGBT) adults. This is a particularly pressing challenge in that many older LGBT adults live alone, do not have connections with their biological families, live in poverty and experience systematic discrimination and harassment across the life course due to their sexual orientation and/or gender identity and expression. It remains unclear how the unique housing needs of older LGBT populations will be addressed given our limited data about these populations. To develop innovative approaches, there is an urgent need to address existing knowledge gaps in relation to the intersection of key concerns of this demographic shift in Canada: aging, housing and older LGBT adults.
Exploring Health Care Consumer Involvement in Clinical Practice Guideline Development.

Presented by: Adam Jordan, Student, Western University

Background and Objectives:

Patient and public involvement (PPI) in clinical practice guideline (CPG) development has a range of benefits and challenges, which vary with strategies used; however, no literature yet exists describing current practice in Canada. This study seeks to describe PPI strategies used in development of Canadian CPGs for the management of mood and anxiety disorders. This study will characterize what groups are involved, as well as how and why they are involved.

Approach:

Canadian CPGs for management of mood and anxiety disorders, developed after 2013, were collected. Web-based material describing the development process for each guideline was also identified. This material was analyzed using qualitative content analysis to categorize groups of patients or other members of the public which were involved in CPG development, strategies used, and the intentions behind utilizing PPI in CPG development. Interviews with CPG authors were conducted, which focused on why patients and the public may be involved or excluded in CPG development, as well as collecting information on emerging strategies used to achieve PPI in CPG development.

Results:

Of twelve CPGs reviewed, only two contained clear indication of PPI during their development. Preliminary results from review of web-based material confirm that PPI in CPG development remains a poorly utilized practice in Canada. Among those organizations which have published descriptions of PPI in their CPG development procedures, a wide range of strategies have been used. Interviews completed thus far reveal an increasing awareness and acceptance of the potential benefits of PPI in CPG development; however, professionals responsible for CPG development remain uncertain with regards to what benefits they should be striving for specifically, and how these may be most effectively achieved.

Conclusion:

Although literature points to a consensus that PPI should be considered an important aspect of CPG development, current results highlight that this remains an uncommon practice within Canada, with little standardization in methods or intentions. Future research should explore how we may effectively promote PPI in CPG development.
Urban-rural differences in long-term care home access to human resources and diagnostic tests: a survey and retrospective cohort study

Presented by: Elizabeth Kunkel, Clinical Research Assistant, Ottawa Hospital Research Institute

Background and Objectives

Urban-rural health inequities are well documented in primary care, but less is known about urban-rural differences in long-term care (LTC) services. The objective of this study was to compare rates of emergency department (ED) visits in urban and rural LTC homes and examine how inequitable distribution of resources contributes to differences.

Approach

We conducted a survey of Ontario LTC homes to determine their access to diagnostic tests and human resources. We then linked survey results to administrative databases to capture resident characteristics and ED visits. Homes located in communities with < 1,000 residents were considered rural, others urban. We defined a cohort of residents in LTC between January and May 2017 and followed residents for six months or until discharge.

We constructed a multilevel negative binomial regression model for ED visits. Covariates included resident characteristics, home rurality, access to psychiatrists, nurse practitioners, and wait times for physicians, urine cultures, X-rays and blood tests.

Results

167 homes (27%) responded to the survey, 140 (84%) urban and 27 (16%) rural. Urban homes had better access to psychiatrists (83% vs. 60%) and nurse practitioners (65% vs. 48%) compared to rural homes. Urban homes also had shorter wait times for urine cultures, but longer wait times for physician visits and X-rays.

Crude ED visit rates were higher in urban homes (1.93 visits per 1,000 person-days vs 1.58 in rural homes, p < 0.001). In the adjusted model, rurality was not a significant predictor of ED transfer (rate ratio=1.18, p=0.20). Shorter wait times for X-rays and physician visits were associated with fewer ED visits.

Conclusion

Urban LTC homes in Ontario have higher ED visit rates. The association is confounded by important LTC home and resident factors. Longer wait times for X-rays and physician visits among urban homes may contribute to their higher ED visit rates.
The Way Forward; Healing the Relationship Between Western and Indigenous Medicines

Presented by: Lindsay Allen, Research Assistant, University of Manitoba

Indigenous people in Canada face alarming health inequities, inadequate access to health care, and culturally incongruous services. Colonialism and racism (including the suppression of traditional Indigenous health and healing practices) are key contributing factors. Health services that incorporate traditional healing improve access, adherence, and outcomes. This paper will provide an overview of Indigenous/Western partnerships functioning as inter-professional health services, building an understanding of the barriers that policy-makers can remove to facilitate inter-cultural collaborations going forward.

The research paradigm will be pragmatic, choosing from an interdisciplinary toolbox for efficacy and appropriateness. The ontology will be based on ways of being in Indigenous-settler relationships, acknowledging socio-historical realities, and dialogical for reconciliation. The epistemology will understand knowledge to be multiple, situated, and challenging systems built on white supremacy and colonization. The design will be a qualitative, honouring but not appropriating Indigenous methodology, using anti-colonial settler methodology. The guiding principles will be cultural respect, settler responsibility, and benefit for Indigenous communities. The method will be a review of all literature relevant to Indigenous-Western health service partnerships in Canada.

It is expected that this review will demonstrate clear benefits to Indigenous-Western health service partnerships, including reduced rates of substance abuse, FAS, and HIV mortality, and improved access to care, adherence to care plans, infant birth weights, mental health status, uptake of trauma/addictions treatment, emergency response times, patient self-responsibility, health system literacy, nutritional status, and social well-being.

Preliminary results show that: 1. While physicians feel Indigenous medicine plays an important role, patients fear disclosure, 2. Indigenous people want traditional and integrated services, physicians typically welcome partnership opportunities but lack formal means of doing so, 3. Service models exist across varying degrees of cooperation (e.g., mutual referrals, co-creating care plans), and 4. Numerous leading examples exist in Canada, but there is no comprehensive national strategy.

It is anticipated that key recommendations will include developing inter-cultural partnerships relevant to local Indigenous communities’ culture and needs; Relationship-building through inter-professional conferences, workshops, and ceremonies; Policies that facilitate formal referrals; Anti-racist educational opportunities; and Elders, healers, and community leaders consulted, included, and respected in service planning and delivery.
Residential Services for Adult Persons with Disabilities Comparative Policy Analysis: Nova Scotia and Ontario

Presented by: Madison Brooks, Graduate Student, Mount Saint Vincent University

Residential support services for individuals with disabilities is commissioned through the Nova Scotia Disability Support Program Policy (DSP Policy, 2012). The assessment of the policy is particularly relevant to the current and future development of services provided by the Nova Scotia Department of Community Services (NSDCS) and specifically the DSP, which is in the process of completing a transformation of the policy, and corresponding program. An increasing number of individuals needing support through the NSDCS programs, and the DSP in particular, have highlighted the unsuitability, unfeasibility and challenges with the policy provisions that have been under scrutiny by community stakeholders, families and individuals with disabilities that are under the jurisdiction of the policy (CHAG, 2016). To analyze the DSP Policy, the province of Ontario’s Services and Supports to Promote the Social Inclusion of Persons with Developmental Disabilities Act (SSPSIPDDA) will be critically compared. Recognizing Ontario as having achieved the closure of institutional settings in 2009 and transitioned to a model of care claiming to be both person-centred and community based-living, as Nova Scotia plans to accomplish, the policy seemed appropriate for comparison. To conduct a comparative analysis of residential services policy between Nova Scotia, a Disability Policy Lens created by McColl and Jongbloed (2006) and conceptually developed by the Canadian Disability Policy Alliance will be utilized. Criteria used to assess the DSP Policy and SSPSIPDDA policy consisted of two of the three stipulations from Article 19 of The United Nations Convention on the Rights of Persons with Disabilities (CRPD); a) choice, and b) access and inclusion, to understand not only how, but on a horizontal level why the policies are different. Discussion of comparative policy analysis findings will reflect upon conclusions of the policies in respect to analysis carried out through the Disability Policy Lens and the CRPD. Findings highlight reshaping policy through a critical perspective of community-based living, rooted in inclusion of persons with disabilities, is key to achieving specific requirements laid out in the CRPD and remedying existing weaknesses in policy according to the Disability Policy Lens.
Geographic variation in mental health service use among children and youth in Canadian Armed Forces (CAF) families across Ontario

Presented by: Isabel Garces Davila, Student, University of Manitoba

Background and Objectives

CAF families relocate four times as often as non-military families. International data suggest that relocation may impact military children and youth’ mental health. Previous research indicates variation in mental healthcare use in different regions in Ontario. With no complementary data in Canada, there is a need to understand mental healthcare use among children and youth posted to different locations. This study examined intra-provincial differences in mental healthcare use in CAF dependents relocated to Ontario.

Approach

This was a retrospective study using linked healthcare administrative datasets housed at the Institute for Clinical Evaluative Sciences (ICES) to examine intra-provincial variation in mental healthcare use in CAF children and youth following their relocation to five regions (South East, Champlain, North Simcoe, North East, Other) in Ontario, between 2008 and 2013. We examined mental health-related visits to family physicians, paediatricians, and psychiatrists, psychiatric hospitalizations. Comparisons of mental healthcare use and time to first mental healthcare visits across regions of Ontario were conducted using chi square tests (categorical data) and Kruskal-Wallis tests (skewed continuous data).

Results

This study included 5,478 CAF dependants. Half of children and youth were under the age of 7, half were boys, a higher number (N = 2,527) lived in the Champlain region than in other regions. The highest percentage of outpatient visits for mental health reasons was found for paediatricians in the Champlain region (22.3%, p

Conclusion

This is the first study to quantify intra-provincial differences in mental healthcare use among CAF children and youth relocated to Ontario. Findings indicate differences in mental healthcare use across regions in Ontario. This reinforce the need to understand resource availability in each location, identify gaps, and ensure supports are available.
Social media and peer-to-peer support for individuals with complex care needs and their caregivers: a scoping review

Presented by: Katherine Kelly, Doctoral Student, University of New Brunswick

Background and Objectives

While children with complex care needs (CCCN) experience multidimensional health and social care requirements, their families also require substantial information and emotional support to become advocates for their child’s care. Online peer-to-peer (P2P) support offers an accessible and inexpensive source of support for families of CCCN. The current study aims to develop a framework for implementing an online P2P forum for families of CCCN in New Brunswick (NB).

Approach

A scoping review was conducted to better understand the use and application of online P2P supports, and to determine the optimal social media platform for hosting a P2P forum for families of CCCN. Relevant articles were identified through searches in four major databases (Scopus, PubMed, CINAHL, Medline) and by hand searching references. Non-peer reviewed literature was identified through Google searches until the point of saturation. Potential platforms for hosting the proposed P2P support tool were identified and assessed through available evaluations of relevant interventions.

Results

A total of 94 articles were included in the final review of related literature. Social media websites that demonstrated versatility and accessibility (e.g. Facebook, YouTube, Twitter) were identified as virtual environments where patients gather to engage in P2P support activities. Facebook, in particular, was identified as the most widely-used platform. Facebook’s prominence as an important source of P2P support can be attributed to its large volume of health-related information presented across a range of topics. Of significance is recognizing that social media health information dissemination is fraught with concerns that include ethics, privacy (e.g. patient confidentiality), and the potential to spread mis-information. Moreover, barriers associated with access must be considered.

Conclusion

Social media platforms, like Facebook, offer an innovative, cost-effective approach to promote P2P support for patients and their families. Considerations must be made to ensure meaningful interaction and retention. Findings will be used to develop and evaluate an online P2P support tool for families of CCCN in NB.
The Metrics of Acute Care Re-entry: Emergency Department Visits by Recently Discharged Inpatients

Presented by: Marilyn Hodgins, Associate Professor, Faculty of Nursing, University of New Brunswick

Purpose: Unplanned re-entry into the acute care system by recently discharged patients is increasingly used as a metric for monitoring healthcare performance. However, the focus of such monitoring has primarily been on inpatient care episodes (hospital readmission) with less attention given to patients presenting to the emergency department (ED) who may be treated and released. These presentations warrant consideration in terms of their cost to the healthcare system and impact on ED patient volumes and flow.

Approach: Although '30-days' is perhaps the most frequently applied metric, its appropriateness has been challenged when the focus is on preventable re-entry. This investigation was undertaken to examine ED use by recently discharged inpatients using three metrics: within 0 to 3 days (rapid re-entry); 4 to 7 days (early); and 8 to 30 days (late) of discharge. Descriptive and comparative analyses of 13-months of administrative data from one tertiary hospital (16,379 hospital discharges to home and 57,054 ED visits) were used to examine rate of ED presentations and differences in patient demographic and clinical profiles among the three metrics.

Results: Slightly more than 2,000 ED presentations, comprising approximately 3.5% of all ED visits or 12.2% of hospital discharges to home, involved patients who presented to ED within 30-days of inpatient discharge. Of these ED presentations, 26% were classified as rapid re-entries, 21% as early, and 53% as late. Slightly more than half (51.7%) of all presentations involved women with no significant difference by metric. Statistically significant differences were observed with Rapid Re-entries being younger, with shorter hospital stays, and more likely to present to ED on weekend. The most common presenting concern for Rapid Re-entries was post-operative complication compared to shortness of breath for Early and Late Re-entries. Only one-third of the ED visits resulted in readmission with no significant difference by metric.

Conclusion: Failure to measure ED visits by recently discharged inpatients results in under-estimation of actual rate of acute care re-entry. Establishment of a consistent metric for reporting ED re-entries is needed. Treating rapid ED re-entries (within 0 to 3 days) as reportable critical incidents might facilitate efforts to prevent their occurrence.
Patient prioritization tools and their effectiveness in non-emergency healthcare services: A systematic review

Presented by: Julien Dery, Master student, Centre interdisciplinaire de recherche en réadaptation et intégration sociale

Background. Waiting lists should be managed as fairly as possible to ensure that patients with greater or more urgent needs receive services first. Patient prioritization refers to the process of ranking referrals in a certain order based on various criteria with the aim of improving fairness and equity in the delivery of care. Despite the widespread use of patient prioritization tools (PPTs) in healthcare services, the existing literature has mainly focused on effectiveness in emergency settings. Methods. This review aims to perform a systematic synthesis of published evidence concerning: 1) prioritization tools’ characteristics 2) their metrological properties and 3) their effect measures across non-emergency services. Five electronic databases are searched (Cochrane Library, Ovid/MEDLINE, Embase, Web of Science and CINAHL). Data are sought to report tool’s format, description, population, setting, purpose, criteria, developer, metrological properties and outcome measures. Two reviewers double check studies eligibility and data relevance. Data are synthesized with sequential exploratory design method. We use the Mixed Methods Appraisal Tool (MMAT) to assess the quality of articles included in the review. Results. A total of 20,008 references were found through databases search. Once duplicates removed, we screen title/abstract of 11,668 references according to eligibility criteria to finally select 26 articles to include in the review. Second screening process of referenced citations of eligible articles is underway. A preliminary analysis of results shows that PPTs are used across a variety of populations and settings. PPTs can include sets of criteria based on clinical, functional or social factors to define patients’ needs. Outcome measures of PPTs are broad, from qualitative stakeholders’ perceptions about the tool to quantitative efficiency, validity and reliability of the tool. Conclusion. This systematic review will provide much needed knowledge regarding patient prioritization tools. The results will benefit clinicians, decision-makers and researchers by giving them a better understanding of the methods used to prioritize patients in clinical settings.
Suppressing Small Counts for Public Release: Applications of Reproducible Analytics in Chronic Disease Surveillance

Presented by: Andriy Koval, Assistant Professor, University of Central Florida

In 2016, the Observatory for Population & Public Health of British Columbia launched the Chronic Disease Dashboard, an online reporting tool designed to address the gap in surveillance of chronic diseases. To protect against re-identification risk, the Ministry of Health required redacting small counts prior to releasing disease rates into public domain. These preparations, when conducted manually, have proven to be arduous, time consuming, and prone to human error.

While finding a “small” count, operationalized as “The automated suppression was successfully integrated into the Dashboard maintenance. Data preparation, application of custom algorithms, and production of graphs were implemented in R and published as a version-controlled RStudio project on Github (https://github.com/ihacru/suppress-for-release). A fully reproducible example with fictional data was made available to demonstrate the current logic of suppression and to ensure the availability of documentation for the future staff of the Observatory charged with Dashboard maintenance. Anticipating the evolution of suppression logic, we isolated the logical tests responsible for redaction and provided several options to vary the degree of preserved information. This work is an important milestone in modernizing Observatory’s analytic capacities and popularizing applied data science among its staff. This paper gives the overview of the workflow and key data operations.

This case of embedded research demonstrates the benefits and feasibility of integrating practices of reproducible analytics into routine workflow of epidemiological surveillance. We make a strong case for employing such data science devices as (1) workflow maps and (2) function dependency trees to structure applied projects and ensure their reproducibility.
Background/Objectives: Data from primary care electronic medical records (EMR) are being used routinely for research, surveillance and clinical improvement; however, they first must be assessed within the context of the intended secondary purpose. Without considering the underlying quality, conclusions may be biased or misinterpreted, subsequently impacting clinical care, policy decisions or research findings. The objective is to describe primary care EMR data quality in Alberta, within the context of hypertension research and surveillance.

Approach: EMR data extracted by two Alberta primary care research networks contributing to the Canadian Primary Care Sentinel Surveillance Network (CPCSSN) will be used. Data include patient sociodemographics, diagnoses, prescribed medications, physical measurements (i.e. blood pressure, height, weight), risk factors, laboratory results. Using a published framework for reporting data quality in distributed networks, four areas will be described: 1) original data capture; 2) data extraction, processing and transformation; 3) data element characterization (i.e. descriptive statistics, distributions/proportions, data format); 4) context-specific characterization of key variables related to hypertension surveillance and research (i.e. cohort identification, time intervals between blood pressure measurements).

Anticipated Results: Results are in progress and will be presented in full during the CAHSPR conference. The EMR data for 50,342 adults with hypertension in Alberta who had at least 1 primary care encounter in a two-year period (July 2016-June 2018) have been identified for this analysis. The process of transforming the raw EMR data to standardized, processed CPCSSN data in Alberta will be summarized. Data completeness and potential data errors are expected to vary according to healthcare utilization, severity of illness, EMR system and type of EMR data entry field (i.e. structured/unstructured). Preliminary assessment of external validity using comparisons with other data sources suggests similar hypertension prevalence as detected in administrative data and physical measures surveys, but higher estimates than self-report surveys.

Conclusion: These findings will provide insight into the quality of CPCSSN EMR data for secondary uses related to hypertension research/surveillance and will inform strategies for improving data quality. Reproducible methods will be used in order to facilitate replication of data quality reports at other CPCSSN networks across the country.
Objective: Patients’ relationships with, and attachment to, primary care providers can influence patient experience, continuity of care and health outcomes. Enrolment policies that formally link patients to providers are intended to improve patient-physician relationships. We assess the impact of Quebec’s enrolment policies on patient-physician attachment using health administrative databases.

Approach: Enrolment is a policy-driven, formalized commitment meant to encourage a stable, productive relationship between a patient and a physician and foster a sense of shared responsibility. Therefore, patient-physician attachment should increase trust and communication resulting in greater continuity of care. We measure attachment in administrative health databases using an algorithm based on identifying the usual provider of care and/or the provider of an annual medical exam. We will examine the natural experiments created by the introduction of Quebec’s enrolment policies targeting first patients with chronic conditions, and 6 years later, the general population.

Results: We will use a difference-in-differences analysis to estimate the intention-to-treat effect of the Quebec enrolment policies on patient-physician attachment at the population level. British Columbia will serve as a control in our analysis because they did not have a province-wide enrolment program when Quebec’s was introduced. We will also assess whether enrolment impacts attachment differentially by patient’s health status, sex, age, and socio-economic status. Overall, we expect the enrolment policies to produce modest improvements in attachment for patients. We hypothesize that more vulnerable patients (e.g., patients with a chronic disease, older, lower socio-economic status) will experience greater improvements in attachment to their physicians. Analyses are currently underway and preliminary results are expected in April.

Conclusion: We identified attachment as an outcome that can be captured in administrative data and was prioritized by stakeholders, including patients. Our evaluation of the impacts of enrolment policies on patient-physician attachment is an important first step in understanding whether these policies can improve continuity of care and population health outcomes.
Consequences of and interventions to address lack of attachment to primary health care: A scoping review

Presented by: Imaan Bayoumi, Assistant Professor, Department of Family Medicine, Queen's University

Background and objectives: Access to Primary Health Care (PHC) is the foundation of a high functioning health care system. Despite universal health insurance, some Canadians remain unattached to a regular PHC provider. Our objectives were to synthesize existing knowledge regarding the consequences of being unattached, particularly for vulnerable or transient populations, and effectiveness of interventions to enhance patient attachment to a PHC provider. This work is part of a broader project focused on patient attachment in Ontario, Canada.

Approach: To address our objectives, we performed a scoping review. Abstracts addressing attachment, lack of attachment, consequences of attachment/unattachment, low attachment, interventions to improve attachment, and attachment and vulnerable populations were included and synthesized. No exclusions for study design or jurisdiction were applied. Medline was searched for studies published from 1946-June 2018. Abstracts and full text articles were assessed using single review.

Results: The initial search yielded 336 citations; 79 studies were assessed in full-text and 45 met inclusion criteria. Barriers to attachment include mental illness, substance use, low income, uninsured or Medicaid status, race and recent immigration. Unattached patients experience lower quality of care, less chronic disease management and preventive care, and higher inpatient hospitalization and 30 day readmission rates. Unattached patients with low socioeconomic status, but not immigrants, have higher daytime emergency department utilization (evening use may be related to after-hours access). Centralized waiting lists were only effective where there was a sufficient supply of providers to meet the demand. No quantitative studies focused on interventions to improve attachment. Attachment was associated with more personalized care, greater confidence in care and more trusting relationships.

Conclusions: Vulnerable groups experience greater barriers to attachment to primary care. Unattached patients experience lower quality of care, higher inpatient hospitalization and readmission rates, and higher daytime ER utilization. Centralized wait lists can help with attachment. There is a need for additional research on effective strategies to improve attachment.
Optimizing the transition from hospital to community through reactivation programs

Presented by: Courtney Shaw, Senior Research Associate, SE Health- SE Health Research Centre

Background and Objectives:
The healthcare system is facing unprecedented challenges in ensuring older adults receive the right care, in the right place, at the right time. Gaps in health and social services have led to patients experiencing prolonged hospitalizations and delayed discharges which has negative patient and system outcomes. To facilitate successful hospital to community transitions SE Health and hospital partners established community-based reactivation programs. In this session, we present learnings gained through realist evaluation of three programs

Approach:
Using a mixed methods design, realist evaluation was undertaken to understand the population, processes and outcomes of three reactivation programs implemented by SE Health in the Greater Toronto Area. Clients' demographics, clinical profile and outcomes were collected using standardized measures at admission and 30 days following discharge. Systems mapping using a human factors framework was undertaken to describe the processes and activities of ‘reactivation’ and explore the potential causal relationships between social and technical aspects of the program. These systems maps were complimented by interview and focus group data from clients and providers to explore their experiences of the program.

Results:
Across all programs clients received support from nursing, physical therapy, occupational therapy, and personal support workers. This was complimented by opportunities for involvement in social and life skills activities such as cooking classes. Significant differences in patient populations were observed between the three sites, including variation in sociodemographic and clinical profile, and reason for being designated as needing an alternative level of care. Preliminary results indicate the requirement to adjust programming and services for success. All programs adapted overtime to meet client needs and work towards improving likelihood of successful reactivation. To assist with personalization of care, we facilitated the co-design of a care planning process with standardized assessment, focus on client-directed goals, shared decision-making and common data collection which should support continuous.

Conclusion:
Community reactivation programs can support transitions from hospital to community and reduce pressures on hospitals by relocating and reactivating patients needing an alternative level of care. Keys to success are care planning utilizing standardized assessment, client-directed goals, and interdisciplinary teams working in a collaborative, patient centered way.
Background and objectives: Older people with frailty often prefer to age-in-place, to remain in their homes and communities as they age. Supporting older people in the community has cost benefits for healthcare spending, however, often significant costs are incurred by individuals and families to enable aging-in-place. Understanding these costs can inform healthcare practice and policy as well as older adults as they plan and make decisions about where to live.

Approach: A systematic scoping review, following Joanna Briggs Institute methodology, is being conducted to understand out-of-pocket expenses incurred by frail older adults living at home and by their family and friend caregivers. The review aims to synthesize a range of evidence including research studies and grey literature reports. Relevant references since 2001 describing the resources, supports and costs for enabling older people with frailty to live in the community will be included. In line with principles of patient and public engagement, academic researchers have partnered with stakeholders such as policymakers, older adult patients, and caregivers throughout review planning and implementation.

Results: A comprehensive search of published literature databases (MEDLINE, CINAHL, EMBASE) and several grey literature databases resulted in 9089 citations. Titles and abstracts were reviewed by two reviewers; full-text relevance screening of 590 citations is underway. Screening, data extraction and synthesis will be completed in Spring 2019. Stakeholders actively engaged in research team meetings, contributed to study design and decision making, and will be involved in interpretation of findings and dissemination. Review findings will categorize the financial needs of older people to remain in their homes as they face health and functional changes and summarize geographic and methodological characteristics of the literature. This study will support optimizing healthcare spending, and decision making by older people with frailty and their caregivers about proactively planning for aging-in-place.

Conclusion: This scoping review extends our understanding of the state of knowledge of economic costs incurred by older adults in the community and their caregivers. Collaborative relationships between the research team and diverse stakeholders supports potential for real-world impact and integration of findings in practice and policy to support aging-in-place.
"She was just lying in bed for three days" The experiences of caregivers of patients who are stuck in hospital

Presented by: Kerry Kulski, Scientist and Assistant Professor, Sinai Health System and University of Toronto

Background and Objectives

A common health systems quality issue is delayed hospital discharge, known in Canada as Alternate Level of Care (ALC). An ALC designation is given when a patient’s treatment is complete but his/her next point of care is unavailable. While ALC patients occupy hospital beds, care and activation usually decreases, exacerbating their already heightened risk of functional decline, falls, and hospital-related adverse events. ALC also impacts patients and their family caregivers who fill these care gaps.

Approach

One-to-one semi-structured interviews are being conducted in person or by telephone with family caregivers of patients who are waiting in hospital for an ALC. The sample target is 35 family caregivers and 23 interviews have been conducted to date. Participants are being recruited from hospitals within the health regions in Ontario (North West, North East and Mississauga-Halton), Canada. These regions have varying geographies, community resources, and population characteristics. Interviews focused on caregivers' experiences of caring for patients who were designated ALC. Qualitative descriptive and interpretive analyses were used to identify core themes.

Results

Core themes to date include: patient over person (patients no longer had medical needs but still required personal care); uncertain, confusing processes (steps in care were unclear); inconsistent quality of care delivery (between providers); caregivers addressing gaps in the system (caregivers provided support to patients while in hospital); and personalization of long-term care (caregivers wanted patients to be in a place that felt homelike, stimulating and in close proximity to them). Caregivers’ roles continue while patients are hospitalized. ALC patients’ physical and social needs are often neglected by the hospital, putting patients and caregivers at risk of additional decline. Caregivers strive to fill care gaps but factors related to geographic location, understanding of the health system and comfort in advocating shape their ability to do so.

Conclusion

ALC designations create additional uncertainty during an already vulnerable time. Caregivers play a critical role in meeting the care needs of patients during this time. The caregiver experience provides insight on healthcare system gaps, the importance of caregiver involvement within care teams and a need for tailored caregiver engagement strategies.
Health System Decision-Makers' Unanswered Policy Questions About Health Technologies

Presented by: Jonathan Harris, Policy and Program Analyst, CADTH

Background

Health technology assessment (HTA) is an essential tool to support evidence-informed health policy-making. However, an acknowledged gap exists in translating HTA results into policy and practice. HTA producers are increasingly recognizing this gap and taking steps to enhance the policy relevance of their work by looking at factors beyond clinical and cost-effectiveness. One such initiative is the recent launch of a policy consultation service by a Canadian HTA agency.

Approach

The policy consultation service allows health system decision-makers to request custom reviews and analysis on policy implementation related to health technology topics. Data drawn from requests to date will be used to draw insights on the issues health system decision-makers are grappling with as it relates to the use of new or existing health technologies, as well as what considerations often go unaddressed within traditional HTA approaches.

Results

Preliminary themes that have emerged from requests made to date include: access (both to new and emerging health technologies, and how new technologies might enhance system access); reassessment and policy or regulatory modernization; potential unforeseen consequences of adoption; learning from the experiences of other jurisdictions; scaling up local innovation; and sensitivity to local context. Further results will be available in time for the conference.

Conclusions

Policy analysis that is sensitive to the local context and considers key enablers or barriers to action is complimentary to HTA in supporting evidence-informed health policy decision-making. System decision-makers are seeking high quality evidence to inform decisions, but are also seeking analysis that helps to contextualize and translate this evidence into policy options and considerations.
Empowering Women Leaders in Health Care, Health Sciences & Indigenous Health Contexts in Canada

Presented by: Ivy Bourgeault, CIHR Chair in Gender, Work and Health Human Resources, University of Ottawa

Background and objectives:

Women constitute over 80% of health workers in Canada, yet they occupy proportionately fewer leadership positions. The pace at which women attain leadership positions is slower than would be anticipated given their historical and increasing representation in the health labour force. Indigenous and Two Spirit Women holding leadership positions in the health context is also under-represented, which undermines the opportunity for a systemic-level response to the Truth and Reconciliation Commission (2015) Calls to Action.

Approach:

The Empowering Women Leaders in Health (EWoLiH) initiative aims to achieve gender equity in the health care, health sciences, and Indigenous health contexts. EWoLiH applies a set of evidence-informed tools to increase the participation, visibility, and advancement of women. This poster outlines: 1) the evidence-informed framework of challenges and enablers to women’s leadership in these domains from a scoping review of the published (n=111) and grey (n=42) literature and input from interviews and learning labs discussions with over 50 women leaders; and 2) a tool kit of promising individual, team, organizational, and system level practices organized along this framework.

Results:

Across the health care, health sciences, and Indigenous health literatures, we know more about the barriers than facilitators that foster women’s leadership. Where the literature includes an intervention, it is often only described and not evaluated. There is also a tendency for interventions to focus on the micro as opposed to the meso/organizational or macro/policy level. These are important gaps to address in the pursuit of systemic change fostering greater equity. There is also a notable absence of literature on how we can and need to engage men to be part of the solution to facilitate the inclusion of women leaders. The literature on women and Two Spirit leadership in Indigenous health is particularly sparse, which has produced an extensive knowledge gap in this sector.

Conclusions:

There are evidence-informed promising practices at the individual, team, organizational, and system levels to advance women’s participation in leadership positions, which can be applied to their health care and health science settings. There is also a unique context for Indigenous women leaders in health care and health science contexts.
A Pan-Canadian Perspective on Incident Management and Reporting

Presented by: Sherry Espin, Associate Professor, Ryerson University

Background: Robust incident management systems are necessary to report patient safety incidents. Canadian organizations need relevant information, strategies and tools to support incident management systems. The use of a pan-Canadian approach to understand various stakeholder perspectives revealed the types of education, tools and resources most needed. This research study describes a comprehensive needs assessment undertaken to develop strategies to build system capacity for preventing, recognizing, responding, learning and improving patient safety incidents.

Approach: A mixed methods approach was used to describe existing strategies for managing incidents and identifying gaps in incident management. The qualitative component consisted of six focus group sessions. Participants were recruited from the Canadian Patient Safety Institute (CPSI) database. Perspectives from clinicians, managers, executives, governors, patients and families were represented. The data were thematically analyzed. The findings informed the development of a national survey, subsequently completed by 155 participants representing different Canadian provinces and settings. An analysis of variance (one-way ANOVA) followed by Tukey Post Hoc test were used to compare the results of the survey.

Results: From the qualitative component, the findings were organized into three main groups: (1) resources, tools and education (2) management support after incident, and (3) safety as a leadership priority. Across groups, key themes emphasized the importance of communication, the tension between variation and standardization, and the shift to redefining harm. From the quantitative component, there appeared to be differences in the score means between the role groups on most items and factors (management support after incident, roles/tools and education and support, and safety as a leadership priority). The clinicians and patient or family typically scored lower than the managers or directors and executives or governors. The differences between the sector groups was not significant.

Conclusion: The results from this study represent a pan-Canadian perspective and describe current trends and needs in incident management systems. This work emphasizes the importance of promoting stakeholder involvement across sectors and provinces in order to improve patient safety through enhanced awareness, education and prevention.
Characteristics of Hospitalizations for Children and Youth in Canada with Complex Care Needs: A Population-Based Study

Presented by: Margaret Holland, Student, University of New Brunswick

Background and objectives:

There is a lack of information on healthcare utilization amongst children and youth in Canada with complex care needs (CCN). An accurate portrait of this population is needed to set targets and inform service delivery improvements. The objectives of this study are to estimate and describe this population. This study will provide stakeholders with data around high system users to inform program development that can both improve health outcomes and reduce costs.

Approach:

This population-based study employed confidential data from the 2006 Canadian Census Masterfiles and 2006/7, 2007/8, and 2008/9 Discharge Abstract Database (DAD). The Census provides rich socio-demographic data and the DAD provides data on acute hospitalization separations from all regions in Canada except for Quebec. Record linkages were based on probabilistic matching. The population of interest included children and youth aged 0 to 18 years. Multivariate logistic regressions with generalised estimating equations were used to adjust for characteristics of patients and hospital admissions. The main outcomes of interest were 30 day readmissions, length of stay, and cost of stay.

Results:

This study is ongoing and will be completed by May 2019. Results will include the percentage of hospitalized children and youth both with and without CCN in Canada. These results will be further broken down by: 1) impairment (e.g. neurological impairment, technological assistive device, single organ impairment, multi-organ impairment) and 2) socio-economic status (e.g. income, family composition, Aboriginal status, and housing). The thirty-day readmission rates and length of hospital stay for children and youth with CCN will be compared to the national pediatric average. We can then establish whether children and youth with CCN accounted for a disproportionately high share of hospitalization expenditures.

Conclusion:

Although a small proportion of the overall pediatric population, children and youth with CCN account for disproportionate share of hospitalizations and healthcare costs in Canada. Findings from this study could inform programing and cost-savings. Proposed areas of future research include the development of risk stratification profiles for this population.
Improving nursing practice in primary care through audit and feedback: A pilot study

Presented by: Émilie Dufour, Étudiante PhD, Université de Montréal

Background and objectives

There is only little performance measurement of nursing care due to limited access to data. Although audit and feedback (A&F) interventions show favorable results on performance improvement, its effectiveness and some of its components are poorly understood. This pilot study aims to evaluate the feasibility and preliminary effectiveness of an A&F intervention in a primary care nursing organization.

Approach

This pilot study is using a quasi-experimental design with 3 measurement times and is conducted in a Local community Health Center in Quebec, Canada. Performance is measured through 6 nursing-sensitive indicators using clinical and administrative data and based on episodes of wound care. Indicators include continuity, nursing follow-up, initial assessment, teaching, frequency of consultations and length of episodes. Data are collected once (T1), then after 6 (T2) and 12 months (T3). The feedback sessions are led by a clinician acquainted with this primary care nursing organization.

Results

We completed two A&F cycles. The results focus on 1) the first two times of measurement of the six performance indicators and 2) the conduct of the two feedback sessions to the nursing team. Indicators were first measured from June to December 2017 based on a sample of 410 patients, then from May to December 2018 based on a sample of 572 patients. Continuity and nursing follow-up indicators showed the lowest performance rates. A feedback session was conducted following each audit period. All team members attended, including registered nurses and managers. Most of the first session was spent on discussing indicators leading to a lack of time for reflection and action planning. Translating planned actions into practice is a major challenge for nursing teams.

Conclusion

A&F is feasible and engages nursing team members, without regard to their function. Our results demonstrate the need to clarify the indicators for clinicians to support effective reflection on their practice. Clearly explaining the indicators is essential to involve clinicians in planning actions that they are committed to carrying out.
Who really has a primary care provider in Ontario? Understanding attachment and unattachment

Presented by: Michael Green, Associate Professor, Queen's University

Background and objectives

Patients who are not attached to a primary care provider are less likely to receive recommended preventive or chronic disease care and have higher health care utilization. It is unclear however how ongoing health care reform has impacted the proportion and make up of patients who are unattached within primary care. Our objective was to develop an approach to characterizing attachment with the goal of better understanding the unattached patient in primary care in Ontario.

Approach

We used linked administrative and survey data to construct definitions of attachment. We looked at self-reported levels of attachment based on patient survey data from the Health Care Experience Survey (HCES), and matched these survey responses to health administration measures (health databases) of being rostered to a family physician/team or being virtually rostered (VR) to a primary care provider (most frequent provider billed). We derived 3 categories of attachment using these two sources of data: 1. Attached, 2. Unattached and 3. Uncertainly attached. Further refinements will involve reporting on physician and patient characteristics such as continuity of care, and measures of health care utilization.

Results

Attached patients (91.8%) and unattached patients (1.3%) were those for whom there was concordance between their attachment status in both the self-report and administrative data. Uncertainly attached patients (6.8%) were those whose responses were discordant. There were two types of uncertainty, those who self reported they had a primary care provider, but with no record of either being assigned or of attending regularly to a provider (3.0%) and those who were rostered or VR to a primary care provider, but did not feel they were attached based on self report (3.8%). For these 3 categories we included adjustments for sex, age, rurality, income, geography and co-morbidity.

