A1.1
Immigration status and potentially avoidable hospitalizations: factors affecting the “healthy immigrant effect”
Presented By: Maude Laberge

Methods: Statistics/Econometrics

Objectives: Estimate the effect of immigration and of immigration characteristics (acculturation and origin) on the risk of a hospitalization for an ambulatory care sensitive condition (ACSC).

Approach: We analyzed data on the Canadian adult population aged 18 to 74 years (excluding Quebec) who responded to the 2006 long form Census. The Census data were linked to the Canadian Institute for Health Information (CIHI)’s Discharge Abstract Database (DAD) for fiscal years 2006-2007 and 2007-2008. The CIHI definition of ACSC hospitalizations was used to identify potentially avoidable hospitalizations in the DAD. Immigration factors analyzed included years in Canada, ethnic origin, and ability to speak one of the official languages. We conducted a logistic regression with an ACSC admission as the binary outcome variable.

Results: There were 3,342,467 respondents aged between 18 and 74 to the long form census. Using the Canadian at birth as our reference population, immigrants had significantly lower odds of an ACSC hospitalization, with the protective effect diminishing with time spent in Canada: AOR=0.44, CI:0.42-0.47 for recent immigrants having lived in Canada for up to 5 years, AOR=0.68, CI=0.65-0.72 for immigrants with 6 to 10 years in Canada, AOR=0.71, CI=0.70-0.73 for immigrants with over 11 years in Canada, and AOR=0.86, CI=0.85-0.88 for children of immigrants. The protective effect was stronger in immigrants of Asian origins and lower in those of European and Oceanic origins. Older age, being male, and living in a rural area were significantly associated with higher risk of a hospitalization.

Conclusion: Our results suggest that the healthy immigrant effects dissipates with time in Canada but remains even in children of immigrants. Factors such as the severity of their condition, and access to care in the community could contribute to the risk of hospitalizations.

Authors: Maude Laberge, ; Marc Leclerc, Université Laval

A1.2
Ambulatory care sensitive conditions (ACSC): Deconstructing the Construct
Presented By: Alan Katz

Methods: Data Mining/Big Data Analytics

Objectives: To explore the validity of ACSC hospital admission rates as a composite measure of primary care (PC) effectiveness in the context of on-reserve First Nations (FN) health.

Approach: Retrospective longitudinal observational study of all sixty-three Manitoba FNs between 1984 and 2015. We calculated annual hospital admission rates for different categories of ACSC (acute, chronic, vaccine preventable and mental health conditions) for different models of on-reserve PC service delivery. Differences in funding and jurisdictional control determine the models of care. We controlled for age, sex, socioeconomic status and premature mortality rates in the Generalized Estimating Equation models, which used a rolling 5-year aggregate admission rate to compensate for low total admission rates. The inclusion of mental health diagnoses in the definition of ACSC is a unique innovation.

Results: ACSC hospitalization rates decreased over the study period for all models of care by an average of 3.3%. Annual adjusted rates dropped from 84.42 (95%CL 60.26-118.26) to 36.24 (95% CL 35.90 - 36.58). The findings for chronic, acute and vaccine preventable ACSC follow a similar pattern with average decrease of 3.4%, 4.4% and 6.2% respectively. In contrast, the rates of admission for mental health ACSC conditions increased 0.1% on average with a range of 1.0 to 5.9% in the models of care provided in FN communities. The rates of hospital admission for ACSC mental health conditions varied across PC service delivery models while nursing station rates increased dramatically from 9.36(95%CL 6.62-13.23) to 28.39 (95%CL 18.30-44.03).

Conclusion: Our results provide insight into the lack of homogeneity of ACSC as a single construct in Manitoba FN. These findings should be confirmed in other populations however in the interim we recommend caution in the use of ACSC as a composite indicator of PC effectiveness.

Authors: Alan Katz, ; Josée Gabrielle Lavoie, Ongomiizwin Research; Grace Kyoon-Achan, University of Manitoba; Stephanie Sinclair , First Nation Health and Social Secretariat of Manitoba ; Wanda Phillips-Beck, First Nations Health and Social Secretariat of Manitoba
A1.3
Expanding the space for equity-oriented primary healthcare: Policy requirements
Presented By: Josée Gabrielle Lavoie, Professor/Director, Ongomiizwin Research

Methods: Mixed Methods

Objectives: The purpose of this paper is to provide an analysis of the factors that shape how non-government (NGO) not-for-profit community health centres (CHCs) are able to carry out an equity mandate and, from this, identify what is required at the level of policy.

Approach: For the analysis presented in this paper, we developed a socio-historical narrative regarding each clinic, including its position within the wider healthcare system. Second, we reviewed the minutes of Board meetings along with funding contracts for each clinic for a 5-year study period (2011-2016) to construct a profile of each clinic’s contractual environment, to identify internal and external pressures (e.g. staffing issues, new policies). Third, we conducted in-depth interviews with clinic leaders (administrative and clinical leads, board members, n=7) specifically focused on the policy/funding context and its impact on the clinic. These interviews were audio recorded and transcribed verbatim.

Results: Our findings show that CHCs are 1. sentinels of equity: their commitment to meeting the needs of the community makes them more likely to become aware of inequities, or emerging vulnerable populations, and crises. 2. CHCs are better equipped to develop care responses that fit with the needs and context of local populations, partly due to their agility and community connection, which can result in community-driven or informed innovations. 3. CHCs are (or should be) able to advocate to the larger healthcare system to ensure that emerging needs are recognized. 4. CHCs are equipped to educate the healthcare system on system-wide responses to new needs. Our data also shows that this last role is largely missing. Other roles remain under-operationalized.

Conclusion: The CHC sector has been shown effective at addressing inequities through innovation. They are an integral part of health systems design, and require a policy enabling environment to achieve their equity potential. We conclude with a series of recommendations.

Authors: Josée Gabrielle Lavoie, Ongomiizwin Research; Colleen Varcoe, UBC School of Nursing; Marilyn Ford-Gilboe, Western University; Nadine Wathen, University of Western Ontario; Annette Browne, UBC School of Nursing

A1.4
Socioeconomic inequalities in the prevalence of psychological distress and suicidal behaviors among Indigenous peoples living off-reserve in Canada
Presented By: Mohammad Hajizadeh, Assistant Professor, Dalhousie University

Methods: Statistics/ Econometrics

Objectives: Indigenous peoples in Canada have the highest rates of psychological distress and suicide. Despite extant literature examining factors associated with psychological distress and suicidal behaviors among Indigenous peoples, income-related inequality in psychological distress and suicidal behaviors and factors that explain it among Indigenous peoples living off-reserve has not been assessed.