Conclusions

By deriving archetypes for attached, unattached and uncertainly attached patients, we can better understand nuances of attachment that need to be considered when developing health policy for access and equity.
THE PROVINCIAL GUIDELINES EFFECT ON RISK-BASED ACCESS TO CARDIAC CATHETERIZATION IN PATIENTS WITH NON-ST ELEVATION ACUTE CORONARY SYNDROMES IN NOVA SCOTIA (2003 – 2013)

Presented by: Sanja Jovanovic, Research Associate, Atlantic Clinical Cancer Research Unit, Division of Medical Oncology

Background: Guidelines for non-ST-elevation acute coronary syndrome (NSTEACS) recommend early cardiac catheterization in patients at high risk of adverse cardiac events. The Nova Scotia Department of Health developed and implemented their own guidelines for ACS and recommend an early cardiac catheterization in NSTEACS based on patient risk. We investigated practice adherence to the guidelines recommendations by examining utilization and timing of cardiac catheterization, and one-year mortality in NSTEACS population in relation to patient risk. Approach: We conducted a retrospective cohort study (n= 25463 patients with first hospitalization for a NSTEACS event, CVHNS registry), 2003-2013. The primary outcome was adjusted utilization of (any) cardiac catheterization during hospitalization, and early catheterization (within 24 hours). The secondary outcome was adjusted one-year mortality. Multivariable logistic regression models were fit to examine the association of risk groups based on The Nova Scotia Non-ST Elevation Acute Coronary Syndrome Long Term Mortality Risk Score (NS risk score; internally validated), with receiving (any) cardiac catheterization during hospitalization and receiving early catheterization, and with one-year mortality. Results: Compared to low-risk group, odds of receiving early cardiac catheterization for high-risk group was 0.41 (95% CI 0.36 – 0.46), very high-risk 0.14 (95% CI 0.12 – 0.17), and intermediate-risk group 0.85 (95% CI 0.76 – 0.94). When stratified by guideline period, the odds of early cardiac catheterization for intermediate group in the post-guideline period approached those of reference group (low-risk group) while odds for high-, and very high-risk group showed small increases compared to those in the pre-guideline period. Adjusted ORs of one-year mortality, for those receiving (vs. not receiving) early cardiac catheterization were 0.18 (95% CI 0.05-0.77) for the low-risk group, 0.54 (0.41 – 0.7) for the intermediate-risk, 0.33 (0.25 – 0.42) for the high-risk, and 0.32 (0.23 – 0.44) for the very high-risk group. Conclusions: While provincial catheterization rates increased, higher risk patients were less likely to receive the procedure. One-year mortality was lower for those receiving catheterization, especially for patients at intermediate to high risk. Targeting catheterization to higher risk patients would be more consistent with the guideline recommendations, and has potential to result in improved outcomes.
Are non-findings a finding in healthcare disparities research?

Presented by: Alexis Gilmer, Graduate Student, Wilfrid Laurier University

Background and Objective: Literature in Canada and the US suggests that experiences and perceptions of treatment in healthcare settings differ by ethnicity and gender. This research will vary from previous literature by examining this issue across a large sample in a quantitative manner. The present study has two primary objectives. First, to assess how Ontarian’s perceive healthcare services and rate their personal health. Second, to determine gender- and ethnic-disparities in perceived quality of care and self-reported general health.

Approach: A sample of 422 participants residing across Ontario (Mage = 71.64) have been recruited thus far from a database of over 1200 individuals to complete a survey about growing up in Ontario. Descriptive statistics were conducted to better understand how Ontarian’s perceive their healthcare services and rate their general health. ANOVA analyses were performed to assess differences in perspective of quality of care and ratings of general health by ethnicity and gender.

Results: Overall, participants self-reported general health that is good to very good (M = 3.6, SD = .97). Preliminary findings indicate that men (M = 2.33, SD = .94) were more likely to avoid seeking a professional for their child than women (M = 1.68, SD = .93); however, this difference was not statistically significant. Additionally, although there were some slight differences in the perception of care across gender and ethnicity these differences were not statistically significant. For example, those who identified as Indigenous reported slightly higher perceptions of differential treatment (n = 20, M = 1.22, SD = .43) than those who identified as Asian (n = 45, M = 1.1, SD = .28), European (n = 66, M = 1.09, SD = .29), or African (n = 13, M = 1.09, SD = .30) but these differences were non-significant. As data collection is ongoing, analyses will be re-run prior to the conference, if accepted.

Conclusion: No differences by ethnicity and gender were found on the perception of healthcare treatment. This finding is inconsistent with the dominant literature. Future research should examine other explanations of disparities, such as self-reported health status, age, sexual orientation, non-binary gender.
Conversion from normoglycemia to prediabetes among immigrants of different ethnicities in Ontario: A population-based study

Presented by: Ghazal Fazli, Post-doctoral Fellow, St. Michael’s Hospital

Background and objectives: Identifying individuals with prediabetes provides an opportunity to intervene early and delay or prevent the onset of type 2 diabetes. We aimed to examine the extent to which the risk of converting from normoglycemia to prediabetes will vary among immigrants of different ethnic groups.

Methods: A retrospective cohort study was conducted to compare the incidence of prediabetes among immigrants of different ethnicity and long-term residents. Adults aged ≥20 with normoglycemia were identified using a single commercial laboratory from 2002-2011 in Ontario and followed until 2013 for the development of prediabetes. Prediabetes was defined according to the World Health Organization, as impaired fasting glucose (IFG: 6.1-6.9 mmol/L) or impaired glucose tolerance (IGT: 7.8-11.0 mmol/L) or HbA1c of 6.0-6.4%. Based on a validated algorithm, immigrants were categorized into distinct ethnic groups using country of birth, mother tongue and surnames. Fine and Gray’s competing risk survival modeling methods were used to compute incidence rates.

Results: Overall, the cumulative incidence of prediabetes was 21.2% among immigrants (N=334,678; mean age 40) and 16.0% among long-term residents (N=1,437,502; mean age 46). Overall, the risk of developing prediabetes was significantly elevated among South Asians (HR:1.95, 95% CI:1.87-2.03, p < 0.001) and Sub-Saharan African and Caribbeans (HR:1.61, 95% CI:1.54-1.68, p < 0.001) compared to Western Europeans. Over a median follow up of 8.0 years, the cumulative incidence of prediabetes was 19.8%, 20.4%, and 23.6% for South-east Asians, Sub-Saharan African and Caribbeans, and South Asians, respectively compared to 13.8% for Western Europeans. The elevated risk of developing prediabetes persisted for all other non-European ethnic groups. Furthermore, the incidence of prediabetes among younger adults of South Asian descent aged 20-34 (14.3%) was equivalent to Western Europeans aged 35-49 (15.6%). Prediabetes incidence rates continued to rise for all groups aged 35-49, but increased sharply by age 50-64.

Conclusion: High risk ethnic groups have a high risk of developing prediabetes. These findings call for health care strategies to adopt early detection interventions for prediabetes in high risk populations and implement preventive lifestyle measures.
Developing the Patient and Public Involvement Questionnaire (PPIQ): Progress to date and next steps

Presented by: Rachel Goren, Research Assistant, Ryerson

Background: The Patient and Public Involvement Questionnaire (PPIQ) was developed to measure board dynamics including public and patient involvement in the area of resource allocation decisions in drug reimbursement. Items were derived from interview data and augmented by a literature review. The PPIQ was reviewed extensively with our knowledge user partner (the Canadian Agency for Drugs and Technologies in Health, CADTH), refined using focus group feedback sessions, and assessed for sensibility using Feinstein’s components of sensibility.

Approach: As a final step in the development of the PPIQ, we will be conducting validity testing with members of drug reimbursement committees across Canada. Preliminary results from the validity testing will be presented, in conjunction with a summary of findings from the PPIQ development process. Moreover, using knowledge translation guidelines (KT), such as assessing potential impact and transferability, this poster will aim to outline the steps taken to disseminate findings from our research.

Results: Validity testing is ongoing, preliminary results will be presented. Specific activities, within the broader KT plan will also be discussed in detail. These knowledge translation activities are the creation of a user centred website, and an informational video series on patient and public engagement. Results will focus on the development of these KT materials and their utility in the implementation and uptake of the PPIQ.

Conclusions: Results from validity testing and KT plan for the PPIQ will be presented. Findings to date support the use of the PPIQ to identify the extent to which committees are meeting the criteria of patient and public involvement by international drug recommendations bodies and other health technology assessment committees.
Using Machine Learning Techniques to Predict End-of-Life Among Older Adults

Presented by: **Michael Ip**, Research Assistant, Ottawa Hospital Research Institute

Inadequate end-of-life care, including a lack of, or late initiated palliative care can lead to poor quality of life and high costs in people’s final months of life. Improving understanding of the trajectory of dying allows end-of-life care needs to be more easily identified. We use machine learning to develop mortality risk prediction models and compare their predictive ability against traditional epidemiological methods. Machine learning models can identify predictor interactions while training without prespecifying them.

We aim to identify predictors that are indicative of mortality within 6 months among older adults in Ontario receiving home care services, and create an algorithm used in a mortality risk prediction tool.

Models were created using data from RAI-HC assessments collected between 2007 and 2013. Multiple models are compared: a previously created proportional hazards regression model, a logistic regression model, and an artificial neural network model. All models were developed using the same set of predictors. Concordance (c-statistic) was used as the primary performance metric for selecting models, although other measures such as calibration are also considered.

The original proportional hazards model created had a c-statistic of 0.77 and 0.75 in the derivation and validation cohorts, respectively. The logistic regression model improved on this slightly, with c-statistics of 0.78 and 0.77. A comparison of observed and predicted mortality also shows improved performance in favour of the logistic regression model.

Neural network (NN) models did not perform well compared to the above models. Several neural network models were trained using different parameters, but all had common shortcomings. 6-month survival was highly overpredicted by the NNs, with some models even only predicting survival. The best performing NN had a c-statistic of 0.64 in its derivation cohort. Machine learning approaches less affected by imbalanced data, such as tree-based models, are considered for future models.

A better understanding of factors risk factors will help in identifying individuals at risk of dying in the immediate future, potentially care as their health status changes. Efforts are ongoing to improve the existing models and to investigate other methods that produce better performing models.
What to bundle next? Building a case for bundled care

Presented by: Jeremiah Hwee, Post-Doctoral Fellow, Trillium Health Partners, Institute for Better Health

Background: Episode-based payment holds potential to improve quality and efficiency in care. Bundled care is an approach used to reduce unnecessary care and cost variation and shift the system towards best practice care. The Ontario government piloted six bundled care projects with positive interim results creating a motivation to expand bundled care, however, it is unclear what to bundle next.

Objective: The objective was to identify which clinical areas hold the greatest promise to bundle care.

Approach: Definitions for episodes of care and practice recommendations developed by Health Quality Ontario, and a multidisciplinary expert committee were used to select clinical areas for consideration. Care episodes for Ontario adults aged ≥18 years that underwent hip fracture surgery, non-emergent spine surgery, or cancer-related surgeries including colorectal, thyroid, and lung were evaluated from 2012 to 2018. Clinical and administrative leaders were engaged to identify patient, hospital and health system outcomes. Hospital readmissions, length of stay, emergency department visits, physician visits, and costs over time were assessed for each procedure. Multi-level regressions and coefficients of variation were used.

Results: We found using an iterative process of presenting and interpreting results to clinical and administrative leaders built trusting relationships and promoted engagement. We highlighted variations in care and costs across episodes to identify areas for improvement in patient care for which bundled care can be effective in improving quality and efficiency in care. Hip fracture, non-emergent spine and colorectal surgeries had the most immediate potential for improvements in quality and efficiency in care due to wide variation in outcomes. We found results must also align with clinical leadership to lead the project, operational readiness to implement, and administrative priorities. Surgical procedures that best aligned with clinical leadership, operational readiness and administrative priorities would become the next bundled care models.

Conclusion: Using an evidence-informed standard definition for episodes of care is a viable method to empirically evaluate candidate procedures for bundled care. Marrying empirical evidence with early and consistent engagement with decision-makers was essential in identifying the next bundled care models that showed promise and aligned with organizational factors.
Addressing complex challenges in child and adolescent mental health system transformation - Choosing realist evaluation to study the Choice and Partnership Approach

Presented by: Leslie Anne Campbell, Assistant Professor, Dalhousie University

The creation of an accountable, patient- and recovery-centred model of child and adolescent mental health care is a leading priority for health system transformation in Nova Scotia. The implementation and evaluation of the transformational Choice and Partnership Approach (CAPA) model is challenged both by key differences in context between sites and by the complex adaptive nature of health systems. Traditional research methodologies may oversimplify evidence and exclude contextual considerations, hindering generalization and interpretation of findings.

Using an integrated knowledge translation approach, we identified relevant stakeholder groups including patients, families, clinicians, managers, policy makers, administrators, and health service researchers. Stakeholders were consulted through project incubators to identify knowledge users and to identify key outcomes and policy and planning information needs. Together we drafted initial research questions and further engaged stakeholders through various means of consultation to refine the research questions, inform the research approach, identify data sources and initial outcomes of interest, and to plan analyses. Consensus-based discussions were held during which several methodological approaches were compared to stakeholder needs, research priorities, and anticipated challenges.

Realist evaluation was identified as the research methodology most congruent with stakeholder-identified needs and the context-dependent complex health system research questions. Realist evaluation is a theory-driven approach to understanding ‘what works, for whom, under what circumstances, and how’ for health and social services. Based on understandings of causal outcomes as following from mechanisms that act within contexts, realist evaluation explicitly captures the complexity of health systems and diverse stakeholder perspectives and interests. Context-mechanism-outcome (CMO) configurations will be used as the main structure for framing theories to identify, test, refine, and explain (in)consistencies in the implementation of CAPA. The results will shed light on the extent a transformational model of mental health care can be scaled up or transferred to other jurisdictions or priority areas.

Health system transformation is complex, involving various components, targets, behaviours, and outcomes. Changes in context may contribute to unexpected changes to the system, resulting in unanticipated variation in outcomes. Realist evaluation explicitly considers context, and as such, it is particularly well suited for informing policy development and health system planning.
Use of digital technology in learning health systems: a scoping review

Presented by: Agnes Grudniewicz, Assistant Professor, University of Ottawa

Background & Objectives:

Healthcare leaders and researchers have articulated the need to transform health systems into rapidly learning health systems (LHSs). While digital technology has been envisioned as providing the power for LHSs by generating timely evidence and supporting best care practices, we do not know if it is indeed playing this role in current LHS initiatives. This scoping review aims to provide an understanding of how and to what extent digital technology is used within LHSs.

Approach:

Multiple databases and grey literature were searched with terms related to LHSs using a search strategy developed with a health sciences librarian and in consultation with two knowledge users. Record selection was done in duplicate by two reviewers applying pre-defined eligibility criteria based on digital technology and LHSs at the abstract and full text levels. Data was extracted from selected records by two reviewers using a piloted data charting form. Results are currently being synthesized through a descriptive numerical summary and a mapping of digital technology use onto known and emerging dimensions of LHSs.

Results:

We identified 884 records after duplicates were removed. Title and abstract screening resulted in 529 studies for full-text review. Full text screening is currently under way and data extraction will be completed by spring 2019. The literature will be synthesized through a descriptive numerical summary and categorized into themes in terms of type of digital technology identified, their degree of implementation, and the evaluation of their effectiveness. A framework-based synthesis approach will be used to map digital technology onto known and emerging dimensions of LHSs. Preliminary results show that despite the widespread reporting of the use of data and technologies in LHSs, the current literature lacks explicit and transparent discussions about how technologies are leveraged to support LHSs.

Conclusion:

We will present a detailed summary of how digital technology is used to make the LHS vision a reality. The results have policy implications as governments look to improve system efficiency. Health care providers may be interested in the results as digital technology is likely to change their practice.
Chronic Obstructive Pulmonary Disease (COPD) Hospitalizations across Canada’s Large Urban Centres: Variations and Trends in Income-related Inequalities

Presented by: Sara Grimwood, Program Lead, Canadian Institute for Health Information

Background/Objective: COPD is a leading cause of morbidity and mortality. Hospitalizations for COPD patients aged 74 years or younger are potentially avoidable with appropriate and effective primary care and tend to be higher in low income populations. Since 1982, Calgary, Vancouver and Toronto have seen the greatest increase in income inequality. This project with the Urban Public Health Network, examines over time, how income inequalities in COPD hospitalization rates vary across and within large urban centres.

Approach: CIHI’s COPD Hospitalizations for Canadians Younger Than Age 75 indicator results were pooled in five-year intervals (2006-2010, 2011-2015) and linked with neighbourhood income quintile and geography data based on patient postal codes using Statistics Canada’s Postal Code Conversion File Plus. Age-standardized rates were calculated, and income-related health inequalities summarized, using rate ratios (RR) and rate differences (RD), to examine the relationship between rates of COPD hospitalization and neighbourhood income over time. Results were reported at the Census Metropolitan Area (CMA) (e.g. Greater Toronto Area) and Census Subdivision (CSD) (e.g. City of Toronto) levels.

Results: The analysis is the first to examine trending of inequality at a local level based on hospitalization data. The results demonstrates that over time (between 2006-2010 and 2011-2015) COPD hospitalization rates were similar across the CMAs, however the inequalities in COPD hospitalizations (the highest rates were for people from the lowest neighbourhood income quintile) remained the same or widened. For example, the hospitalization rate for the Victoria CMA was 62 hospitalizations per 100,000 people in 2005–2010 and 65 in 2011–2015. However, the RR for Victoria increased from 4.4 (RD: 98 hospitalizations per 100,000 people) in 2006–2010 to 9.1 in 2011–2015 (RD: 142 hospitalization per 100,000). Inequalities in COPD hospitalizations also varied within CMAs where CSD-level inequality also remained the same or widened over time.

Conclusions: Results demonstrate persistent or widening income-related health inequalities in COPD hospitalizations in large urban centers over time. Integrating these local results with other contextual data may provide further insight to help guide communities in targeted health care planning to improve quality of care, access and outcomes for low income populations.
How do respondents of primary care surveys compare to typical users of primary care? A comparison of two data collection methods

Presented by: Shawna Cronin, PhD Candidate, University of Toronto

Background & Objectives: Patient experience surveys are an important tool for the measurement of primary care performance, however, there is limited evidence on their representativeness of the patients and the general population. Data collection methods are crucial to this endeavour, and our objective is to compare two different primary care surveys to determine differences in the representativeness of patient respondents depending on whether survey respondents were recruited by practice staff or research staff.

Approach: This representativeness study included two surveys of primary care quality: the QUALICOPC survey, where surveys were given to staff to distribute to consecutive patients, and the TRANSFORMATION survey where patients were consecutively recruited by a researcher. Survey data was linked to databases at Ontario’s Institute for Clinical Evaluative Sciences, and patient respondents of each survey were compared to patients who visited the physician on the survey recruitment day, and to patients who visited the physician on four randomly selected days throughout the year. Standardized differences were used to compare the sociodemographic characteristics, morbidity, and health care utilization of patients.

Results: The differences between characteristics of QUALICOPC respondents and other patients were negligible, whether these patients visited their physicians on the day of survey administration or on randomly selected days throughout the year. TRANSFORMATION respondents included a larger proportion of patients aged 45 to 64 and a lower proportion of patients with very high morbidity compared to both patients who visited on the same day, and patients who visited on randomly selected days. The number of primary care visits among TRANSFORMATION respondents and other patients was negligibly different; however, TRANSFORMATION respondents had lower mean ED visits and acute care stays compared to other patients visiting the same physicians on the same day and randomly selected days, indicating that patients surveyed were relatively healthier than the comparison groups.

Conclusion: This study found that survey distribution by practice staff generated more representative respondent population than research staff. This difference may reflect a better knowledge of the patient caseload by the staff and suggest primary care quality surveys could improve...
Implementing a fully integrated mixed methods design with a cross-national, multidisciplinary team: the Early Career Primary Care (ECPC) Study

Presented by: Laurie Goldsmith, Adjunct Professor, Simon Fraser University

Background and Objectives:
Mixed methods scholars emphasize the importance of integration, with key methodologists suggesting studies without integration of qualitative and quantitative phases do not earn the mixed methods label. While mixed methods research designs are now common in Canadian health services research, few examples demonstrate qualitative and quantitative integration. This presentation describes our mixed methods study of early career primary care physicians’ practice intentions, practice choices, and practice patterns and our attention to integration throughout the study.

Approach:
We employ a fully integrated mixed methods design to understand early career primary care physicians’ practice intentions, practice choices, and practice patterns within the physician workforce in BC, ON, and NS. Our study treats qualitative and quantitative methods with equal status, which is operationalized through two dominant arms (one qualitative, one quantitative) and a third arm (quantitative) playing a supporting role. The three arms are integrated in multiple ways during the study planning, data collection and analysis, and interpretation phases. Integration is further supported through some basic methods primers and regular communication and membership overlap across study sub-teams.

Results:
We are one year into the implementation of our mixed methods study. We have spent significant time refining our data construction plans within and across the study arms. Early attention to integration at the study preparation phase resulted in the identification of new concepts to use across the study arms. Regular discussion of integration also allowed for expansion of integration plans. This complex study design has been further supported by our commitment to transdisciplinarity and collaboration effectiveness. Our multidisciplinary team includes persons with expertise in both qualitative and quantitative methods, and experience serving as methods translators on mixed methods projects; all these persons serve on at least two study sub-teams. We have established a strong initial foundation for communication within and across study arms.

Conclusion:
Employing integration in mixed methods research requires sustained attention to mixing throughout the study and an openness to creating new concepts and approaches during the study. Attention to integration, transdisciplinarity, and collaboration effectiveness is especially key in cross-national, multidisciplinary teams where different team members have expertise in different components.
Identifying Timing of Recurrence in Breast Cancer Using Administrative Data

Presented by: Shiying Kong, Biostatistician, University of Calgary

Background: In population-based cancer-free survival analyses, researchers are facing the challenge of ascertaining the timing of recurrence. We previously developed a validated algorithm to identify the presence of recurrences; this is a follow-up study to detect the timeframe of these recurrences.

Methods: We used a cohort from a prior chart review that consisted of all young (≤ 40 years) breast cancer patients (2007-2010) and all neoadjuvant chemotherapy patients (2012-2014) in Alberta. Health events that signified recurrences and their timing were obtained from the routinely collected administrative data. Based on the previously developed algorithms for identifying the presence of recurrence, the timing of the recurrence was further determined by the timing of the indicator event that contributed to the detection of the recurrence. We compared the results of cox regressions models using the estimated recurrences and timing with that of chart review data.

Results: In total, 598 patients were included. 121 (20.2%) had recurrence after a median follow-up of 4 years. Based on the high accuracy algorithm for identifying presence of recurrence (with 85.1% sensitivity, 97.3% specificity, 88.8% PPV, 96.3% NPV and 94.8% accuracy), among the 121 recurrences, the magnitude of difference between the estimated and the actual recurrence dates within 0-15, 16-30, 31-60, 60-90 and >90 days were 28.9%, 14.9%, 19.8%, 9.1% and 27.3%, respectively. The estimated and actual data generated Kaplan-Meier curves are very similar (Log-rank P-value = 0.981). Also, the hazard ratios and the P-values of each independent variables (including age, tumor grade, size, molecular classifications, histology, treatments and year of diagnosis) were similar between the estimated and actual data.

Conclusion: The proposed algorithms for identifying the timing of recurrence achieved favourably high validity, and it is potentially usefully in survival analysis.
Healthcare Costs and Utilization in Young Adults with Cirrhosis: A Population-based Study.

Presented by: Jeffrey Ames, Internist, Queen’s University

Background and Objectives: Healthcare expenditure in Canada continues to rise at an alarming rate with chronic diseases accounting for the majority of the costs. Recent data from Ontario has shown that the burden of cirrhosis has increased significantly over the past 20 years and is disproportionately rising in young adults. The aim of this study was to quantify healthcare costs and describe healthcare utilization in this population to facilitate future healthcare planning.

Approach: This is a retrospective population-based study from Ontario using the database holdings of ICES from January 1, 2007 - December 31, 2016. Individuals with cirrhosis between the ages of 18-50 identified based on a validated case definition were included. After adjusting for inflation, annual total direct healthcare costs were calculated stratified by sex and hepatic decompensation across multiple healthcare settings including inpatient, outpatient, pharmacy, long-term care, and the emergency room. Healthcare usage was described across the same settings in addition to 30-day hospital readmissions and ICU admissions.

Results: During the study period the annual total direct healthcare costs in young adults with cirrhosis increased by over $191 million (2007: ~$248 million vs. 2016: ~$439 million), representing a 177% increase and almost 1% of the entire provincial healthcare budget. In 2016, the average annual cost per patient was $8,140 and was similar between sexes (males $8,205 vs. females $8,050). However, annual costs were over 3-fold greater in those with decompensated cirrhosis compared to those with compensated disease ($22,866 vs. $6,421 respectively) mostly driven by higher inpatient expenses. In 2016, 12.5% of patients required a hospital admission, 34.7% presented to the emergency room, and 7.6% required homecare services. Of all hospitalizations in 2016, 21.5% included ICU admissions and 10% were 30-day readmissions.

Conclusion: Healthcare costs in young adults with cirrhosis have risen dramatically over the last decade secondary to an increased burden of disease and high usage of inpatient resources in patients with decompensated disease. These results highlight the need for novel strategies for chronic disease prevention and management in this population.
Access to midwifery care in Ontario for people of low socio-economic status: findings from a quantitative study

Presented by: Liz Darling, Associate Professor, McMaster University

Background and objectives: Although public funding of midwifery care in Ontario was intended to increase access for people of low socio-economic status (SES), access to midwifery care based on SES has not been measured. The objectives of our research were 1) to examine whether the distribution of midwifery clients across SES quintiles changed between 2006 to 2017, and 2) to examine whether the current distribution across SES quintiles differs between midwifery care recipients and all other pregnant people.

Approach: We conducted two retrospective population-based studies using data from the Ontario Midwifery Program legacy database (2003-2012) and the BORN perinatal registry (2012-2017). The study population for our first objective included all Ontario midwifery courses of care from April 2006 to March 2017. The study population for our second objective included all Ontario residents who gave birth in Ontario between April 2012 and March 2017. We assigned neighbourhood level SES quintiles based on the Canadian Deprivation Index (CDI) and the Ontario Marginalization Index (OMI) using postal codes. Analyses were conducted in SAS 9.4 using descriptive statistics.

Results:

The study populations included 1) 187,009 midwifery courses of care (2006-2017), and 2) 700,743 Ontario residents (2012-2017). Between 2006 and 2017 the proportion of Ontario midwifery clients in the most materially deprived (CDI) quintile increased from 15.6% to 18.0%, and decreased from 21.6% to 18.7% in the least deprived quintile. The number of midwifery clients in the most deprived quintile increased from 1611 in 2006 to 4175 in 2017. Midwifery clients were less likely than the rest of the population to be in the most materially deprived (CDI) quintile (18% vs. 25% in 2017). This discrepancy varied regionally, being greatest in Toronto (21% vs. 30% in 2017). The SES distribution of rural midwifery clients is closer to that of the rest of the population.

Conclusion: Access to Ontario midwifery care for people of low SES has improved over time but remains inequitable. Given the potential benefits of midwifery for people of low SES, targeted efforts to reduce this inequity are warranted. Research about the barriers to midwifery care for this should inform these efforts.
Soins infirmiers palliatifs en centre d’hébergement : étude de l’influence de la pratique réflexive sur la perception de compétence

Presented by: Karine Couturier, Étudiante à la maîtrise en sciences infirmières, Université du Québec en Outaouais

Contexte et objectifs : Les centres d’hébergement sont le deuxième milieu de fin de vie des québécois, suivant les hôpitaux. Plusieurs études indiquent que les soins infirmiers palliatifs doivent y être développés. Selon la littérature scientifique, l’approche réflexive est une approche novatrice qui a des résultats positifs sur le développement professionnel des infirmières. Cette recherche a pour but de déterminer si une intervention de pratique réflexive influence la perception de compétence en soins palliatifs des infirmières en centre d’hébergement.

Méthodologie: Un devis mixte a été sélectionné avec une méthodologie en trois étapes : 1) développement de l’intervention avec analyse de la littérature et consultation d’experts; 2) Mise à l’essai de l’intervention auprès d’un petit échantillon; et, 3) Évaluation de l’intervention à l’aide d’une approche quasi-expérimentale avant-après. L’intervention de pratique réflexive réalisée a consisté à 46 rencontres de 30 minutes, auprès de 20 infirmiers/infirmières, sélectionnés par un échantillonnage non probabiliste de convenance. L’intervention s’est déroulée sur une période de 4 semaines, dans deux centres d’hébergement québécois.

Résultats : 1) L’intervention de pratique réflexive a été développée et validée. Les modalités déterminées sont 8 rencontres de groupe de 2 à 5 infirmières, guidées par un mentor. 2) En outre, les analyses pré intervention ont montré que les infirmières se perçoivent compétentes dans les soins de fin de vie et dans leur connaissance des enjeux personnels et professionnels liés aux soins palliatifs. La perception de compétence moins développée est dans l’évaluation des besoins spirituels ainsi que dans les enjeux éthiques et légaux. Les infirmières ayant moins de 5 ans d’expérience ont une perception de compétence moins développée. 3) Enfin, les résultats après l’intervention indiquent que la perception de compétence en soins palliatifs des infirmières en centre d’hébergement est plus élevée (p < 0,05).

Conclusion : Mesurer la perception de compétence en soins palliatifs des infirmières en centre d’hébergement permet de cerner les besoins de formation continue et de développement professionnel, particulièrement auprès des novices infirmières. La pratique réflexive s’avère une approche novatrice prometteuse afin d’améliorer la compétence infirmière en soins palliatifs.
Productivity and Access to Psychotherapy: Lessons for Canada from the United Kingdom

Presented by: Mary Bartram, Postdoctoral Researcher, McGill University

Background and objectives: Improved productivity and increased tax revenue were core elements of the original business case for the Improving Access to Psychological Therapies (IAPT) program launched in England in 2008. In Canada, productivity concerns are also driving increased interest in mental health from both the public and private sectors. This study examines lessons for Canada from the United Kingdom’s (UK) efforts to improve productivity by increasing public funding for psychotherapy.

Approach: Productivity outcomes and broader lessons learned in the UK are analyzed drawing on publicly-available IAPT data and reports, with reference to the original business case. A comparative analysis considers how these lessons can be adapted to differences in the Canadian context, including: the greater role of employment-based benefits, federal/provincial dynamics in a more decentralized government structure, and gaps in public insurance for psychotherapy.

Results: Lessons learned from the UK and how these can be adapted to the Canadian context include: 1) identifying the costs and benefits to the funder is important, and requires attention to multiple levels of government and both the private and public sectors in Canada 2) measuring changes in employment status requires transparency and careful attention to ebb and flow across various forms of occupation, both of which may be particularly challenging with Canada’s diffuse accountability for results 3) broader economic and social changes need to be considered when attributing changes in employment status to psychotherapy in Canada just as in the UK and 4) demonstrated improvements in mental health status has been enough to sustain reforms in the UK, and in Canada it may be enough to reduce long-standing financial barriers to psychotherapy services.

Conclusion: This analysis points to the need to temper productivity claims when making the case for increased funding for psychotherapy until more conclusive evidence can be developed, and to adapt the policy rationale and service system design to specific governance contexts.
Healthy Professional Workers: A Gendered Analysis of Mental Health and Workplace Stressors

Presented by: Ivy Bourgeault, CIHR Chair in Gender, Work and Health Human Resources, University of Ottawa

Background: This paper examines the workplace mental health experiences of professional workers from a gender lens. Professional workers are a particularly interesting set of workers to examine the experience of mental health issues because of the importance of mental acuity and the provisions of professional service work and the threat of their disclosure of mental health to their license to practice. Links between professional acuity, mental health and gender are neglected in the literature.

Approach: Quantitative analyses from two data sources: the 2013/14 Canadian Community Health Survey (N = 5,300) and the 2012 CCHS Mental Health and Well-being (N = 1,100) were conducted with a focus on the case study professions of accounting, academia, dentistry, medicine, nursing and teaching (primary and secondary). The workers we focus on represent a mix of sex and gender composition and work context features that the literature suggests are important to the experiences of workplace mental health.

Results: Compared to non-professional workers, the selected professions were more likely to include women with a higher than average age compared with non-professional workers. As a group, they reported higher self-perceived general health, better mental health, and a lower prevalence of mental disorders, but also higher self-perceived life and work stress than other workers. Compared to non-professional workers, case study professions reported higher psychological demands, higher job security, and higher job control (measures of job discretion and job authority) but lower job authority and higher physical requirements. Paradoxically, they experienced both higher job satisfaction but also higher work absences than non-professional workers. Women in case study professions showed higher job strain, physical exertion, and lower job authority than men.

Conclusions: Better understanding the unique workplace mental challenges faced by male and female professional workers across a range of service sectors will help to improve target interventions that foster enhanced workplace wellness and in turn professional services to clients, students and patients.
Cost of Assisted Dialysis Therapies in Manitoba

Presented by: Ryan Bamforth, Student, University of Manitoba

Cost of Assisted Dialysis Therapies in Manitoba

Background and objectives:

The prevalence of kidney failure is increasing in Canada. Most patients will require life-saving therapy with dialysis at a substantial cost to the health care system. Assisted peritoneal dialysis (PD) and assisted home hemodialysis (HD) are home based alternatives to in-centre HD for patients incapable of performing total self-care home dialysis and have demonstrated equivalent outcomes with respect to mortality and morbidity. We aimed to describe the costs associated with these assisted home dialysis modalities.

Approach:

We constructed a cost minimization model from the perspective of the Canadian public health payer. We included costs related to human resource expenses, medical and surgical supplies, dialysis-related drugs, equipment, utilities, and capital costs. Cost estimates were sourced from hospital statements of operations, established utility rates, and activity-based dialysis workload estimates.

Results

Annual per-patient maintenance costs of full-assisted PD were estimated at $75,822, $59,026 for daily assistance with set-up only, and $38,658 for self-care patients PD patients with associated training costs of $0, $3,776 and $7,157 respectively. For assisted home HD with visits three times per week, annual per-patient maintenance costs of full assistance were estimated at $49,253 and $42,054 for set-up only with associated training costs of $24,379 and $14,170.

The model estimated that in-centre HD offered lower overall costs than full-assisted PD. The time frame to achieve cost neutrality from in-centre HD to full-assisted PD was estimated at 5.1 months, 11.1 months from conventional HHD to ICHD, 3.2 months from self-care PD to ICHD and 9.2 months from conventional HHD to full-assisted PD.

Conclusion:

Partially assisted home dialysis modalities offer similar or slightly reduced costs compared with in-centre HD. Future studies to consider graduation rates to full self-care from assisted dialysis and the cost implications of respite care are needed.
Measuring the performance of integrated care systems: A scoping review of what, why and how

Presented by: Suman Budhwani, PhD Candidate, Institute of Health Policy, Management & Evaluation, University of Toronto

Background & Objectives: Health systems worldwide are exploring integrated patient care models as a means to improve outcomes. A key question is how to assess the performance of integrated care systems. The objective of this study was to assess current approaches to assessing the performance of an integrated care system. A secondary objective was to recommend a list of measures that could be used to create a best-in-class integrated care balanced scorecard for a local health authority.

Approach: A scoping review of peer-reviewed and grey literature published in English between 2000-2018 was conducted. A total of 4035 articles were gathered for screening from CINAHL, Medline, Psychinfo, Embase, Google and Google Scholar. Two reviewers independently screened articles for title and abstract based on the inclusion/exclusion criteria, followed by full text review. The main goal of the full text review was to characterize the measures used to assess the performance of integrated care and understand why they were selected, in specific contexts and how they relate to the structures and processes of integrated care.

Results: Anticipated study results will identify key constructs, dimensions and measures used to assess the performance of integrated care. A theory of change will be proposed to enable understanding of the value of specific structures and processes that lead to outputs and outcomes of integrated patient care. Reliable, feasible and scientifically sound measures will be identified that can be used to assess integrated care in Ontario. Relevant measures that describe underlying mechanisms of change will be identified and included in this proposed scorecard.

Conclusion: The what, the why and the how of integrated care are all important questions to answer in recommending performance measures assessing achievement of integrated patient care within health systems. Tracking performance of integrated care through reliable, feasible and scientifically sound measures will lead to improved patient and health system outcomes.
Evaluating the Effect of Pharmacist-led Medication Review in High-Risk Patients on Downstream Health Services Utilization

Presented by: Sophie Kitchen, MSc Student, School of Population and Public Health at UBC

One in nine emergency department visits in Canada result from adverse drug events, the unintended and harmful effects of prescription medication use. In-hospital pharmacist-led medication review has been proposed to improve detection and communication of adverse drug events to reduce the likelihood of re-exposure and decrease unnecessary health services use. This study measured the effect of pharmacist-led medication review relative to the standard of care on trends of downstream health services and prescription drug utilization.

This study analyzed data of 10,327 high-risk patients from a prospective, multi-center quality improvement program in Vancouver, Canada. An adverse drug event clinical decision rule was used to identify patients at high-risk of experiencing an adverse drug event based on the patient's age and medical history. Patients were then allocated to receive either medication review or standard of care. Medication review involved a critical examination of a patient’s medications to identify and resolve medication-related problems, and communicate these results to community-based care providers. An interrupted time series analysis was used to compare the differences in outcomes one year following the intervention.

Following medication review there was a level increase of 92.9 total general practitioner visits per 1000 patients (95% CI: -291.5, 477.2; p=0.64) relative to the control group in the month following the intervention. The trend of general practitioner visits decreased by 3.5 per 1000 patients per month (95% CI: -70.9, 63.8; p=0.92) for 12 months following the intervention relative to the control. Additional health services measures, including emergency department visits, and specialist's visits, as well as prescription drug measures, including prescription drug use and costs, patient medication persistence, and potentially inappropriate prescriptions will also be measured with results expected February 2019. Anticipated results could show a decrease in potentially inappropriate prescriptions for those who received medication review.

This study presented a novel application of interrupted time series to evaluate the effect of pharmacist-led medication review on health services utilization. While there were no statistically significant differences observed in general practitioner visits, further analysis will be done investigating the effect on alternative health services and prescription drug outcomes.
Exploring the Employers Perspective on the Implementation of Registered Nurse Prescribing in Nova Scotia

Presented by: Jaimie Carrier, MSc Nursing, Dalhousie University

Nurse prescribing has been implemented internationally for over 20 years in response to growing demands for healthcare services, demographic shifts and financial pressures. Nova Scotia is examining opportunities for innovative healthcare delivery models that optimize the scopes of practice of existing health professionals and have a direct impact on accessibility. The objective of this study was to explore the perspectives of employers on the implementation of registered nurse (RN) prescribing in Nova Scotia.

We used a qualitative descriptive design. Participants (n=9) were managers, directors, or senior directors overseeing health services for adults in primary healthcare, long-term care, home care and mental health. Interviews were semi-structured and offered the participants the opportunity to share their perspectives on, a) patient care areas that would benefit from RN prescribing, b) important concepts to be considered in the creation of RN prescribing policy, and c) the possible barriers and facilitators to the implementation of RN prescribing. Interviews were analyzed using thematic analysis.

Results revealed that employers believe that RN prescribing will improve access to timely and appropriate care, specifically in the areas of palliative care, wound care, and medication management. Employers also noted that new policies surrounding RN prescribing must promote interprofessional practice, ensure patient safety, and offer continuity between the nurse and the patient. System-level factors impacting the implementation of RN prescribing in Nova Scotia include, the crucial need for continuous support from health and regulatory organisations, as well as accessible and appropriate formal education. Healthcare organizations considering RN prescribing should have a strong interprofessional work environment, appropriate staffing, positive intraprofessional relationships, and physician support, as well as readiness for change. Other important factors include adequate peer support and strong RN/physician relationships.

This study provides health policy makers with data that is essential for the successful implementation of RN prescribing. By addressing known barriers and focusing on patient care areas that can benefit from RN prescribing, these findings support a policy that will positively impact Nova Scotian’s access to timely and appropriate healthcare services.
Towards an Organizational Participatory Research Evaluation Method: Protocol of a Mixed Methods Validation Study

Presented by: Joshua Hamzeh, PhD Student, McGill Department of Family Medicine

BACKGROUND: Organizational participatory research (OPR) involves researchers partnering with health organization stakeholders (e.g., decision-makers) to improve organizational practices. A previous review led to a comprehensive OPR partnership framework. However, no questionnaire evaluates all dimensions of the framework and, therefore, OPR partnerships. OBJECTIVES: To develop and validate a questionnaire for assessing the dimensions of OPR health partnerships. (O1) Identify the most essential items for each dimension of the framework and (O2) validate them with OPR health stakeholders. APPROACH: Two-phase mixed methods validation study. Phase 1 (O1): e-Delphi: 30 OPR stakeholders will build consensus on the most essential items for the dimensions of the OPR framework, using a 5-point Likert scale. An initial questionnaire (V1) will be drafted based on Phase 1 results. Phase 2 (O2): Ecological validation: At least 20 stakeholders, recruited from the authors’ OPR health projects, will complete the V1 questionnaire and take part in focus groups to comment on the clarity, relevance and representativeness of the items. The divergence/convergence of Phase 1 and 2 results will inform questionnaire content and format changes. EXPECTED RESULTS: A modified version of the questionnaire (V2) will be made, named the Organizational Participatory Research Evaluation Method (OPREM). CONCLUSION: This study will produce a validated questionnaire to assess partnerships between health organization stakeholders and researchers. The questionnaire will be distributed nationally and will provide health organization stakeholders information to help them improve their partnerships with researchers and consequently may help to improve health organization practices across Canada.
To increase opportunities for social engagement and promote positive attitudes towards aging the Intergenerational Activities for Growth and Engagement project (interAGE) was developed as an experiential learning, cohousing opportunity for University students and residents in a long-term care and assisted living facility (LTC/AL).

The project goals were to 1) improve the mental health and wellbeing of residents through social activities and interactions with university students, and 2) provide students an opportunity to connect with older adults in a day-to-day living environment. Students were enrolled in a fourth year elective course taught on site in the LTC/AL residence. Weekly classes were attended by: students, faculty, as well as LTC/AL residents, their family members, LTC/AL staff, and interested guests from the community. Students also engaged in 10-15 hours per week of structured and unstructured activities with residents.

This project was co-created by University of Northern British Columbia researchers and stakeholders from the Northern Health Authority. This presentation will provide insights into the pilot co-creation process along with preliminary qualitative and quantitative research findings from the perspectives of residents (focus groups and pre-post surveys), LTC/AL staff (focus groups) and students (interviews and digital stories co-created by residents and students). We will also describe the intergenerational activities led by the students.

The design process took nearly two years beginning with water cooler conversations and community consultation to decisions and actions. University students, LTC/AL residents, and LTC/AL staff participated in town hall discussions from which findings were integrated into the pilot project design. Consultation focused on assessing enthusiasm for the project, motivation to participate in the project, opportunities to identify preferred activities or time commitment between students and residents, as well as expectations of different stakeholders and opportunity to voice any concerns they may have about the project. In fall 2018 and winter 2019 semesters, the first two cohorts of undergraduate students moved in.

Together, a strong team of researchers and health care decision makers was successful in co-designing and implementing this co-housing opportunity aimed at meeting the needs of all involved within an experiential learning and research-inclusive environment.
Financial and Non-Financial Incentives Influencing Access to care for common mental disorders in Ontario Family Health Teams

Presented by: Rachelle Ashcroft, Assistant Professor, University of Toronto

Objectives

A key objective of this study is to understand how the range of financial and non-financial incentives influences access for common mental disorders (CMDs) in interprofessional primary care teams.

Approach

Led by an interdisciplinary team, this qualitative study uses a constructivist grounded theory approach. Recruitment for this study targeted participants from Family Health Teams (FHTs) in Ontario, which resemble other team-based and “medical home” models of care implemented in other provinces. Using purposive sampling, we have completed 96 semi-structured interviews with diverse healthcare professionals within FHTs (e.g. physicians, executive directors, nurses, social workers, counsellors, psychiatrists), community mental health providers, and policy and decision-makers.

Results

The poster will present findings related to our evolving theoretical model, which specifically describes the types of incentives influencing teams and clinicians, the mechanisms through which these incentives appear to be working, and their impact on access. Participants have identified a wide range of financial (e.g. funding models, remuneration schemes, bonuses) and non-financial (e.g. training opportunities, organizational culture and policies) incentives affecting mental health care, and a number of mechanisms have been revealed (e.g. autonomy, mastery, connectedness). The areas of quality explored in the study include technical care quality, access, equity, structural quality, person-centeredness, and efficiency.

Conclusion

Understanding how various financial and non-financial incentives influences access will help stakeholders understand the levers and pathways of change they can use to improve care quality for CMDs in primary care. This is especially timely for Ontario, where a regional strategy for primary care resources, including the availability and role of mental health workers is underway.
Knowledge and Motivations of Researchers Publishing in Presumed Predatory Journals: A Survey

Presented by: Agnes Grudniewicz, Assistant Professor, University of Ottawa

Background & Objectives:

The threat of predatory journals adds a layer of complexity to the journal selection process. There is a sense that predatory journals exploit the open access model, often by “spamming” researchers with offers of rapid publication at a much lower cost than legitimate open access journals, or without acknowledging that manuscripts are subject to publication fees. Our objective was to examine the motivations and experiences of biomedical researchers who have submitted to presumed predatory journals.

Approach:

Using Beall’s list and OMICS journals, we identified corresponding authors of published empirical articles in biomedical journals presumed to be predatory. We conducted an online survey asking for basic demographic information, respondent’s research status and publication record, as well as questions about researchers’ perceptions of publishing in the presumed predatory journal, type of article processing fees paid, and the quality of peer review received. The survey also asked six open-ended items about researchers’ motivations and experiences. We reported descriptive statistics for characteristics of the participants, summary statistics for quantitative items, and conventional content analysis for open-ended survey items.

Results:

We sent our survey to a total of 583 potential participants. Eighty-two partially responded (~14% response rate) to our survey (N= 59 male, 72.8%). The top three countries represented were India (N=21), USA (N=17), and Ethiopia (N=5). Only 3 participants thought the journal they published in was predatory at the time of article submission. The majority of participants first encountered the journal via an e-mail invitation to submit an article (N= 32, 41.0%), or through searching online to find a journal with relevant scope (N=22, 28.2%). Most participants indicated their study received peer review (N=65, 83.3%), and that this was helpful and substantive (N=51, 79.7%). More than a third (N=32, 45.1%) indicated they did not pay fees to publish.

Conclusion:

This work provides important evidence to inform policy to prevent future health research from being published in predatory journals. Our research suggests that common views about predatory journals (e.g., no peer review) may not always bear true, and that a grey zone between legitimate and predatory journals exists.
Criteria for Selecting Quality Long-Term Care (LTC) Homes with Promising Social Approaches: Decision-Maker Perceptions and Preferences

Presented by: Ivy Bourgeault, CIHR Chair in Gender, Work and Health Human Resources, University of Ottawa

The multi-provincial Seniors-Adding Life to Years (SALTY) project aims to add quality of life to late life for older adults living in long term care (LTC). This poster presentation shares results from qualitative research conducted to identify the criteria that Nova Scotia long-term care (LTC) program leaders and decision-makers associate with promising social approaches in late life residential care (e.g., approaches that promote comfort, enjoyment, and social engagement). To identify nursing homes with promising approaches to LTC in Nova Scotia, our team conducted a study involving 15 semi-structured interviews and one focus group with a purposeful sampling of provincial program leaders and decision makers representing government, non-government, continuing care research, union, industry and advocacy groups. Interviews were digitally recorded, transcribed, and coded and thematically analyzed using manual content analysis and NVivo software. Results were interpreted using a descriptive-interpretive sociological approach. Wordle is used to create word clouds that visualize quality by identifying most frequently used words, and to offer a means of validating findings from the thematic analysis. Results from the content analysis highlight the saliency of physical location, geographical proximity to home community, LTC home physical design, private rooms, entertainment, appetizing food, and amenities. Culturally appropriate care, care worker and resident safety, and dementia-related education and training and supports and services were also identified as important contributors to quality late life LTC. Results are visually depicted and contextualized through reference to social, demographic, and continuing care service delivery information. Despite growing recognition of the importance of resident and family preferences in LTC research, limited attention has been paid to decision maker preferences. This poster contributes to knowledge by identifying the criteria that guide decision maker understandings of quality within the Nova Scotia context.
Exploring Effective Medical Interviewing using Appreciative Inquiry Approach

Presented by: Masud Khawaja, Assistant Professor, University of the Fraser Valley

Medical interview is considered the most powerful and versatile instrument available to the physician. It is no wonder then that doctors are able to reach a final diagnosis in about 76% of the patients on the basis of an effective medical interview alone. However healthcare practitioners are apprehensive that diagnostic tests are beginning to create a wedge in the doctor-patient relationship. This study explores the clinicians’ experiences of an effective patient interview process.

This is the first known empirical study which uses Appreciative Inquiry (AI) approach to get to the core of an effective medical interview. AI is a strength based technique which instead of taking a deficit based approach enquires into the stakeholders’ narrative about what is already life-giving when they are at their best. For this study, Appreciative Inquiry interviews were conducted with six clinical faculty members of two teaching hospitals. Thematic analysis of the interview transcripts was carried out. Coding was done and data was categorized. Aggregated common information gave insight into clinicians’ perception of effective medical interviewing.

Results of this study demonstrate that the most effective patient interviews not only lead to early final diagnosis, but also help develop trust. Once rapport is established between the physician and the patient, it results in better treatment compliance and decreased morbidity. Effective patient interviews also help the physicians gain insight into any lack of available family/social support. Since such a situation is especially detrimental to the elderly, an informed physician is able to connect them to relevant social services. The most significant recurring theme that emerged from this study was the need for physicians to be motivational during the medical interview process. The results showed that motivational interviewing strategies used by the physicians were successful in enhancing treatment adherence.

Healthcare professionals lament the recent decreased emphasis in medical school curricula on history-taking skills. This AI study clearly reveals that for clinicians, medical interviewing remains the cornerstone of a successful therapeutic relationship. Furthermore, we should also explore the possibility of teaching motivational interviewing techniques to our medical students.
When policy meets practice: The implications of the legalization of non-medical cannabis for nurses in Canada

Presented by: Ashley Chisholm, Research and Policy Advisor, Canadian Nurses Association

Background: In preparation for the October 2018 legalization of non-medical cannabis in Canada, the Canadian Nurses Association (CNA) conducted research to influence policy development and prepare nurses for this wide-spread policy change.

The objectives of the following presentation are:

- To provide an overview of CNA’s approach to non-medical cannabis policy in Canada
- To describe implications for registered nurses and nurse practitioners in Canada
- To determine areas of opportunity moving forward

Methods: In 2017, to inform the CNA policy work on the legalization of non-medical cannabis, CNA engaged with nurses using a national survey to assess their knowledge on non-medical cannabis use and inform the response to Bill C-45. In addition to surveying nurses, CNA commissioned a study, by Nanos research, to assess Canadians self-reported knowledge level of the risks and harms associated with non-medical cannabis use and the role of nurses to educate the public on risks and harms associated with non-medical cannabis use.

Results: Over 90% of Canadians support nurses educating Canadians on the risks and harms associated with recreational cannabis use. Despite the public’s strong support that nurses are well positioned to educate Canadians on risks and harms associated with recreational cannabis use, only 62.8% of RNs and NPs report themselves as knowledgeable. As Canada moves forward with legalization of non-medical cannabis, there is consensus from health organizations that a robust public education campaign is necessary to prepare the public for this new policy direction.

Conclusion: While CNA has advocated for such a public education approach, we maintain that adequately preparing Canada’s nurses is an essential component of such an approach.
Nurses Leading Evidence-based Quality Improvement: An example through the development of three Choosing Wisely Canada lists for nurses

Presented by: Ashley Chisholm, Research and Policy Advisor, Canadian Nurses Association

Background: The Canadian Nurses Association (CNA) partnered with Choosing Wisely Canada (CWC) to lead the development of the first non-medical list in Canada for nurses. Since the inaugural nursing list in 2016 two specialty lists for nurses have been developed including a list on infection prevention and control in 2017 and a subsequent nursing list in gerontology in 2018.

Approach: Framed as a series of “don’t” statements, the lists of nurse-developed evidence-based recommendations serve as a resource to inform nurse-client conversations about tests, treatments or interventions which lack benefit or cause harm. This presentation will highlight the significance of CWC’s engagement with CNA as a means to expand the campaign and its evidence-informed recommendations and tools to a broader health-care community, potentially enhancing the ability to positively impact a greater number of patients. In addition, we will provide an overview of the development of the nursing list, describe the appraisal tool, and Delphi process for appraisal used by expert panels.

Results: The development of the inaugural Choosing Wisely Canada nursing list and the two specialty lists provides an example of how nursing leadership and expertise can be leveraged to develop nurse-informed resources as a tool to embed evidence into practice and influences quality and safety at point of care. Nurses are the largest group of care providers in Canada, often a patient’s first and most prolonged contact with the health care system, and key participants in team-based care.

Conclusion: Nurses need to lead and be informed on evidence-based practices as they play a pivotal role in quality improvement activities in the health care system including: supporting and engaging with patients in conversations about tests, treatments, procedures, and policy development.
Factors Associated with Emergency Department Length of Stay Times Greater than 8 Hours among Complex Patients in the Hamilton Niagara Haldimand Brant Local Health Integration Network

Presented by: Iwona Bielska, Post-Doctoral Fellow, McMaster University

Increasing emergency department (ED) patient wait times represent a substantial challenge for health care systems. Longer ED wait times are related to a greater risk of adverse outcomes, patient dissatisfaction, ambulance offload delays, and stress levels among health professionals. The objective was to identify the ED patient and visit characteristics related to wait time target status among complex patients (high acuity or admitted) in the Hamilton Niagara Haldimand Brant Local Health Integration Network (HNHB LHIN).

A secondary analysis of 2014-2015 fiscal year data on ED visits within the HNHB LHIN in southern Ontario was completed. Information on patient and visit characteristics was obtained from the National Ambulatory Care Reporting System. ED wait time performance in Ontario is measured as the 90th percentile length of stay from triage to discharge disposition. For complex patients, the provincial target is 8 hours. For the analysis, visits were classified as within target (≤8 hours) or above target (>8 hours). Logistic regression analyses were carried out to determine the association between the characteristics and visit status.

There were 551,394 ED visits of which 405,490 were among complex patients. 81% of the complex patient visits were within the 8 hour target. The odds of not meeting the target significantly increased with age, triage level, ambulance arrival, registration in ED between the hours of 21:00-5:59, receiving home care services, and hospital admission. Compared to patients who met the 8 hour target, patients who did not meet the target were more likely to be diagnosed with blood diseases (OR: 13.2, 95% CI: 11.9-14.8), endocrine/metabolic diseases (OR: 4.2, 95% CI: 3.9-4.6), and neoplasms (OR: 3.2, 95% CI: 2.8-3.7).

This study evaluated factors related to long ED wait times among complex patients. Further research should investigate possible hospital flow issues that impact ED length of stay, as well as provide evidence-based recommendations to addressing the situation.
Impact of an interprofessional team-based care program on the health care utilization of patients with complex health and social needs

Presented by: Sydney Jopling, Master’s Student, University of Toronto, Institute of Health Policy, Management and Evaluation

Background and objectives

Interprofessional team-based care (IPTBC) has been shown to improve quality of care and decrease emergency department visits for patients with complex health and social needs. “Teamcare” is an initiative designed to improve access to IPTBC for complex patients through referral programs operating in a network of Community Health Centres (CHCs) in Ontario. The objective of this study is to analyze the impact of participation in Teamcare on patient health care utilization.

Approach

The study utilized health care administrative data from the Institute for Clinical Evaluative Sciences (ICES) linked to data from Community Health Centres (CHCs), which contain a unique program identifier for SPiN participants. The study timeline is from March 31, 2015 to March 31, 2016, with a two year lookback period and a two year follow-up period centered on date of enrolment with the program. A fixed effects model with a modified difference-in-differences approach was estimated to analyze the impact of participation in Teamcare on non-urgent emergency department visits for Teamcare patients compared to a propensity score-matched control group.

Results

The anticipated sample size for the Teamcare patient group is approximately 300 individuals. The literature suggests that team-based care reduces emergency department (ED) visits and is particularly effective in reducing ED visits for patients with mental health issues and/or a high degree of medical complexity. It is therefore anticipated that the rate of non-urgent ED visits will decrease for the Teamcare patient group compared to the control group.

Conclusion

This study examines the impact of Teamcare, an interprofessional team-based primary care program, on unnecessary or avoidable health services utilization, specifically non-urgent emergency department visits. These findings will inform future efforts to improve access to team-based care and improve health system outcomes.
Rationale, mechanisms of action, and behaviour change techniques of the E_MOTIV intervention: A web-based, adaptive e-learning environment to support the implementation of behaviour change counseling in nurses’ practice

Presented by: Guillaume Fontaine, PhD Candidate & Vanier Scholar, University of Montreal

Background and objectives: Cardiometabolic risk factors, such as smoking, contribute to the rise of chronic diseases and poor quality of life. Guidelines recommend routine delivery of behavior change counseling (BCC) to patients hospitalized for problems related to health behaviors. However, studies underline limited implementation of BCC in acute care nurses’ practice. This study aimed to develop the theory underlining the E_MOTIV intervention, a web-based, adaptive e-learning environment to support the implementation of BCC in acute care nurses’ practice.

Approach: We used Sidani and Braden’s approach to develop the E_MOTIV intervention theory. This approach includes describing intervention rationale (i.e., the problem) and proposing mechanisms of action (MoAs) and strategies (i.e., behavior change techniques [BCTs]). To describe the rationale, we retained the Reasoned Action Approach (Fishbein, 2010) and Cognitive Load Theory (Young, 2014). We then used Michie’s Theory and Technique Tool (2018) to select MoAs, and link them to BCTs that were thought to influence nurses’ intention and behavior. We selected the dose, mode of delivery, and outcomes of the E_MOTIV intervention based on a systematic review and meta-analysis (Fontaine, 2017).

Results: Constructs of the Reasoned Action Approach were linked to 10 MoAs described by Michie: intention, knowledge, skill, environmental context and resources, attitude towards the behavior, beliefs about consequences, emotion, subjective norm, social influences, and beliefs about capabilities. These MoAs included for evaluation were then linked to 35 potential BCTs that either had a statistically significant effect in changing targeted MoAs, or that were considered effective in doing so by expert consensus. A total of 16 BCTs were included in the E_MOTIV intervention theory after we considered their appropriateness in improving the implementation of BCC in nurses’ clinical practice using the APEASE criteria. Three techno-pedagogical design principles derived from Cognitive Load Theory were used to develop the adaptive e-learning environment.

Conclusion: Sidani and Braden’s approach provided a systematic method for developing the intervention theory. The Reasoned Action Approach, Cognitive Load Theory, and tools from Michie facilitated the description of intervention rationale, and the identification of MoAs, BCTs, and techno-pedagogical design principles. Further research will test the effectiveness of the E_MOTIV intervention.
Instrument Development to Measure the Designs of and the Exposures to the Natural Environments in Long-Term Care Homes Among Residents and their Care Staff

Presented by: PEGGY PEI-CHI, PhD Candidate and Landscape Architect, University of Toronto

Background & Objective: The natural environment (NE) in healthcare is significantly and positively associated with health and work outcomes. The NE is an escape from the clinical environment. This area of research is novel in Canadian long-term care (LTC), and there are no validated surveys by which to measure NE’s designs and usages in LTC homes for rigorous evidence. Therefore, this presentation will describe the content and linguistic validation results of two surveys under development.

Approach: In a modified Delphi technique, contents such as domains, subdomains, and items of the surveys were finalized by expert consensus in a series of rounds. Through purposive sampling, 24 of the 39 invited experts participated. Only the domains, subdomains, and items rated as “very” or “extremely” important/appropriate by a minimum 70% of the experts were included in the surveys. Thematic analysis of comments further clarified subdomains, items, and the wordings. Linguistic validation will be finalized before the conference dates through cognitive debriefing among the targeted respondents (n=30; i.e., personal support workers, nurses, facility managers, and recreational coordinators).

Results: Sunlight and nature are the domains. Themes such as sunlight vs. daylight, control, weather, and wording were thoroughly discussed. The Natural Environment Design (NED) Survey will measure the NE designs in common spaces and exposures to the NE in resident activities. The NED survey has 20 included subdomains (21 omitted). For example, “view out of the main windows” is subdomain; “When I look out of the main window what do I see?” is an item. The Natural Environment Usage (NEU) Survey will measure the care staff’s exposures to, use of, and perceptions of the NE. The NEU survey has ten included subdomains (three omitted). For example, “Daylight and me” is a subdomain; “I walk by windows while I am working” is an item.

Conclusion: The time is ripe to create health-promoting LTC environments under Ontario’s ten-year redevelopment strategy. As a licensed landscape architect and health services researcher, I am aware that validated instruments are needed for rigorous evidence in this growing area of research in LTC homes to inform imminent environmental designs and standards.
How do people use online parenting health information with others, and what are the outcomes?

Presented by: Reem El Sherif, PhD student, McGill University

Background: High quality online consumer health information (OCHI) can reduce unnecessary visits to health professionals and improve health. One of the ways people use OCHI is to support others with health conditions. Members of an individual’s entourage may help them overcome information-seeking barriers and illness challenges. Little is known on how people use OCHI with others, and what are the outcomes. Objective: Uncovering outcomes for people who search for OCHI for members of their social circle.

Approach: A mixed studies literature review followed by a convergent mixed methods study in the context of an online parenting information website (NaitreetGrandir). N&G implemented the validated Information Assessment Method (IAM4 parents) questionnaire in December 2016 and has received over 28,000 completed questionnaires. Participants visited N&G between 2017 and 2018 and completed an IAM questionnaire. Responses on OCHI outcomes will be analyzed, comparing between parents and non-parents (entourage). Interviews with 30 entourage members and thematic analysis on perceived OCHI outcomes. Quantitative and qualitative components will be conducted and analysed separately; results compared using a joint display to provide a complete picture.

Anticipated Results: This is an important topic for researchers, primary health care practitioners, and patients. Different aspects of social support have been examined in relation to OCHI but there are no theories to explain this role. Results of the literature review, exploring the role of social support in OCHI seeking and outcomes, will be presented. A theoretical model on the role of social support in OCHI outcomes, developed following the review, will be presented for feedback. Preliminary results of the mixed methods study will be presented. These results will provide a better understanding of how people share OCHI on child well-being and development with others in their social circle, and what outcomes they experience. The validated IAM4parents questionnaire will also be adapted for entourage members.

Conclusion: By better understanding how people use information together, information providers can adapt information to meet both individual and group needs, and health care practitioners can target patients’ entourage with information for dissemination and use. Results will be used in the next phase: a qualitative interpretive study with Quebec OCHI users.
Recherche intégrée au Centre intégré de santé et de services sociaux Chaudière-Appalaches : stratégies et modalités de partenariat entre la recherche et l’organisation pour soutenir la prise de décision.

Presented by: El Kebir Ghandour, CIHR-INESSS-Université Laval HSI Fellow, Institut national d’excellence en santé et en services sociaux (INESSS)

Depuis 2016, le centre intégré de santé et de services sociaux Chaudière-Appalaches (CISSS-CA) connaît une expérience de recherche intégrée visant à soutenir les transformations de pratique et organisationnelles. Cette expérience s’inscrit dans le cadre d’une programmation de recherche d’un clinicien-chercheur (PA) intégré des Instituts de recherche en santé du Canada (IRSC). Un boursier postdoctoral du Programme de bourses d’apprentissage en matière d’impact sur le système de santé (BAISS) des IRSC s’est associé à cette expérience en 2017. Cette bourse fournit aux stagiaires des occasions d’apprentissage par l’expérience permettant d’accélérer leur développement professionnel tout en contribuant à des transformations et des changements de pratique et organisationnels informés par les données probantes. Cette initiative s’est organisée au CISSS-CA autour de besoins populationnels initialement identifiés et de préoccupation et priorité des directions du CISSS et celles du MSSS. Durant cette année, la collaboration a contribué à la planification de projets organisationnels pour répondre à des problématiques de transition des soins pour les personnes âgées et de la problématique des aînées grands utilisateurs des services d’urgences.

Nous discuterons dans cette présentation:

1) Comment se vit le partenariat entre les deux milieux, la recherche intégrée, chercheur intégré et boursier de la BAISS, et l’organisation de santé, ainsi que les facilitants et les barrières perçus envers l’atteinte de la synergie souhaitée entre les deux univers, et la mise en place au CISSS-CA de composantes du système de santé apprenant; et

2) En donnant des exemples concrets, discuter de la contribution potentielle de la BAISS et des projets de recherche intégrée menés dans le CISSS CA, au soutien de l’accélération du développement professionnel du boursier, au renforcement du partenariat amorcé et de collaborations avec plusieurs niveaux décisionnels, milieux de pratiques (urgences, hôpital et première ligne) et OBNL (organisme d’économie sociale) et au soutien de l’organisme pour atteindre ses propres objectifs d’amélioration identifiés

Plusieurs retombées de la recherche intégrée sont reconnues comme tangibles au sein de l’organisation. Cependant, certains enjeux et défis sont à relever ont été aussi identifiés
Maternal Health Programs, Interventions, and Services in Pakistan: A Scoping Review

Presented by: **Raadhiyah Zowmi**, Student, Brock University

Despite worldwide efforts to improve the quality of maternal health services, there are critical disparities in how women and children access these services. In Pakistan, efforts to improve maternal health services have been steadily increasing over the past three decades, but there have been no efforts to systematically review and describe these initiatives. This presentation will describe the findings of a scoping review that characterized past efforts to improve maternal health services in Pakistan. A scoping review, using the Arksey and O’Malley (2005) framework, was conducted to examine existing literature regarding maternal health initiatives in Pakistan. A database search was conducted in MEDLINE, Embase, and PsychINFO to retrieve programs and interventions that target any aspect of maternal and/or child health. Study characteristics and program details were extracted and summarized to provide context for future priorities and gaps to improve maternal health in Pakistan. This scoping review found that few studies described the design or impact of their program and/or intervention, which makes it difficult to assess the success of the intervention and make decisions regarding future programs. Few interventions engaged the target population in program design and delivery. This major gap has important implications to the feasibility of programs and the likelihood of its acceptance in the target population. Another notable finding was that there is little effort made in Pakistan to sustain initiatives beyond their formal funding cycles, which means that interventions that are have some benefit for a specific population are not readily accessible to other populations. The findings from this review will be utilized to address gaps to identify priorities for future program design and formulate the next steps in improving the quality and accessibility of maternal health services in Pakistan. This project is coordinated by an international coalition of North American and Pakistani healthcare professionals and researchers.
Inequity in access to dental care in Canada

Presented by: christian martine, PhD student, University of Toronto

Access & Equity

Objectives: Inequity in access to dental care in Canada is an enduring problem. The aim of this study is to understand how organized dentistry influenced the termination of programs with alternate forms of delivery that lessened inequity in access to dental care, despite evidence of their quality and success.

Approach: This study comprised two key phases. The first one involved a scoping review of the literature, and used a data reduction framework to segment data according to the a priori theory of professional dominance. The second phase developed a concept map based on that scoping review in order to visually display how organized dentistry was able to influence the termination of programs improved access to dental care. This map confirmed that the theory of professional dominance can fruitfully be used to guide the direction of further research in this field.

Results: The scoping review revealed that even though organized dentistry was unable to prevent the emergence of alternate programs in the delivery of dental care, it was influential in their termination. It also identified a significant gap in the literature regarding the political dynamics pervading the context of the dismantlement of these programs. More significantly, it uncovered that the overwhelming evidence regarding the quality and success of such programs have been highly ignored. Formulation of the conceptual framework in the second phase, which directed attention to the disregard for available evidence and the political dynamics operating in the context of these programs’ termination, sustained and supported important concepts of the overarching theory of professional dominance, such as monopoly of knowledge, social license, self-regulation and gatekeeping.

Conclusion: Investigation into the political dynamics governing programs that improve access would help explain the disregard of evidence concerning their effectiveness. It could reduce the power yielded by the monopoly of knowledge, supporting strategies that counteract or overcome organized dentistry’s political influence and help improve access to dental care in Canada.
Economic Impact of Adverse Drug Reactions (ADRs): A Data-Driven Perspective

Presented by: Tuhin Maity, PhD Student, McMaster University

Background and Objectives:
The economic burden of Adverse Drug Reactions (ADRs) is frequently overlooked. Clinical trials are not very effective for detecting low-frequency ADRs, and post-trial reporting of ADRs is often lagged or omitted. With the recent progress in data collection, we aimed to gain insight into the real-world ADR rates and their economic burden using two brand-name TNF-α inhibitor drugs, Remicade and Humira, as a case study.

Approach:
We analyzed the ADR reports in the Canada Vigilance Adverse Reaction Online Database from 2013 to 2017. Remicade and Humira, together, were associated with approximately 20% of all the ADRs reported during this period. Using these data, we estimated real-world ADR risks for these two drugs, and compared them with the ones reported in clinical trials. We converted the ADR risks into quality of life decrements. We assessed the healthcare delivery costs and productivity loss resulting from ADR-related hospitalizations and deaths. Together, we made a case for the inclusion of ADR risk and cost into economic analysis of these pharmaceuticals.

Results:
Remicade and Humira were associated with more than 55,000 ADR reports in 2013-2017, which included 750 deaths and 14,000 hospitalizations. Based on their combined market size, we estimated that 16.2±0.6% of all patients received Remicade or Humira reported an ADR, leading to a small but significant loss of QALY. We found that the real-world estimates of ADR risks could display both higher and lower rates when compared to reports from clinical trials. We assessed that the average annual healthcare delivery costs and productivity loss resulting from ADR-related hospitalizations and deaths for these two drugs were $12.2±1.4 million and $29.0±10.4 million, respectively. Together, this is equivalent to $637±249 per person-year among all the recipients of Remicade or Humira.

Conclusion:
The magnitude of ADR-related economic burden estimated in this paper indicates that the cost of ADRs can be significant, and needs to be accurately reflected in economic analysis. Future data-driven analytics-based research for evaluating the frequency and costing of ADRs will improve the accuracy of clinical and economic evaluations.
Impact of Inpatient Palliative Care Consultation Post-Discharge: A Systematic Review

Presented by: Mary Scott, Research Assistant, Ottawa Hospital Research Institute

Background and Objectives: While most patients desire to die at home or in hospice, the transition from hospital to community settings often lacks streamlined coordination of care. No systematic review exists that examines the impact of hospital-based palliative care consultations on transitions to the community and associated outcomes. The aim of this review is to appraise the available evidence on the impact of inpatient palliative care consultations on transitions from hospital to community settings.

Approach: A systematic review registered in PROSPERO, Centre for Reviews and Dissemination (ID: CRD42018094924). The Effective Public Health Practice Project (EHPCPP) tool was used for quality appraisal. Studies were included if they assessed the transition from hospital to community and examined outcomes after an inpatient palliative care consultation. PubMed, CINAHL, and Cochrane were searched for quantitative articles published between Jan 1st, 2000-March 11th, 2018.

Results: Our search retrieved 2749 articles; 123 articles were full-text screened. Fifteen studies met our inclusion criteria. Studies reported that inpatient palliative care consultations are associated with high rates of discharge to community settings, greater provision of services post-discharge, improved coordination, and lower rates of re-hospitalization.

Conclusions: This review found that hospital-based palliative care consultations positively impact patient outcomes and transitions to the community. These findings support the delivery of inpatient palliative care to improve patient quality of life and relieve overburdened acute care systems.
Background and objectives While most of the studies published since the 1980s investigated the impact of nurse staffing policies on patient outcomes, multiple authors suggested that the omission of nursing care could mediate the association between nurse staffing and outcomes. We aim to contribute to the field by: 1) synthesizing conceptual and methodological challenges of studies examining the associations between nursing staffing, care rationing and patient outcomes, and 2) by identifying future avenues for research. Approach A narrative review of the literature was conducted according to the methodological recommendations of Gasparyan, Ayvazyan, Blackmore, and Kitas (2011). Four electronic databases were searched to identify studies examining the effect of staffing on care rationing and patient outcomes (Medline, CINAHL, Health Management Database, and Cochrane Library). The initial search of the literature was performed between August and October 2018 and was last updated in December 2018. Results The comprehensive search of the literature yielded 5214 citations. After the removal of duplicates and screening, 47 primary studies and 7 literature reviews met our inclusion criteria. Of the primary studies included, 89.4% (n=42), were based on cross-sectional studies, and over half of studies were conducted in the Northern American hemisphere (55%, n=26). The three most frequently used surveys instruments were the MISSCARE (47%, n=20), followed by the RN4CAST (19%, n=8), and the BERNCA (16%, n=7). The most frequently reported conceptual challenge was the use of self-reported measures (n=29), followed by the multidimensional nature of care rationing (n=21), the use of cross sectional designs (n=20), and that care might have been provided by other professionals or family members (n=11). Conclusion While keeping in mind that most threats to the validity of benchmark nurse staffing studies might arguably apply to care rationing studies, one should consider the valuable lessons learned in this field that has considerably grown in the past 30 years. While there is a considerable amount of evidence, there is a lack of high-quality evidence. The use of longitudinal cohort designs might help determine if specific staffing and care rationing thresholds precede the occurrence of adverse events in acute care settings.
Utilizing social media for colorectal cancer screening: an innovative cluster randomized controlled trial protocol

Presented by: Arlinda Ruco, PhD Student, University of Toronto and St. Michael's Hospital

Background and objectives: Utilizing social media for health promotion is an emerging approach in changing health behaviour but remains relatively underexplored in cancer screening. The objective of our study is to report on the protocol of a pragmatic cluster randomized controlled trial (RCT) evaluating the impact of Facebook ads promoting colorectal cancer (CRC) screening.

Approach: We will conduct focus groups with persons in our target population (age 50-74 at average risk for CRC) to develop three messages for inclusion in the trial. We will also conduct “split testing” on Facebook to identify a photo to accompany the ads. A pragmatic cluster RCT will be conducted in Ontario, Canada with randomization at the Forward Sortation Area (FSA). We will target all FSAs, stratified by urban or rural location and randomly allocate each to one of four study arms (message 1, 2, 3 or control group with no ad campaign). The campaign will be launched for three months.

Results: The primary outcomes will be intention to screen and screening participation. Intention to screen will be captured through Facebook pixel while screening participation will be captured through administrative databases. Secondary outcomes will include click-through-rates, number of likes, impressions and comments of each ad as measured through Facebook Ad Manager. A Poisson loglinear model with generalized estimating equation to account for clustering will be used in order to compare proportions against study arms for the primary outcomes. We will also summarize social media engagement metrics (click-through-rates, likes, impressions, comments) for each ad to compare across intervention arms.

Conclusion: Our study will inform the feasibility of using social media for CRC screening with the potential to reach a large number of people in a relatively short amount of time with the ability to limit cost. Our study results are likely to be taken up by screening programs looking for innovative ways to increase screening participation and can easily be translatable to other cancer disease sites.
Accessibilité aux services de réadaptation pédiatrique au Canada : résultats d’une enquête organisationnelle

Presented by: Rose Gagnon, M.Sc.(c), pht, Université Laval

Background and Objectives:
Les services de réadaptation physique sont essentiels aux enfants ayant des déficiences. L’accessibilité à ces services de réadaptation serait compromise dans le système de santé canadien, quoiqu’elle n’ait pas fait l’objet d’un portrait national. Ce projet visait à décrire les listes d’attente dans les centres de réadaptation pédiatriques canadiens et à faire état des stratégies employées pour la gestion de ces listes.

Approach:
Nous avons mené une enquête descriptive transversale dans les centres de réadaptation (CR) du Canada qui offrent des programmes et services de physiothérapie ou d’ergothérapie à une clientèle pédiatrique (0-21 ans) ayant des déficiences physiques ou neuromotrices au Canada. Les données ont été obtenues via un questionnaire électronique suivi d’un entretien téléphonique structuré auprès des gestionnaires des listes d’attente dans ces CR. Les données ont fait l’objet d’analyses statistiques descriptives.

Results:
Des données ont été recueillies auprès de 70 (participation 41,9 %) des 167 programmes et services ciblés. En moyenne, le temps d’attente médian était de 4,6 ± 3,1 mois en physiothérapie, de 4,5 ± 2,3 mois en ergothérapie, et de 4,8 ± 4,6 mois pour les programmes. Douze services ne présentaient pas de temps d’attente. 52,4% des milieux utilisaient un outil formel pour prioriser les références, 65,1% employaient des niveaux de priorité et 66,7% présentaient une balise de temps d’attente maximal. L’organisation des services et la gestion des listes d’attente étaient complexes et hautement hétérogènes entre les provinces et dans certains cas entre régions d’une même province, compliquant ainsi l’obtention, la synthèse et l’interprétation des résultats à l’échelle nationale.

Conclusion:
Les résultats obtenus dressent un portrait récent de l’accessibilité aux CR pédiatriques canadiens et exposent certaines lacunes. Cette analyse suggère la nécessité d’instaurer diverses mesures, notamment en matière de pratiques cliniques, organisationnelles et de politiques de réadaptation pédiatrique, pour améliorer l’accessibilité aux services pour la clientèle visée.
Implementing Performance Indicators for the Patient Medical Home: A Deliberative Consensus Approach to Metrics in Primary Care

Presented by: **Myles Leslie**, Associate Director of Research / Assistant Professor, The School of Public Policy at the University of Calgary

**Background and Objectives**

Variants of Primary Care Networks (PCNs) have emerged in several Canadian provinces as policy mechanisms to support delivery of the Patient Medical Home (PMH). As Alberta moves towards measuring the performance of its PCNs, this research addresses known policy implementation challenges. Specifically, it combines qualitative research and consensus-building techniques to identify PMH performance metrics that reflect the priorities and perspectives of the province’s three key health services constituencies: health professionals, policy makers and citizen-patients.

**Approach**

In Phase I, we will conduct qualitative interviews and observations focused on which metrics of PMH performance each of the three constituencies prefer, and how those metrics interact with payment models, governance structures and other policies. These data will be analysed using an inductive grounded theory approach, with findings presented to participants in pre-briefing sessions in Phase II. Appropriately primed, participants from Phase II will then take part in a consensus conference in Phase III. This innovative, facilitated event will leverage the shared understandings created in Phase II and use Nominal Group Technique to achieve a consensus on appropriate metrics.