Approach: Using nationally representative Aboriginal Peoples Survey (APS 2012, n=28,000), we measured income-related inequalities in the prevalence of psychological distress and suicidal behaviors among Indigenous adults (18+) living off-reserve in Canada. The relative and absolute concentration indices (RC and AC) were computed to measure income-related inequalities in distress and suicidal behaviors (suicidal ideation and suicide attempts) for men and women, within the three main Indigenous groups (First Nations, Métis, and Inuit), and in different geographic regions. We also decomposed the RC and AC to identify factors explaining income-related inequalities in distress and suicidal behaviors among Indigenous peoples living off-reserve.

Results: The prevalence rates of mild or more serious distress (Kessler Psychological Distress Scale [K10] scores > 20) and lifetime suicidal ideation and suicide attempts were 6%, 19% and 2%, respectively, among Indigenous peoples in Canada. Women reported higher rates of distress, suicidal ideation and suicide attempts than men. The RC and AC suggested that mild or more serious distress and suicidal behaviors were concentrated among the poor. The extent of income-related inequalities in depression and suicidal behaviors were higher within Métis and Indigenous peoples living in Alberta and British Columbia. Decomposition analyses indicated that income, educational attainment and occupational status, were the most important factors contributing to the concentration of distress and suicidal behaviours among Indigenous peoples with low-income levels.

Conclusion: Policies designed to address various forms of social inequality such as income and education may help reduce psychological distress and suicidal behaviors among Indigenous peoples in Canada. Understanding potentially differing needs across Indigenous groups and geographic regions is a key for targeted interventions.

Authors: Mohammad Hajizadeh, Dalhousie University; Amy Bombay, Dalhousie University; Yukiko Asada, Dalhousie University
A2.1
Health care and social service use by individuals with mental health diagnoses at the transition from pediatric to adult care

Presented By: Dan Chateau, Assistant Professor, Manitoba Centre for Health Policy, University of Manitoba

Methods: Data Mining/Big Data Analytics

Objectives: Many services provided by, or funded by, government agencies specifically target pediatric populations (<18). Access to these services is typically cut off once a person is considered an adult. This study will examine change in care associated with the transition from pediatric to adult care for mental health conditions.

Approach: Using the Manitoba Population Research Data Repository housed at MCHP, we identified individuals receiving mental health services at their 18th birthday through medical services records, hospital discharge abstracts, or receipt of services at the Manitoba Adolescent Treatment Centre. Physician visits, specialist visits, hospitalizations, prescription drug use, income assistance, social housing, and involvement with the criminal justice system were examined in the two years before and two years after the transition and compared to individuals without a mental health diagnosis. Mortality after the transition was also measured. In addition we also examined the cause of visits and hospitalizations.

Results: 13,518 individuals were identified in our mental health cohort, totaling 14693 person years at risk prior to the transition and 14202 person years at risk after the transition. Overall physician visit rates were higher for those with a diagnosis (3.73 vs 1.75/person-year), but did not change in the post transition period (3.77). Access to psychiatrists, however, declined significantly (83.9/100PY to 46.8). Importantly, psychotropic drug dispensations saw only a modest decrease in opioid use was observed.

Conclusion: The transition from pediatric to adult care can have a significant impact on health care service use and provision. This study assessed this at a population level and while overall levels of physician visits remained stable, a reduction in specialist care and increase in opioid use was observed.

Authors: Dan Chateau, Manitoba Centre for Health Policy, University of Manitoba; Heather Prior, Manitoba Centre for Health Policy; Dale Stevenson, Manitoba Centre for Health Policy, University of Manitoba; Laurence Katz, University of Manitoba; Nie Yao, Manitoba Centre for Health Policy, University of Manitoba

A2.2
Unwarranted variation in psychiatric care intensity

Presented By: David Rudoler, Project Scientist, Centre for Addiction and Mental Health

Methods: Statistics/Econometrics

Objectives: We explore variation in the supply of community-based psychiatric care, including the practice styles of psychiatrists, the factors associated with variation in supply, and implications of this variation for access to mental health and addiction services.

Approach: We used health administrative data from the Institute for Clinical Evaluative Sciences to capture annual observations (n = 7,420) on all practicing full-time psychiatrists in Ontario, Canada between 2009/10 to 2013/14. Our analysis comprised a two-stage approach. In the first stage, we use a mixture modelling (latent-profile analysis) to identify unique psychiatrist practice styles and describe outpatient psychiatrist practices. In the second stage, we use a fractional response multinomial logit to estimate the relationship between practice style and psychiatrist practice characteristics.

Results: We identified four distinct practice styles. The highest intensity practice style (representing 21 percent of psychiatrists) provided care to an average of 84 patients per year (compared to 387 in the lowest-intensity practice style) and saw them for an average of 23 outpatient visits per year (compared to four visits in the lowest-intensity practice style). This variation occurred both across and within regions, but high-intensity practices were more heavily concentrated in urban regions. Psychiatrists with high-intensity practice styles were also less likely to see patients with previous psychiatric hospitalizations.

Conclusion: This study finds evidence for variation in the supply of community-based psychiatric care, and inefficiency and inequity of the current distribution of these resources. Interventions such as payment reform, performance reporting and feedback, and shared care may reduce unwarranted variation and improve access for persons with severe mental illness.

Authors: David Rudoler, Centre for Addiction and Mental Health; Claire de Oliveira, CAMH; Maria Eberg, Institute for Clinical Evaluative Sciences; Juveria Zaheer, Centre for Addiction and Mental Health; Paul Kurdyak, CAMH
A2.3
Potential economic impact of a peer navigator program in an emergency department in Ontario
Presented By: Hailey Saunders, Health Economist, Centre for Excellence in Economic Analysis Research

Methods: Economic Analysis or Evaluation

Objectives: The emergency department (ED) can be an overwhelming experience, particularly for those with mental health and/or addictions (MHA) issues. The support of a peer navigator can aid in the navigation of services and recovery. This study aimed to conduct an economic analysis of a peer navigator program (PNP) in Ontario.