**Results**

Our participatory action research will create a common language and collective understanding amongst health professionals, policy makers, and citizen patients, focusing the three constituencies on what ought to be measured within Alberta’s PCNs, and how. This common language will be central to avoiding the known downsides and unintended consequences of performance measurement in healthcare service delivery. Specifically, qualitative research-informed deliberations and consensus building are central to avoiding implementation challenges such as gaming, decoupling, and effort substitution. Implementable metrics that are respected by all of the constituencies will emerge from a self-reflective and group deliberative process that allows their clinical level quality, system level accountability, and patient experience improvement priorities to align.

**Conclusion**

Facilitating the inclusion of perspectives from all three health services constituencies as performance metrics for PCNs are developed is an innovative approach. Lessons on how to structure similar processes so that they effectively drive implementable metrics for quality improvement elsewhere in Canada will be learned.
High Risk Plastic Surgery: An Analysis of 108,303 Cases from the American College of Surgeons National Surgical Quality Improvement Program

Presented by: Melissa Wan, Medical Student, UBC

Background and Objectives: There is a lack of large-scale data that examines complications in plastic surgery. A description of baseline rates and patient outcomes allows better understanding of ways to improve patient care and cost-savings for health systems. Herein we determine the most frequent complications in plastic surgery, identify procedures with high complication rates, and examine predictive risk factors.

Approach: A retrospective analysis of the 2012-2016 American College of Surgeons National Surgical Quality Improvement Program (NSQIP) plastic surgery dataset was conducted. Complication rates were calculated for the entire cohort and each procedure therein. Microsurgical procedures were analyzed as a subgroup, where multivariate logistic regression models determined the risk factors for surgical site infection (SSI) and related reoperation.

Results: We identified 108,303 patients undergoing a plastic surgery procedure of which 6,264 (5.78%) experienced any complication. The outcome with the highest incidence was related reoperation (3.31%), followed by SSI (3.11%). Microsurgical cases comprised 6,148 (5.68%) of all cases, and 1,211 (19.33%) experienced any complication. Similar to the entire cohort, the related reoperation (12.83%) and SSI (5.66%) were common complications. Increased operative time was a common independent risk factor predictive of a related reoperation or development of an SSI (p < 0.001). 23.3% of microsurgeries had an operative time larger than 10 hours.

Conclusions: The complication rate in plastic surgery remains relatively low but is significantly increased for microsurgery. Increased operative time is a common risk factor. Two team approaches and staged operations could be explored, as a large portion of microsurgeries are vulnerable to increased complications.
Patient Experience Determinants and Manifestations: A Classification Scheme

Presented by: Moutasem Zakkar, Ph.D student, University of Waterloo - School of Public Health and Health Systems

Background and objectives:

Patient experience is a pillar in patient-centered care. However, it is a complex multidimensional phenomenon that is linked to complex constructs, such as patient expectations, and patient satisfaction. We have developed a classification scheme for the dimensions of patient experience, which differentiates between two types of dimensions: the determinants and the manifestations of patient experience. The classification provides a holistic view of patient experience and it can be used for research, policymaking, and quality management.

Approach:

We have conducted a narrative review of the literature aiming at exploring select constructs and initiatives developed by researchers, healthcare providers, and health policymakers for theorizing or operationalizing patient experience. The narrative review method doesn’t require a systematic process for searching for and selecting the research studies, and it gives researchers the flexibility to use primary and secondary literature to shed light on important aspects of the phenomenon while taking into consideration the authority, coverage, and currency of the sources (Mays et al., 2005).

The presentation summarizes a paper that has been accepted for publishing in a peer-reviewed journal.

Results:

We have identified five determinants for patient experience: the experience of illness, patient’s subjective influences, quality of healthcare services, health system responsiveness, and the politics of healthcare. These determinants are given different weights by different stakeholders in healthcare. We have also identified two manifestations of patient experience: patient satisfaction and patient engagement. We have also critically explored some health policy initiatives and theories that are related to patient experience, including healthcare politics (i.e., power and knowledge differentials among stakeholders), managerialism vs professionalism in healthcare, human rights, and patient experience boundaries (i.e., the experience of illness or experience of care). In addition to the proposed classification, we have created a concept map that links together all the relevant concepts.

Conclusion:

There is a plethora of concepts that reflect some of the dimensions of patient experience or the varying perspectives of stakeholders. With the lack of an appropriate classification, this plethora of concepts has made it difficult to conceptualize and operationalize patient experience effectively enough to the quality of care goals.
To pay or not to pay for performance in Canadian primary care: a rapid review of evidence from high-income countries

Presented by: Derek Manis, Health Policy PhD Student, McMaster University

Background and Objectives:
Healthcare expenditures in Canada are rising, currently at 11.5% of GDP and reflecting an unsustainable financing approach. Pay-for-performance (P4P) has been suggested as a cost-effective remuneration model, whereby a practitioner’s salary, or an organization’s funding, is based on pre-determined performance measures (e.g., patient outcomes). However, the evidence of P4P is limited. This rapid review examines the effects of P4P in primary care on patient outcomes and whether it provides better value for patients and insurers.

Approach:
MEDLINE, Embase, CINAHL, EconLit, Social Science Abstracts, Google Scholar and McMaster Health Forum’s Health Systems Evidence were searched for evidence on the topic of P4P in April 2018. Sources must have examined P4P broadly in a high-income country. The search was limited to peer-reviewed journal articles. Sources that only investigated P4P in a low- or middle-income country were excluded. Sources that reported on P4P for only one health condition or a specialized health care setting were also excluded. All sources were managed in EndNote, and a thematic analysis was conducted on eligible studies.

Results:
There are debates in the literature about the cost-effectiveness of P4P. Specifically, modest reductions in mortality and hospital admissions exist, but there are upfront and ongoing costs of implementing and managing a P4P scheme. P4P was not found to be associated with improved health outcomes for chronic health conditions, with the exception of diabetes. P4P does result in better quality of care, but these improvements may only be observed during the first year of implementation. P4P may encourage physicians to favourably select patients who are healthier and have fewer health needs to achieve P4P incentives, which reinforces inequities in access to care, particularly among those who are older, have chronic and intersecting health needs, and are likely of low socioeconomic status.

Conclusion:
The evidence currently available on P4P is weak and inconclusive. P4P schemes can enhance short-term quality of care, but they require substantial investment in implementing and managing the scheme, which limits cost-effectiveness. Canadian policymakers, insurers and health care managers should very carefully consider the decision to implement a P4P scheme.
Decisions in healthcare are not based on a single piece of evidence. Decision-makers consider a broad range of information, including patient, system and financial information. Canadian healthcare decision-makers now have access to linked clinical and financial data – at the patient level - via an online, private tool.
EMR’s Impacts on the Management of ACSC: a Scoping Review

Presented by: Maude Lévesque Ryan, Master’s student, University of Ottawa

Background and objectives

Electronic medical records (EMRs) present opportunities to support primary care providers in addressing challenges associated with chronic disease management. Positive impacts related to EMRs have been reported in hospital and tertiary care settings. Nevertheless, limited information is available on EMRs impacts on the management of ambulatory care sensitive conditions (ACSC) in primary care settings. This study addresses this gap and presents the results of a scoping review that examined EMRs impacts in this area.

Approach

In order to assess the breadth and nature of existing evidence, four databases (CINAHL, EMBASE, MEDLINE and Web of Science) were consulted using consistent keywords (e.g., asthma, outpatient, electronic medical records, impacts etc.). Articles obtained through this comprehensive search were screened based on the inclusion/exclusion criteria. Non-empirical articles, articles published before 2012, and studies conducted in secondary or tertiary care settings were systematically excluded. Systematic data extraction was performed using a developed coding scheme; a close examination of reported impacts on quality of care at the process (e.g., adequate prescribing) and outcomes (e.g., hospitalization rates) levels was conducted.

Results

39 articles from five countries were included in this review. Most studies were conducted in the U.S. (85%); three studies were from Canada. The ACSC considered were diabetes (30 articles), hypertension (8 articles), asthma (5 articles), congestive heart failure-CHF (2 articles), chronic obstructive pulmonary disease-COPD (1 article). EMRs impacts on diabetes management were mixed but mostly positive for all categories of quality measures including process and outcomes measures. Positive impacts were also noted for hypertension management (e.g., improving the blood pressure control). In the case of asthma, process measures were improved (e.g., improved prescription of inhaled corticosteroids); EMRs impacts on outcomes measures were mixed. Impacts were positive for CHF. Surprisingly negative effects were observed for COPD.

Conclusion

Positive impacts associated with EMRs use were observed, although empirical evidence was scarce and inconclusive with the exception of diabetes. A systematic review on the impacts of EMRs on the management of diabetes is recommended to evaluate these impacts’ magnitude and significance; more research is needed for the other ACSC.
Prescribed drug spending in Canada, 2018: a focus on public drug programs

Presented by: Jeff Proulx, Program Lead, CIHI

Background:

This report provides an in-depth look at public drug program spending in Canada in 2017. It looks at the types of drugs accounting for the majority of spending, broken down by sex, age and neighbourhood income. It also examines how different drug classes contribute to observed trends in public drug program spending in Canada.

Approach:

This report provides an in-depth look at public drug program spending in 2017 using drug claims data submitted to CIHI’s NPDUIS by all provinces, including Quebec for the first time, Yukon, plus 1 federal program administered by the First Nations and Inuit Health Branch at Indigenous Services Canada.

Included in the analysis are the types of drugs accounting for the majority of spending, broken down by sex, age and neighbourhood income. It also examines how different drug classes and types (e.g. generic drugs, high-cost drugs and cancer drugs) contribute to observed trends in public drug program spending in Canada.

Results:

Public drug program spending increased by 4.6% in 2017 and accounts for 41.8% of prescribed drug spending in Canada. Antivirals and antineovascularization agents were the top 2 contributors to growth in spending. Anti-TNF drugs (8.2%) and antivirals (5.0%) accounted for the two highest proportions of public drug program spending.

About 1 in 4 Canadians (22.7%) received benefits from a public drug program in 2017. Public drug program spending per paid beneficiary was higher among those in low-income neighbourhoods but was lower among those living in rural/remote neighbourhoods.

The proportion of public drug program spending on high-cost individuals continues to rise. In 2017, the 2.3% of individuals for whom a drug program paid $10,000 or more accounted for more than one-third of spending (36.6%).

Conclusion:

Drug spending is increasing more than the other major areas of health spending — with a large proportion of drug spending going toward high-cost drugs for a small number of individuals. Examining recent trends in drug spending is helpful as Canada contemplates policies like international trade agreements and national pharmacare.
Improving Collaboration in Times of Crisis: Integrating Physicians in Disaster Preparedness and Health Emergency Management in British Columbia

Presented by: Helen Thi, Senior Policy Analyst, Doctors of BC

Background and objectives:

No area in British Columbia is immune from hazards. These events, including earthquakes, wildfires, pandemics, and other mass casualty incidents, can occur at any time, causing serious harm to people’s safety and health. Physicians play a critical role in saving lives and reducing health-related harms when disasters strike. The objectives of this physician-led initiative were to develop policy on integrating physicians in disaster preparedness planning and foster collaborative relationships with key emergency management partners in BC.

Approach:

Through the guidance of a working group, a two-pronged approach was used to develop a policy paper. An extensive literature review and environmental scan were conducted to understand health emergency management planning in BC, including physicians’ roles before, during, and following emergencies, and approaches taken in other jurisdictions. Building on the learnings of the environmental scan, physicians and key stakeholders were engaged through surveys and meetings to identify barriers to physician involvement in health emergency management planning and opportunities to better integrate physicians in these activities.

Results:

There are a number of barriers to physician participation in health emergency management planning in BC. Provincial emergency response frameworks only discuss the roles of some physicians, such as medical health officers. Such frameworks do not reference the roles of all physicians, including hospitalists and community-based physicians, prior to, during, and following emergencies. Consultation with physicians and stakeholders in emergency management also reveal that inadequate funding and compensation is a barrier to physician participation in broader disaster preparedness planning. Lastly, as disaster medicine often receives little attention during medical training in Canada, it is important to build physician capacity in health emergency management to support their participation in disaster preparedness planning and other emergency management activities.

Conclusion:

There are opportunities for improved integration of physicians in health emergency management activities across BC. This includes building physician capacity and engaging interested clinicians early in the disaster planning process to foster collaborative relationships between physicians and emergency planners. Lessons learned from this policy initiative are applicable to other jurisdictions.

Presented by: Helen Thi, Senior Policy Analyst, Doctors of BC
Person-Centred Healthcare Quality: Including Patients and Communities in the Consensus Process to Develop Quality Indicators

Presented by: Kimberly Manalili, PhD Student, University of Calgary

Background and objectives

The consensus process is a well-established method to ensure that the selection, refinement, and prioritization of quality indicators is supported by content experts and key stakeholders. In our study to develop Person-Centred Quality Indicators (PC-QIs), we aimed to take a novel approach to incorporating the perspectives of patients and caregivers, ethno-cultural community representations, healthcare providers, and quality improvement leads, to ensure that the PC-QIs truly reflect what matters most to people in their care.

Approach

We conducted a two-day modified Delphi consensus panel consisting of national and international panellists on March 8-9, 2018 in Calgary. We strived towards establishing a consensus panel where approximately half of the panelists comprise patients/community representatives to ensure their perspectives were well represented. The patient/community perspective would also be “weighted” equally to the perspectives of quality improvement leads, researchers, and healthcare providers. Furthermore, the consensus process was facilitated by one person-centred care researcher, and one patient partner to address potential power differentials that may arise from engaging patients/communities, researchers, healthcare providers, and quality improvement leads together.

Results

The consensus panel was comprised of 26 panelists, of which 13 were patients/community members, and 13 were person-centred care researchers, quality improvement leads, or healthcare providers from British Columbia, Alberta, Ontario, Quebec, the US, UK, and Sweden. A frequency count for speakers indicated that while patients/community members represented half of the panel, the researchers, quality improvement leads, and healthcare providers spoke about 30% more than patients. However, a content analysis of the panel discussions showed that patient/community perspectives were seen as highly valuable to the researchers, quality improvement leads, and healthcare providers. In particular, while some indicators were seen as more challenging to measure, PC-QIs that are seen as important to patients (e.g. policy for person-centred care) were adopted and refined.

Conclusion

Well-established and rigorous research methods can be adapted to better engage patients/community in quality improvement. While further study is needed for empowering people in research, placing value on the patient/community perspective can play an important role in ensuring that research is relevant and reflects what matters most to people.
Complex Continuing Care (CCC) facilities offer a specialized plan of care for clinically complex patients who need to stay in hospital, but do not require the care intensity of an acute care hospital. We conducted a study to describe CCC facilities in Ontario, Canada, from 2013-2016. Objectives: identify who is using CCC facilities; regionally compare length of stay (LOS) in facilities; and regionally compare mortality and hospitalization rates while in and post CCC facilities. We conducted a retrospective population-based cohort study of CCCs in Ontario, Canada, using health administrative data. We captured all incident CCC admissions between April 1, 2013 and March 31, 2016. Incident admissions to CCCs were identified using the Canadian Continuing Care Reporting System (CCRS). We used the CCRS as well as other linked databases at ICES to obtain patients’ sociodemographics, clinical variables, and health outcomes. We categorized facilities by size based on the number of CCC beds. Our outcomes of interest were LOS, mortality, and hospitalization rates and were computed across geographic regions (LHINs) established by the Government of Ontario. We observed 57,152 admissions to CCC facilities from 2013-2016, of which 4,140 were in small facilities, 29,065 in medium facilities, and 23,947 in large facilities. The North West LHIN had the greatest number of CCC bed days per 100,000 people per year (19,585) while Central West had the fewest (2,412), representing an 8-fold difference. North West also had the highest incident admission rate at 334.2 per 100,000 (compared to 50 per 100,000 in Central West). The North East LHIN had the longest mean LOS (73.5 days) while the South East LHIN had the shortest (41.6 days). Mortality and hospitalization rates varied across regions, with a 2.6 and 2.1 fold difference, respectively, between the highest and lowest LHINS. The variations across regions found in this study suggest that there are differing standards of practice and services rendered to CCC patients across Ontario. Further work must be done to understand why these variations are occurring.
The incidence of falls and associated outcomes of patient admitted to Intensive Care Unit

Presented by: guosong wu, PhD candidate, University of Calgary

Background and objectives

Falls are one of the most common reported adverse events in hospital, resulting in injuries, disability, prolonged hospital stay and even death. Direct costs associated with falls in Canada are estimated at 2 billion dollars annually. An increased focus on early mobilization for critically ill patients admitted to the intensive care unit (ICU) has raised concerns about increased risk of falls. This research aims to determine the incidence of falls and its associated outcomes among patients admitted to ICU.

Approach

We will conduct a retrospective cohort study on ICU patients age 18 years and older in Alberta adult Alberta, Canada from Jan 1st, 2014 to June 30th, 2016. All patient falls voluntarily reported through the patient safety Reporting & Learning System (RLS) or documented in the electronic medical record (eCritical Alberta) will be identified. Validation of patient falls will be conducted through a review of the medical record by two independent auditors. Inter-rater agreement will be calculated. The incidence of falls and associated outcomes will be reported. Tools for fall assessment and strategies for fall prevention will be discussed.

Results

Based on preliminary RLS data, 126 patient falls were reported across Alberta ICUs during 2016. The majority of patient falls (n=35, 27.8%) occurred to patients aged 45 to 64 years of age. Most falls (n=112, 88.9%) falls occurred in patient’s room. 22.2% (28) of patients with a fall experienced harm. This study will utilize linked data to provide an in-detail description on ICU fall incidence rate per 1000 patient days, percentage of falls causing harm and percentage of patients with 2 or more falls. In ICU, visual impairments, the use of medication, delirium, early mobilization, restraint use might associate with patient falls. This research will consider above risk factors and compare the outcomes (Change of patient goal of care, length of stay, mortality) differences.

Conclusion

Patient falls are leading cause of injury and contribute to additional costs on healthcare system but totally preventable. Evidence generated from literature could be used to develop tools to prevent patient falls.
The Pink Dumbbell Problem

Presented by: Terri Roberts, Graduate Student, Mount St. Vincent University

The Pink Dumbbell Problem is that some people believe women must use 1lb pink dumbbells to exercise, which are of such a low weight as to be of no value as exercise implements. This may sound ridiculous, but ask any certified exercise trainer about women insisting on using pink dumbbells and they will roll their eyes and tell you stories of their frustration. The PDP is one of many problems trainers face that this study calls Gender-Specific Fitness Myths (GSFMs).

A GSFM is a gender-specific belief about fitness activities and outcomes and which are scientifically disproven. They are often ideas which limit the physical activity and outcomes for women. This is a problem, especially considering the rates of physical activity for Canadian women is dreadfully low. This has caused an upswing in physical (and possibly mental) illness that is hitting women especially hard. If we want Canadian women to move more, we have to tackle the false reasons preventing them from trying.

Examples:

- Women can’t do push-ups/pull-ups/throw/run/bench press/etc.
- Men strength train, women just tone
- Aerobics is only for women
- If a woman lifts more than 3lbs she’ll get ugly, manly muscles
- Women don’t have as many muscles as men
- Women are likely to get hurt if they use free weights

This study will conduct focus groups of certified exercise educators in Nova Scotia, discussing the GSFMs they are hearing from clients, and the pedagogical strategies they use. Analysis of the focus group data will be both a feminist and agnotological critique.

A feminist critique of this material is crucial for two reasons: 1) the myths already identified by the researcher are negatively affecting women’s health and those that negatively affect men’s health are also well explained via feminist critique; 2) the majority – estimated 90% - of fitness educators in Canada are women. The agnotological analysis will be based in historical documents of medical journals, marketing of fitness fads, and pop culture representations of exercise clients and educational professionals.
Workplace Bullying in Nursing: The Role of Authentic Leadership

Presented by: Edmund Walsh, PhD Student, Western University

Registered nurses experience concerning levels of workplace bullying, which has been shown to be associated with negative implications such as increased nurse burnout and higher job turnover intentions. The objectives of this study were twofold: (1) examine the effect of managers’ authentic leadership on workplace bullying among experienced registered nurses and (2) assess whether the preceding relationship is mediated by nurses’ psychological capital (i.e., self-efficacy, optimism, hope, and resiliency) and a professional practice environment. This study was cross-sectional and nonexperimental in nature. Four hundred experienced registered nurses (defined as having ≥ 3 years of service) were randomly sampled from each of Alberta, Nova Scotia, and Ontario for a total of 1,200 potential participants. Standardized questionnaires were mailed to the home addresses of participants obtained from the registered nurse regulatory bodies. A modified Dillman data collection process was used, and a response rate of 39.8% (N = 478) was obtained. PROCESS, an SPSS macro, was utilized to test the hypothesized mediation model. The majority of participants were female (91.6%), held a bachelor’s degree (50.5%), and were employed full-time (54.9%). Moderate authentic leadership and relatively infrequent workplace bullying were reported. Males reported higher workplace bullying than females, and participants with graduate degrees reported higher workplace bullying than those with bachelor’s degrees. Managers’ authentic leadership was negatively related to workplace bullying as well as positively associated with nurses’ psychological capital and professional practice environment. Meanwhile, professional practice environment was negatively associated with workplace bullying. The relationship between authentic leadership and workplace bullying was mediated by professional practice environment but not psychological capital. The model under investigation explained 23.2% of the variance in workplace bullying. Healthcare administrators and policymakers working toward preventing and reducing workplace bullying among registered nurses should consider strategies related to influencing leader behaviours. Human resources professionals in healthcare organizations may find using authentic leadership as a framework to guide the hiring and training of managers to be a valuable endeavour.
Scabies outbreak

Presented by: Trevor Tessier, Care Team Manager, Saskatchewan Health Authority

Challenges: Scabies in facilities such as long term care and hospitals across the world is minimally documented and has a low number of cases in the geriatric populations making it difficult to detect and deal with. In Eston, Saskatchewan on November 26th, 2018 a month before Christmas an “itchy skin manifestation” with a few cases of scabies were confirmed necessitating an outbreak. Dealing with an outbreak was the easy part, organizing and working with staff before the declaration of the outbreak was the problematic part. Before the declaration, we had residents and staff members with the rash not knowing what it is and trying a range of different treatments explaining of varying results. We searched months for an answer with our first rash arising in September having three residents have it in October and seven residents and three staff having it by mid-November. Staff huddles were mutiny, people were scared, and work became stressful.

Goal: Realizing the struggles of the situation, I would aim to discuss proper handling and the importance of emergency management as it pertains to facilities with spreading diseases working toward earlier outbreak statuses such as alert situations and exploratory lab tests for earlier intervention based on the first-hand experiences me and my team faced.

Activities: Would be to show and explain how my situation could be improved through earlier recognition and communication by changing systematic issues to allow for improved communication and care for clients, staff and public.
Prevalence of cognitive impairment is expected to increase as the population ages. Early identification of mild cognitive impairment (MCI) is essential to delivering evidence-based interventions and helping patients and families living with declining cognition to adopt coping strategies that slow disease progression and improve their quality of life (QOL). The BrainFx Screen is a tablet-based digital tool that detects functional deficits of early cognitive decline that may not be evaluated by other early MCI screens. Our study is a concurrent, mixed methods, prospective, multicentre design to evaluate the sensitivity and specificity of the BrainFx Screen against a validated MCI screen in people aged 55 and older. Performance on the BrainFx Screen is evaluated against the results of similarly tested patient cohort populations in the BrainFx Living Brain Bank™ and a digital report includes interventions tailored to address deficits in the seven cognitive domains assessed. Healthcare provider, caregiver and patient perceptions and attitudes towards the technology, caregiver burden, patient anxiety and their decision-making in being willing to be screened will be explored qualitatively. Over twelve months, approximately 4000 Screen tests will be collected from homecare and four primary care settings. A subset of participants will return once every three months to repeat the BrainFx and validated MCI screens in random counterbalanced order, to a maximum of four visits. We anticipate the BrainFx Screen will demonstrate equivalent sensitivity and specificity to the comparison MCI screen. The benefits of an ecologically valid tool, digital administration, digital reporting, and tailored intervention strategies are anticipated to improve treatment planning for healthcare providers and provide valuable tools to patients and their families to help improve their QOL. Our exploration of older adults’ perceptions of screening will influence future recommendations on MCI screening and treatment. Studies on the value of screening for MCI are limited. Healthcare providers, patients and policy makers will benefit from this clinical and economic assessment of a novel MCI screen. These data also allow us to explore and identify socially constructed barriers to MCI screening and early intervention for cognitive decline.
Canadian public drug plans finance the largest component of prescription drug expenditures in Canada. In 2017/18, expenditures for the provincial plans (except Quebec) and the NIHB combined topped $11 billion, with drug costs growing by over 6%.

The increased use of higher-cost medicines, including DAA drugs for hepatitis C, have been a primary driver of drug cost growth in recent years. In 2017/18, half of the top contributors to the annual growth were drugs costing over $10K per year. These high-cost medicines now account for over one third of total drug costs, although they are used by less than 2% of beneficiaries.

While the pressure from higher-cost drugs continues to increase, the savings from generic substitutions and price reductions are gradually declining, reaching a new low in 2017/18. Meanwhile, biosimilar substitutions, which offer the potential for future cost savings, have only had a very modest impact to date.

Based on public drug plan data from the Canadian Institute for Health Information’s NPDUIS Database, this presentation provides a detailed examination of the shifting pressures driving the growth in drug costs, differentiating between transient cost pressures and those contributing to a longer lasting effect. The analysis focuses on the 2017/18 fiscal year and provides a retrospective look at recent trends.

A greater understanding of the forces driving expenditures in Canadian public drug plans will enable policy-makers and stakeholders to better anticipate, manage and respond to evolving cost pressures and inform discussions on longer term system sustainability.
Responding to the needs of older women who experience intimate partner violence: A mixed methods study of service providers

Presented by: Christie Stilwell, Graduate Student, Dalhousie University

Knowledge is lacking on the specific supports and services available to women midlife and older who experience intimate partner violence (IPV) in Canada. Presently, many IPV services target women of childbearing age, and while these services do not necessarily exclude older women, they often overlook the unique needs of this demographic. This mixed method study aimed to examine the current support services for older women who experience IPV in Canada.

To meet the aim of this study, a systematic web search was conducted to locate Canadian programs, organizations, and other supports for older women who experience IPV. Key information (i.e. type of program, location served) was recorded from each of the supports that fit the inclusion criteria. To gather more information, invitations to participate in a web-based survey were extended to the administrators of these supports. Finally, semi-structured interviews were held with interested survey participants to provide more context on their services, and to gather further insights on IPV supports for older women across Canada.

The web search yielded approximately 80 services that appeared, explicitly or implicitly, to support older women who experience IPV. Invitations were sent to these services and 25 full or partial responses were recorded. Semi-structured interviews were held with 8 participants. Responses from the survey and interviews provided a rich description of the current services being provided, populations who access these services, organizational and collaborative challenges, achievements, future developments, areas where more knowledge or training is needed, and other organizations who support older women who experience IPV.

Findings from this study draw attention to the diverse range of services that are available, however it is apparent that more initiatives are needed to support older women who experience IPV. Further, innovative solutions are needed to navigate the barriers that interfere with the development and provision of these services.
Generic Drug Pricing in Canada: Closing the Gap

Presented by: Elena Lungu, Manager, NPDIS, Patented Medicine Prices Review Board

Canada has one of the strongest generic markets in the industrialized world, with the second highest per capita spending in the OECD (Organisation for Economic Co-operation and Development), yet Canadian generic drug prices have traditionally been much higher than international levels.

In April 2018, a new five-year joint initiative between the pan-Canadian Pharmaceutical Alliance (pCPA) and the Canadian Generic Pharmaceutical Association came into effect, aimed at reducing the prices of 70 of the most commonly prescribed generic drugs to as low as 10% of their brand-name equivalents. This presentation uncovers the latest findings on the impact of this initiative, measuring its success in closing the gap between Canadian and international prices. The findings report on the extent to which generic prices have declined domestically and underscore the importance of generics in Canadian and foreign markets.

IQVIA MIDAS™ data from the second quarter of 2018 is used to examine the latest trends in Canadian generic drug sales, utilization, and pricing within an international context, highlighting the market segments targeted by policy changes. International trends and price comparisons include the seven countries the PMPRB considers when reviewing the prices of patented medicines, as well as other OECD countries.

This presentation aims to provide stakeholders with an assessment of the change in Canadian generic prices relative to international levels before and after the implementation of the most recent pCPA initiative, informing decision makers on the effects of these policies on payers across the market.
Oncology Drug Market: A High-Growth, High-Price Therapeutic Area

Presented by: Brian O'Shea, Economist, Patented Medicine Prices Review Board / Government of Canada

With cancer rates on the rise, the drug development pipeline is dominated by oncology products, promising hope to patients and clinicians seeking access to medication for the fatal disease. The increased need for cancer products is turning oncology into a high-growth, high-price therapeutic area, fueled by the inflow of new drug launches with price tags that are continually reaching new highs.

Oncology is the second top driver of pharmaceutical spending in Canada, with sales more than doubling over the last decade and prices rapidly climbing. Limited available therapeutic alternatives and longer market exclusivity have further exacerbated these cost pressures, as many oncology drugs are targeted, often biologic, therapies facing limited and delayed competition. More new cancer drugs are used in combination with existing products or as part of multiple regimens, contributing to the rise in treatment costs and adding to the challenges around reimbursement decisions. The fast-growing costs of treating cancer are not always matched by clear therapeutic benefits, as many new oncology drugs only offer limited therapeutic benefit over existing treatments.

This presentation examines the trends in availability, pricing, and sales in Canadian and international oncology markets, highlighting major cost drivers. The study reviews oncology drug approvals from Health Canada, the FDA, and the EMA, analyzes pricing and sales data from IQVIA’s MIDAS™ Database, and reports on pan-Canadian Oncology Drug Review assessments. International markets examined include the countries in the Organisation for Economic Co-operation and Development (OECD).

This analysis responds to a growing need to better understand and document the evolving oncology market, and provides decision makers, researchers, and patients with valuable insight into relevant market dynamics from a Canadian and international perspective.
Risk Screening at Veterans Affairs Canada: Development of a Risk Screening Tool

Presented by: Ryan Murray, Masters student, University of New Brunswick

Background and objectives: At Veterans Affairs Canada (VAC), a review of risk screening found existing tools did not incorporate the department’s domains of well-being, nor recent evidence on screening for frailty nor evidence on reestablishment risk. Therefore, VAC has initiated work on a new tool that is evidence-based, simple and brief to administer, modifiable by VAC, and effective at triaging clients and potential clients to the appropriate level of care such as case management, guided support, or self-management.

Approach: An intradepartmental working group reviewed the literature and identified 16 risk indicators associated with experiencing a difficult military to civilian transition. Multiple logistic regression modelling was conducted using data from all three cycles of the Life After Service Studies (LASS 2010, 2013, and 2016) and stratified based on four rank groupings (officers, senior non-commissioned members, junior non-commissioned members, and entry ranks). Adjusted odds ratios were calculated for available risk indicators in each model with corresponding p-values. The sensitivity and specificity were calculated for the ability of various scoring mechanisms to predict difficult adjustment to civilian life using LASS 2010 data.

Results: Seven risk indicators had significant odds ratios of two or greater, three or more times across a total of eleven models. These risk indicators were the following: self-rated mental health, activity limitations, needing help with daily activities, social support, satisfaction with main activity, and satisfaction with finances. Additionally, self-rated general health was included because it had high bivariate odds ratios and because it is often asked with self-rated mental health in population health surveys. The past-year main activity question was also included in the tool since it must be asked prior to satisfaction with main activity. Age older than 85 years was also included given the known risk of frailty. The selected scoring option had a sensitivity of 58% and a specificity of 90%.

Conclusion: A nine-item risk screening tool was developed to triage Veterans to VAC services based on their level of risk. This tool was then pilot tested on Veterans across Canada in order to evaluate its effectiveness and adapt the tool according to the experiential knowledge of frontline staff.
High Users of Primary Care Services Among Canadian Armed Forces Veterans

Presented by: Ryan Murray, Masters student, University of New Brunswick

Objectives: High users of healthcare are a small proportion of the population who account for a disproportionately large amount of costs and utilization. High users of healthcare among Canadian Armed Forces (CAF) Veterans were examined using Veterans Affairs Canada (VAC) health expenditures, but they have not been examined in the provincial health care systems. This study will examine the well-being characteristics associated with high use of primary healthcare services among CAF Veterans.

Approach: Analysis was conducted on the 2016 Life After Service Survey, a nationally representative survey of over 56,000 CAF Regular Force Veterans containing self-reported data on health and determinants of health. Characteristics of high users of primary healthcare services, measured as 10 or more self-reported family doctor visits in the previous 12 months, were compared with the rest of the sample, the non-high user group. Independent variables were selected from VAC’s Well-being Conceptual Framework, which examines well-being in seven subordinate domains. Bivariate and multiple logistic regression modeling will identify the well-being indicators associated with being a high user of primary care.

Results: Bivariate analysis revealed that being a high user was significantly associated with female sex (Odds Ratio (OR)=2.8), multiple chronic physical health conditions (2 OR=2.0; 3+ OR=3.9), moderate (OR=2.3) and severe (OR=10.1) mental health problems, high disability (OR=12.1), being unemployed (OR=2.6) or not in the labour force (OR=3.3), being dissatisfied with main activity (OR=6.5) and finances (OR=2.7), suicidal ideation (OR=4.2), low social support (OR=2.8), weak sense of community belonging (OR=2.5), and a difficult adjustment to civilian life (OR=3.2). High users of primary care were also more likely to use other healthcare services such as other medical specialists, mental health professionals, hospitalizations, and home care. Subsequently, multivariate analysis will reveal the most significant indicators associated with high use after adjusting for others.

Conclusion: The results from this research will allow for the identification and characterization of high users of primary healthcare services among CAF Veterans with implications for informing healthcare policy that will ensure that the right Veteran receives the right care at the right time.
Our People, Our Health: Envisioning Improved Primary Healthcare in Manitoba First Nation communities.

Presented by: Wanda Phillips-Beck, Researcher, First Nations Health and Social Secretariat of Manitoba

Background & Objectives:

Understanding that self-determination is essential to improving the state of health of First Nations peoples in Canada and supporting communities’ priorities are critical for primary healthcare transformation. The purpose of this study was to learn how existing strengths in First Nations communities that can be leveraged to improve community-based primary healthcare in FN Communities in Manitoba. We asked participants to envision optimal healthcare systems that would be innovative and transformative.

Approach:

This qualitative study is one five within a larger program of research titled Innovation Transforming Community-based Primary Healthcare (CBPHC) in First Nation and rural/remote communities of Manitoba, a partnership between the University of Manitoba, the First Nation Health and Social Secretariat of Manitoba and 8 Manitoba FN’s. We used a community-based participatory approach to engage 8 First Nations communities and questions were co-developed by university-based researchers, Nanaandawewiwegamig and community partners. 183 interviews were conducted by community-based local research assistants. Data was collaboratively analyzed through process involving community partners.

Results:

Key themes emerged to transform community-based primary healthcare: primary prevention focused on health determinants affecting various communities (housing, water, employment, education), wholistic traditional healthcare, expanded services to meet specific needs as identified by communities, infrastructure improvement, continuity of care, investing in community-based human resources, investing in traditional health knowledge and land based activities, support for ongoing culturally based quality assessments and improvement, increased mental health services including appropriate addictions counselling. Specific roles were identified at four levels: individual, community, local leadership and government.

Conclusion:

Optimal community-based primary healthcare would place people and community at the center of care as leaders; strategies would be culturally respectful, responsive, geographically sensitive, and outcome-oriented. This could be achieved by acknowledging and supporting local health priorities rather than imposing contextually irrelevant and top down solutions.
Patient-Researcher Partnerships: Evaluating the Impact of an Online Module Featuring Video Narratives of Partnership Experiences

Presented by: Donna Plett, Graduate Student, Institute of Health Policy, Management and Evaluation, University of Toronto

Background & Objectives: The conduct of patient-oriented research requires pragmatic support for successful partnerships amongst providers, researchers, and patients. A multidisciplinary team funded by the Ontario SPOR Support Unit is co-designing an online module featuring video narratives from patients’ and researchers’ stories of partnership so that others can learn from their experiences. This presentation will focus on the evaluation plan to better understand users’ perspectives of the value and impact of learning from this type of resource.

Approach: The evaluation will employ a mixed methods approach. We will hold 3 focus groups of 4-6 patients and researchers with experience of research partnerships to: assess attitudes and experience with online learning (modified e-HIQ); identify learning needs and interests; and review the content and navigation of the online training module. Participants will explore the module at home for 2 weeks; a follow-up survey will capture the perceived value of the resource, impact on partnership expectations and behavior, and suggestions for improvement. Web access and utilization data will be collected for 3 months following the public launch of the module.

Anticipated Results: Given the limited evaluation evidence to date regarding the perceived value and impact of training and resource materials that aim to support patient-researcher partnerships in research, we anticipate that the results will provide insights in several areas: 1) identification of patients’ and researchers’ learning needs related to the creation and sustainability of partnerships across the different phases of the research life cycle; 2) patients’ and researchers’ perceptions of the value and impact of learning from a diverse sample of others’ lived experiences of partnership in their own voices; 3) users’ perspectives on the content, design and navigation of an evidence-based online resource that was co-designed with patients and researchers.

Conclusion: The number of training resources to support patient-researcher partnerships is rapidly growing, yet few feature a diverse range of experiences using video narratives that are available online. This evaluation will contribute evidence of users’ perspectives on the value of such a resource, and future learning needs for successful partnerships.
Risk Screening at Veterans Affairs Canada: Pilot testing the tool

Presented by: Linda VanTil, Senior Epidemiologist, Veterans Affairs Canada

Background and objectives: Veterans Affairs Canada (VAC) has developed a nine-item risk screening tool to consistently screen Veterans for risks associated with difficult adjustment to life after service, functional decline, caregiver burnout, institutionalization, and other difficulties across multiple domains of well-being. This tool was then pilot tested on Veterans across Canada in order to evaluate its effectiveness at triaging clients to the appropriate level of care such as case management, guided support, or self-management.

Approach: The pilot study was conducted in five pilot sites across Canada. Veterans who contacted VAC at these sites were asked to participate in the administration of the nine-item risk screening tool. Frontline staff evaluated their administration of these questions. A week later, participants were contacted again by a different staff person and asked to participate in a follow-up series of questions, designed to assess their complexity of care and intensity of needs. Both stages of the pilot were completed by 246 Veterans. Using both stages, expert reviewers were asked to triage 91 of these participants.