Approach: A cost-consequence analysis was conducted from the perspective of a public healthcare payer over an 8-month period (December 2016 to July 2017) using data collected by the PNP and the National Ambulatory Care Reporting System. The intervention group included patients who received support from the peer navigator when they visited an ED. A control group was constructed using historical hospital data from December 2012 to July 2013 when no PNP existed. The groups were compared on 7-day and 30-day repeat ED visit with potential confounders (e.g., age, sex) controlled for. Differences in outcomes and costs between groups were reported separately.

Results: Overall, there were 309 clients in the intervention group, and 1,047 in the control group. The mean age of the groups were 39 (±17) and 42 (±20) for the intervention and control groups, respectively. Approximately 50% of patients were female. Descriptively, 10% of the intervention group visited the ED again within 7 days, whereas 7% of the control group visited the ED again within 7 days. For 30-day repeat ED, 21% of the intervention group and 16% of the control group returned to the ED. The adjusted logistic regression showed no significant differences between groups in both 7-day and 30-day repeat ED visit. The annual cost of the PNP was $63,849, which included 1 full-time peer navigator and 0.25 full-time equivalent program coordinator.

Conclusion: This analysis reported differences in outcomes and costs separately, providing flexibility to decision-makers to make their own value judgment on outcomes while recognizing the limitations in the data. Compared to the control (no program group), the peer navigator program cost approximately $64,000 more, and reported similar repeat ED visits.

Authors: Hailey Saunders, Centre for Excellence in Economic Analysis Research; Wanrudee Isaranuwatchai, Centre for Excellence in Economic Analysis Research; Jeffrey Hoch, UC Davis; Samuel Law, St. Michael’s Hospital; Jorge Telchi Soliz, Centre for Excellence in Economic Analysis Research; Desmond Loong, Centre for Excellence in Economic Analysis Research; Deena n/a, Centre for Excellence in Economic Analysis Research

A2.4
Conducting Fidelity to Standards Assessment: implications for program decision-makers
Presented By: Chiachen Cheng, Assistant Professor; Child & Adolescent, Youth Psychiatrist, Northern Ontario School of Medicine, Centre for Applied Health Research - St. Joseph’s Care Group

Methods: Program or Policy Evaluation

Objectives: Early Psychosis Intervention (EPI) is an evidence-informed model of care. In 2011, Ontario Government released Standards for EPI programs. EPION (Early Psychosis Intervention Ontario Network) piloted an initiative to measure fidelity (adherence to Standards) in programs. This presentation will discuss the outcomes implications for EPI program decision-makers.

Approach: The pilot initiative involved 9 EPI program sites. The in-person fidelity assessments were conducted over two days by a pair of assessors (an EPI clinician and implementation specialist). The fidelity assessments were conducted using the evidence-based 31-item First-Episode Psychosis Services Fidelity Scale (FEPS-FS). Consensus was used to determine ratings on a scale between one to five. Data sources for the assessment included client and family feedback, chart review, team discussion, program policy review and staff interviews. Reports included the final ratings and suggestions for quality improvement per item. This presentation will focus on the implications for EPI programs.

Results: The aggregate fidelity assessment results included areas of higher/lower fidelity across the sites, patterns according to program type (e.g., large number of staff versus small number of staff) and common challenges. Generally, sites had higher fidelity in multi-disciplinary approach to case management and medication treatment. Lower fidelity areas were in manualized care processes, formalized and consistently delivered evidence-based therapies (e.g., cognitive behavioural therapy), and specific policies that are documented for systematic service delivery. Smaller programs had more challenges delivering the full complement of EPI model, especially in areas that required more resources. There was also variability in the degree of outreach into community across sites. Few programs have dedicated resources to implement program evaluation or assessment of fidelity to EPI Standards.

Conclusion: While this study was a pilot initiative involving only 9 out of 50 EPI programs in the province, we learned about how the sector can be supported to make service improvements to achieve Standards. We will discuss the lessons about quality improvement and quality assurance in mental health service delivery.

Authors: Chiachen Cheng, Northern Ontario School of Medicine, Centre for Applied Health Research - St. Joseph’s Care Group; Gordon Langill, CMHA Haliburton Kawartha Pine Ridge; Avra Selick, Centre for Addiction and Mental Health; Donald Addington, University of Calgary; Janet Durbin, Centre for Addiction and Mental Health
A3.1
Effect of continuity of care on the risk of developing multimorbidity in Ontario, Canada between 2001 - 2015: A retrospective cohort study
Presented By: Edward Chau, Master’s Candidate, Institute of Health Policy, Management, and Evaluation

Methods: Statistics/ Econometrics

Objectives: Continuity of care has emerged as a potentially modifiable determinant of the health of patients with multimorbidity, but its association with the onset of chronic conditions is not well understood. The objective of this study was to investigate whether relationship continuity of care affects the risk of developing multimorbidity.

Approach: We assembled a cohort of 166,665 patients aged 18 – 105 years with at least one chronic condition in Ontario, Canada using health administrative databases. Continuity of care was specified as the time-dependent exposure. We calculated continuity with the Bice-Boxerman Index, which included all physicians encountered in inpatient and outpatient (office, home care, long-term care, and emergency department) settings. Patients were followed between 2001 – 2015 for the occurrence of a second, third, and fourth chronic condition. We estimated the risk that patients developed each consecutive chronic condition using a cause-specific hazards regression modelling approach.

Results: Approximately 53% of patients were aged less than 45 years and 52% of the cohort were females. The median follow-up time in days until the occurrence of a second chronic condition was 1738 (IQR: 560, 4353). Estimates revealed that patients with one condition and high continuity had an 8% lower risk of multimorbidity (cause-specific hazard ratio: 0.92; 95% CI: 0.90,0.93) after adjusting for age, sex, income, place of residence, primary care enrolment, and the annual number of physician visits. Among patients with two conditions, individuals with high continuity had a reduced risk of developing a third condition (0.90; 0.88,0.91). Patients with three conditions and high continuity had a reduced risk of developing a fourth condition (0.89; 0.87,0.91).

Conclusion: These findings suggest that continuity of care protects patients from accumulating chronic conditions over time. This represents an encouraging healthcare strategy to consider as a means of mitigating the burden of multimorbidity. Future studies should seek to explain the mechanisms through which continuity prevent chronic conditions from occurring.

Authors: Edward Chau, Institute of Health Policy, Management, and Evaluation; Walter Wodchis, University of Toronto; Luke Mondor, ICES; Laura Rosella, Dalla Lana School of Public Health, University of Toronto

A3.2
Accumulating multimorbidity: the role of depression, socioeconomic status, and other factors
Presented By: Allanah Li, Master’s Student, Institute for Health Policy, Management, and Evaluation, University of Toronto

Methods: Statistics/ Econometrics

Objectives: Multimorbidity is a significant challenge facing patients, clinicians, and the healthcare system. This study seeks to determine whether depression is associated with incident multimorbidity. Furthermore, it will explore whether and how this relationship is modified by socioeconomic status (SES) and other factors (e.g. behavioural factors, access to health care).

Approach: This is a longitudinal retrospective cohort study. The cohorts are derived by linking Ontario respondents to the Canadian Community Health Survey Cycles 1.1 and 2.1 and National Population Health Survey 1996/97 to health administrative databases. Survey data is used to identify depression and additional covariates including demographics, SES, and behavioural factors. The cohorts are followed through ten years of administrative data for the development of incident physical illnesses (from a specified list of 15 chronic conditions). Multinomial logistic regression and a Cox proportional hazards model will be used to examine the development of incident illness, multimorbidity, and mortality.

Results: Data analysis is occurring in early 2018 and will be complete by the time of conference presentation. The results of the first analysis will help clarify whether depression is an independent risk factor for the development of multimorbidity in an otherwise healthy cohort over a 10-year follow up period. The second analysis will further explore to what extent the relationship between depression and multimorbidity is modified by other factors. For example, it will clarify whether among individuals with depression, do those with lower SES accumulate multimorbidity earlier/faster/to a greater extent than those with higher SES.

Conclusion: Pending results. It is anticipated that this work will contribute to our understanding of risk factors and determinants of multimorbidity, particularly for people with depression. This in turn can help identify those at risk of developing multimorbidity and clarify potential areas for intervention to improve outcomes.

Authors: Allanah Li, Institute for Health Policy, Management, and Evaluation, University of Toronto; Walter Wodchis, University of Toronto; Laura Rosella, Dalla Lana School of Public Health, University of Toronto; Paul Kurdyak, CAMH
A3.3
"It’s a fight to get anything you need” — Accessing care in the community from the perspectives of people with multimorbidity
Presented By: Julia Ho, Student, University of Toronto

Methods: Qualitative Research Methods

Objectives: There is a growing interest in redesigning health-care systems to better manage the increasing numbers of people with multimorbidity. The purpose of this study was to understand the challenges patients with multimorbidity face in accessing care in the community, and the implications for patients and their families.

Approach: A secondary analysis of qualitative data was conducted on semi-structured interviews with 116 patients who were receiving care in an urban rehabilitation facility in 2011. Exploratory interpretive analysis was used to identify themes about access to care.

Results: Challenges occurred at two levels: at the health system level and at the individual (patient) level. Issues at the health system level fell into two broad categories: availability of services (failing to qualify, coping with wait times, struggling with scarcity and negotiating the location of care) and service delivery (unreliable care, unmet needs, incongruent care and inflexible care). Challenges at the patient level fell into the themes of logistics of accessing care and financial strain. Patients interacted and responded to these challenges by: managing the system, making personal sacrifices, substituting with informal care, and resigning to system constraints.

Conclusion: Identifying the barriers patients encounter and the lengths they go to in order to access care highlights areas where policy initiatives can focus to develop appropriate and supportive services that are more person and family-centred.

Authors: Julia Ho, University of Toronto; Kerry Kuluski, Sinai Health System; Jennifer Im, University of Toronto

A3.4
Effectiveness and Safety of Oral Anticoagulants for Seniors Following Hospital Discharge
Presented By: Harsukh Benipal, Student, McMaster University

Methods: Statistics/ Econometrics

Objectives: The peri-hospitalization period is recognized as high risk for patients, including those on chronic medication therapy. Over 7 million oral anticoagulant (OAC) prescriptions are dispensed in Canada yearly. We sought to measure the rate of hemorrhage and thrombotic events in senior OAC users in the year following hospital discharge.

Approach: We conducted a retrospective cohort study among Ontario residents, aged 66 years and older, who initiated or resumed OAC therapy post-discharge from an inpatient hospitalization between September 2010 and March 2015. Encoded patient data were linked, including prescription drug claims, vital status, demographics, and hospitalizations. We calculated hemorrhage and thrombosis hospitalization rates per 100 person-years overall and stratified into the first 30 days post-discharge period and the remainder of the 1-year follow-up. Hemorrhagic events included intracranial, upper and lower gastrointestinal, and other major bleeds. Thrombotic events included ischemic stroke, myocardial infarction, systemic embolism, venous thromboembolism, and coronary procedures.

Results: 119,598 patients were included in the study, median age 78 years, 55.5% female, 26.3% with Charlson comorbidity score > 2. The overall rates of haemorrhage and thrombosis were 18.6 (95% confidence interval [CI] 18.1-19.0) and 18.1 (95% CI 17.6-18.5) per 100 person-years, respectively. Risk for both hemorrhagic and thrombotic events were significantly lower in females than males, with p-value < 0.0001 for each outcome. The rate of hemorrhage was highest during the first 30-days post discharge (26.5 [95% CI 25.5-27.6]), falling to 15.9 (95% CI 15.4-16.4) per 100 person-years during the remaining 1-year follow-up. Likewise, the risk of thrombosis per 100 person-years was highest during the first 30-days post-discharge: 33.6 [95% CI 32.4-34.7] versus 12.9 (95% CI 12.4-13.3) during the remaining 1-year follow-up.

Conclusion: In this large cohort of older adults receiving OAC therapy, rates of hemorrhage and thrombosis were high during the year following hospital discharge, and were particularly elevated during the first 30 days. Interventions to improve anticoagulant safety in the early post-discharge period seem warranted.