Results: The high prevalence (85%) of activity limitations among VAC clients eliminated this question. Expert reviewers relied on several follow-up questions to triage clients to the appropriate level of care. These questions were added to the screening tool: regular family doctor, visit for mental health, frequency of alcohol consumption, and mastery. Frontline staff had difficulty asking questions that required a 5 category response, therefore the satisfaction and mastery questions were re-formatted to a dichotomous scale. “Low risk” was assigned to a score of 0-1, and triaged to targeted assistance; “moderate risk” scored 2-4, and triaged to guided support; and “high risk” scored 5+, and triaged to case management.

Conclusion: In 2019, VAC will implement a new screening tool to document the screening process. VAC’s screening tool standardizes the data collected to ensure consistency and continuity of Veteran information to provide services and referrals. Future versions of the tool will need to address the limited outcome data available for Veterans aged 65 and older.
Risk Screening at Veterans Affairs Canada - Review and Recommendations

Presented by: Mary Beth MacLean, Health Economist, Veterans Affairs Canada

Background and Objective

The “risk” most commonly discussed in the context of Veterans at Veterans Affairs Canada (VAC) is risk of poor well-being outcomes, since a key departmental goal is to enable the well-being of Veterans as they transition out of the military and throughout their life course. This includes well-being in the domains of health, purpose, finances, health, social integration, life skills, housing and physical environment, and culture and social environment.

Approach

This study is the first of three related to risk screening at VAC and examines the screening process and risk screening tools at VAC, the evidence on reestablishment risk and risk screening for frail elderly and provides recommendations on developing a new risk screening tool at VAC.

Results

The review found that: (1) VAC’s current screening process includes four screening tools; (2) other countries conduct interviews with veterans transitioning to civilian life, however, specific screening tools were not identified; (3) there is a lack of evidence demonstrating the effectiveness of VAC tools in triaging clients; (4) a self-assessment tool using the domains of well-being was not designed for triaging clients; (5) client need level can be segmented into case management, guided support and self-management; (6) there are 21 high-level indicators currently being used to measure the well-being of Veterans at VAC; and (7) this framework, evidence on reestablishment risk from the Life After Service Studies, and recent evidence on screening for frailty have not been included in the current risk screening tools.

Conclusion

VAC should consider developing a screening tool to replace the four existing tools. This tool should allow for triaging clients between three levels of support, and consider the well-being framework, evidence from the Life After Service Studies, and recent evidence on the effectiveness of PRISMA-7 in screening for frailty.
Have Prescription Monitoring Programs Impacted Opioid-Related Harms and Consequences?

Presented by: Emily Rhodes, Research Assistant, Ottawa Hospital Research Institute

In order to address the opioid crisis in North America many regions have adopted preventative strategies, such as prescription monitoring programs (PMPs). PMPs aim to certify opioids are prescribed in appropriate quantities and only when necessary. Significant resources are directed to PMPs on an ongoing basis and there is a need to determine their effectiveness. We aimed to synthesize the literature on changes in opioid-related harms and consequences, an important measure of PMP effectiveness. We conducted a standard systematic review. We narratively synthesized PMP implementation and opioid-related harms and consequences outcomes. We included full published reports of primary study data, in all languages, as well as data on any jurisdiction or level that had implemented a PMP as the main population of interest. Outcomes were grouped into categories by theme: opioid dependence, opioid-related care outcomes, opioid-related adverse events, and opioid-related legal and crime outcomes. Potential risk of bias of each selected study was assessed using the QUIPS tool. All data extraction was performed using Covidence, data analysis with Excel 2016 and Stata 15. We included a total of 22 studies in our review. Two studies reported on illicit and problematic use but found no significant associations with PMP status. Eight studies examined the association between opioid-related care outcomes and PMP status. Of which, two found that treatment admissions for prescriptions opioids were lower in PMP states ($p < 0.05$). Of the thirteen studies that reported on opioid-related adverse events, two found significant ($p < 0.001$ and $p < 0.05$) but conflicting results with one finding a decrease in opioid-related overdose deaths post PMP implementation and the other an increase. Lastly, two studies found no significant association between PMP status and opioid-related legal and crime outcomes (crime rates, identification of potential dealers, and diversion). Our study found no strong evidence to strongly support overall associations between PMPs and opioid-related consequences and harms. However, this should not detract from the value of PMPs as a piece of the larger harm reduction strategy.
How do health workforce planners choose the planning models they use?

Presented by: Adrian MacKenzie, PhD Candidate, Memorial University of Newfoundland

Background and Objectives:
Health human resources (HHR) planning in Canada and other countries has tended to rely on conceptually invalid models, resulting in inequitable access to health care. The reasons for the continued reliance on these models have received little attention within the broader literature on the 'evidence-policy gap'. The objective of this study was to identify technical and political factors affecting the choice of HHR planning models in Nova Scotia.

Approach:
The study combined a literature review with a series of semi-structured interviews with key informants in Nova Scotia. The literature review targeted English-language publications in scientific journals as well as grey literature published by specific organizations such as the World Health Organization. The interviews were conducted with a purposive sample (n=5, after which saturation was reached) of the 7 policy- and decision-makers in the province whose responsibilities include HHR planning. Recurring themes across informants' responses were identified.

Results:
The literature review found no empirical analyses of the factors affecting HHR planners' choices of planning model. Editorials and case reports from Australia, Canada, the Netherlands, New Zealand, and the United Kingdom repeatedly identified two factors – 1) interests of health professional educational institutions, unions, professional associations, and regulatory bodies, and 2) the availability of data – as being primary drivers of the use or non-use of different HHR planning models. Factors identified by interviewees as affecting their choice of HHR planning model included 1) the model's resonance (or lack thereof) with key stakeholder groups; 2) the technical and political capacities of their respective teams to implement the model; 3) the model's balance between complexity and comprehensiveness; 4) the availability of data to populate it.

Conclusion:
Stakeholder interests and data availability were identified in the existing international literature and by Nova Scotia HHR planners as key determinants of the choice of HHR planning model. Such findings support the view that HHR planning processes are driven more by data availability than by health care system objectives.
Evaluating maternity care services for women living with HIV

Presented by: Esther Shoemaker, Postdoctoral Fellow, Bruyère Research Institute

Background and Objectives:

The incidence of HIV infections among women is increasing in Canada and the majority of these women are of reproductive age. Continuous treatment with antiretroviral therapy enables women living with HIV to become pregnant without mother-to-child transmission and they are increasingly planning to become pregnant. Little is known about their healthcare service use and health outcomes. Our objective is to describe, assess and evaluate the service use and outcomes for women living with HIV in Ontario.

Approach:

We are conducting a retrospective population-level cohort study using linked health administrative databases at ICES combined with the Ontario data of the Canadian HIV Women’s Sexual and Reproductive Health Cohort Study (CHIWOS). Participants are all women living with HIV who were pregnant and gave birth in Ontario, Canada, between 2000 and 2018. We will use multivariable regression to determine the association between sociodemographic and clinical variables and rates of maternal morbidity and labour and birth interventions. Service use and health outcomes will be compared to women without HIV who are pregnant and give birth.

Results:

We anticipate to establish how the maternity care service use of women living with HIV relates to their health outcomes and to identify factors associated with poor maternal health outcomes. Our results will inform the maternity care service use and health outcomes of women living with HIV in order to help design quality maternity care delivery strategies for women living with HIV.

Conclusion:

HIV specific knowledge is limited in the broader healthcare system and might lead to an overuse of maternity care services and clinical interventions.
Exploring the Role of Lay, Peer, and Professional Patient Navigators in Canada

Presented by: Amy Reid, Research Assistant, University of New Brunswick

Patient navigation (PN) is an innovative approach to address the complex nature of navigating health, education, and social services. Currently, there is no consensus on when to use a lay or peer navigator versus a professional navigator. The purpose of this qualitative study is to explore the situations or populations that are suited for lay, peer, and/or professional navigators in Canada and to describe the rationale for choosing one model of navigation over another. A qualitative descriptive approach has been chosen for this study. Participants have been purposefully recruited based on the results of an environmental scan of PN programs within Canada, followed by a general Google search using key terms including, “patient navigation,” and “Canada,” or the name of each province or territory. Data is being collected through individual semi-structured interviews with patient navigators, and through documents including program evaluation reports. Braun and Clarke’s six phases of thematic analysis will be used to guide the analysis of interview transcripts and documents. Results will outline the roles of patient navigators across Canada who work with various patient populations (e.g. diabetes, mental health and addictions). This study will discuss the reasons why each program was implemented, including the rationale for using their particular model of navigation. Preliminary findings indicate that when choosing an individual to take on the role of a navigator, their designation (e.g. lay, peer, or professional) is less important than their understanding of health system(s) and their ability to connect with the patient. These and other themes will be explored in depth as data collection and analysis proceeds. This study will generate a better understanding of the patient populations and settings that incorporate lay, peer, or professional navigators. The results will be prepared for publication and add to the literature on PN. Implications of this study include informing existing and future PN programs, particularly those in Canada.
Classifying retirement home residents in Ontario, Canada: creating the first population-level retirement home cohort

Presented by: Derek Manis, Health Policy PhD Student, McMaster University

Background and Objectives:
There are approximately 800 retirement homes (RH) in Ontario with a resident capacity over 75,000. By 2026, 2.5 million Canadians over the age of 65 years will require continuing care supports. The private retirement home sector is a market that has not yet been investigated. Through a collaboration between the Retirement Home Regulatory Authority (RHRA) and ICES, we will leverage and link existing data sources to classify RH residents and create the first population-level cohort.

Approach:
Using data from the RHRA register, we will link the RH postal code to the Registered Person’s database along with individual birthdate (i.e., >= 65) to determine clusters of older adults who may likely live in a RH. We will use the individual ICES key numbers and link our identified clusters to the Continuing Care Reporting System to exclude those who are in long-term care facilities. We will additionally link to the Canadian Community Health Survey, because it excludes long-term care and RH residents, to help validate our cohort. Data linkage between databases will be performed in SAS.

Results:
We will describe our methods and approach to identify retirement home residents, exclusive of those in LTC or in the community based on facility postal code information. We anticipate our approach will be highly sensitive to identifying RH residents and specific to excluding older adults who may reside in a long-term care facility that is attached to a RH and/or live independently within their community. We will describe the RH cohort’s demographic profile and health status (e.g., income, education, chronic health conditions, etc.) and home health care service utilization. We will also conduct a subgroup analysis of RH residents who reside in rural, northern and/or remote locations.

Conclusion:
The health status and health service utilization patterns of this cohort will inform the delivery of home and supportive living services and contribute to the development of health policies that are reflective of the needs of older adults. The analytic use of this cohort also informs future RHRA policies.
A Logic Model to Guide the Implementation And Evaluation Of NaviCare/SoinsNavi: A New Brunswick Navigation Centre For Children and Youth With Complex Care Needs

Presented by: Alison Luke, Research Associate, University of New Brunswick

BACKGROUND: Current systems are not well integrated and do not provide the needed supports, resources or access caregivers and families require to properly care for their child with complex care needs (CCNs). This can often create confusion and have an impact on continuity of care. This lack of integration also impacts how care is delivered and documented when families and children are moving back and forth between acute-care and the community.

APPROACH: NaviCare/SoinsNavi is a research-based navigation centre aimed to help facilitate more convenient and integrated care to support the needs of children/youth and their families using a patient navigator to offer personalized family-centred care. With limited funds for healthcare and research, the need for accountability and to ensure the programs put in place are accomplishing their set goals (or if not, why) are paramount. With this at the forefront, the NaviCare/SoinsNavi team set forth to develop a logic model that would help guide program implementation and ensure the goals of the centre could be evaluated and achieved.

RESULTS: A logic model was developed by the NaviCare team to facilitate the foundational work needed for a successful program, such as planning, establishing program goals and objectives, as well as providing a logical illustration of how the program will work. This visual representation of the assumed cause-and-effect connections between program components and desired outcomes informed the identification of inputs, activities, and outputs deemed critical for successful program execution, and for the research and evaluation of both the processes, and program as a whole. This provided a safeguard to ensure critical activities were not overlooked, allowed the comparison of the ideal versus the realities of the program, enhanced communication, and highlighted data and resources that may be needed for implementation and evaluation.

CONCLUSIONS: The NaviCare/SoinsNavi logic model will help guide the research and development of the program and identify variables to be evaluated. This will support achieving NaviCare/SoinsNavi’s vision that every child and youth with CCNs has access to the required health, social, and education services they require in a timely manner.
Access to novel advanced prostate cancer therapies in Ontario

Presented by: Danial Qureshi, Clinical Research Coordinator, Ottawa Hospital Research Institute

Background & Objectives: Prostate cancer is a leading cause of morbidity and mortality among men. While metastatic prostate cancer is incurable, it is treatable, and in recent years several trials have shown a clinically-significant survival benefit with the introduction of new treatment options (docetaxel, abiraterone, and enzalutamide). The purpose of this study is to assess current prescribing rates of advanced prostate cancer therapies in varying prostate cancer populations, and to investigate whether disparities of access currently exist.

Approach: We conducted a retrospective cohort study using linked administrative data held at ICES, capturing all patients aged 65+ with a prostate cancer diagnosis (metastatic and non-metastatic) in Ontario between Oct 1st, 2013 and Oct 1st, 2015. We further grouped patients based on either receipt of androgen deprivation therapy (ADT) or presence of castration-resistant prostate cancer. Planned analysis of the following outcomes will be completed soon (prior to the conference): cohort (e.g. age, sex, income, LHIN) and disease characteristics (e.g. PSA, Gleason’s score, clinical T-stage), incident medication use including novel hormone therapies (abiraterone, enzalutamide), and prescribing physician specialty.

Results: We identified 15,136 patients who had a prostate cancer diagnosis during the study period. Among these patients, 3,503 were receiving ADT; 733 (20.9%) were metastatic cases, while 2,770 (79.1%) were non-metastatic. We also identified 265 patients who had castration-resistant prostate cancer (metastatic: 67.0 %, non-metastatic: 33.0%). A total of 823 (5.4%) died during the study period, among which 419 had a prostate cancer primary cause of death. Remaining results on outcomes pending (will be completed prior to conference).

Conclusion: As shown through our preliminary results, we have successfully captured prostate cancer patients at varying disease stages. Identification of patient groups who currently have poor access to advanced therapies will help to address future inequities of access as these advanced treatments gain traction earlier in the disease course.
EXPERIENCES OF FAMILIES USING NAVICARE/SOINSNAVI: A PATIENT NAVIGATION CENTRE FOR CHILDREN WITH COMPLEX CARE NEEDS IN NB

Presented by: Alison Luke, Research Associate, University of New Brunswick

EXPERIENCES OF FAMILIES USING NAVICARE/SOINSNAVI: A PATIENT NAVIGATION CENTRE FOR CHILDREN WITH COMPLEX CARE NEEDS IN NB

Background

NaviCare/SoinsNavi is a patient navigation centre for children and youth with complex care needs in New Brunswick that was launched January 2017. The patient navigators help coordinate patient care; improve transitions in care; connect both families and care providers to services and programs; help families better understand health, education, and social services; and serve as a resource for the care team. The objective of this presentation is to present findings from the implementation of NaviCare/SoinsNavi.

Approach

A mixed method approach was used to explore parents’ experiences with NaviCare/SoinsNavi. Fourteen participants who received services from NaviCare/SoinsNavi participated in semi-structured interviews, which were conducted either face-to-face or over the phone. Thirteen participants also responded to a satisfaction survey that was emailed to all NaviCare/SoinsNavi clients once their file was closed. Additional demographic information was collected to provide context. Interview data was analyzed using inductive thematic analysis, which is a research method for identifying, analyzing, and reporting themes within the data. Survey data was analyzed using descriptive statistics.

Results

Although children served by the centre vary by condition, age, and gender, the ‘typical’ child is: male, between the ages of 6 and 11, and diagnosed with autism spectrum disorder (ASD) or Attention Deficit Hyperactivity Disorder (ADHD). Most common reasons for calling the centre include seeking support for service referrals, care coordination, and funding. Findings demonstrate that families have substantial needs reflecting gaps and barriers in care delivery across the province. Overall, families were extremely satisfied with the centre. Emerging themes from interview data include: 1) living with a child with complex care needs, 2) navigating the system, 3) looking for help, and 4) the value of NaviCare/SoinsNavi.

Conclusion

This study demonstrates that patient navigation is an innovative service delivery approach to improve the integration of care for individuals with complex care needs. Future research is needed to measure the impact of patient navigation programs on care coordination, return on investment, and health outcomes to inform policy and practice.
Retention of visa trainees following post-graduate medical residency training in Canada.

Presented by: **Maria Mathews**, Professor, University of Western Ontario

**Background & Objectives:**

Visa trainees are international medical graduates (IMG) who come to Canada to train under a student or employment visa and are expected to return home after their training. How many visa trainees remain in Canada after their training? We examine the retention patterns of visa trainee residents funded by Canadian (regular ministry and other), foreign, or mixed sources.

**Approach:**

We linked data from the Canadian Post-MD Medical Education Registry with Scott’s Medical Database to identify visa trainees who remained in Canada after their exit from post-graduate training. Eligible trainees were IMG who were visa trainee as of their first year of training, started their residency program no earlier than 2000, and exited training between 2006 and 2016. We used cox regression to compare the retention (work in Canada Y/N) of visa trainees funded by Canadian, foreign, and mixed sources. Potential covariates included gender, training program, region of medical graduation, age, legal status at training exit, and residency training region.

**Results:**

Of the 1,913 visa trainees in the study, 431 (22.5%) were Canadian-funded, 1,353 (70.7%) were foreign-funded, and 129 (6.8%) had mixed funding. The largest group (70.6%) came from Middle Eastern and North African countries. 16% of visa trainees remained in Canada up to 11 years after exiting post-graduate training. Trainees who remained on visas (HR: 1.91; 95% CI 1.60-2.30), were funded exclusively by foreign sources (HR: 1.46; 95% CI 1.25-1.69), and who had graduated from ‘Western’ countries (HR: 1.39; 95% CI 1.06-1.84) were more likely to leave Canada than trainees who became citizen/permanent residents, were funded by Canadian sources, or visa graduates of Canadian medical schools, respectively.

**Conclusions:**

1 in 6 visa trainees remain in Canada after their residency training. Trainees with Canadian connections (funding and/or change in legal status) were more likely to remain in Canada.
How Do Post-graduate Medical Fellowship Programs Contribute of Canada’s Physician Supply?

Presented by: Maria Mathews, Professor, University of Western Ontario

Background & Objectives:

Fellowship programs are additional years of specialized training following medical residency training. The number of fellowship trainees has grown substantially in Canada in the past 30 years. In fellowship programs, the number of visa trainees exceeds the number of Canadian medical graduates (CMG) and citizen/permanent resident international medical (C/PR-IMG). To what degree do fellows contribute to Canada’s physician supply? We examine the retention patterns of CMG, C/PR and visa trainee fellows.

Approach:

We linked data from the Canadian Post-MD Medical Education Registry with Scott’s Medical Database to identify fellows who remained in Canada after their exit from post-graduate training. Eligible fellows entered their fellowship program in 2000 or later, and exited training between 2006 and 2016. We used cox regression to compare the retention (work in Canada Y/N) of CMG, C/PR-IMG, and visa trainees. Potential covariates included gender, training program, region of medical graduation, funding source, age, legal status at training exit, and training region.

Results:

Of the 12,876 fellows in the study, 3013 (23.4%) were CMG, 1,233 (9.6%) were C/PR-IMG, and 8,630 (67.0%) were visa trainees. The bulk (60.1%) of fellowship funding comes from non-government Canadian sources (e.g. hospitals, charities). Most fellows (74.8%) left Canada after their training: 24.7% CMG, 62.7% C/PR-IMG, 93.9% visa trainees. After controlling for region and year of training, C/PR-IMG (HR: 3.27 95% CI 2.95-2.62) and visa trainees (HR: 6.17 95% CI 5.70-6.69) were more likely to leave Canada than CMG; and those funded by foreign sources (HR: 1.24 95% CI 1.10-1.40) or unknown sources (HR: 1.18 95% CI 1.03-1.34), but not other Canadian sources, were more likely to leave Canada than those funded by Canadian ministry sources.

Conclusions:

The study results raise many questions about the role of fellowship programs in Canada’s physician workforce, particularly for C/PR-IMG for whom fellowship represents a way to enter, but not remain, in the physician in Canada. Fellowship programs, as suggested by the large proportion of funding from non-government Canadian sources may address local needs for specialized physicians.
Policy and program innovations in patient-centred team-based primary healthcare for people with multimorbidity: A four province comparative case study

Presented by: Tara Sampalli, Director of Research and Innovation, Nova Scotia Health Authority

Background and objectives

Multimorbidity (MM), the co-existence of two or more chronic disease is a priority issue for policy makers and providers across Canada due to high impacts on affected individuals and health system. Team-based primary health care is seen as an important strategy to improve outcomes for MM. In a cross-provincial comparative study, the primary objective is to learn from innovative team-based care approaches that can help inform better policies and redesign of service delivery for MM.

Approach

We will use a comparative case study with embedded units design. With Nova Scotia, Newfoundland, Ontario and Quebec as the cases, the embedded units are interprofessional primary health care teams that offer programs for patients with MM. Through analysis of primary (NS and NL) and secondary (ON and QC) data, we will compare innovations in the four provinces. The research process includes an environmental scan to identify current innovations, LEAN approachesto describe the innovative processes, interviews and a survey with patients and providers, and the creation of patient-centered knowledge translation tools and platforms about promising approaches.

Results

Building on the Patient-Centred Innovations for Persons with Multimorbidity (PACE in MM) framework, we will better characterise what PHC programs for MM currently being offered to those with MM. Using the Consolidated Framework for Implementation Research (CFIR) framework we will inform our understanding of how programs for patients with MM are currently being implemented, and potentially identify barriers and facilitators to the implementation and scaling up of programs. The proposed study will 1) Catalyze opportunities to learn from and generate spread of the PACE in MM framework; 2) Enable knowledge users to support and further develop promising MM programs; 3) Inform care management needs of patients with MM with additional vulnerabilities, such as rural and newcomer populations

Conclusion

Through engaging patients with MM and PHC teams in the study, we hope to contribute to collaborative co-design of new, and refinement of existing, programs and policies to improve patient-centered care and health outcomes. Potential outcomes to the health system include reduced usage of emergency and unnecessary services.

Presented by: Janelle Boram Lee, Graduate Student, University of Manitoba

Background: Immigration is the leading contributor to population growth in Canada and will be the only one by the next decade. Research on disparities and risk factors in birth outcomes among immigrants is largely based on Canadian provincial data, raising concerns about generalizability of findings to other provinces or at the national level. We describe Canadian provincial variations in birth outcomes according to the geographical origins of mothers.

Approach: We used data from the Canadian Vital Statistic Birth Database administered by Statistics Canada, which includes birth certificate records provided by provincial/territorial vital statistics registrars. The study population comprised all singleton live births from 2000 to 2016. We adapted the United Nations Classification of World Regions for grouping maternal birthplaces. To examine the association between maternal birth countries and provincial variations in birth outcomes, adjusted risk ratios were calculated for preterm birth (PTB) and small-for-gestational age (SGA), and adjusted mean differences for at-term (39-40 weeks) birth weights between infants born to foreign-born mothers and those born to Canadian-born mothers.

Results: The cohort included 5,831,580 livebirths. Proportion of births to foreign-born mothers rose from 23.7% in 2000 to 30.7% in 2016 with provincial variations – doubled in Alberta, Manitoba, and Atlantic Canada, and quadrupled in Saskatchewan. Compared with infants born to Canadian-born mothers, births to mothers from Eastern, Western, and Central Asia, North Africa, US, and Europe (excluding United Kingdom) showed lower rates of PTB; births to mothers from Bangladesh, South Eastern Asia (excluding Vietnam), and Caribbean showed higher PTB rates. For SGA, births to mothers from Asia (excluding China), Sub-Saharan Africa, Caribbean, and South America showed higher rates and those born to mothers from US and Eastern Europe had lower rates. Infants born to mothers from all regions, except the US, showed lower mean birthweight.

Conclusion: Past 17 years, proportion of births to immigrant mothers has steadily increased in Canada, but not uniformly across provinces. Maternal birth country is associated with birth outcomes consistently across provinces, with a few exceptions. Findings aid understanding of perinatal health associated with immigration and decision-making in healthcare supporting this population.
New Brunswick physicians’ perspectives toward medical assistance in dying (MAiD)

Presented by: Caitlin Robertson, Student, University of New Brunswick

Background and Objectives:
With the addition of medical assistance in dying (MAiD) to Canadian law in 2016, came many challenges to patients and providers. Since physicians and NPs are the professions able to provide MAiD, it is imperative to understand their perspective. In New Brunswick, only physicians are currently providing MAiD within the two regional health authorities. The purpose of this research is to understand what is shaping the perspectives of New Brunswick physicians toward MAiD.

Approach:
We will be conducting semi-structured one-on-one interviews with New Brunswick physicians. We will be following a Straussian Grounded Theory approach to data collection and analysis to understand the social structures in place shaping their opinions on this topic. As such, the interview questions may potentially change over the course of the interviews. A snowball sampling approach will be used to recruit participants; we intend to have a purposive sample with half of the sample in support of MAiD, and half in opposition. We will continue data collection until a sufficiency of information is observed.

Results:
Although data collection is not complete, it is anticipated that we will gain a rich understanding of what is shaping the views of New Brunswick physicians towards this important topic. This research has the potential to inform future studies on this topic.

Conclusion:
With the new law on medical assistance in dying, it is essential to understand the views of the practitioners legally allowed to provide this service; in New Brunswick, this is primarily physicians. Understanding these perspectives would be important in shaping further policies and regulations.
Patient/Caregiver-Researcher Partnerships: Developing an Experience-Based Online Training Module for Patient-Oriented Research

Presented by: Michelle Marcinow, Research Associate, Institute for Better Health - Trillium Health Partners

Background and objectives: Engagement of patients/caregivers as partners in research is typically adopted to foster effective collaborations that yield higher quality research processes and outputs. Yet patients and researchers alike have identified the need for further evidence regarding the value of engagement, practical insights into others’ experiences, and training to develop skills and knowledge. This project aims to provide a deeper understanding of partnership experiences, and to create an online training module to help advance patient-oriented research.

Approach: We will conduct individual narrative video interviews with 15 patients/caregivers and 15 researchers (variation sampling as per individual attributes and partnership experiences). Interviews will be digitally recorded and transcribed verbatim. Thematic analysis will identify themes important to participants, and we will explore differences and similarities between patient/caregiver and researcher responses. We will then co-design and develop an online training module – featuring the stories of those we interview. Our advisory group includes scientists, educators, patients, and caregivers to guide the development of a product that complements existing training resources. A mixed methods evaluation will follow the launch of the module.

Results: We have conducted 17 interviews to date in 3 jurisdictions across 2 provinces. Our preliminary analysis indicates consistency with existing literature on partnerships and engagement, with some important nuances – e.g. the particular challenges that this type of research presents for early career scientists, the complexity of partnership where people have multiple roles, and variable perspectives on required intensity of engagement. We anticipate that the final collection of narratives, and online module (based on the analysis of the interviews) will contribute valuable insights regarding lived experiences of partnership that will be instructive for both patients and researchers. The training module will be made freely available on www.healthexperiences.ca and OSSU web sites. The evaluation is expected to demonstrate value in sharing experiences in peoples’ own voices.

Conclusion: The findings of this study will provide learnings of the challenges and benefits related to engagement in patient-researcher partnerships and suggestions to help individuals prepare for, and reflect on, their roles. The online module will support training and help people and teams navigate effective collaborations.
Assessing quality of care of heart failure (HF) in primary care in Ontario and the impact of financial incentives on care quality (ACCEPT-MORE Phase 3)

Presented by: Thivaher Paramsothy, Graduate Student, University of Toronto

Background and objective

Heart failure (HF) is the leading cause of hospital admission in Canada, and patients with HF have longer hospital stays, resulting in heavy healthcare costs. Significantly, most HF admissions are due to exacerbated symptoms which may be preventable with quality primary care. We sought to identify HF quality indicators in primary care, assess the current state of HF care by family physicians in Ontario, and evaluate whether the physician incentive in Ontario improves HF care.

Approach

A comprehensive search strategy was conducted in MEDLINE to identify and select HF-related quality indicators and primary care clinical practice guidelines. University of Toronto Practice Based Research Network (UTOPIAN) will be used to identify patients with HF and assess the current state of practice for managing Ontario patients with HF using the quality indicators selected. Additional analyses will stratify patients with HF by whether or not the services they received are associated with Ontario’s physician incentive to determine if the use of the incentive is correlated with better performance on quality indicators.

Results

A comprehensive search strategy retrieved a total of 94 articles, of which 13 were selected. In addition, 81 grey literature sources were reviewed, of which 20 were selected. From both sources, we retrieved 79 quality indicators relevant to heart failure management in primary care. We anticipate that the quality of HF care in primary care will have several areas needing improvement. In addition, we anticipate Ontario’s physician incentive had little or no impact on the quality of HF care, consistent with the literature on other similar financial incentives.

Conclusion

This study will enhance understanding of the current performance of HF care amongst family physicians in Ontario and identify possible areas of improvement. Using the primary care quality indicators identified, we can evaluate the effectiveness of the incentive for HF management in Ontario to inform future policy.
Scaling-up eConsult in Quebec: what are the main policy issues?

Presented by: Mélanie Ann Smithman, Research professional/Student, Université de Sherbrooke

Background

Effective innovations, that could help improve healthcare, often remain unscaled. EConsult—an asynchronous online platform connecting primary care providers and specialists—has been shown to improve access to specialists in Ontario. In Quebec, eConsult is implemented in three regions and planned to be scaled-up provincially. Efforts to scale-up innovations like eConsult at a provincial level must address policy issues. As a first step, we identified the main policy issues of scaling-up eConsult in Quebec.

Approach

We reviewed meeting minutes, reports and presentations from the Quebec eConsult steering committee and observed committee meetings to generate a preliminary list of overarching themes. We compared and completed this list with themes identified in scaling-up efforts in other Canadian provinces (internal documents, scientific literature, and pan-Canadian symposium). We then held a deliberative forum with key stakeholders of eConsult in Quebec (n=10 participants) to discuss each theme in more depth and determine its relevance to the Quebec context. We conducted thematic analysis of the deliberative forum discussions to identify the main policy issues of scaling-up eConsult in Quebec.

Results

We identified 6 main policy issues for the scale-up of eConsult in Quebec: 1) establishing remuneration of both primary care providers and specialists for doing an eConsult and following up with patients; 2) developing information technology infrastructures to support eConsult at a large scale; 3) integrating eConsult with other innovations related to eHealth, access to specialists and interdisciplinary teams (e.g. electronic medical records, standardized referrals to specialists, use by allied health professionals); 4) transitioning governance from provider-led structures of regional pilot projects to government-led provincial structures; 5) including eConsult as a formally recognized tool for continuing medical education; 6) managing change at a large-scale (e.g. developing best practices guidelines, monitoring, balancing primary care provider enthusiasm with careful scale-up efforts).

Conclusion

EConsult has the potential to improve the delivery of care by specialists and primary care providers. However, many policy issues need to be considered to allow the successful scale-up of eConsult at the provincial level. Future research should explore promising strategies to address these policy issues.
Opioid-Related Deaths in Ontario, Canada: Enhancements to the Coroner’s Abstracted Data

Presented by: Samantha Singh, Research Project Manager, ICES

Background/Objective: Post-mortem toxicology results are considered the gold standard for identifying whether a death is opioid-related. In 2016, the Ministry of Health and Long Term Care released the Ontario Opioid Strategy with the intention of improving data collection to support evidence-based policies. In response to this, the Office of the Chief Coroner (OCC) of Ontario implemented a novel abstraction tool, the Opioid Investigative Aid (OIA), to capture consistent, detailed and timely information on opioid-related deaths.

Approach: Previously, coroner’s abstracted data was linked to the data repository at ICES, and included information on manner of death and drug concentrations from post-mortem toxicology for all opioid-related deaths in Ontario. Effective May 2017, the OIA collected additional variables, that were not previously captured, to acquire detailed opioid-related information around demographics (i.e. ethnicity, incarcerations), past drug and medical history, current and/or recent drug use (e.g. drugs found at the scene and/or recently used), and circumstances surrounding the death (e.g. naloxone administration). These new variables captured on the OIA will be included in the annual data transfers to ICES for linkage.

Results: Between May 1, 2017 and December 31, 2017, we identified 930 individuals who died from an opioid-related cause in Ontario, the majority of whom were caucasian (84.7%; n=788), living in private residences (73.5%; n=684), never legally married (49.0%; n=457) and unemployed (46.3%; n=431). About one-third of individuals (35.3%; n=328) had a known past encounter with the criminal justice system (incarceration, custody, or police involvement). Among individuals who died from an opioid-related cause, resuscitation was attempted on about half (54.0%; n=502) and naloxone was administered to a small proportion (n=155; 16.7%). Alcohol was present at approximately one-quarter (n=256; 25.5%) of the scenes related to the death under investigation.

Conclusion: The implementation of the Opioid Investigative Aid provides enhanced information that is not available through other existing databases, and can be used to inform policies and strategies aimed at addressing the ongoing opioid crisis. This information may identify preventable measures to help reduce opioid-related deaths occurring in the province.
Reflections on the experiences of the inaugural cohort of PhD Health System Impact fellows

Presented by: Elena Lopatina, PhD Candidate, University of Calgary

Background and objectives: In the light of the increasing number of PhD graduates choosing career paths outside the academy, the Canadian Institutes of Health Research (CIHR) introduced a Training Modernization Strategy to ensure that PhD students develop professional competencies relevant outside academic environments. The Health System Impact (HSI) Fellowship is one pillar of this strategy that offers trainees impact-oriented experiential learning opportunities within health system organizations. In 2018, the first cohort of PhD HSI fellows started their fellowships.

Approach: The inaugural cohort of PhD HSI fellows started an informal online group to provide peer support to other fellows while navigating the course of their respective 1-year fellowships. Members of the online group plan to conduct focus groups to learn more about the experiences of PhD HSI fellows, including how their role has been defined and evolved with their health system partner, and how commitments and responsibilities between their academic and health system partners have been managed. This work reflects on shared experiences of fellows included in the peer support group on the first semester of their fellowships.

Results: Thirteen fellows joined the online group. Fellows represent 12 universities and 13 partner organizations and vary in the year of the PhD training (junior years \([N = 3]\), senior years \([N = 10]\)), nature of their partner organization (government \([N = 6]\), for-profit \([N = 1]\), and not-for-profit \([N = 6]\)), and the extent to which the fellowship project is embedded in the PhD research \([N = 8]\) or is distinct \([N = 5]\). Some challenges experienced include limited ability to pursue the project outlined in the application and limited understanding of the fellowship specifics by universities. Nonetheless, the program is highly valued by the fellows and provides opportunities to accelerate professional growth and career readiness, including experiential learning and allocated time for professional development.

Conclusion: The PhD HSI fellowship provides fellows invaluable opportunities to accelerate their career readiness for impactful careers to address health systems challenges. Understanding the experiences of the inaugural cohort of PhD HSI fellows can contribute to an improvement of further initiatives to modernize PhD training for future health systems leaders.
Evaluation of routinely measured PATient reported outcomes in Hemodialysis care (EMPATHY): Implementing a cluster randomized controlled trial at the health system level

Presented by: Hilary Short, Research Coordinator, University of Alberta

Background and objectives: Advanced chronic kidney disease requiring dialysis is associated with poor health outcomes and quality of life. Patient-reported outcome measures (PROMs) capture patients’ experiences of symptoms and the functional impact of disease, which can support clinicians in monitoring disease progression and facilitate patient-centered care. The EMPATHY trial will evaluate the impact of routinely measuring and reporting PROMs on patient-reported experience, clinical outcomes, and healthcare utilization.

Approach: The EMPATHY trial is a pragmatic, multi-centre, cluster randomized trial being implemented in the Northern and Southern Alberta Renal Programs (NARP/SARP) and the Ontario Renal Network (ORN). The trial is evaluating a disease-specific (Edmonton Symptom Assessment System Revised – Renal) and a generic (EQ-5D-5L) PROM. In-centre hemodialysis units are randomized to one of four groups: 1) ESAS-r; 2) EQ-5D; 3) ESAS-r and EQ-5D; 4) usual care. Patients’ PROMs are assessed bimonthly in groups 1, 2, and 3. All groups have access to standardized treatment aids for clinicians, providing information on symptoms management. The main outcome of this study is patient-provider communication.

Results: NARP began implementing EMPATHY in September 2018. Implementation in SARP and ORN will begin in 2019. To date, 17 dialysis units, including nearly 900 patients, in NARP have been enrolled: 5 units are hospital-based in urban areas and 12 are community-based units in rural areas. A total of 20 in-services were provided to train nurses on the EMPATHY protocol and nephrologists were informed of the trial through a distributed information sheet and an education session. Each unit appointed one nurse to be an EMPATHY site lead to champion the trial and act as a liaison between the unit and the research team. Study outcomes are being collected by various surveys measuring patient-provider communication, patient experience, symptom burden, quality of life, depression and anxiety.

Conclusion: Incorporating PROMs into clinical practice seems an appropriate strategy to engage patients in decisions regarding their care and outcomes. However, this approach requires a substantial reallocation of healthcare resources. The EMPATHY trial will rigorously evaluate such interventions and investments to ensure they provide value for patients and health systems.
Three ways of “Managing Fatigue”: Increasing access by expanding the options for delivery of an effective self-management intervention

Presented by: Tanya Packer, Professor, School of Occupational Therapy, Dalhousie University

Background and Objectives: Fatigue is one of the most common and disabling symptoms associated with chronic conditions including multiple sclerosis (MS), brain injury, and cancer. It impacts employment, family and mental health. The widely used ‘Managing Fatigue’ intervention, delivered by occupational therapists, effectively reduces fatigue impact using one-to-one, online, and teleconference formats. However, the comparative effectiveness and non-inferiority of formats is unknown, limiting adoption of multiple options that would increase access to the intervention.

Approach: This PCORI-funded study seeks to determine whether delivery using teleconference, online, and one-to-one formats are equally effective in improving physical, mental, and social function, and whether demographic characteristics can or should be used to further tailor the intervention. The three-arm, non-inferiority randomized control trial (n~610), is comparing the three methods of delivery for adults with MS fatigue. The online delivery arm of the trial is being led by researchers in Nova Scotia. This paper will describe the study protocol, focusing on development of the online self-management intervention. Lessons learned during pilot testing will be presented.