Authors: Harsukh Benipal, McMaster University; Anne Holbrook, McMaster University; Michael Paterson, Institute for Clinical Evaluative Sciences (ICES); Diana Martins, Institute for Clinical Evaluative Sciences; Tara Gomes, St. Michael's Hospital; Simon Greaves, Institute for Clinical Evaluative Sciences
**A4.1**

Implementation and evaluation of NaviCare/SoinsNavi: A navigation centre aimed at improving access to care for children with complex health conditions

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

Methods: Qualitative Research Methods

Objectives: NaviCare/SoinsNavi is a patient navigation centre in New Brunswick for children with complex health conditions. The objectives of this presentation are to: 1) present an overview of patient navigation as an effective way to facilitate more convenient and integrated care, and 2) present early findings from the implementation of NaviCare/SoinsNavi.

Approach: A qualitative descriptive design was used to explore parents' experiences and satisfaction with NaviCare/SoinsNavi. Twenty participants were identified from the families who have received services from NaviCare/SoinsNavi using a purposeful sampling technique. Data was collected using semi-structured interviews, which were conducted either face-to-face or over the phone. Additional demographic information was collected to provide context. The data was analyzed using inductive thematic analysis, which is a research method for identifying, analyzing, and reporting themes within the data (Braun & Clarke, 2006).

Results: Although children served by the centre vary by condition, age, and gender, the profile of the typical child is as follows: male, between the ages of 6 and 11, diagnosed with autism spectrum disorder (ASD) or Attention Deficit Hyperactivity Disorder (ADHD). Most common reasons for calling the centre include respite care, after school care, camps, and service referrals. The qualitative findings demonstrate that families have substantial needs reflecting service gaps and barriers in care delivery across the province. Overall, families were extremely satisfied with the centre. Emerging themes include a relief to find someone who would listen to them, reduced feelings of stress, improved care coordination, and increased knowledge of programs/services.

Conclusion: This study demonstrates that patient navigation programs are an innovative service delivery approach to improve the integration of care for individuals with complex conditions. 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.

Authors: Shelley Doucet, University of New Brunswick; Alison Luke, University of New Brunswick; Rima Azar, Mount Allison University; Jennifer Splane, NaviCare/SoinsNavi

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**A4.2**

Evaluating the Edmonton Zone Triple Aim Initiative: building and implementing a shared measurement system for healthcare improvement with complex, vulnerable clients.

Presented By: Jacob Van Nest, Evaluation and Improvement Consultant, Alberta Health Services

Methods: Economic Analysis or Evaluation

Objectives: The Edmonton Zone Triple Aim Initiative supports Complex High Needs Patients in Edmonton’s Eastwood Area. The aims of the initiative are to improve population health, enhance experience of care, and reduce per capita costs. The objective of the outcome evaluation was to determine whether participating organizations had met these aims.

Approach: Participants in the Triple Aim Initiative include over 40 providers and 445 patients identified by seven different community Teams. The Evaluation Team used Triangulation Theory in an effort to validate the data for all Teams. Data collection for quantitative and qualitative measures come from a variety of sources including accessing administrative data, as well as conducting patient and provider surveys, interviews, and focus groups. Analysis of system level data, such as emergency department visits, inpatient stays, and physician continuity includes descriptive and statistical modeling approaches in a pretest-posttest study design.

Results: The outcome evaluation demonstrates that participating Teams improved care for their patients. There were significant improvements in experience of care metrics for patients across all Teams, demonstrating progress toward the aim of enhancing patients’ experience of care. Additionally, all teams performed significantly better in experience of providing care metrics than a comparison group, achieving an added fourth aim that was set for the initiative. Some Teams demonstrated a reduction in acute care utilization and cost, as well as higher continuity of care with a family physician. There is evidence that suggests Teams who scored higher on elements of the Managing Complex Change model (vision, skills, incentives, adequate resources, and action plan) were more likely to achieve better patient health outcomes in the evaluation.

Conclusion: Lessons learned from this evaluation are critical for the initiative moving forward and for those working with similar populations. Our experience with the Triple Aim Initiative will help build support for the development and implementation of a shared measurement system as we continue to foster our collaborative healthcare improvement partnerships.

Authors: Jacob Van Nest, Alberta Health Services; Eric VanSpronsen, Alberta Health Services; Christine Vandenbergh, AHS; Melanie Hennig, Alberta Health Services; Lana Socha, Alberta Health Services; SungHyung Kang, Alberta Health Services; Xiaoming Wang, Alberta Health Services; Lorraine Telford, Alberta Health Services; Dorah Conteh, Alberta Health Services
A4.3
Using case management functions to connect patients and their family caregivers nearing end of life with informal and formal community-based services/supports; A realist review.
Presented By: Grace Warner, Associate Professor, Dalhousie University

Methods: Mixed Methods

Objectives: The objective of this realist review was to partner with family caregivers and health-system knowledge users to synthesize the literature on how case management can connect patients and their family caregivers nearing end-of-life to critical informal and formal community-based services/supports to improve the delivery of community-based palliative care.

Approach: The RAMESES protocol for conducting realist reviews was followed. Librarian assisted systematic searches of the research literature and iterative consultations with knowledge user partners occurred in two jurisdictions. Three reviewers screened the articles, and a Delphi process was used to determine relevant outcomes. The literature is being organized into preliminary theories to describe how particular contexts catalyze the use of case management mechanisms in community-based palliative care to generate improved patient, family caregiver and health-system outcomes. These context-mechanism-outcome configurations will be used to construct a theoretical framework of how case management functions improve community based palliative care in different contexts.

Results: The team screened 2389 articles, extracting data from 161. Articles were categorized by relevancy and by key outcomes identified during the Delphi process with key stakeholders (health system representatives, family members, clinicians). Outcomes were to improve: engagement of family/patients, case-management functions within teams, policy frameworks to support integration, and a palliative approach to care. Most included literature was describing mechanisms such as case-management functions or palliative approaches to care. There was a dearth of literature identifying what informal community services/supports are deemed critical to help patients remain in the community at end-of-life, or how to involve patients/families in their plan of care. Preliminary ideas on services/supports are being identified through research exploring patients/families’ needs and the public health approach to palliative care could improve context.

Conclusion: The literature suggests community-based palliative care is still adopting a more health services delivery model and the adoption of a more inclusive model that integrates health and community services/supports through case management functions is still in its infancy. Recommendations will focus on mechanisms that help catalyze innovative community-based palliative care.

Authors: Grace Warner, Dalhousie University; Lisa Garland Baird, University of Alberta; Kothai Kumanan, Primary Health Care, Nova Scotia Health Authority; Robin Urguhart, Dalhousie University; Beverley Lawson, Dalhousie Family Medicine; Tara Sampalli, Nova Scotia Health Authority; Cheryl Tschuruk, Nova Scotia Health Authority; Lori Weeks, Dalhousie University; Frederick Burge, Dalhousie Family Medicine; Erin Christian, Nova Scotia Health Authority; George Kephart, Community Health and Epidemiology, Dalhousie University; Ruth Martin-Misener, Dalhousie University; Tanya Packer, School of Occupational Therapy, Dalhousie University; William Montelpare, University of Prince Edward Island

A4.4
Content Validation of a Practice Guide for Organizational Participatory Research
Presented By: Paula Bush, Academic associate, McGill University

Methods: Survey Research Methods

Objectives: Conducting Organizational Participatory Research (OPR) can be a feasible means to develop and implement practice or policy changes in health organizations such as hospitals. But, researchers and organization stakeholders can be at a loss regarding how to conduct OPR. We sought to develop and content validate an OPR practice guide.

Approach: Based on a systematic review of OPR processes and outcomes, we developed a practice guide of recommendations, and then improved it with a group of OPR experts (patients, managers, clinicians, researchers). We invited authors of the studies in the review to participate in a two-round e-Delphi. We sought consensus on the clarity, relevance, and representativeness of the recommendations, as well as the introductory text, the overall format. Respondents were asked to provide ratings on a Likert scale of 1-9 (not at all clear/relevant to extremely clear/relevant) and to suggest modifications, deletions or additions. An average response of 7/9 indicated consensus.

Results: Seventeen OPR researchers from 7 countries rated 39 recommendations, most with explanatory text. Round-one results indicated consensus for the relevance of 35 recommendations and for the clarity of 31. However, respondents provided over 1100 words of general comments for improving the guide, and 127 ± 71 words per recommendation. Based on comments and ratings, 12 recommendations were combined into 7 new ones and 5 were removed. The explanatory text of all recommendations was revised. Round-one results and the revised practice guide were submitted to respondents for round-two. Eleven responded and reached consensuses for the relevance of all 27 recommendations. Regarding clarity, consensus was reached for 24 recommendations. These 3 recommendations were revised based on respondents’ comments and submitted to three internal experts for feedback.

Conclusion: An international group of OPR experts agree that the 27 recommendations in this OPR practice guide are clear, relevant, and represent the necessary guidance for OPR stakeholders. This guide will help researchers, clinicians, managers and patients to mitigate the challenges of OPR and achieve their practice or policy change goals.

Authors: Paula Bush, McGill University; Marie-Claude Tremblay, Université Laval
A5.1
Healthcare Costs and Mortality Among Incident Senior High Cost Healthcare Users (HCU) in Ontario: Regional Variation and Care Efficiency
Presented By: Sergei Muratov, Doctoral student, McMaster University

Methods: Data Mining/Big Data Analytics

Objectives: To describe the regional variation in health care costs and outcomes and identify regions with efficient care across Ontario’s Local Health Integration Networks (LHIN) among senior incident HCU and non-HCU.

Approach: Retrospective population-based matched cohort study of incident senior HCUs defined as Ontarians age ≥ 66 years in the top 5% most costly healthcare users in FY2013. HCUs were matched to non-HCUs (1:3) based on age, sex and LHIN. Primary outcomes were LHIN-based variation in total costs (composed of 12 cost components) and mortality during FY2013 measured by a coefficient of variation (CV, %). Outcomes were adjusted for age, sex, Aggregated Diagnosis Groups, and low-income status. Two-part regression models were used to account for zero values. To indicate care efficiency, total health expenditures for each LHIN were plotted against mortality.

Results: We studied 703,388 subjects (incident HCU=175,847, non-HCU=527,541). Unadjusted CV for total costs was low: 3.4% (HCU) and 5.5% (non-HCU). Greater variation was observed for specific cost components, with unadjusted CV highest for complex continuing care at 45.1% among HCUs and 241.5% for rehabilitation costs among non-HCUs. Unadjusted CV for mortality was 6.8% for HCUs and 20.6% for non-HCUs. Upon adjustment, CV decreased for all cost components and mortality in both cohorts. Remaining post-adjustment variation was however greater among non-HCUs: for costs, adjusted CV was the highest for long-term care at 7%; for mortality, adjusted CV was at 6.3%.

Central West LHIN demonstrated the highest care efficiency in both cohorts. Efficiency of care in Toronto Central (HCU) and Central (non-HCU) LHINs was among the lowest.

Conclusion: Risk adjustment is important when examining regional variation in health care costs and outcomes. Lower regional variation amongst senior HCUs in Ontario suggests more equitable care compared to non-HCUs. LHINs with lower efficiency of care deserve more study with respect to local care practices and supply factors.

Authors: Sergei Muratov, McMaster University; Justin Lee, McMaster University; Anne Holbrook, McMaster University; Andrew Costa, McMaster University; Michael Paterson, Institute for Clinical Evaluative Sciences (ICES); Jason Robert Guertin, Université Laval; Lawrence Mbuagbaw, McMaster University; Tara Gomes, St. Michael’s Hospital; Wayne Khuu, Institute for Clinical Evaluative Sciences (ICES); Priscila Pequeno, ICES Central; Jean-Eric Tarride, McMaster University

A5.2
Incident Senior High Cost Users in Ontario: Predictors of Urgent Index Hospitalizations
Presented By: Sergei Muratov, Doctoral student, McMaster University

Methods: Data Mining/Big Data Analytics

Objectives: To identify the diagnoses associated with the most costly urgent index hospitalizations (IH) among incident senior high-cost users (HCUs), and to identify health care and health system factors associated with them.