Results: Adaptation for online delivery of a therapist facilitated group intervention poses technical, security, and therapeutic challenges. Prevalence of phone apps and wearable technology now set high expectations for easy navigation, responsiveness and usability of technology. Mimicking a therapeutic environment online requires ingenuity; strategies to build self-efficacy, such as competence mastery and peer modeling, must be deliberately and carefully planned. Therapist training is needed to translate face-to-face group facilitation competencies to the online environment. Lessons learned will be relevant to practitioners and policy makers considering ways to increase access to chronic disease management interventions for people who cannot access them due to employment demands, mobility, transportation, or geographic barriers.

Conclusion: This study will provide evidence for patients and healthcare providers on how to choose from the alternative delivery methods available for people with fatigue secondary to MS and other chronic conditions. Knowledge of implementation strategies to successfully provide new opportunities to deliver chronic disease management will be learned.
Impact of the publicly funded herpes zoster immunization program on burden of disease in Ontario, Canada

Presented by: Diana Martins, Research Program Manager, St. Michael’s Hospital

Background and Objectives:
Herpes zoster (shingles) infections are associated with considerable morbidity and healthcare costs. In September 2009, a live, attenuated herpes zoster (HZ) vaccine (Zostavax) became available in Canada. This was subsequently provided free of charge to all Ontario residents aged 65 to 70 through a publicly-funded immunization program commencing in September 2016. We examined the impact of the HZ vaccine availability and Ontario’s immunization program on HZ incidence and associated health service use in Ontario.

Approach:
We conducted a population-based time-series analysis among Ontarians aged 65 to 70, between January 2005 and June 2018. We report monthly rates of herpes zoster incidence, defined as 1) physician visit for HZ with a HZ antiviral prescription dispensed within +/- 5 days, or 2) emergency department (ED) visit or hospitalization for HZ. Secondary outcomes included monthly rates of HZ related ED visits and hospitalizations. We stratified outcomes by sex, income quintile and rural/urban residence. We used interventional autoregressive integrated moving average (ARIMA) models to examine the impact of the HZ vaccine availability and Ontario’s immunization program on our outcomes.

Results:
The availability of a herpes zoster vaccine did not significantly impact trends of incidence or related hospitalizations among Ontarians aged 65 to 70 (p=0.43 and p=0.97, respectively). In contrast, the subsequent implementation of Ontario’s immunization program significantly reduced the rate of incidence among our population by 25.3% between August 2016 and June 2018 (p<0.01; from 4.8 to 3.6 individuals per 10,000 population). The rate of ED visits and hospitalizations for herpes zoster were relatively stable between January 2005 and August 2016, but significantly decreased following Ontario’s immunization program by 36.2% (p<0.02; from 1.7 to 1.1 hospitalizations per 10,000 population between August 2016 and June 2018). Findings were consistent when stratified by sex, income quintile and rural/urban residence.

Conclusion:
Ontario’s publicly-funded immunization program for herpes zoster led to significant reductions in the incidence of disease and related hospitalizations among individuals aged 65 to 70 in the province. Our future work will evaluate the cost savings associated with the reduction in herpes zoster-related health service use.
Development and characterization of a palliative care cohort using administrative data in Ontario, Canada

Presented by: Amy Hsu, Investigator, Bruyère Research Institute

Background: In recent years, the receipt of palliative care (PC) has been used as a proxy measure for advanced illness in individuals approaching end of life. The purpose of this research is to define a cohort of individuals in Ontario, Canada receiving a palliative care label (e.g. flag indicating eligible for PC home services or service such as PC nursing visits) across multiple sectors and characterize how closely a PC label is associated with 1-year mortality.

Approach: We identified all variables indicating receipt of a PC label within multiple linked health administrative databases held at ICES. We categorized each variable by type, setting, and provider of care. We created a cohort of individuals aged ≥18 years who received their first ever PC label between April 2011 and March 2016.

Then, we used Kaplan-Meier survival curves to measure the association between receipt of a PC label and 1-year mortality. We compared the PC cohort to an age- and sex-matched cohort of Ontarians aged ≥18 years who were alive between April 2011 and March 2017.

Results: We identified 55 PC variables in 9 databases held at ICES. Our final PC cohort consisted of 338,128 individuals. The average age of the PC cohort was 73.3 ± 15.68 years and 47.4% were male. Of those, 324,876 (96%) were successfully matched to a population control. A significantly higher proportion of individuals among the PC cohort compared to the population controls died within 1 year (55.4% vs. 3.4%). Individuals who received their first ever PC label in an acute care setting were the most likely to have died at 1 year (89.6%) compared to those identified in an outpatient setting (29.1%), or a home care setting (56.7%).

Conclusion: The ICES-derived PC cohort has a higher rate of death compared to population-matched controls, and this rate varies significantly among PC settings. Over half of individuals in the PC cohort were still alive one year after their first ever PC label. Further work is required to determine why differences across settings exist.
Primary health care innovations designed to integrate with other community-based services: Examining implementation factors and degree of integration for a selected set of Canadian innovations

Presented by: Tara Stewart, Health Services Researcher, George and Fay Yee Centre for Healthcare Innovation

In this step of our multi-phase SPOR-PHICI comparative program/policy analysis, we examine a selected set of publicly-funded Canadian primary health care (PHC) innovations designed to integrate with services offered by other organizations in the community. More specifically, our objective was to document and analyze the implementation factors and degree of integration success of service models that permit providers to coordinate complementary services and exchange information/resources to enhance quality care for complex patients.

In a previous phase, our team compiled a list of 32 eligible innovations across 10 provinces. Informed by Suter et al.’s (2007) Principles of Successful Health Systems Integration and Damschroder’s (2009) Consolidated Framework for Implementation Research, we developed a data collection template focused on selected implementation factors identified as central to integration success. Drawing from grey/published literature, government websites, and key informant interviews, we gathered the following information for each service: (i) program overview, context, history, goals, design, and trialability, (ii) patient focus, (iii) information systems, (iv) financial management, (v) performance management, (vi) governance structure, and (vii) policy instruments.

Data collection and analysis is still in progress. Building on the Canadian Health Services Research Foundation’s work (Hutchison & Roy, 2010) that documented a selection of PHC innovations across Canada as of 2010, we will update the landscape focusing specifically on selected PHC innovations designed to integrate with other services, and provide a more granular analysis of implementation factors linked to integration success with the most promising innovations likely to (i) be designed with regional focus and around population-based need; (ii) display fit with partnering organizations in terms of aligned goals and complementary services; (iii) have formalized agreements/processes/mechanisms in place to communicate information, share resources, and work collaboratively across organizations; and (iv) have evolved a framework of evaluation, performance management, and accountability.

Quality care for complex patients is facilitated by integration of PHC with other community-based services. This cross-provincial analysis of PHC innovations designed to deliver patient-level integration is a step toward the development of a mechanism for sharing knowledge across jurisdictions, thereby helping to create conditions that encourage the spread of innovation.
Machine learning for clinical prediction: for which problems might it be most useful?

Presented by: Colin Weaver, Student, University of Calgary

Background and objectives:

Regression and machine learning methods can both be used to develop clinical prediction models. These provide diagnostic or prognostic estimates for individual patients which can, among other things, inform treatment decisions. Although few machine learning-based models are currently used, there is optimism surrounding their potential impact. The objective of this presentation is to discuss characteristics of the clinical context and data which should inform the decision to use machine learning for a given prediction problem.

Approach:

This narrative review synthesizes, critiques, and discusses relevant literature. Included are the most recent reviews and frameworks on the development, validation, and evaluation of clinical prediction models as well as opinion pieces on the application of machine learning for clinical prediction. A clinical example will be used to illustrate these concepts: predicting the risk of coronary heart disease to inform the decision to use lipid-lowering medications.

Results:

Three key considerations for the use of machine learning were identified. 1) Acceptability. Machine learning methods are often challenging to interpret. 2) Importance of accuracy. Greater accuracy (often realized with machine learning) is always preferred but may be less important if there is not a direct connection between accuracy and health outcomes: the predictions might be used alongside other considerations to make treatment decisions (e.g., patient preferences) or factors other than diagnosis/prognosis may influence response to treatment. 3) Characteristics of the data and prediction problem. Machine learning methods are more flexible and are expected to perform particularly well when: the sample size is large, there are a large number of predictors (e.g., an image), or the anticipated relationship between predictors and outcome is complex.

Conclusion:

These considerations will help researchers decide whether machine learning methods might be appropriate for a given clinical prediction problem. Before implementing a machine learning or regression-based clinical prediction model one should ideally have evidence that compared with standard of care it is more accurate and improves health and/or cost outcomes.
Female and Male Veterans and Canadians: A Sex-Disaggregated Comparison of Well-being

Presented by: Alexandra Ralling, Student Researcher, Veterans Affairs Canada

Background: While there is a growing body of literature on Canadian veterans, sex- and gender-based analysis of this population is limited. Differences between females and male veterans have been identified. However, comparisons have not been made to the Canadian general population (CGP). This study explores whether these differences are consistent with differences in the CGP. (54/75)

Approach: Data on veterans were analyzed from the 2013 Life After Service Survey, a nationally representative survey of 3,727 recently released (1998-2012) Canadian Armed Forces veterans. Veterans were compared to the CGP using age-sex adjusted rates and confidence intervals from the 2011-2012 Canadian Community Health Survey (CCHS), the 2013-2014 CCHS, and the 2013 Labour Force Survey. Indicators for comparison are aligned with VAC’s surveillance framework, and include indicators from five of the seven domains of well-being. (74/100)

Results: Recently released Veterans and the CGP share many well-being characteristics; however, findings demonstrate notable differences between Veterans and the CGP. Specifically, regular force and reserve force class C Veterans, both male and female, were more likely than the CGP to: (1) perceive their health and mental health as fair or poor; (2) experience an activity limitation and need help because of an activity limitation; (3) report chronic pain, arthritis, and back problems; (4) report a mood disorder or any mental health condition; and (5) report high school graduation as their highest level of education. Both female veterans and Canadians were more likely to require help and experience an activity limitation compared to their male counterparts. (115/125)

Conclusion: These findings highlight differences that are essential to understanding the needs of the veteran population and how sex and gender may interact to produce these differences. Due to the limited number of females surveyed, further research needs to examine the feasibility of collecting larger datasets of female veterans. (48/50)

Presented by: Tanya Packer, Professor, School of Occupational Therapy, Dalhousie University

Background and Objectives: Collaborative and Chronic Disease Management teams in Nova Scotia are increasing access to care and support for patient self-management. With 90% of chronic disease management done at home, by patients, self-management support is an established component of quality chronic disease management. Despite this, assessing and planning for self-management needs is fragmented and often ad hoc. We show how a patient-oriented framework is influencing program/practice and system-level changes to meet self-management support needs.

Approach: The TEDSS framework, developed from the literature and validated with qualitative accounts of 117 adults with neurological conditions, categorizes self-management strategies used by clients into seven domains and 25 subdomains. Teams in Nova Scotia have begun using the TEDSS as a framework for quality improvement and planning. The depth and breadth of services being delivered are measured against TEDDS, identifying gaps in service and pinpointing professional development needs of the teams. Development of a patient-reported outcome measure to assist teams deliver care is also underway. Results: To date, 4 chronic disease, 3 primary collaborative practices and 4 primary care networks are participating. The TEDSS framework enables teams to measure and reflect on the current self-management support provided to clients. Teams report that the framework identifies areas of strength and gaps in care delivery, enhances communication within the team, identifies interdisciplinary professional development needs, and illustrates how members of the team contribute to overall care. Use of a common framework across teams helps to plan team composition and resources needed to meet the needs of specific patient populations, especially those with multiple chronic conditions and complex needs. Conclusion: Used for planning, the TEDSS framework helps transcend the profession-specific lens of team members by focusing quality improvement on the collaboration of team to meet patient needs. It provides information to improve team communication and function, and data to guide planning for team member roles, scope of practice, and composition.
eReferral Systems Worldwide: Informing Provincial Plan for eReferral in Ontario

Presented by: Isabella Moroz, Research Associate, Bruyère Research Institute

Background Accessing specialist care continues to be a major challenge in Canada. The current referral process remains unsafe and inefficient in terms of timeliness of referrals, specialist access, and communication between primary and specialty care. Electronic referrals (eReferrals) hold great potential toward the ultimate goal of seamless communication, operational and clinical efficiencies, and provision of quality care to patients. We conducted a worldwide scan of eReferral systems to gain a better understanding of existing services with the goal of informing eReferral implementation on a provincial scale.

Approach We performed an environmental scan, supplemented by a direct outreach to Canadian and US stakeholders with implementation experience in eReferral. The search strategy included the terms “eReferral” OR “electronic referral” OR “e-Referral” AND a country name based off a systematic review of eReferral systems and a list of the World Health Organization’s member states. A list of countries that had implemented eReferral was kept and once the search was completed, further analysis of each system took place. The existing eReferral systems in countries and regions with access issues and publicly funded healthcare systems were characterized.

Results Our scan revealed eleven eReferral systems employed worldwide: Finland, Denmark, Norway, Netherlands, UK, Ireland, New Zealand, Australia, US (San Francisco General Hospital), Scotland, Canada (Alberta). The different countries were very deliberate in choosing to address a specific national priority via eReferral. These ranged from addressing excessive wait times (e.g. Finland, US, Scotland), patient safety focus (Norway, UK, Ireland, New Zealand, Australia), clinical pathway initiated due to leadership by a specialist champion (Netherlands, New Zealand, US), to policy and strategic priority. In terms of impact, improvements in efficiency, effectiveness (including cost effectiveness), patient safety, provider satisfaction and equity were observed with eReferral implementation.

Conclusion The goals and impacts achieved by the different countries are highly aligned with the Institute of Medicine’s (IOM) six domains of quality care framework: safety, effectiveness, patient-centredness, timeliness, efficiency and equity. We hence recommend this framework be used as a foundation for a province-wide implementation eReferral solution to better support both patients and providers across Ontario.
Moving beyond facilitators and barriers: Policy options to facilitate innovation and adoption of health technologies for older adults

Presented by: Maggie MacNeil, Ph.d Student, University of Waterloo

Background and Objectives:
Over 85% of older adults wish to age in place in their homes, even if their health status changes (Canadian Mortgage and Housing Company, 2018). Technologies can empower older adults to age in place and delay placement to long-term care, but innovators find it difficult to navigate multiple sets of policies and regulations across jurisdictions to bring their technologies to market in Canada.

Approach:
A scoping review and a qualitative interview process with relevant stakeholders (innovators, researchers, decision-makers, industry-representatives), have created an inventory of facilitators and barriers to health technology innovation and adoption for older adults in Canada (MacNeil, Koch, Kuspinar, Juzwishin et al., 2018). Content analysis will be used to code these items into specific policy actions (Hseih & Shannon, 2005). A Delphi approach, (using questionnaires with rounds interspersed by controlled feedback) will be used to rank policy options on their relevance and feasibility to facilitate health technology innovation and adoption for older adults.

Results:
Delphi methodology serves to organize and combine stakeholder opinions on the most relevant and feasible policy options to address issues that hinder promising technologies from being used to support older adults to live independently in their homes. The Delphi process is expected to demonstrate which evidence-informed policy options are deemed the most relevant and the most feasible to be implemented, based on input from a diverse stakeholder group. Results are expected to reflect budget constraints in health care, and the value of diverse partnerships across all stages of technology innovation.

Conclusion:
This work aims to understand expert stakeholders’ perceptions about the relevance and feasibility of evidence-informed policy options to facilitate innovation and adoption of health technologies for older adults.
The Development of Continuing Care Client and Caregiver Satisfaction Tools

Presented by: Marilyn Macdonald, Professor, Dalhousie University

Background and Objectives:
Providing high quality publicly-funded home care to clients and their caregivers is a priority in Nova Scotia. The Nova Scotia Health Authority’s Continuing Care program has engaged researchers at Dalhousie University to develop provincial surveys to measure satisfaction of continuing care clients and their caregivers. We will share the process we followed in the creation of the surveys, the surveys developed, and our insights about how those in other jurisdictions can learn from our experience.

Approach:
The creation of initial surveys was informed through various sources including published peer-reviewed and grey literature, input from continuing care clients and their caregivers, surveys obtained within the province and from other jurisdictions, input from continuing care administrators, and accreditation standards. We created an Advisory Team to inform the development of the surveys that included home care clients and their caregivers and continuing care staff. We facilitated a modified Delphi approach involving several rounds of feedback including seeking input about the initial surveys from the Advisory Team, pilot testing of the surveys, and inviting input from home care providers.

Results:
We will present categories included and examples within each category. Importantly, our surveys include the capacity to distinguish the management of care and the provision of care. We will highlight key items added through implementing the modified Delphi approach conducted with various stakeholders. For example, we identified priorities to include items that identify how the continuing care program has an impact on reduced suffering and how empathy is exhibited by care providers. We will also present how the results of the survey will be linked with health administrative data (e.g. health system usage) to inform future decision making about the provision of continuing care within the province. The results will inform the continued development of person and family-centred care in the province of Nova Scotia.

Conclusion:
Our involvement of multiple stakeholders in the process of developing the surveys can inform other jurisdictions undertaking similar initiatives. Through developing a version of the survey for caregivers of continuing care clients, we recognize the crucial role they play in supporting continuing care clients. Future plans include conducting psychometric testing.
Using an integrated knowledge translation (IKT) approach to enable policy change for electronic consultations in Canada

Presented by: Isabella Moroz, Research Associate, Bruyère Research Institute

Background The challenges of translating innovations into practice have been widely recognized in Canada, previously described as the land of perpetual pilot projects. We set out to use the integrated knowledge translation (IKT) approach to bring together a research team, interested partners and stakeholders, including patients, to identify policy issues affecting the spread and scale up of an eConsult service. eConsult innovation enables asynchronous primary care providers to specialist communication through the use of a secure web-based platform. Approach The IKT strategy we employed was based on five key activities leading to a National eConsult Policy Think Tank meeting: 1) identifying potential policy enablers and barriers, 2) engaging national and provincial/territorial partners, 3) including patient perspectives, 4) undertaking co-design and planning, and 5) adopting a solution-based approach. We successfully leveraged a diverse set of stakeholders, including patients, care providers and decision makers in strategic discussions around each activity. The aim was to have stakeholders identify actionable suggestions for next steps (e.g., further round table discussions, advocacy, papers and policy briefs), which could inform a national implementation strategy. Results We have outlined a practical approach to engaging stakeholders in deliberative policy dialogue and influencing policy change to improve healthcare service delivery and ultimately patient experiences and health outcomes. This approach provides guidance for academic researchers and the role they need to play in the translation and uptake of research findings that could transform and support healthcare improvement in Canada. Following the Think Tank all stakeholders continued working together to synthesize and consolidate relevant, actionable solutions to identified policy gaps. A series of briefing notes were developed to provide guidance on the development of policies in five key areas: payment for providers, interjurisdictional licensing, patient privacy, quality assurance, and regulation. Follow up discussions were also supported to keep this momentum going and move the national implementation strategy forward. Conclusion Addressing policy barriers known to commonly impede the translation of knowledge into action requires a different approach than the traditional academic one. By actively engaging in policy discussions and ensuring engagement of the knowledge users as per IKT approach, researchers can support better
Moving towards a learning healthcare system: stakeholder feedback on implementing regional performance portraits

Presented by: Frederick Burge, Director of Research, Dalhousie Family Medicine

Background/Objectives: Initiatives to measure primary care performance are now being developed in the Canadian context. However, little information exists on how regional primary care performance reports should be implemented to inform learning health care systems. Objective: To obtain stakeholder priorities on attributes of primary care important to performance reporting, using sample comprehensive primary care performance portraits drafted to show cross-regional context and performance results.

Approach: Multiple comparative embedded case study. Setting: Cases are three comparable health regions in British Columbia, Ontario, and Nova Scotia. Data sources: 1) In-depth interviews (n=18-24) with purposively selected clinicians, health care administrators, and policy makers (e.g. primary care decision-makers, physician leads, regional directors, regulators). Analysis: NVivo (v.11) will be used to manage the data. Using content analysis we will identify themes within and across cases. The code book and coding process will be developed by the research team using inductive and deductive processes in a series of iterative discussions.

Results: Common themes across cases about stakeholder priorities for content and format in regional primary care performance reports are anticipated.

Conclusions: Results from this study will be combined with previous patient engagement work (two full-day citizen-patient dialogues in each case) to further shape a primary care performance portrait that multiple stakeholders can use to inform improvements in primary care.
Listening and Learning: A Case for Indigenous Conceptualizations of the Learning Health System

Presented by: Crystal Milligan, PhD Student, University of Toronto, Institute of Health Policy, Management & Evaluation

Background and objectives

Evidence suggests that Canadian health systems comprise an inequitable structural framework that inadequately addresses Indigenous peoples’ health needs. Still, health systems remain slow to examine the structural barriers to Indigenous peoples’ health. The learning health system (LHS) offers a framework to develop health services that incorporate Indigenous knowledges and ways of knowing, and facilitate relationships between health systems and Indigenous clients. As the healthcare community advances its conceptualizations of an LHS, Indigenous perspectives are absent.

Approach

Drawing from a northern Canadian context, this analysis invokes Indigenous and Western theory to identify characteristics of an LHS. Indigenous scholarship is examined in order to enhance our understanding of learning, health, and systems, and how the LHS may add value beyond the sum of these parts. This understanding is contrasted and integrated with Western literatures related to organizational learning and complex adaptive systems, exploring the relationships between the LHS and its clients as a source of learning to guide the LHS toward a more inclusive and wholistic view of health and healthcare.

Results

Results suggest that meaningful engagement with Indigenous knowledge holders is necessary for organizations to learn from Indigenous knowledges. An Indigenous perspective on the interconnectedness of all people and things supports the idea that community knowledge holders can be valued members of the health system; the LHS that learns from Indigenous knowledges may learn to conceive of itself as networks of relationships rather than a distinct entity defined by organizational borders. In an LHS that learns from Indigenous knowledges and ways of knowing, learning may shift from a deficit- to strengths-based view of Indigenous communities, health, and healthcare. A greater range of ways of knowing will give rise to a greater range of ways to act, based on a greater range of evidence, values, and beliefs.

Conclusion

Built on respectful relationships between knowledge holders within and beyond organizational boundaries, the LHS could be developed as a system to improve healthcare in Indigenous communities. Indigenous conceptualizations of the LHS are needed to define what is worth learning, who needs to learn, and who owns what knowledge.
Assessing Systems Thinking in Four National Public Health Strategies

Presented by: Joslyn Trowbridge, PhD Candidate, Dalla Lana School of Public Health

Background

Researchers increasingly find that “simple, single-cause, single-discipline and single-level-of-analysis models” are “necessary, but insufficient” to explain and solve complex public health problems. [1] As a conceptual framework, systems thinking understands disease causation as “multifactorial, dynamic, and non-linear” [2] and seeks to understand the relationships between a systems’ parts. This project analyzes the extent to which systems thinking is used across four national public health strategies.

Results

An analysis of four strategies on obesity, substance use, mental health of Black Canadians, and tuberculosis prevention, all developed by the Public Health Agency of Canada, is underway. Anticipated results will vary according to differences in governance, structural context, design process, and paradigm or theory of change. Greater presence of systems thinking characteristics are expected to be found in newer strategies and those under development due to the recent traction of systems thinking approaches in intervention research and policy and strategy development. This analysis will assess the barriers and facilitators to inclusion of these characteristics in the strategy design process to uncover research and policy analysis environments conducive to systems approaches.

Approach

This project uses document analysis and interviews with PHAC staff involved in strategy development to assess the extent of systems thinking in each strategy. A framework developed from systems science literature (primarily Johnson et al.’s Intervention-Level Framework) will be used to assess the strategy document and additional supporting documents. Interviews with those involved in strategy development will elicit additional information on the design process, structural context, and facilitators and barriers. Interviews will be transcribed and analyzed using NVivo software and will be compared to the document assessment to build an analysis of factors contributing to systems thinking approaches.

Conclusion

Systems approaches are potentially useful tools for policy makers to design strategies for complex public health problems. This research assesses how and to what extent systems approaches are used in four national strategies. This project is supported by the CIHR Health System Impact Fellowship and Public Health Agency of Canada.

Bridging the gap between public health systems and policymakers: A rapid review of the impact of public health reform on population health outcomes.

Presented by: Sionnach Lukeman, Assistant Professor, Rankin School of Nursing, St. Francis Xavier University

Public health systems in Canada have experienced numerous structural changes in recent years, however there has been little emphasis on the specific health outcomes affected by these changes. Public Health Systems and Services Research (PHSSR) examines the organization, financing, and delivery of public health services within communities and their impact on health. The research question for this review was: how does the restructuring of public health systems impact population health outcomes?

A rapid review was conducted of literature published between 2010 and 2018. Initial searches focused on Canadian literature, but due to a significant lack of Canadian research in this area, the search was expanded to include research conducted outside of Canada. Following the screening of 234 texts and hand-searching of reference lists, a total of seven articles (2 systematic reviews, 1 case control study, 3 cohort studies and 1 scoping review) were included for critical appraisal. Tables were used to extract relevant data from each text. Data synthesis was conducted to determine the overall conclusions of the included research.

Overall, the evidence investigating public health reform in Canada is extremely limited. The available international research was examined to produce recommendations for Canadian policymakers and decision-makers. Through data synthesis, three themes emerged from the literature: public health spending, public health system organization, and health equity. Existing literature suggests that spending more money on public health leads to improvements in some areas of population health (e.g., cardiovascular disease and infectious disease morbidity). Factors such as increased staffing per capita and financial resources are associated with better population health outcomes. Finally, the evidence suggests inconclusive or negative impacts on health equity due to health care system reforms. The current research provides a starting point for further discussions and collaborations between researchers, healthcare workers, and policymakers.

The lack of evidence focused on understanding the impact of public health reform on population health outcomes in Canada is a concern. Investment in baseline PHSSR data collection and robust knowledge translation plans will be steps toward building better health for all.
Does attaching patients to a family physician improve access to primary care?

Presented by: Mélanie Ann Smithman, Research professional/Student, Université de Sherbrooke

Background and objective

Unattached patients—those without a family physician—face barriers accessing primary care. Formally attaching patients to a family physician is a common feature of patient-centered medical homes in many jurisdictions, including Quebec—where centralized waiting lists help attach patients to physicians. Yet, little is known about the effects of formal attachment on access to primary care. We assess the effects of attachment to a family physician through centralized waiting lists on access to primary care.

Approach

We are conducting an observational cohort study of all patients attached to a family physician through Quebec’s centralized waiting lists between 2012 and 2014 (n=459,903 patients). Our analysis is based on administrative billing data from the Régie d’Assurance Maladie du Québec. We have utilisation data two years before attachment and at least one year after attachment. Primary care utilisation (number of primary care visits) is used as a proxy for “realized access” to primary care. We will conduct t-tests and multilevel regression analysis (patients nested within attached family physician) controlling for age, sex, and comorbidity (Charlson Comorbidity Index).

Results

Preliminary results – Patients who were attached to a family physician through centralized waiting lists in Quebec were an average of 40.1 years old, 51.8% were women and 40% were considered medically vulnerable (i.e. had at least one health condition such as hypertension, diabetes, cancer, etc.). Unattached patients had an average of 2.22 visits in the year before attached to a family physician; this increased to 2.94 in the year after attachment (p < .001). Provincially, this represents an additional 72,860 primary care visits per 100,000 population, yearly. Anticipated results - We will also present the results of multilevel regression analyses currently in progress.

Conclusion

Our analysis provides an assessment of the effects of attachment on access to primary care. The results may be useful for policy-makers in jurisdictions with formal attachment or considering the implementation of formal attachment. Future research should seek a more in depth understanding of the effects of attachment.
Natural Language Processing and Machine Learning with Free-Text Electronic Medical Record Data for Hypertension Case Finding

Presented by: Elliot Martin, Data Scientist, Centre for Health Informatics, University of Calgary

Background and Objectives:
Presently, hypertension surveillance relies on administrative databases such as the Discharge Abstract Database (DAD), which contains diagnosis codes abstracted by human coders from free-text discharge summaries. Although coding of hypertension is mandatory in Alberta, it is undercoded in the DAD, leading to underestimates of prevalence and subjecting research studies to a risk of misclassification bias. In this work, we demonstrate machine-learning methods using newly available free-text electronic medical records (EMRs) to improve hypertension identification.

Approach:
We developed case finding algorithms for hypertension using Natural Language Processing (NLP) and Machine Learning (ML). Our cohort comprised approximately 2000 randomly selected adults who were admitted to any of three major acute care facilities in Calgary in 2015. We linked free-text discharge summaries from Sunrise Clinical Manager EMRs to ‘gold standard’ hypertension labels obtained via manual chart review. We extracted clinical concepts from the discharge summaries using cTAKES, an advanced medical NLP program. We then applied supervised ML techniques to identify hypertension cases from this cohort. We compare our algorithms to case definitions from the DAD as a baseline.

Results:
The diagnosis codes used for hypertension case finding in the DAD were chosen based on our previously published work. While the DAD codes had a high positive predictive value (PPV) of 0.96, the sensitivity was only 0.52. We tested a wide variety of ML methods, using the clinical concepts extracted by cTAKES as predictors. The best performing methods were tree-based ensemble models (RandomForest, XGBoost), which significantly outperformed both the baseline from the DAD and linear models such as logistic regression. The superior models greatly boosted the sensitivity (0.79-0.82) while maintaining a high PPV (0.94-0.95). Stratification by age, length of stay, and mortality will also be presented.

Conclusion:
Algorithms generated by ML will play an important role in more accurate hypertension surveillance – maintaining a high PPV while dramatically improving the sensitivity. Technology such as this could reduce coding time while simultaneously improving the quality of the DAD. In future this work will be expanded to other conditions.
Perceived need for mental health care and health-related quality of life in older adults consulting in primary care in Quebec

Presented by: Catherine Lamoureux-Lamarche, PhD student, University of Sherbrooke

Background and objectives

In Canada, the prevalence of perceived need for care (PNC) has been estimated to reach 75% among adults with mood or anxiety disorders. Data on PNC for common mental health (CMH) disorders and its association with quality of life in older adults are scarce. The aim of this study was to assess the association between health-related quality of life and PNC for CMH problems in older adults consulting in primary care.

Approach

This study included 762 older adults consulting in primary care who participated in the subsequent waves of the longitudinal study ESA-Services conducted between 2011 and 2016 in Quebec. Health-related quality of life was assessed using the visual analog scale, which ranged from 0 to 100. Perceived need for mental health care was measured at wave 3 using an adapted version of the Perceived Need for Care Questionnaire (unmet, met or no need). Multinomial regressions were used to evaluate the association between health-related quality of life and PNC controlling for socio-demographic and clinical factors.

Results

Prevalence of unmet and met needs were 16.0% and 16.7%. 67.3% of older adults did not report a need for care for CMH problems. Among those with a CMH disorder (depression or anxiety), 50% reported a perceived need for mental health care (met or unmet). Results showed that older adults with a met need for CMH problems were more likely to be women and to report an anxiety disorder compared to participants with no perceived need. Older adults with a met need also reported lower health-related quality of life compared to older adults without a perceived need. Participants with an unmet need and a met need did not differ with respect to socio-demographic and clinical factors and health-related quality of life.

Conclusion

The assessment of PNC is an important subject in healthcare service research as it represents the patient perspective and might be a better predictor of health treatment outcomes. Future studies should focus on PNC association with persistent CMH problems and healthcare use and costs.
Frequent hospital users for mental health or addictions: perspectives on access to care

Presented by: **Yanyan Gong**, Project Lead, Canadian Institute for Health Information

**Background and objectives:**

Many mental health and addiction issues can be managed in the community if mental health services and support programs are available and accessible. However, reports and patient stories indicate challenges with accessing these services, leading to frequent use of emergency departments and hospital inpatient services. The objective of this work is to show the magnitude of this burden on the Canadian hospital system, as a starting point to identifying areas for improving community-based care. (74 words)

**Approach:**

Individuals with multiple hospital stays and/or multiple visits to emergency department (ED) or urgent care centres (UCC) for mental health or addiction (MHA) issues were examined using administrative databases, at Canada and jurisdiction levels. Individuals who had at least one hospitalization or one visit for MHA in a one-year period were included. A 365-day look back period was used to identify repeat ED/UCC visits or hospitalizations for MHA. Patients’ demographic characteristics, socio-economic status and reasons for hospitalizations and/or ED/UCC visits were described. (82 words)

**Results:**

In 2017-2018, among those who were discharged from a general hospital with a MHA condition, 12% had 3 or more hospital stays in a year. Mood and affective disorders, substance-related disorders and psychotic disorders were the main reasons for the repeated hospitalizations. At the same time, many patients with MHA conditions used ED/UCC services, 1 in 10 of those captured in the data visited ED or UCC at least 4 times, accounting for 36% of total MHA visits in a year. The main reason for the frequent use of ED/UCC services was substance-related disorders; some had multiple MHA conditions. These frequent users are generally young (median age=33) and reside in the least affluent neighborhoods. A quarter of them repeatedly used both ED and general hospital beds. (127 words)

**Conclusions:**

High usage of hospital beds, ED/UCCs by people with MHA conditions can indicate lack of or poor access to community mental health or addictions services. Regular monitoring can help track progress towards improvement. An examination of the variability in hospital and ED/UCC use across jurisdictions could help identify best practices. (50 words)

Total word count=332.
Canadian Stability Analysis - Comparison of ICD-10-CA and ICD-11

Presented by: Janice MacNeil, Program Lead, Classification and Terminologies, Canadian Institute of Health Information

Background and Objectives

Diagnostic classification enables the capture of information from health encounters for research, policy and decision-making. WHO launched the development of ICD-11 in 2007, with formal adoption anticipated in 2019. CIHI is embarking on projects to assess the clinical, business and statistical implications of implementing the new version for morbidity statistics. The work focuses on fitness for use and the impact of transitioning from ICD-10-CA to ICD-11 for Canadian specific codes and select CIHI Indicator codes.

Approach

All Canadian code enhancements to ICD-10-CA (3903 codes) and select ICD-10-CA codes used in Canadian Indicators (2752 codes) were assessed for comparability to ICD-11 code content. Using the ICD-11 Coding Tool, classification specialists assigned each code to categories based on the comparison of their mapping. For cases where ICD-11 was less specific than ICD-10-CA, we assessed whether post coordination (combining multiple codes) could result in code equivalencies. Reliability was assessed through comparison of the outputs to WHO-ICD-10/ICD-11 mapping tables and through inter-rater reliability. Code utilization patterns across Canada were reviewed to assess pan Canadian impact for this select set of codes.

Results

Out of 6170 codes assessed, 13.2 % (n=817) were found to be exact matches between ICD-10-CA and ICD-11. 2.06% (n=127) were more specific in ICD-11 than ICD-10-CA, while 82.4 % (n=5084) were less specific (entailing a loss of detail). In 1.4 % (n=88) of cases there was no match, meaning that Canadian-specific content could not be found. Where ICD-11 was less specific, post coordination (combining more than one code) enabled exact matches in 43.5 % (n=2686), partial matches in 24.9% (n=1267) and 18.0% (n=1115) were unmatched (additional specificity could not be added). These findings represent preliminary results with further analysis and validation currently in process.

Conclusion

If a diagnostic classification fails to capture useful information from health encounters, this will have negative consequences for the validity of data used for research, policy and decision-making. The impact of ICD-11 adoption in Canada will be significant; this work will inform strategies to guide decision making about ICD-11 implementation.
Hospice Use Among Long-Term Care Facility Residents in Canada

Presented by: Beibei Xiong, Graduate Student, University of Northern British Columbia

Background and Objectives: It is estimated that between 16% and 30% of Canadians who die annually have access to or receive end-of-life care services, many of whom are referred to hospice programs in their last days of life. This study aims to describe and compare the characteristics of residents who received hospice care versus those who did not receive hospice care in their last year of life in long-term care facilities (LTCFs) in Canada.

Methods: This retrospective cohort study used linked health administrative data from the Canadian Continuing Reporting System (CCRS) and the Discharge Abstract Database. Data in CCRS is routinely collected via the interRAI Resident Assessment Instrument Minimum Data (MDS 2.0). All persons residing in LTCFs between Jan. 1st, 2015 and Dec 31st, 2015 were included in this study. Death records were linked up to Dec 31th, 2016. Descriptive and inferential statistics were used to describe and compare the characteristic of residents who received hospice care versus those who did not receive hospice care in their last year of life.

Results: Among the 185,715 residents resided in LTCFs in Canada in 2015, 30.9% died within one year of assessment, and 7.7% of them received hospice care in their last days of life. Residents more likely to receive hospice care in their last year of life were: younger; male; had a do not resuscitate order; lived in urban LTCFs; had diagnosis of cancer, anemia, or gastrointestinal disease; had a diagnosis of dementia, depression, stroke, or congestive heart failure; had less severe aggressive behaviors, lower level of social engagement, more severe physical impairment, more severe pain, higher pressure ulcer risk, and exhibited severe health instability.

Conclusions: Expanding awareness of characteristics of residents who may benefit from hospice care compared to those who actually received hospice care may help LTCFs administrators, hospice care providers, and policy makers to identify ways to implement services and interventions that can improve access, utilization, and quality of hospice care in LTCFs.
Enhancing access to care through a pop-up model of service delivery: Service provider practice changes and organizational policy implications

Presented by: Cathie Scott, Chief Information Officer, Alberta Centre for Research with Children, Families & Communities

Background and objectives: The Alberta Local Innovation Partnership (LIP) of the Innovative Models Promoting Access-to-Care Transformation (IMPACT) research project designed and implemented pop-up health and community services events in Lethbridge, Alberta. The pop-up events brought together primary healthcare (PHC) service providers to provide care in different locations to people who are underserved by, and struggle to connect with, PHC services. Approach: Participatory action research (PAR) approaches were used to design and implement the pop-up events. We worked closely with PHC service providers to improve the engagement and approachability of services at the pop-ups. Over the course of the research program, a ‘learn as you go’ mindset informed continuous improvements to service providers’ approaches to practice. These included shifting from designated ‘navigators’ to incorporating navigation in everyone’s role, practicing warm handoffs, coming out from behind your table, and using plain language signage and materials. Service providers attended planned rehearsals before each pop-up event where these improvements to the pop-up model were introduced. Results: Follow-up interviews with service providers revealed that they had embraced the ideas introduced at the pop-ups to provide care differently. Service providers said they individually adopted new ways of practicing navigation, warm handoffs, and using new tools to improve engagement and approachability. Further, service providers reported advocating with their leadership for more far-reaching changes, such as expanding outreach, recognizing the unique needs of vulnerable populations (e.g., transportation), and improving referral processes. Conclusion: The pop-up model for PHC service delivery has improved access to PHC by promoting changes in the way service providers provide care. New and creative ways of providing care were introduced and tested. Service providers adopted many of these ideas within their organizations, influencing operational and programmatic policy changes.
Identifying the Factors Contributing to Improved Transitions in Care and Patient Outcomes

Presented by: Stephanie Montesanti, Assistant Professor, School of Public Health, University of Alberta

The need for quality care transition planning from acute care hospital to the home or community setting is more important than ever as patients experience frequent transitions, and as patients leave the hospital after shorter lengths of stay. We know from the evidence base that there are several gaps in care. A 2012 Canadian Institute for Health Information (CIHI) report on provincial readmission rates stated that 1 in 12 patients are readmitted within a month of leaving hospital in Canada. The cost to the Canadian health care system is reported to be $1.8 billion. The Alberta Health Services Primary Health Care Integration Network (PHCIN) commissioned research to identify interventions to improve TiC and patient outcomes in Alberta. A rapid review synthesis and expert interviews were conducted to: (1) examine the current international research literature in TiC; (2) identify the patients that would benefit from improved transitions of care; and (3) examine evidence of high quality interventions to improve TiC for patients. Our findings demonstrate that there is variability concerning which patients are at risk of hospital readmission, and which can benefit from interventions. Tools exist for identifying high-risk, complex patients, but success in their use to improve patient outcomes has been of questionable effectiveness, and limited to specific hospital centers. Multi-component interventions that support patients in managing changes in their health status from one setting to the next are most effective.
Healthcare Professional Workplace Engagement: Trends from the Health Care in Canada Survey 2013-2018

Presented by: Nicole MacPherson, Research Assistant, Strive Health Management

Background and Objectives:

With a vision to inform and influence Canadian health policy and care, thirteen iterations of the Health Care in Canada (HCIC) survey have been implemented since 1998. Nationally representative samples of the Canadian public and health professionals are polled regarding healthcare topics such as access and quality of care; medication adherence; personal health; professional engagement; eHealth; future innovations. Trends across the 2013, 2016 and 2018 surveys regarding workplace engagement of healthcare professionals will be presented.