Approach: We conducted a retrospective, population-based cohort study using administrative healthcare records. Incident senior HCUs were defined as Ontarians age ≥66 years who were in the top 5% most costly healthcare users during fiscal year 2013 (FY2013) but not during fiscal year 2012 (FY2012). An IH was defined as the first hospital admission during FY2013 with no hospitalizations in preceding 12 months. IH costs (expressed in CAD2013) were calculated according to most responsible ICD-10 diagnosis codes (MRDx). The costliest diagnoses were defined as the top 25th percentile by costs. Multivariate logistic regression was used to identify independent predictors of urgent IHs.

Results: Of all incident HCUs (n=175,847), 76% had an IH in FY2013, with the total cost CAD1.64 billion. Urgent admissions accounted for 71% of IHs at a cost of CAD1.2 billion. The five costliest MRDx were: acute myocardial infarction (8%), fracture of femur (7%), cerebral infarction (4.5%), heart failure (3.5%), and chronic obstructive pulmonary disease (3.2%).

Across all 5 conditions, less outpatient care (such as physician and home care visits) in FY2012 was associated with higher odds of IHs (aORs range: 0.57-0.99). Most prominently, the odds were 28 to 43% lower in patients seen by a geriatrician. Patients with no primary care provider enrollment had higher odds of IHs (aORs range: 1.09-1.57). The odds were lower among residents of long-term care facilities (aORs range: 0.10-0.35).

Conclusion: A small number of diagnoses, each associated with chronic remediable risk factors, accounted for a large portion of inpatient costs associated with urgent IHs among senior HCUs. Receiving more outpatient care, enrollment with a primary care provider, and living at a long-term care facility had a protective effect.

Authors: Sergei Muratov, McMaster University; Justin Lee, McMaster University; Anne Holbrook, McMaster University; Andrew Costa, McMaster University; Michael Paterson, Institute for Clinical Evaluative Sciences (ICES); Jason Robert Guertin, Université Laval; Lawrence Mbuagbaw, McMaster University; Tara Gomes, St. Michael’s Hospital; Wayne Khuu, Institute for Clinical Evaluative Sciences (ICES); Priscila Pequeno, ICES Central; Jean-Eric Tarride, McMaster University
A5.3

The Concepts of Canadian Population Grouping Methodology and Its Application

Presented By: Yingjun (Victoria) Zhu, Senior Analyst, Canadian Institute for Health Information

Methods: Data Mining/Big Data Analytics

Objectives: CIHI’s Population Grouping Methodology uses data from multiple sectors to create clinical profiles and to predict the entire population’s current and future morbidity burden and healthcare utilization. This presentation illustrates how outputs from the grouper can be applied to healthcare decision making and planning processes.

Approach: The population grouping methodology starts with everyone who is eligible for healthcare, including those who haven’t interacted with the healthcare system and those with no health conditions, providing a true picture of the entire population. The grouper uses diagnosis information over a 2-year period to create health profiles and predict individuals’ future morbidity and expected use of select health care services. Predictive models were developed using age, sex, health conditions and the most influential health condition interactions as the predictors. These models produce predictive indicators for the concurrent period as well as one year into the future.

Results: The power of the model lies in the user’s ability to aggregate the data by population segments and compare healthcare resource utilization by different geographic regions, health sectors and health status.

The presentation will focus on how CIHI’s population grouping methodology helps client’s monitor population health and conduct disease surveillance. It assists clients with population segmentation, health profiling, predicting health care utilization patterns and explaining variation in health care resource use. It can be used for risk adjustment of populations for inter-jurisdictional analysis, for capacity planning and it can also be used as a component in funding models.

By comparing with other similar products in the world, CIHI’s population grouping methodology has been proved to have similar or better predictive power.

Conclusion: CIHI’s population grouping methodology is a useful tool for profiling and predicting healthcare burden and future system use, with key applications for health policy makers, planners and funders. The presentation will focus on how stakeholders can apply the outputs to aid in their decision making and planning processes.

Authors: Yingjun (Victoria) Zhu, Canadian Institute for Health Information; Rachel Zhang, Canadian Institute for Health Information

A5.4

Changes in Out-of-pocket Health Care Expenditures by Canadian Households from 2010 to 2014

Presented By: Heather Worthington, Research Coordinator, UBC Centre for Health Services and Policy Research

Methods: Survey Research Methods

Objectives: The Canadian health system relies on private financing for components of health care that fall outside the Canada Health Act. This includes a significant portion of prescription drugs, dental care, eye care, and private insurance premiums. We quantified recent changes in out-of-pocket health care spending by Canadian households.

Approach: Using data from 89,469 interview respondents to Statistics Canada’s annual Survey of Household Spending from 2010 to 2014, we calculated inflation-adjusted per-household out-of-pocket spending on health care [Is this the same number as last time?] services in Canada, and by province. Further, we estimated the percent of household income spent out-of-pocket on health care services. We performed these estimates both overall and stratified by different levels of after-tax income and household demographic characteristics. All of our estimates used survey weights and estimation methods provided by Statistics Canada.

Results: We found that Canadian households spent an average of $2,251 out-of-pocket per household on health care in 2014 – a 6% decrease over 2010. The highest average spending in the years studied was 2013 at $2,523 per household. Spending on dental services, eye-care, and non-prescribed medicines and equipment remained relatively consistent over the 5-year period. However, household spending on prescription drugs decreased by an average of $123 per household, or 23%. In contrast, spending on private health insurance premiums increased from an average of $446 per household in 2010 to $694 in 2014 – a 56% increase. We will also present concentration curves to describe household spending by different income levels.

Conclusion: Out-of-pocket health spending has remained relatively constant in recent years, however spending on different types of health care has changed. While prescription drug costs have decreased, private insurance payments have increased quite dramatically. This changing landscape of private health care expenditures should be acknowledged and its impact on Canadians considered.

Authors: Heather Worthington, UBC Centre for Health Services and Policy Research; Lucy Cheng, UBC Centre for Health Services and Policy Research; Michael Law, UBC
A6.1
Integrated Service Focused Health Workforce Planning at the Regional Level: Advice for the Toronto Central Local Health Integration Network Primary Care Strategy
Presented By: Sarah Simkin, Physician & Health Researcher, University of Ottawa

Methods: Mixed Methods

Objectives: The Toronto Central Local Health Integration Network (TC LHIN) has identified health workforce planning as essential to the implementation of their Primary Care Strategy. Accordingly, this project aimed to develop an evidence-informed, data-driven, fit-for-purpose, and integrated service focused health workforce planning model for primary care services in the TC LHIN.