Approach:

A broad spectrum of institutional members from national associations and organizations collaborate on the HCIC survey design and knowledge translation activities. POLLARA have provided leadership of question formatting, random sampling, data collection and collation for all surveys.

Doctors, nurses, pharmacists and administrators were surveyed in 2013, 2016 and 2018. Other health providers (dietitians, occupational therapists, physical therapists, psychologists and social workers) were added in 2016. Professionals were asked about their level of job engagement using a 10 point scale where 1=very poor, i.e., with long-term exhaustion, cynicism and inefficiency, and, 10=excellent, i.e., with high energy, involvement and performance efficacy.

Results:

In 2018, 77% pharmacists, 79% doctors, 82% nurses, 83% other providers and 92% administrators reported ‘good’ or ‘very good’ job engagement. Engagement has been stable over time for nurses and pharmacists, while doctors and other providers have declined. Although administrators’ engagement increased over time, the ‘very good’ category decreased from 50% to 23%.

Increased workload was the highest contributing factor for job disengagement in 2013, ranking first for all (29-49%), and remained the highest for nurses (40%) and administrators (52%) in 2018. Increased stress was commonly cited over surveys. Workplace structure (i.e., relentless change) has increased for administrators: 18% in 2013, 45% in 2018. Functionally disorganized workplaces, increased stress and lack of a meaningful voice were also cited more often in 2018 than previously.

Conclusion:

Job engagement of health professionals is crucial for a successful healthcare system. The trend of decreased engagement by health providers is alarming and necessitates further investigation. Constant change and reorganization within workplaces are taking a toll on Canada’s healthcare professionals, and therefore, in the healthcare system as a whole.
Evolving towards shared HIV care using the Champlain BASE™ eConsult service

Presented by: Janessa Porter, Research Assistant, Bruyère Research Institute

Background and Objectives:

Electronic consultation is a potential strategy to improve access to HIV specialist expertise and promote collaborative care models. The Champlain BASE™ eConsult service provides asynchronous communication between primary care and specialist care providers on a secure, web-based system. Our objective was to describe the use and impact of the service by characterizing the topics of the eConsult usage, the nature of the responses, and the impact as reflected in survey feedback from primary care providers.

Approach:

We analyzed the data from eConsults sent between February 2015 and December 2017 to the HIV specialty group, which includes HIV physician specialists, HIV pediatricians, and pharmacists and social workers with expertise in HIV, in Ontario’s Champlain Local Health Integration Network (LHIN). We analyzed usage data and close-out survey responses using descriptive statistics, classified eConsults according to a pre-defined list of validated taxonomy, and conducted a thematic analysis on the consultation logs including primary care providers’ questions and specialists’ responses to identify common clinical themes.

Results:

Primary care providers submitted 46 eConsults to HIV specialists during the study period. Primary care providers highly valued the eConsult service (average rating 4.8/5). Almost all questions were answered by an HIV specialist physician or an HIV pharmacist. Approximately two thirds of the questions concerned patients living with HIV, the remainder concerning patients at risk of becoming infected with HIV. The most common question types related to drug treatment (58.7%), management (19.6%), and diagnosis (13.0%). The main clinical themes involved management of significant complexities in people living with HIV, such as comorbidities and drug interactions, and suggestions of coordinated patient care. In 11 cases, primary care providers used eConsult for advice regarding pre-exposure prophylaxis (PrEP) for HIV-negative patients at risk of HIV infection.

Conclusion:

eConsult effectively provides primary care providers with guidance and education related to their patients living with or at risk for HIV. eConsult enabled specialists to disseminate information and facilitated care coordination. With increased promotion and uptake of PrEP, eConsult will be a valuable resource for accessing PrEP expertise.
Examining Experiences of Home Healthcare Nurses about Deprescribing of Medications for Older Adults in the Community

Presented by: Winnie Sun, Assistant Professor, University of Ontario Institute of Technology

Objectives: The aim of this study is to explore the barriers and enablers of deprescribing from the perspectives of home care nurses, as well as to conduct a scalability assessment of an educational plan to address the learning needs of home care nurses about deprescribing.

Methods: This study employed an exploratory qualitative descriptive research design, using scalability assessment from two focus groups with a total of eleven home care nurses in Ontario, Canada. Thematic analysis was used to derive themes about home care nurse’s perspectives about barriers and enablers of deprescribing, as well as learning needs in relation to deprescribing approaches.

Results: Home care nurse’s identified challenges for managing polypharmacy in older adults in home care settings, including a lack of open communication and inconsistent medication reconciliation practices. Additionally, inadequate partnership and ineffective collaboration between inter-professional healthcare providers were identified as major barriers to safe deprescribing. Further, home care nurses highlighted the importance of raising awareness about deprescribing in the community, and they emphasized the need for a consistent and standardized approach in educating healthcare providers, informal caregivers, and older adults about the best practices of safe deprescribing.

Conclusion: Targeted deprescribing approaches are important in home care for optimizing medication management and reducing polypharmacy in older adults. Nurses in home care play a vital role in medication management and, therefore, educational programs must be developed to support their awareness and understanding of deprescribing. Study findings highlighted the need for the future improvement of existing programs about safer medication management through the development of a supportive and collaborative relationship among the home care team, frail older adults and their informal caregivers.
Academic trainees in the world of government: Reflections from Health System Impact Fellows embedded in regional, provincial and federal health organizations

Presented by: Kaitlyn Tate, Health System Impact Doctoral Fellow, University of Alberta

Background: Collaborative projects between researchers and health system decision-makers have been identified as a potential means to enhance the application of research evidence in health system decision making. The CIHR Health System Impact (HSI) Fellowship is a unique experiential opportunity to embed PhD and Post-doctoral candidates in health system organizations across Canada. Six research fellows present their initial experiences of how they’ve contributed to the work of governmental health organizations at regional, provincial, and federal levels.

Approach: The HSI Fellowship provides a mutually beneficial experience for fellows to gain practical experience contributing to health system challenges, while partner organizations can draw on their research and analytical acumen. However, the fellowship is still in its infancy and experiences have varied widely across health system settings. This program supports diverse training experiences outside of traditional academic settings, and provides a framework for fellows to develop a range of competencies to enhance their professional and personal development. Our participation in this program supports an innovative approach to cultivate learning health systems across Canada and develop ourselves as health system leaders.

Results: From our shared experiences, we identified key learnings related to navigating competing priorities, supporting evidence informed decisions for complex policy issues, and the roles and potential of researchers in policy. Fellows can concentrate their attention on health system partner priority, providing capacity for robust analysis and interpretation to support an informed policy-making process despite arising issues. Fellows contribute their knowledge as content experts to address particular issues, and can support better linkage of data into meaningful information. Although adhering to the principles of linear, rational choice is not always possible in policy, fellows can provide critical analysis and appraisal skills needed to best utilize existing data sets and mitigate the effects of bias in expansive, and often expensive, health policy decisions.

Conclusion: The HSI Fellowship program enables decision-makers and fellows to develop shared appreciation of each other’s responsibilities and expertise. Fellows are being equipped with the networks and skills to be leaders in learning health systems. Program key competencies help manage the tension between evidence informed decision-making and dynamic political environments.
Enhanced communication between inpatient and community pharmacists to optimize medication management during transitions of care

Presented by: Sara Guilcher, Assistant Professor, University of Toronto

Background and objectives

Community pharmacists are medication experts who are well positioned to support people during care transitions, yet are not routinely included in communications between hospitals and primary care providers. PROMPT (Pharmacy cOMmunication ParTnership) facilitates medication management by optimizing information sharing between pharmacists across care settings. This developmental study evaluated the feasibility of implementing the PROMPT intervention, assessed the perceived effectiveness of various components of the intervention, and explored how contextual factors influence implementation.

Approach

PROMPT was implemented for 14 weeks (January – April, 2018) in internal medicine units in two Toronto teaching hospitals, and featured two contact points between hospital and community pharmacists around patient discharge: (1) faxing an enhanced discharge prescription and discharge summary to a patient’s community pharmacy and (2) a follow-up phone call from the hospital pharmacist to the community pharmacist.

Our multi-method approach featured electronic patient records, telephone surveys, and semi-structured interviews with participating community and hospital pharmacists. The Consolidated Framework for Implementation Research (CFIR) was used as a conceptual framework to develop the interview guide and inform descriptive thematic analysis.

Results

Twelve pharmacists (including residents and students) completed 45 PROMPT interventions across two hospital sites. Thirty-seven community pharmacies received PROMPT patients. In at least 75% of interventions, discharge prescriptions with hospital pharmacists’ contact information were faxed and follow-up calls were placed by hospital pharmacists to community pharmacies. Discharge summaries were faxed to community pharmacies in only 22% (n = 10/45) of interventions. PROMPT was favorably regarded by hospital and community pharmacists because it improved intraprofessional communication and facilitated patient care across practice settings. Pharmacists identified greater and timelier access to information and ease of program implementation as key positive features of PROMPT. Pharmacists suggested enhancements for streamlining the program and optimizing its impact on patient care.

Conclusion

Hospital pharmacists were challenged to incorporate PROMPT into existing practice. However, PROMPT was favorably received by community pharmacists who perceived it as beneficial to workflow, information-sharing, and patient care. Findings revealed opportunities for refinement of future iterations of PROMPT.
Health service use, workforce participation, and community engagement for families with children at early risk for developmental delay in the All Our Families pregnancy cohort.

Presented by: Matthew Russell, Postdoctoral Fellow, University of Calgary

Background and Objectives: Children with neurodevelopmental disorders often have increased health service use and their caregivers experience impact on workforce participation and community engagement, with early identification and intervention thought to mitigate these outcomes. In order to facilitate early identification, this study investigates how early risk for a developmental delay, which is associated with neurodevelopmental disorders, relates to health services use of children and caregiver workforce participation and community engagement.

Approach: We used data from the All Our Families study, a prospective pregnancy cohort based in Calgary, Alberta. Exposure (risk of developmental delay) was based scoring at risk on two domains of the Ages and Stages Questionnaire (ASQ) (communication, gross motor, fine motor, problem solving or personal social abilities) when the child was 2. Outcomes were maternal-reports of children’s allied health care and physician visits (and estimated costs), and self-reports of the caregiver’s workforce participation and community engagement when the child was 3. A sensitivity analysis excluded reports of neurodevelopmental disorder diagnosis when the child was 3.

Results: Among 1314 mother-child pairs, the ASQ identified 209 (16%) children as at risk of developmental delay, and 3% had a reported neurodevelopmental disorder diagnosis. Risk of developmental delay was related to increased physician health care service use, allied health care service use and allied health costs. However, the increased health service use and costs were not observed when excluding children with a reported neurodevelopmental disorder diagnosis by year 3. We did not find a difference in community engagement and workplace participation among families based on risk of developmental delay.

Conclusion (33 of 50 words): These results provide evidence that neurodevelopmental disorder diagnosis is important to early access to health care services. The findings add to growing discussion on how to identify and support neurodevelopmental disorders in Canada.
Interaction of resident quality of life with policies that govern staff: A four-province comparison of Long-Term Care policy using a staff perspective

Presented by: Deanne Taylor, Corporate Director, Research, Interior Health

Canada has one of the most regulated long-term care (LTC) systems in the world. Regulations promote good quality for people living in care; however, gaps in policy can manifest as a failure to uphold what really matters. The key objective of this paper by our research team within SALTY (Seniors: Adding Life to Years) is to assess the complex interplay of LTC policies that influence quality of life (QOL) at end of life in LTC.

We have analyzed 160+ relevant policies from BC, AB, ON and NS using a hermeneutics content analysis approach. Each document was categorized by specificity to LTC, and degree of legal obligation against a 6 level scale. Next, to assess the QOL elements, each policy was examined using Kane’s (2001) 11 domains for measuring QOL from four perspectives. Using key words to identify staff, policy excerpts were extracted and analyzed to assess the characteristics and portrayal of resident QOL.

Results demonstrate differences among each province’s high legal obligation policy documents in terms of types of language used to identify various people in LTC, explicit aims of policy as cited to the reader rather than how policy manifests in reality, tone of policy, and geographical contextual variations when considering resident preferences within 11 domains: safety/security, physical comfort, enjoyment, meaningful activity, relationships, functional competence, dignity, privacy, individuality, autonomy/choice, and spirituality as a quality of end of life consideration.

We highlight differences among the 4 provinces and the implications of these findings in terms of how resident quality of life at end of life is considered from a regulatory staff perspective.
The Future of Technology and Aging in Canada: A Research Agenda created using Mixed Methods

Presented by: Dorina Simeonov, Policy & Knowledge Mobilization Manager, AGE-WELL NCE Inc.

Background & Objectives

The aging population is one of the greatest challenges of the 21st century. Technology is proving itself to be a solution. As Canada’s Technology and Aging Network, AGE-WELL is leading the way in developing technologies, services, policies and practices that improve the lives of seniors and their caregivers. Building on its successes, AGE-WELL launched a research agenda for 2020 and beyond to provide a way forward for the innovation community the network has created.

Approach

AGE-WELL used a mixed methods approach to review provincial, territorial, national, and international policy priorities by engaging with government and analysing policy documents. A short list of 18 themes or challenge areas was created. Qualitative data was collected on these themes at five public consultations hosted across the country (Vancouver, Edmonton, Winnipeg, Toronto, Montreal) to engage older Canadians, caregivers, policymakers, researchers, industry and community partners. Quantitative data was collected through an online public questionnaire, which received 518 responses. Feedback from approximately 1,000 stakeholders in total was used to finalize a set of eight challenge areas that make up Canada’s technology and aging research agenda.

Results

A challenge area is an important but difficult and complex problem area that demands innovation and deployment of real-world solutions. A challenge in this context is not just about research questions or priorities; it may be about economic opportunities and making a positive contribution to Canadian society and government policy. AGE-WELL aims to tackle the following eight challenge areas by aligning technology, policy and practice, and service delivery models to create sustainable change:

- Supportive Homes & Communities
- Health Care & Health Service Delivery
- Autonomy & Independence
- Cognitive Health & Dementia
- Mobility & Transportation
- Healthy Lifestyles & Wellness
- Staying Connected
- Financial Wellness & Employment

AGE-WELL produced a digital and print booklet defining each challenge area and outlining innovative solutions that are already in the market or are being developed in the technology and aging space.

Conclusion

These are areas where technology can make a significant difference and will push the scientific envelope, according to AGE-WELL’s research community and stakeholders. Tackling this research agenda will ensure that current and future generations of seniors and caregivers have the technology-based solutions they need to live well and age well.
Effectiveness of Quality Improvement Strategies on the Management & Control of Hypertension in Primary Care: A Systematic Review and Meta-Analysis

Presented by: Kimberly Manalili, PhD Student, University of Calgary

Background and Objectives:
Despite efforts to improve management and control of hypertension, evidence on the effectiveness of quality improvement strategies targeting the healthcare system, providers, and patients remains unclear. The objectives of this study were to conduct an updated systematic review and meta-analysis (based on Walsh et al. 2006) to assess effectiveness of quality improvement strategies in the management and control of hypertension in primary care and identify the most effective strategies for improvement of blood pressure outcomes.

Approach:
Studies were identified in Medline, Cochrane Central Register of Controlled Trials, Embase, CINAHL, and PsycINFO databases from 1980 to October 2018. Randomized Controlled Trials that assessed 12 predefined quality improvement strategies were included. For this study-in-progress, a pilot review of 50 randomly selected full-text articles were reviewed in duplicate; and data were extracted and assessed for risk of bias. Random effects models were used to estimate the pooled weighted mean difference for systolic and diastolic blood pressure (SBP, DBP) changes. Sub-group analyses were done by quality improvement strategy. This study is registered on PROSPERO (CRD42019119009).

Results:
An initial pilot review of 50 randomly selected articles from 435 identified full-text studies was conducted, following a screening of 4808 records (6413 before deduplication). Twenty-two studies assessing ten quality improvement strategies were included in this review and meta-analysis. Compared to usual care, use of quality improvement strategies were found to be effective in reducing blood pressure. All strategies individually assessed were associated with blood pressure reductions, with the exception of the electronic patient registry (n=2). Team changes (n=4), patient education (n=7), patient reminder systems (n=2), and shared decision making (n=1) strategies were associated with statistically significant blood pressure reductions. These strategies showed reductions of 5.3-5.6 mm Hg SPB and 2.7-3.6 mm HG DBP, which have important clinical implications for controlling blood pressure.

Conclusion:
Preliminary findings from our systematic review and meta-analysis suggest that quality improvement strategies are effective in improving blood pressure outcomes, with further study needed on electronic patient registry strategies. We caution that these initial findings may change upon completion of the review and further exploration of sources of heterogeneity.
The Experiences of Arabs in Receiving Health Services

Presented by: Selma Tobah, PhD Candidate, University of Western Ontario

Considering the political climate, the popularized depiction of Arab Orientalist stereotypes, and the impact of racial biases in the provision of health services, the purpose of this systematic review was to understand the experiences of Arabs upon their receipt of health services, as well as the perspectives of service providers of Arab patients, post-September 11, 2001.

The databases of PubMed, CINAHL, Scopus, and Embase, Social Work Abstracts, and Social Services Abstracts, were searched for articles conducted in English in Canada, the UK, USA, and Australia, using search terms of: Arabs; healthcare services; access; cultural humility; cultural competence; healthcare; social services; discrimination. These terms were searched using keyword and database specific terms, searching anywhere in the article (ie title, abstract, body of the article). Citation chaining as also conducted using Google Scholar in order to conduct a hand search of any possible relevant scholarly articles. A narrative synthesis was conducted to analyze results.

After the initial removal of duplicates, title screening, and abstract reviewal, a total of eight articles were found to be relevant with another four articles found from the citation chaining process. This led to a total of 12 sources addressing the research question. Seven articles were from the perspective of Arab patients and 5 from that of service providers. Three major themes emerged: 1) linguistic/cultural differences as a barrier to giving/receiving proficient care, along with the benefits and detriments of using interpreters or service providers of the same linguistic/cultural background; 2) the experience of perceived discrimination and racism; 3) cultural competency and the training/characteristics of service providers in administering culturally competent care.

The findings present important considerations when servicing an Arab population. The review furthers the conversation on cultural competency training, the risk of stereotyping in this approach, and the benefits of shifting to ‘cultural humility’. Gaps still exist in exploring the impact of perceived discrimination on this population in seeking care.
Prescription For All: Improving Drug Coverage Through National Pharmacare

Presented by: Sarah Turner, Master of Health Administration Student, Johnson Shoyama Graduate School of Public Policy, University of Regina

Canada’s Advisory Council on the Implementation of National Pharmacare is considering how to close gaps in outpatient drug coverage. Five percent of Canadians have no coverage, 10 percent do not fill prescriptions due to cost, and another five percent go without necessities to fill them, resulting in premature deaths plus avoidable, burdensome deterioration in health (Law et al., 2018). Every major study has recommended reform, the last in 2002. Now is the time to act.

This poster is a visual briefing note addressing the first two questions posed in the Council’s white paper: Who should be covered under national pharmacare? and How should national pharmacare be delivered? Incorporating data tables and figures, descriptive bullets, and a decision matrix, it presents an analysis of how three viable national pharmacare options, developed after an extensive review of North American and European drug plans, perform on four criteria—accessibility, portability, health outcomes, and system burden—important to the stakeholders (individual Canadians, health system officials, and health care providers) most likely to react to legislation tabled by the Government.

Three distinct pharmacare plans were evaluated. All would improve upon the status quo. The “Income-Tested Plan,” which would cap out-of-pocket expenses at a predefined portion of income as determined by the budget, would be portable and would marginally improve health outcomes by increasing medication adherence but would potentially leave a number of Canadian citizens without drug coverage. The “All Access Canada Plan,” which would automatically enroll every Canadian in a plan providing access to a single, national formulary, would improve access and health outcomes and likely reduce financial burden on the system. The “Expanded Access Canada Plan,” which would build upon Quebec’s twenty-year-old universal public-private drug coverage system by requiring all Canadians to enroll in a public or employer-administered private plan, would also do so.

The “Expanded Access Canada Plan is recommended because in addition to performing at the highest level on the decision criteria it can be modified to expand or contract the role of employer-sponsored private plans that could offer coverage (for a user fee) for drugs not listed on the public formulary.
What impacts success? A qualitative study of the structure of the Connect 2 Care (C2C) program

Presented by: Kerry McBrien, Assistant Professor, University of Calgary

Background and objectives: Connect 2 Care (C2C) is a mobile outreach navigation program in Calgary, Alberta for adults with complex social and health needs and high acute care use, who experience challenges accessing needed community services. As part of a larger study informed by the Donabedian framework of structure, process and outcome, we aimed to understand the structural facilitators and barriers to program success from C2C team members’ perspective.

Approach: We conducted semi-structured interviews to explore frontline C2C staff experiences with the program and their perspectives with respect to its ability to deliver the care expected and provide the services required to meet their clients’ needs. All frontline team members which included four health navigators, three nurses, and two managers participated in individual interviews in October 2018. Interview transcripts were analysed using inductive line-by-line thematic analysis. Consensus in coding, theming, and definitions was reached using an iterative process among the complete research team.

Results: Several codes emerged from the interviews that reflect a shared organizational culture regarding the uniqueness of the program as well as its complexity in terms of processes, goals, and outcomes that demand a particular set of structural attributes. Five main themes emerged in relation to the program structure with potential effects on program processes and outcomes: 1) the uniqueness of C2C compared to other community programs that serve vulnerable populations, including its mobility and relationship with partner organizations; 2) staff onboarding and training with emphasis on the health component of the program; 3) team commitment, knowledge, and attitudes toward their clients and the program; 4) program management and leadership; and 5) modifying factors and contextual factors, influencing the other four themes.

Conclusion: The contribution C2C makes to the health of vulnerable individuals is facilitated by core program characteristics including its mobile nature and team composition. For sustainability and expansion, structural changes addressing barriers in training, leadership, and empowerment of staff will enhance its ability to fully accomplish goals and meet clients’ needs.
Understanding the Experiences of Health Professional End-users Post Electronic Order Entry Implementation—A Pilot Study

Presented by: Matthew Tersigni, Student, University of Toronto

Little work has been done to understand the subjective experiences of health care providers after system level changes have been implemented. The means by which quality improvement initiatives are implemented have profound impacts on the way end-users such as physicians and midwives deliver care. As Canada’s health system moves towards fully electronic order sets, which challenge traditional workflow and practice, it is important to listen to and understand the experiences of end-users.

The Women’s Health program at Trillium Health partners was identified as having the highest adoption rate of electronic order entry 6 months post-implementation. To understand the experiences of health professionals, semi-structured interviews were completed. 3 physicians and 3 midwives were interviewed. Interviews focused on evaluating the beliefs and perspectives during the three phases of transition: (1) Initial reactions to the introduction to the new system (2) Training (3) Implementation and current workflow. Participants were notified of the opportunity through an email invitation. All interview transcripts were anonymized and analyzed using a phenomenological approach and NVIVO software for thematic analysis.

Initial reactions by physicians highlighted the short-comings of electronic order set implementation. Physicians describe initiatives being started prior to essential infrastructure being put in place. Logistical barriers such as the availability of computers and printers were felt most by physicians rather than midwives. Positive experiences were facilitated by intensive transition efforts such as training sessions, and self-learning modules. End-users were appreciative of the different means by which training was offered such as the availability of one-on-one sessions, and super-user support. Physicians felt their workflow was negatively affected and consequently threatened patient safety. While midwives’ felt their workflow was less affected, they also felt patient safety was at risk due to physician barriers.

Future quality improvement efforts would be wise to first consult end-users to determine logistical barriers that must be overcome. Despite few participants, preliminary results suggest that the implementation of order sets was well tolerated. Further work must be done in different departments, especially those with lower adoption rates.
Measuring and reporting what matters: regional portraits of patients’ medical homes

Presented by: Sabrina Wong, Professor, UBC

Background & Objective: There has been little evaluation of the impact of strategies to improve performance in primary care in Canada. The TRANSFORMATION team developed a methodology that could inform the monitoring of progress at a regional level using the Patient Medical Home (PMH) framework. The PMH is a care delivery model where patient treatment is coordinated through their primary care clinician. This study aims to identify the degree of variation at a regional level in attaining goals set by the PCMH.

Approach: Study design: Mixed methods: concurrent descriptive using practice-based surveys, administrative data, case studies. Setting: Three regions meant to have similar population characteristics based on Statistics Canada peer groups: Fraser East, British Columbia; Eastern Ontario, Ontario; Central Zone, Nova Scotia. Participants: 1206 patients linked to 87 unique primary care practices; 25 decision-maker and clinician interviews, 6 focus groups (n=3: patient; n=3 clinician). Intervention/Instrument: Patient experience and organizational surveys; document review; interviews and focus groups. Main and secondary outcome measures: Ten pillars of PMH: patient centred-care, personal family physician, team-based care, timely access, comprehensive care, continuity of care, electronic medical records, evaluation, education and training, internal/external supports.

Results: The TRANSFORMATION study collected the most comprehensive collection of primary care data in Canada using patient, clinician and organizational surveys; administrative data; and case studies. There is regional variation across pillars of the Patient’s Medical Home. There is also regional variation across different dimensions within each pillar. For example, the continuity pillar consists of patient experiences of coordination orientation; organizations’ experience of practice integration, coordination, & information; and administrative data about relational continuity. Case study data provide insights into these variations.

Conclusion: The portraits provide information about regional level variation in attaining PMH goals. TRANSFORMATION provides foundational work to inform a health information infrastructure in moving towards PMH and learning healthcare system.
Create a Memory-Friendly Restaurant Through Sensory Experience Design

Presented by: Rezvan Boostani, Design Researcher, OCAD University

Background and Objectives:
Sensory design including olfactory, auditory, visual and tactile elements within a restaurant setting can have an impact on the dining experience. This research project developed sensory-focused design principles and interventions specific to restaurant settings in order to include people with memory impairment due to aging and/or early stages of dementia. This is achieved using participant feedback from real-world dining experiences to understand sensory-focused design elements that support a quality experience.

Approach:
A literature search was conducted with focus on defining background about social engagement challenges as a result of memory loss. The next stage of the research focused on the dining experience and used a diary method whereby persons with mild dementia and their family members identified their needs, barriers and goals for social engagement, associated with dining out. To validate information obtained from the diary information and the literature search, as well as obtain additional information, various stakeholders including individuals with mild dementia and their family members, and experts (two geriatricians, an interior designer and a restauranteur) were interviewed.

Results:
Analysis of the data was qualitative and main themes emerged from open coding and thematic analysis of the data. Main themes emerged from diary studies and interviews fell under 5 main themes: welcoming and friendly, familiarity, simplicity, inclusiveness and flexibility, as well as comfort and safety. The primary outcome of the study was a set of design guidelines for a memory-friendly restaurant. To provide coherent understanding, set of design guidelines expanded to encompass the memory-related background as a rational for the proposed strategies. Defined needs, barriers and goals became data for context and strategies. Feedback and data findings from interviews added crucial details to the guidelines either as action plans or examples.

Conclusion:
The purpose of this research is to improve restaurants to be memory-friendly through sensory design elements. This study defines the issues in a restaurant by individuals with memory impairment. The key outcome of the study was a set of design guidelines based on the emergent themes from the research methods.
Developing a Standardized Process for Healthcare System Evaluation of Healthcare Quality and Safety Education

Presented by: Deirdre McCaughey, Associate Professor, Cumming School of Medicine, University of Calgary

Background & Objectives: Since the Canadian Adverse Events study (2004), healthcare systems across Canada have focused attention on in-organization education to improve provider abilities to reduce adverse events and poor patient outcomes. Despite continued emphasis on improving knowledge and skills, Canadian Institute for Health Information (CIHI) data has revealed only marginal improvement in adverse event reduction. High-performing healthcare systems across Canada are now developing more comprehensive Healthcare Quality and Safety Education (HQSE) pathways.

Approach: In partnership with Alberta Health Services (AHS), our research team utilized four strategies to map out HQSE pathways. First, we screened all AHS training courses for HQSE specific content (n = 1238). Next, we used logic models to classify courses as being quality improvement/patient safety as well as classify knowledge domains within each course (e.g. QI methods). Then we developed a competency model to identify the level of expertise taught in each course (e.g., beginner, intermediate, mastery). Finally, we interviewed 28 AHS stakeholders to validate the above classification models as well as determine the value/knowledge acquisition measurement of training.

Results: Our research partnership with AHS resulted in the development of a HQSE curriculum map represented by two models: 1) Content Map—identifies all HQSE course content as being QI and/or patient safety; and 2) Content Matrix—identifies the knowledge domains taught in each course as well as the competency level of each course. AHS can develop additional HQSE courses based on content need as well as use these models to create a skillset matrix for organizational position requiring QI/PS expertise. Lastly, we developed a set of recommendations for AHS to: 1) embed greater student application of new skills post training, 2) develop mechanisms to measure course attainment and participant learning and 3) develop measures to capture benchmarking data and calculate the value derived from HQSE.

Conclusions: Comprehensive HQSE is required within healthcare systems across Canada for effective quality improvement and patient safety to reduce the occurrence of adverse events. This is achievable through standardized HQSE pathway that is based on competency, organizational structure, and fosters knowledge, skills, and abilities.
Trauma-Informed Program Evaluation and Research in Community and Health Services

Presented by: Michael Wall, Researcher, Child Development Institute

Background and Objectives

In recent years, there has been a recognition that community and health-based organizations need to become more adept at understanding the impacts of trauma, and working with individuals who may have experienced traumatic event(s). To this end, trauma-informed practices have become an essential element in supporting clients accessing mental health and health-related programs and services. However, there has been little focus on how trauma-informed practice may be adopted and integrated into program evaluation and research.

Using a case study design, this presentation will outline the learnings gained from developing a trauma-informed program evaluation and research model within a Toronto-based children’s mental health agency for the purposes of improving client-care and program evaluation processes and outcomes. There will be a focus on defining the core components of trauma-informed practice and how they have been integrated into program evaluation initiatives within the context of children’s mental health. The presentation will also review the learnings gained and relevant research literature pertaining to trauma-informed practice and how trauma-informed research may better support clients accessing services and the work of clinical service providers.

Results

Initial feedback surrounding the model and previous research literature have suggested that there are four main components to successfully implementing trauma-informed program evaluation and research, including: (1) Training of researchers and research assistants, (2) meaningful collaborations with clients, clinicians, and administrative staff, (3) providing opportunities and choice within these research collaborations, and (4) establishing a system of support for clients partaking in program evaluation initiatives. Each component will be presented with practical examples to display how organizations can work towards implementing a model of trauma-informed program evaluation and research. In addition, we will also be presenting the various challenges that were experienced upon implementing the model of program evaluation and how these challenges may be mitigated.

Conclusion

Trauma-informed practices are an essential aspect of ethical and collaborative program evaluation and research initiatives. This presentation will provide attendees with an increase awareness of trauma-informed practice principles, and how these principles have been applied to research and program evaluation initiatives in mental health and health-related services and organizations.
Translating research to inform policy decisions – the OncoSim’s experience

Presented by: Jean Hai Ein Yong, Consultant, Canadian Partnership Against Cancer

Background and objectives: Simulation models are important tools for evaluating healthcare interventions; however, developing these complex models is resource-intensive and the results may not be timely for informing policy decisions. OncoSim is the only cancer simulation tool that is available for free to users; they can modify the model inputs to answer specific policy questions. In this presentation, we will share our experience in developing and maintaining a cancer simulation tool aimed to inform policy decisions.

Approach: OncoSim is led and supported by the Canadian Partnership Against Cancer, with model development by Statistics Canada, and is made possible through funding by Health Canada. Combining Canadian data from the real world, expert opinion and clinical trials, OncoSim projects health and economic outcomes, and attributes them to 27 risk factors, such as smoking and physical inactivity. In addition to providing high-level projections for 28 cancer sites, OncoSim models four other cancer sites and related screening programs in detail: breast, colorectal, lung and cervical cancers.

Results: Over the last five years, OncoSim’s projections have helped inform cancer control planning decisions across Canada. The Canadian Partnership Against Cancer actively works with its partners to promote the use of OncoSim in informing policy decisions. Statistics Canada develops and maintains the models with input from experts in cancer screening, clinical epidemiology, health economics and oncology. We will discuss governance structure to effectively elicit input from experts, strategies to engage users and to promote adoption among policy makers, and ongoing efforts to validate model results using emerging data. Also, we will share our successes and challenges in keeping the models useful for policy makers.

Conclusion: OncoSim has proven to be a useful tool but its maintenance for use by a diverse user group continues to be challenging. Our experience and lessons learned are valuable to others interested in developing and maintaining a multi-purpose simulation tool to inform policy decisions.
Unit costs for healthcare service use for MH problems and other conditions in Quebec: the healthcare system perspective

Presented by: Catherine Lamoureux-Lamarche, PhD student, University of Sherbrooke

Background and objectives

Costs associated with healthcare use are usually assessed using unit costs. In Canada, these cost estimations are generally not disease-specific and rarely include indirect costs. The aim of this study is to estimate unit costs for healthcare use (ambulatory, emergency department (ED), day surgery, day hospital and hospitalisation) for mental health (MH) problems and other conditions using provincial administrative data from Quebec.

Approach

Unit costs were calculated using provincial mean costs of activity centers estimated with the 2013-2014 financial reports (AS-471) from the Quebec ministry of health and social services and opportunity costs for buildings and lands obtained from the literature. Unit costs were estimated per visit for ambulatory and ED visits and per diem for day surgeries and hospitalisations. Unit costs for an ambulatory visit, a hospitalisation day and day hospital were estimated for MH problems. Each unit cost included medical (laboratory and imaging tests, medical furnitures, care provision), general (laundries, housekeeping and hygiene), other (maintenance and security) and opportunity costs.

Results

Our results showed that an ED visit cost 303$ CAD. A hospitalisation was estimated at 449$ CAD per day for MH problems and 548$ CAD per day for other conditions. A day surgery cost on average 1685$ CAD per surgery. MH day hospital was estimated at 124$ per day. An ambulatory visit for other conditions cost 67$ CAD. Ambulatory visits for MH problems were estimated at 67$ CAD plus 640$ CAD per user (per year) for a hospital visit and 261$ per visit plus 1146$ CAD per user (per year) for a visit in a local community service center. It is important to note that these costs do not include fees paid to physicians for medical procedures.

Conclusion

In this project, we were able to estimate unit costs that include direct and indirect costs using provincial data. These unit costs are relevant to estimate more precisely healthcare costs from the healthcare system perspective. Future studies should focus on costs related to social services (ex. community organisations).
Implementation of a program to improve screening and communication of risk of violent and aggressive patient behaviours in a hospital setting: a mixed methods evaluation

Presented by: Kate Kerkvliet, Project Coordinator, McMaster University

Background and Objectives:
Workplace violence involving aggressive and responsive patient behaviours is a top safety concern in the hospital setting. A program was developed and implemented in a tertiary care centre emergency department and inpatient units to better identify and communicate potential patient behaviour safety risks and to develop care plans to manage patients with an identified risk and prevent violent incidents. Our objective was to evaluate the implementation of the program and its effectiveness.

Approach:
A mixed methods approach was used for evaluation. Surveys were administered to staff before and after program implementation to assess their perception of risk from patient behaviour and confidence in identifying, managing, and communicating patient risk. Focus groups and interviews were held with staff, with questions based on the Consolidated Framework for Implementation Research (CFIR). An audit was conducted to evaluate compliance with patient screening and use of risk communication tools and care plans. Incidence of emergency code calls, security assists, and safety occurrence reports related to violent or aggressive patient behaviours before and after program implementation were analyzed.

Results:
750 staff completed the baseline survey and 448 completed the post-implementation survey. Overall, staff perception of risk from patient behaviour decreased after program implementation while staff confidence in identifying and managing patients with behaviour safety risk and agreement that staff were successful at communicating risk increased. Focus groups and interviews identified areas for improvement but most staff believed the program will help to keep them safe. Audit results showed a patient screening compliance rate ranging from 56% to 100% across units. Use of risk communication tools was appropriate in most cases; however, there was room for improvement in development of care plans for patients with an identified risk. Evaluation of program effectiveness, including emergency code calls, security assists, and safety occurrence reports, is ongoing.

Conclusion:
Evaluation results identified key barriers and facilitators to implementation of the behaviour safety risk program. These results are being used to inform continued program implementation at the test site and at other regional hospitals to improve staff safety and patient care related to violent, aggressive, and responsive behaviours.
Cancer burden attributable to 27 risk factors

Presented by: Jean Hai Ein Yong, Consultant, Canadian Partnership Against Cancer

Background

OncoSim is a Canadian cancer simulation tool that is free to users; they can modify the model inputs to answer specific policy questions. In a recent release, it has expanded its projections from three to 32 cancers, and attributes cancer burden to 27 risk factors. The purpose of this presentation is to introduce OncoSim’s new feature on cancer burden and risk factors to analysts and policy makers interested in cancer prevention.

Approach

OncoSim is led and supported by the Canadian Partnership Against Cancer, with model development by Statistics Canada, and is made possible through funding by Health Canada. Combining data from the real world, expert opinion and the published literature, OncoSim projects health and economic outcomes for 32 cancers, and attributes them to 27 risk factors, such as smoking and physical inactivity. It captures the impact of risk factors on cancer burden (incidence, mortality and direct healthcare costs) using Canadian population attributable risk estimates, incidence and survival data from the Canadian Cancer Registry, and costs from retrospective administrative database analyses.

Results

OncoSim estimated that 210,000 new cancer cases would be diagnosed in Canada in 2018. Active smoking was the biggest cancer risk factor, accountable for 38,000 new cancer cases, 25,000 cancer-deaths and $2.5 billion cancer-related direct healthcare costs. The next largest contributors to cancer burden were physical inactivity and excess body weight (26,000 new cancer cases and 11,000 cancer-deaths).

Conclusion

OncoSim estimates cancer burden (incidence, mortality, and direct healthcare costs) attributable to 27 risk factors by sex, year and province. Future releases will allow users to evaluate the impact of cancer prevention interventions that modify risk factor exposures.
What is Value in Healthcare? Examining How Research Operationalizes Porter’s Definition of Value-based Healthcare

Presented by: Natalie Ludlow, Program Director, University of Calgary

Background and objectives

Value-based healthcare (VBHC) is a term synonymous with the pursuit of greater value in healthcare. However, the term “value” lacks conceptual clarity and is reflective of individual, social, and/or economic value. Porter’s 2010 seminal VBHC work put the patient at the center of the value equation and has become a central tenet in pursuit of healthcare value. The purpose of our study is to conceptualize how Porter’s VBHC is defined, operationalized, and implemented in research.

Approach

A literature search in six academic databases was conducted to identify articles examining VBHC; specifically studies with a Porter-based patient-centric focus to VBHC. Approximately 1,001 articles were retrieved for initial review and, using a consensus-based logic model for inclusion/exclusion, approximately 802 met the inclusion criteria for full text review. Articles were then examined in relation to the following objectives: 1) conceptually map the VBHC literature, 2) identify how Porter’s equation is applied, and 3) identify the methodologies used to measure outcomes, costs, and value. Findings were cross-compared and emergent themes organized to Porter facets of value (outcomes, costs, and value).

Results

Our review identified emerging pathways and gaps in how researchers conceptualize and apply Porter’s definition of VBHC. First, studies that examine value are applied at varying levels (micro/meso/macro) within the health system. Thus, providing evidence that value is measurable at all levels within a healthcare system. Second, the three facets of Porter’s VBHC is robustly found across the literature. However, most studies examine only one or two facets and fail to specify or define all three. Porter’s seminal work is cited and applied in research, yet there lacks consistency in the actual use of Porter’s definition. Five recommendations for future research using Porter’s VBHC include: (1) pre-selection of outcomes/costs, (2) operationalizing outcomes/costs, (3) value framework creation, (4) data collection, and (5) value calculation.

Conclusions

As Porter’s work has shifted how we think about value in healthcare, it is imperative that consistency occurs in how Porter’s definition is applied. This study is a first step to understand the impact of Porter’s seminal VBHC.

Presented by: Lynda van Dreumel, PhD Candidate, McMaster University

Background: Following release of the Truth and Reconciliation Commission (TRC) Final Report, Indigenous health policy has remained on the government agenda. Past attempts to implement Indigenous health policy reform have posed significant challenges. In 2016, Ontario launched the First Nations Health Action Plan (OFNHAP). This study (1) examined prospects for successful implementation of OFNHAP and (2) considered recommendations to enhance the likelihood of successful implementation of OFNHAP.

Approach: An explanatory single case study was used. Implementation of Jordan’s Principle across Canada was selected as a critical case. Policy literature, including documents and position statements from First Nations’ stakeholder groups as well as federal and provincial governments were examined. Findings were analyzed in the context of the Consolidated Framework for Implementation Research (CFIR) to understand the interplay among policy, context, and setting; as well as individuals and their influence on the implementation of OFNHAP.

Results: The following contextual factors increase the likelihood of successful OFNHAP implementation: (1) OFNHAP policy directions are highly aligned with Indigenous health paradigms and demonstrate a high potential for local adaptability; (2) Indigenous ways of knowing are acknowledged and prioritized in the policy; (3) high value is placed on First Nations engagement and collaboration; (4) regionalization in Ontario allows for the potential of a more nuanced understanding of local needs and; (5) implementation of Indigenous health policy reform has been legitimized through the TRC.

Conclusion: Application of the CFIR model indicates that engagement with local First Nations’ communities to co-design and co-implement health policy is crucial to the success of OFNHAP. Additionally, the formal integration of First Nations’ voices into collaborative implementation and evaluation processes will enhance the likelihood of OFNHAP implementation success.
The OncoSim-Breast model: reproducing the observed effects of breast cancer screening in a randomized clinical trial

Presented by: Jean Hai Ein Yong, Consultant, Canadian Partnership Against Cancer

Background and objectives

OncoSim is a free, web-based simulation tool that evaluates cancer control strategies. OncoSim-Breast is a new addition to OncoSim’s suite of cancer models. Evaluation of breast cancer screening strategies is one of many use cases of OncoSim-Breast. The objective of this study is to replicate the UK Age trial, a well-documented randomized clinical trial of annual breast cancer screening in women age 40-49 in the UK, and to compare OncoSim-Breast’s projections with the trial results.

Approach

Combining data from the real world, expert opinion and the published literature, OncoSim-Breast models the natural history and progression of breast cancer. We simulated a cohort of women born in 1950-1957 to match the UK Age trial in two scenarios: (i) no screening; and (ii) annual screening for women age 40-49. In the screening scenario, we calibrated the rescreening rate to the average number of mammograms per woman in the Age trial. For each scenario, we estimated the incidence of breast cancer and breast cancer deaths in women age 40-49.

Results

OncoSim-Breast reproduced the impact of annual breast cancer screening in women age 40-49 on breast cancer incidence and mortality observed in the UK AGE trial. As compared to no screening, OncoSim predicted that annual breast cancer screening in women age 40-49 years would lead to a 23% increase in the detection of invasive cancer and ductal carcinoma in situ, and 10% fewer breast cancer deaths. The estimates were well-within the 95% confidence intervals of the trial estimate, at both 10- and 17-year follow-up.

Conclusion

OncoSim’s ability to reproduce observed effects of breast cancer screening in a randomized clinical trial increases the confidence of its model results to inform breast cancer screening-related policy decisions. Efforts are ongoing to externally validate OncoSim’s predictions with real-world data, such as the Canadian Breast Cancer Screening Database.
Development of an Evaluation Framework for Community-Based Healthcare (CBHC)

Presented by: Natalie Ludlow, Program Director, University of Calgary

Background and objectives

Community-based healthcare (CBHC) is an integrated health system structured around individuals and communities. Through optimal coordination of integrated, team-based primary-care services, CBHC aims to enhance how people are connected to healthcare and services closer to home. Today, CBHC varies in its adoption and execution across Canadian health systems with no specific framework for defining and operationalizing CBHC in Canada. Our research examines the CBHC literature and proposes an evidence-based framework for CBHC operationalization.

Approach

A full literature search in six academic databases was conducted to identify articles examining CBHC; retrieving 2942 articles. A consensus-based logic model for inclusion/exclusion was developed and beta tested for consensus. Articles were screened in three phases—title review, abstract review, and full text review. Thirty-nine articles met the inclusion criteria for full text review. Thirty-five were traditional peer-review articles and four were seminal government reports and/or health services documents. Team members then individually identified emerging themes and cross-compared for team agreement and consensus. Emergent themes were organized across Triple/Quadruple Aims and identified as short or long term CBHC outcomes.

Results

Our review of the CBHC literature establishes ten “best-practices” recommendations to support the operationalization of CBHC programs that have the potential to develop a Canadian pan-provincial framework. Recommendations attained from this review include: the use of Triple/Quadruple Aim (and its facets) as a foundational framework for CBHC; the use of logic models as organizational tools for CBHC programs; and develop adaptable evaluation frameworks and metrics at both system and program level. Furthermore, evaluation metrics and indicators need to be well-defined and specific to the program being evaluated; align measures within structure, process, and outcome for comprehensibility; incorporate the use of both quantitative and qualitative methodology; allow for unintended indicators to emerge; and include knowledge transfer to ensure end-user support and uptake.

Conclusions

Using these recommendations found from the literature review, we have developed and propose a cross-provincial framework to support CBHC initiatives at all levels of a healthcare system. Integration of CBHC will help provincial and local health systems achieve optimal outcomes for their population of service.
Simulation modeling to inform health policy and system decisions in colorectal cancer screening: a systematic review

Presented by: Heather Smith, MSc Student/generic surgery resident, University of Ottawa

Background & Objectives: Simulation modeling has frequently been used to assess interventions in complex aspects of healthcare where clinical trials are not feasible, such as colorectal cancer (CRC) screening. Simulated models provide estimates of outcomes, unintended consequences, and costs of an intervention; therefore, offering an invaluable decision aid for policy-makers and healthcare leaders. This systematic review aims to assess if simulation modeling has supported evidence-informed decision-making in CRC screening.

Approach: A search of the academic and grey literature published between Jan 1, 1999-2019 will be conducted to identify articles that include both 1) simulation modeling methods and 2) a focus on CRC screening. Articles will be assessed by three independent reviewers for risk of bias and the extent to which the study contributes evidence towards informed decision-making. Criteria required for informed decision-making will be used as outlined in the internationally recognized Grading of Recommendations Assessment, Development and Evaluation Evidence to Decision framework (GRADE EtD). These criteria include information on an intervention’s resource utilization, cost-effectiveness, impact on health equity, and feasibility. Subgroup analysis of articles based on their GRADE EtD criteria will be conducted to identify methods associated with decision support capacity (ie quantitative or mixed-methods).

Results: Our preliminary search retrieved 571 articles. We anticipate this systematic review will synthesize the contribution simulation modeling methods have provided to informing decision-making in colorectal cancer screening. Furthermore, methods that are associated with a stronger impact on decision-making will be identified in our analysis and discussed.

Conclusion: This systematic review will describe the contribution of simulation modeling methods in health policy and health system decision-making in CRC screening. Our findings will provide guidance to researchers and healthcare leaders for making evidence-informed decisions on CRC screening processes and programs using simulation modeling. This study will also provide a framework to assess the utility of simulation modeling in other areas of complex healthcare decision-making.
The association between the Ontario Marginalization Index (ON-MARG) and adverse childhood experiences in Ontario: A population-based study

Presented by: Isac Lima, Sr. Methodologist, ICES uOttawa

Background and objectives

Adverse childhood experiences (ACEs) have been well established as risk factors for both adverse physical and mental health outcomes as well as a significant burden in terms of morbidity, mortality and system costs. The ON-MARG is a census-based index designed to reflect neighborhood marginalization factors and its association with health problems. We aimed to assess the marginalization factors associated with ACEs and to identify the geographic distribution of cases in Ontario.

Approach

We conducted a retrospective-cohort study using ACEs from emergency department or hospitalization visits between 2002 and 2018. The International Classifications of Diseases 10 codes were used to identify ACEs in the National Ambulatory Care Reporting System (NACRS) and Discharge Abstract Databases (DAD), which were categorized as physical, psychological, or sexual abuse, or neglect. The ON-MARG Index data was stratified into quintiles of the four marginalization dimensions, and rates of ACEs were calculated for each dimension: residential instability, material deprivation, dependency and ethnic concentration. Multilevel logistic regression models were conducted for the association between marginalization index and ACEs, adjusting for confounders.

Results

214,404 ACEs cases were observed. Neglect (38.6%) was the most prevalent type of ACE, followed by physical (33.5%), sexual (21.9%) and psychological abuse (6.1%). The most marginalized areas of residential instability, material deprivation and dependency were found to have the highest rates of ACEs, however areas with higher ethnical concentration had lower rates of ACEs (Q5=63 vs. Q1=81 per 100,000). Physical abuse was more prevalent among children living in areas with higher residential instability (OR=1.33, 95%CI=1.23-1.43), material deprivation (OR=1.46, 95%CI=1.34-1.59), and less ethnical concentration (OR=2.02, 95%CI=1.87-2.18). Psychological abuse was more likely in areas with high residential instability (OR=1.24, 95%CI=1.08-1.42), and neglect was more frequent in areas with high dependency (OR=1.19, 95%CI=1.09-1.29). Sexual abuse was more likely in areas with lower ethnic concentration (OR=1.21, 95%CI=1.14-1.31).

Conclusion

The dimensions of the marginalization index were significant predictors of ACEs in Ontario. Areas with higher residential instability, material deprivation and dependency are associated with more cases of ACEs, while lower ethnic concentration is associated with cases of sexual and physical abuse. Future studies should target interventions to reduce ACEs.
Healthcare Workers’ Views on the Second Victim Phenomenon

Presented by: Myuri Manogaran, Data and Research Analyst, Royal College of Physicians and Surgeons of Canada

Objectives: Second victim phenomenon (SVP) has been identified as a serious issue for healthcare providers (HCP), impacting their well-being and patient safety. SVP is defined as a HCP traumatized by an unanticipated adverse patient event. The purpose of this study was to determine the extent of SVP and the resources available to support HCP across Canada.

Methods: A national self-administered online survey of healthcare providers was conducted. The survey instrument, Second Victim Experience and Support Tool, a validated tool was used to identify second victim occurrences and victim support resources. We also collected data on demographic and employment characteristics, educational history, and four open-ended questions on second victim support. The Canadian Patient Safety Institute assisted in identifying the sample.

Findings: A total of 390 frontline healthcare professionals completed the survey. Of the 390 who responded, 58% indicated that they have been involved in a serious patient safety event impacting one of their patients and 32% indicated that a patient safety event caused them to experience anxiety, depression or wondering if they were able to continue to do their job in the last 12 months. Of the 123 who indicated experiencing anxiety, depression or wondering if they were able to continue their job due to a patient safety event, 89% of them did not receive any second victim support at their institution. Support that participants indicated receiving included discussion with manager and/or colleagues and employment assistant programs. 35% of participants indicated being not satisfied with the amount and type of support they received.

Conclusion: Based on the data collected it is evident that HCP who have experienced a patient safety event are not receiving second victim support at their institution. Next steps include interviews with healthcare managers to better understand what is needed to support and implement strategies to support healthcare providers in dealing with SVP.
Partnering with mental health service users to develop a questionnaire on users' experiences of integrated care

Presented by: Matthew Menear, Postdoctoral Fellow, Laval University

Background and objectives: The integration of mental health care in primary care is an essential strategy for improving the care experiences and outcomes of people with common mental disorders. However, we know relatively little about how service users define integrated care and to what extent they perceive their care as integrated or not. The aim of this study was to co-design a questionnaire assessing primary mental health care service users' experiences of integrated care.

Approach: We first conducted a systematic review to identify service-user focused instruments measuring primary mental health care integration. We searched Medline, EMBASE, PsycINFO and the grey literature and ultimately identified 15 eligible questionnaires or scales. Next, we used a User-Centered Design process to co-design a new questionnaire with four adult primary mental health care service users. The process involved several design cycles, including users' definition of integrated care and its constructs, the identification and development of items measuring those constructs, and feedback on initial and revised versions of the questionnaire. All meetings with service users were recorded, transcribed, and analyzed thematically.

Results: Service users perceived that their mental health care was integrated when it was: (1) accessible and primary care and other professionals were reachable, (2) appropriate, safe, and matched their needs, (3) continuous over time, (4) focused on the whole person, (5) person-centered and emphasized their engagement as partners, and (6) recovery-oriented. They also shared their views on the instruments identified by the systematic review how our new questionnaire could be structured and presented. They participated in the selection and prioritization of items to be included in the questionnaire by rating the relevance of 139 items across the six domains of integration outlined above. Over several in-person meetings, they provided feedback on questionnaire prototypes, leading to the creation of a 30-item version ready for broader validation.

Conclusion: Few studies have directly measured primary mental health care integration in Canada and efforts to include users as partners in the evaluation process are rare. Our questionnaire will help us establish a clearer portrait of integrated care, focusing on experiences that matter from mental health service users' perspectives.
A framework for value-creating Learning Health Systems in Canada

Presented by: Matthew Menear, Postdoctoral Fellow, Laval University

Background and objectives: Worldwide there is a growing interest in delivering greater value in healthcare. Learning Health Systems (LHSs), which leverage advancements in science and technology to improve health system performance at a better cost, have been proposed as a strategy for achieving this goal. However, there remains little consensus around how to define and implement LHSs. We thus aimed to develop a conceptual framework that could inform the emergence of value-creating LHSs in Canada.

Approach: The framework was developed by a team of Fellows and decision-makers at the Institut national d'excellence en santé et en services sociaux (INESSS). The development process included: (a) a scoping literature review; (b) regular meetings to build the framework; (c) consultations with experts. The scoping review involved searches in bibliographic databases (e.g. Medline, Embase) and the grey literature using keywords related to 'learning health system'. The interdisciplinary team iteratively developed the framework drawing on LHS models and case examples identified in the scoping review, and received feedback on preliminary framework versions from a university committee with LHS-related expertise.

Results: The framework describes four components that characterize LHSs: 1) Core values, 2) Pillars and accelerators, 3) Processes, and 4) Outcomes. LHSs embody certain core values, including inclusiveness, transparency, scientific rigour, and person-centeredness. However, values such as equity and solidarity should also guide LHSs established in countries like Canada. LHS pillars are the infrastructures and resources supporting the LHS, whereas accelerators are those specific infrastructures that enable more rapid learning and improvement. These infrastructures support the execution and routinization of learning cycles, which are the fundamental processes of LHSs. The main outcome sought by executing learning cycles is the creation of value, achieved when systems strike a more optimal balance of impacts on patient and provider experience, population health, and health system costs.

Conclusion: Our framework is informed by previous efforts to conceptualize and describe LHSs but is innovative in how it comprehensively ties together the distinctive structures, processes and outcomes of LHSs. The framework is currently guiding work at INESSS to support the emergence of LHSs in the province of Quebec.
Prenatal care of women who give birth to Children with Fetal Alcohol Spectrum Disorder in a universal health care system: A case control study using linked administrative data

Presented by: Deepa Singal, CIHR Health Systems Impact Post Doctoral Fellow, British Columbia Academic Health Sciences Network

Background: Physicians delivering prenatal health care (PNC) services are in a unique position to help prevent or reduce alcohol consumption during pregnancy and can play an integral role in decreasing the prevalence of FASD. However, few studies have investigated PNC use among women who use alcohol during pregnancy. The objective of this study was to investigate rates of PNC usage of women who have given birth to children with Fetal Alcohol Spectrum Disorder (FASD).

Approach: A case control study was conducted of women with children born in Manitoba between April 1, 1984 and March 31, 2012, with follow up till 2013 using linkable administrative data. The study group included women whose child(ren) were diagnosed with FASD (n=702) between April 1, 1999 and March 31, 2012 at a centralised diagnostic clinic. The comparison group included women whose children did not have an FASD diagnosis (n=2097), exact matched on the index child’s birthdate, postal code, and socioeconomic status (SES). Adequacy of PNC utilization was defined using the revised Graduated Index of Prenatal Care Utilization.

Results: Women in the study group had lower socioeconomic status than women in the comparison group and were more likely to have mental disorders and involvement with the child welfare system. Rates of inadequate PNC were higher among the study group (adjusted Relative Risk (RR) 2.47, 95% Confidence interval (CI) 2.08 to 2.94), as were rates of no PNC (adjusted RR 3.55, CI 2.42 to 5.22). Among the study group 41% received no or inadequate PNC, with 59% receiving intermediate, adequate, or intensive PNC.

Conclusion: Women who give birth to children with FASD have higher rates of inadequate PNC and significant social complexities. Socioeconomic disparities in the use of PNC should be addressed; multi-sector interventions are needed that facilitate the uptake of PNC among high risk women with alcohol use.
Patient Perceptions of Heart Failure Self-Management and Daily Symptoms

Presented by: Connie Schumacher, Lead Clinical Coordinator DIVERT-CARE, McMaster University

Background

Heart failure is a progressive debilitating disease punctuated by intermittent periods of decompensation. Self-management plays an integral role in prolonging periods between exacerbations. Self-management is a daily responsibility that includes monitoring, interpreting symptom changes, and responding with appropriate actions. Despite education, some patients fail to act on symptom changes or seek timely medical intervention. The purpose was to explore the decision making processes undertaken by community-dwelling individuals with heart failure as they experience symptom changes.

Approach

Semi-structured face-to-face interviews were conducted with 18 homecare patients. Participants were recruited from a Community Care Access Center in Ontario if they had a pre-existing diagnosis of heart failure, experienced an exacerbation with hospitalization in the preceding three months, and had received self-management education. An interview guide was used to focus on self-management, the symptom experience, and response to symptom changes. Interviews were audio recorded and transcribed verbatim, participants were debriefed immediately following interviews. Grounded theory methods of iterative data collection and analysis were used. Open, axial and selective coding were applied with constant comparison between cases to generate themes.

Results

Self-management was described as a set of tasks; taking medications, weighing themselves, and measuring their abdomen. Two types of symptom changes were represented, escalating exacerbations and daily symptoms. Escalating symptoms were described as severe with heightened emotions. Daily symptoms were described as elusive and approaching a continuous experience. Behaviors that minimized adverse symptoms were described. Consequences of symptom avoidance included reduced physical activity, reduced participation in social activities, and isolation. Consultation with a health professional was not viewed as part of self-management, weight charts and questions were not shared or discussed outside of routine appointments. A few participants described reluctance to seek help as the symptoms were not serious enough to warrant attention, a view that had been reinforced in previous encounters with health providers.

Conclusion

Findings support the need for heart failure education that emphasizes early symptom recognition, provides opportunities to guide symptom interpretation and reinforce appropriate actions. Engaging primary care physicians to develop self-management patient-physician collaboration mechanisms should be pursued. Study findings inform future initiatives to optimize management of heart failure in the community.
A Dynamic Capability for Enhancing Innovation, Adaptation and Sustainability of Healthcare Organizations: The ELIAS Framework

Presented by: David Persaud, Professor, Dalhousie University

Background and Objectives:

The sustainability of health care organizations is enhanced by the utilization of innovations. These innovations can be developed within organizations or accessed through knowledge transfer or both. An organization that actively practices organizational learning and the utilization of dynamic capabilities has been shown to enhance ongoing innovation, adaptation, and sustainability. Therefore, the objective of this study was to determine the factors that can be used to enhance organizational learning, innovation, adaptation, and ultimately sustainability.

Approach

A literature review was conducted. The databases Pubmed, Business Source Complete, Academic Search Premier, CINAHL, and PsycINFO were searched for articles published in the English language since 2000 onward. These databases were searched using combinations of keywords such as “accountability”, “learning”, “sustainability”, “innovation”, “outcome”, “change”, “implement”, “dynamic capability” “institutionalization”, “routinization”, “knowledge”, “diffusion”, “culture”, “complex adaptive”, “adaptation”, “performance”, “evaluation”, “improvement”, “resistance”, and “measurement. A snowballing strategy was also employed by searching the reference sections of reviews and theoretical papers identified in the search. In addition, contemporary frameworks based on learning, adaptation, innovation, and sustainability within health care organizations were also examined.

Results

An integrated framework of performance driven change and innovation emerged from the analysis. The framework is called the Enhancing, Learning, Innovation, Adaptation, and Sustainability framework (ELIAS). This framework is considered a dynamic capability because it allows a healthcare organization to make internal changes that allow it to adapt to changing environments thereby remaining sustainable. The ELIAS framework represents a seamless integration of performance measurement; the disconfirmation of outmoded mental models; the contextualization of solutions; their implementation, and routinization. An integral aspect of the development and utilization of the ELIAS framework is the presence of a dynamic learning culture. Such a culture reinforces accountability, continuous improvement, assessment of mental models, organization learning mechanisms, shared leadership, measurement, contextualization, and a psychologically safe environment.

Conclusion

The existence of a dynamic learning culture enhances the development of dynamic capabilities such as the ELIAS framework. The utilization of this framework enhances the chances of a healthcare organization being able to innovate, adapt, and remain sustainable; thereby allowing it to better serve its community’s changing needs.

Presented by: Michael Reid, PhD Student, Dalhousie University, Dept. of Community Health and Epidemiology

Background and Objectives: There is a growing body of research highlighting high levels of community variation in case-mix adjusted health outcomes across Nova Scotia. A number of communities that consistently display poor health outcomes when compared to the rest of the province have been identified. The objective of this study is to develop and compare preliminary profiles of these identified communities to assess similarities and difference between them with respect to social and economic community attributes.

Approach: Our hypothesis was that while there will be some similarities between the Nova Scotian communities that display poor health outcomes when compared to the rest of the province, for the most part our profiles will indicate that there is considerable heterogeneity between those communities. To test this hypothesis, we used 2016 census data to develop and compare profiles for nine Nova Scotian communities that have poor case-mix adjusted health outcomes of unplanned repeat hospitalizations, high-cost healthcare use, and long lengths of stay. Census variables extracted included variables related to housing, education, income, marital status, family characteristics, language, citizenship, employment and available workforce. Radar plots were used to visually show variation in the values of these variables between the selected communities.

Results: Communities that consistently display poor health outcomes when compared to the rest of the province tend to be clustered geographically and have similar average household sizes. Our profiles also show less than five percent total variation between the communities in terms of percentage of unemployed people, percentage of people with and without Canadian citizenship and people who are living common law, separated, divorced or widowed. However, the profiles also highlight areas of heterogeneity between communities. Variation in the variables examining housing, workforce, education, language spoken and certain categories of dwelling is high. In these categories total variation between the selected communities is at least ten percent and in some cases as high as thirty-two percent.

Conclusion: Our community profiles showed that there is considerable variation between the social and economic attributes of Nova Scotian Communities that consistently display poor health outcomes when compared to the rest of the province.
Patients’ perspectives on medication for inflammatory bowel disease: contributions to health services planning

Presented by: Jose Diego Marques Santos, MSc candidate, Department of Community Health & Epidemiology, College of Medicine, University of Saskatchewan

Background and objectives (75-word limit);

Canada has the highest prevalence and incidence rates of inflammatory bowel disease (IBD) worldwide. The rates of non-adherence to IBD medications are high (30-45%). This non-adherence issue highlights the importance of understanding patients’ perspectives to better plan health services for individuals living with IBD. Up to date, no literature reviews have addressed the patients’ views about IBD medication. We aimed to synthesize the evidence about patient’s perspectives on medication for IBD.

• Approach (100-word limit);

A scoping review was conducted to answer the following guiding question: “What are the perceptions of patients living with IBD on their medication?” We searched the available literature using MeSH terms, subject headings, and non-controlled keywords in the following databases: MEDLINE, EMBASE, SCOPUS, CINALH, and Web of Science. The inclusion criteria were: 1) research conducted in Canada or the United States among patients with IBD exploring their perspectives on medication for either Crohn’s disease or Ulcerative colitis; 2) studies with quantitative, qualitative, or mixed methods; and 3) articles published in English between 1998 and 2018.

• Results (125-word limit);

This is a work in progress. After screening 932 records, 42 full-text articles were reviewed. In total, eight studies were included in the analysis. The lack of knowledge about medication seems to be an issue for IBD patients. Doubts about efficacy, side effects, and characteristics of the medication suggest that IBD patients do not have enough knowledge about their medication. Some negative views on IBD medication may also be present (e.g. some patients dislike rectal administration methods, the high number of pills, and potential side effects). Believing that the medication was not necessary after “feeling better” was a misconception probably associated with limited knowledge about the prescription.

• Conclusion (50-word limit).

Lack of knowledge, patient’s doubts, negative views, and misconceptions about medications are some of the perceptions among patients living with IBD. Health services for IBD could be better planned when taking into consideration patients’ perspectives. Patients informed about their medications could lead to better disease management and improve healthcare outcomes.
Facilitating Precision Health Innovation and Commercialization in Alberta - Identification of Policy Issues Across the Innovation and Commercialization Ecosystem

Presented by: Craig Scott, Research Associate, University of Calgary - School of Public Policy

Background and objectives: Health systems globally are shifting towards Precision Health (PH), the utilization of individual information to inform health and social services delivery to improve health outcomes. PH is a major economic development focus across the globe, however, most Canadian provincial health systems do not have a strategy. This research examines Alberta’s Precision Health innovation and commercialization (I&C) ecosystem and the development of new technologies and processes, to identify key policy barriers across the PH I&C ecosystem.

Approach: Qualitative semi-structured interviews were conducted to utilize perspectives from senior-level executives currently engaged in PH I&C in Alberta to identify policy challenges. Participants were grouped by category from the Triple Helix Model of Innovation – Government, Industry, and Academia. A qualitative thematic analysis of the interviews was conducted on the interview transcripts using NVivo software to code the data, generating thematic policy challenges. A scoping literature review was used to identify an innovation policy categorization framework. The chosen framework provided seven categories to evaluate and identify gaps in the existing policies in Alberta.

Results: Sub-optimal coordination between the various ecosystem players was the most consistent and prevalent findings across all groups. Most respondents identified the absence of a mandated organization for PH I&C as a major impediment to decision-making. Multi-sectoral activity was another concern despite acting as an identifier of the capacity to produce PH I&C. Tension between academics and government (health service providers included) existed for “discovery-driven” and “market-pull” research funding. Many respondents were concerned with the level of health system public procurement. Application of the innovation policy framework revealed a lack of formal leadership by an I&C decision-making body as a key barrier. The implementation bodies of public policies have a lack of industry involvement. Throughout the seven categories, demand stimulating policies were absent or underrepresented.

Conclusions: Findings suggest the need for a stronger role of governance structures to coordinate PH innovation ecosystem activity. A group with the capacity to address the multifaceted and interdisciplinary policy challenges may improve PH I&C outcomes in Alberta. Future research is required to inform the design of horizontal and vertical governance structure.
Assessing the factors associated with the completeness of electronic medical records (EMRs)

Presented by: Cathy Eastwood, Operations Manager, Centre for Health Informatics, University of Calgary

Given its widespread integration across healthcare systems, and its abundance in clinical information, the EMR has become a rich data source for research ranging from policy and system improvement to precision medicine. However, few studies focus on evaluating EMR data quality. EMR completeness, (the inclusion of key components in EMRs e.g., discharge summary), is an essential EMR quality dimension. This study evaluates the factors associated with completeness of the population-based EMR data in Calgary, Alberta.

Data from a chart review study using 3045 randomly selected inpatient charts from three medical centers in Calgary, Alberta between January and June 2015 was used for this analysis. The in-hospital EMR data and paper chart were linked using unique patient and admission identifiers. Completeness was assessed through detection of missing discharge summaries (DCs) using the EMR data. Chart review data included the Charlson Comorbidity Index (CCI), patient care hospital, length of stay (LOS), age and sex. The differing distributions of these factors as well as their independent associations between patients with and without missing DCs were compared.

The majority (n=3002, 98.6%) of the EMRs were linked to the paper chart data. Among the 3002 EMRs, 846 (28.2%) lacked DCs. Compared to the patient group without missing DCs, the patients in the missing DC group were more likely to be male, were younger, and had a lower CCI score (68% of patients without DCs and 47% of patients with DCs had CCI scores of 0). Specifically, they were less likely to have experienced a myocardial infarction, congestive heart failure, dementia, diabetes with complications, liver disease, and metastatic tumors. There was a statistically significant difference in frequency of missing DCs between the three hospitals. Additionally, patients discharged home rather than to another institution, and those with a shorter LOS, were associated with missing DC.

Incomplete EMRs were associated with young male patients with few comorbidities. The absence of key EMR documents affects quality of data used in various areas, including health system performance research and artificial intelligence initiatives. Further research is needed to identify associated factors and plan appropriate interventions to reduce EMR incompleteness.
An Examination of Integrated Knowledge Translation Research: History, Reformulation, Evolution and Comparison with Close Relations

Presented by: Kelly J. Mrklas, PhD Trainee, University of Calgary

Background
Integrated knowledge translation research (IKTR) is a recently emerging concept, coined in the mid 2000s by Graham et al. IKTR involves purposeful, collaborative involvement of researchers and knowledge users across the research process, to increase the uptake/use of findings. IKTR bears strong similarity to other related approaches (i.e., engaged scholarship, Mode 2, knowledge co-production, co-creation, participatory research, human centred design, collaborative-participatory design). A close examination of its historical origins, integration into national funding agency guidance and process, presence as an underlying assumption of the Knowledge to Action framework (K2A), and its context provide important insights into the nature of IKTR and its future applications.

Objectives
To critically review and compare characteristics (e.g., historical origins, epistemological, methodological, measurement, impact contribution/attribution characteristics, developmental implications) among IKTR and related approaches and to examine their influence on current conceptualizations, and where possible, future applications.

Methods
A focused search for studies pertaining to IKTR, linkage and exchange, and related concepts was undertaken to create an historical timeline, establish source documents, clarify how and when concepts emerged, and how they were subsequently applied and changed over time. Findings were summarized and tabulated to create a comprehensive current state.

Results
The historical timeline and adoption of IKTR within national health research funding agency guidance influenced its conceptual evolution. IKTR was broader in scope and involved more than the initial philosophy of linkage and exchange. IKTR became a refined, emerging practice involving very specific ends across the entire research process (e.g., improvement of health outcomes, healthcare services, products and system). IKTR differs in scholarly ways from its close relations, but as with other similar approaches, manifests similarly in practice. Evaluative efforts and comparative work with other approaches further delineate IKTR as a key research approach and a concept whose evidence base is emergent.

Conclusions
As participatory research methods gain widespread popularity, understanding IKTR, and the conditions under which it works best, is essential. An in-depth appraisal of historical and conceptual origins, application context and ultimate ends, demonstrate why IKTR is a novel approach that is both similar in practice, yet conceptually distinct, from its closest relations.
Engaging Children and Youth in Policy Development for Medical Assistance in Dying (MAID) in a Paediatric Setting

Presented by: Lilian Jia Lu Lin, PhD Student, University of Toronto

Background and Objectives: Canada’s decriminalization of medical assistance in dying (MAID) in 2015, which allowed capable adults whose death is “reasonably foreseeable” the option to end their life with the assistance of a doctor or nurse practitioner, has generated tremendous controversy as well as legal uncertainties for healthcare institutions that receive MAID requests.

Approach: In developing a policy to guide clinical management of MAID cases for patients 18 years and older that may in the future apply to mature minors, the MAID working group at The Hospital for Sick Children (SickKids) has solicited feedback from the hospital’s Family Advisory Committee on its draft MAID policy. Through a bioethical analysis using the communitarian approach, I will argue the thesis that young patients and siblings serving on the SickKids Children’s Council also have the right to weigh in on the draft MAID policy.

Results: While it may seem acceptable from a paternalistic view to forgo consulting the Children’s Council in order to avoid causing potential harm and discomfort to its members, a communitarian approach which emphasizes societal values and norms and having respect for all members of a society makes it imperative for SickKids to consult with its constituents who may be the most affected by its policy.

Conclusion: Given the polarized societal attitudes towards MAID as a result of Canada’s diversity of cultural, religious, ethnic, and linguistic experiences, a communitarian perspective offers a fruitful starting point for examining a deeply divisive topic such as MAID policy development in the paediatric setting.
Findings from a scoping review on self-management of problem gambling

Presented by: Jessica Wiese, Research Associate, Centre for Urban Health Solutions, St. Michael's Hospital

Background and Objectives:
Problem gambling (PG) is a serious public health concern, especially among people who experience homelessness, addiction, and mental health challenges. Little research has focused on self-management in gambling recovery, despite evidence that a substantial number of people do not seek formal treatment and prefer managing issues independently. The purpose of this study was to identify what is reported in the scientific literature on the self-management of PG and to provide recommendations for future research.

Approach:
Our study used a scoping review method, which aims to broadly synthesize research literature on a specific topic to identify key concepts, gaps in research, and reported evidence. We developed a literature search strategy to identify articles published from 2000 to 2017 that examined self-management strategies for PG among adult populations (aged 18+). From the 2,662 potential articles identified, we found 31 articles that met the criteria for inclusion. We extracted and charted data on self-management strategies, study methods, characteristics of participants (e.g., age, sex, race, health comorbidities), and key findings.

Results:
The majority of studies examined self-exclusion, which refers to entering into a formal agreement with a venue to ban oneself from their gambling activities. Other studies explored the use of workbooks, money or time limiting strategies, cognitive, behavioural and coping strategies, stress management, and mindfulness. Overall, 23 self-management strategies were identified, indicating a growing interest among researchers to examine a variety of strategies. Key findings from studies suggest evidence is still too limited to determine whether these strategies are effective in reducing gambling-related behavior and harms. There was also a lack of research on self-management approaches tailored to specific groups (e.g., age, income, gender, ethnicity and race).

Conclusion:
Given that only a minority of people with gambling concerns seek treatment, it is important to examine the self-management of gambling as a complement to formalized treatment. This is especially true for people with complex health and social needs who are more likely to experience PG and barriers to treatment.
Understanding H.O.P.E. through complexity: A Developmental Evaluation of a holistic model of community care

Presented by: Courtney Shaw, Senior Research Associate, SE Health- SE Health Research Centre

Background and Objectives:
A health system is a complex network of organizations, programs, and people who aim to promote, restore or maintain health. In response to this complexity, there is growing recognition of the relevance of complexity theory to understand health system functioning, and to guide health care research and evaluation. We apply this approach to our testing of the H.O.P.E. Model, a holistic model of community care that leverages technology while maintaining compassionate care.

Approach:
Within a Developmental Evaluation approach (Patton, 2010) overall data collection and analysis follows a mixed methods design guided by the Participatory Research to Action Framework (Reference removed for blind review). This design allows for the use of multiple data sources, collected in an ongoing iterative process and the meaningful engagement of stakeholders throughout. In collaboration with these stakeholders we have designed a developmental evaluation to generate the evidence body for the H.O.P.E. model which embeds rapid cycles of evaluation to enable real-time iteration and test which elements are critical to the implementation of the model to get desired co-designed outcomes.

Results:
Within a Developmental Evaluation approach data collection is ongoing and iterative, continually feeding into design processes. The researchers engaged in developmental evaluation play multiple roles, acting as expert advisors in the design processes, providing critical feedback on progress, and acting as ‘guardians’ of the principles which are meant to be adhered to. This presentation will report on our experiences of using participatory action methods within a developmental evaluation framework, highlighting the challenges and opportunities inherent when a research team plays multiple roles in a constantly evolving process.

Conclusion:
Developmental evaluation has different aims to traditional impact or process evaluations. Our experience with developmental evaluation has been informative, at times challenging, and influential on the outcomes of the H.O.P.E model. Results will be of interest to stakeholders across the healthcare system challenged by the complexities inherent in their work.