Approach: Two complementary activities were undertaken to inform model development: a comprehensive review and assessment of existing health workforce planning models, and the identification of appropriate datasets on population health needs and health workforce availability. Models were first assessed based on their alignment with a list of guiding principles that outlined the core needs and key challenges faced by the TC LHIN, and the strength of evidence surrounding the models’ performance and acceptability. Models that were deemed methodologically appropriate for the TC LHIN were then assessed based on the availability of requisite data.

Results: A hybrid, integrated service-based model was developed, accounting for the scale, quality, and link-ability of available data, and combining elements from a number of existing models in order to embed key features that align with the TC LHIN’s configuration and objectives. The model provides the TC LHIN with the capacity to 1) project demand for multi-professional integrated primary care as a function of population need, 2) project alignment between service requirements and capacity at the neighbourhood, sub-region, and LHIN levels for short and long-term planning horizons, 3) engage primary care providers in the co-design of scenario analyses to assess the impact of policy interventions against an array of potential futures, and 4) conduct in-depth examinations of key challenges, including changing practice patterns, and population mobility.

Conclusion: This model is complemented by a framework to guide the institutionalization of ongoing and iterative health workforce planning processes within the TC LHIN. Such processes could enable the selection of policy interventions that are robust to uncertainty, and promote more stable alignment between service requirements and capacity.

Authors: Sarah Simkin, University of Ottawa; Caroline Chamberland; Gholamhosain Salehi Zalani, University of Ottawa; Ivy Bourgeault, University of Ottawa

A6.2
Can minimum nurse-to-patient ratios reduce patient mortality in acute care hospitals: A cohort study
Presented By: Christian Rochefort, Professor / Researcher, University of Sherbrooke

Methods: Statistics/ Econometrics

Objectives: In 2004, California became the first state to implement mandatory minimum nurse-to-patient ratios in hospitals. Since then, several other jurisdictions worldwide have implemented or are considering implementing such ratios. We examined whether failure to meet minimum nurse-to-patient ratios as set in California is associated with an increased risk of death.

Approach: A dynamic cohort of adult medical, surgical, and intensive care unit (ICU) patients admitted between 2010 and 2017 to a large university health network in Quebec was followed to examine the associations between patient cumulative exposure to work-shifts where nurse-to-patient ratios were below the minima set in California (i.e., 1:5 on medical/surgical wards, and 1:2 in the ICU) and the risk of mortality. The association between these ratios and the risk of death was assessed using a Cox regression model which adjusted for patient (e.g., age, sex, comorbidities), nursing unit (e.g., unit type) and other nurse staffing characteristics (e.g., experience).

Results: A total of 124,832 patients were followed, of which 4,975 died during their hospitalization. Patients who died where, on average, older, had more comorbidities, and a higher severity of illness on admission than those who survived. After adjusting for patient, nursing unit, and other nurse staffing characteristics, we found that each 3-additional work-shifts where the nurse-to-patient ratios on medical-surgical wards were less than 1:5 was associated with an increased risk of death of 1.5% (HR: 1.015, 95% CI 1.008-1.022). We also noted that very few work-shifts in the ICU were below the minimum ratio set in California (i.e., 1:2), and found that the cumulative number of shifts where the ICU nurse-to-patient ratios were below this threshold was not significantly associated with the risk of death.

Conclusion: Failure to meet the minimum nurse-to-patient ratio set in California for medical and surgical units increases the risk of death among patients admitted to these units. There is a pressing need for policies that will attract and retain greater number of nurses in hospitals to satisfy minimum staffing ratios.

Authors: Christian Rochefort, University of Sherbrooke
A6.3
Assessing Physician Retirement using Licensure Data: Are Policy Makers Overestimating the Size of the Physician Workforce
Presented By: Lindsay Hedden, Postdoctoral Research Fellow, Centre for Clinical Epidemiology and Evaluation
Methods: Data Mining/Big Data Analytics

Objectives: Policy makers rely on data from licensing bodies to identify when physicians leave practice (retire). We sought to examine the concordance between retirement defined using licensure data and billings (activity) at a variety of thresholds, and comment on the strengths, limitations, and policy implications of these approaches.

Approach: We used population-based, administrative data -- registries, billing records (all fee-for-service encounters and non fee-for-service payments) -- for all BC physicians age 50+ for 2005-12. We defined retirement using three approaches: status change from “active” to “retired/de-enrolled” in the BC College of Physicians and Surgeons registry; falling below and maintaining less than $10,000/$20,000 in annual billings; and a complete cessation of billing with no subsequent resumption. For each definition, we examined the number of retirement events and average age of retirement observed within the study period. We produced Phi-Coefficients to assess concordance between the retirement definitions.

Results: The study cohort included 4503 physicians who billed in at least one year (2005/6-2011/12). Concordance between activity- and licensure-based definitions of retirement was generally poor (Phi-coefficient=0.64). 1549 (34.4%) and 1413 (31.4%) physicians fell below and maintained less than $20,000 and $10,000 in billings respectively. While 1394 (29.7%) stopped billing entirely, only 832 (18.5%) surrendered their College licenses. The average age of retirement was almost 1.5 years later (66.9 vs. 65.5) according to licensure compared with billing data. Furthermore, we identified 970 (21.5%) and 727 (16.1%) physicians who ceased billing activity for more than six- and 12-months respectively while still holding full, active licenses. 30% of physicians who did surrender their full licenses moved to a temporary license before permanently de-enrolling.

Conclusion: Licensure-based definitions of retirement significantly underestimate the number of physicians no longer delivering care and suggest that physicians are retiring at an older average age than they really are. Thus, relying on these data to estimate the size of the active workforce may exacerbate downstream shortages in some specialties.

Authors: Lindsay Hedden, Centre for Clinical Epidemiology and Evaluation; Ruth Lavergne, Simon Fraser University; Kimberlyn McGrail, School of Population and Public Health, University of British Columbia; Centre for Health Services and Policy Research, University of British Columbia; Michael Law, UBC; Megan Ahuja, CHSPR; Morris Barer, School of Population and Public Health, University of British Columbia

A6.4
Why is the number of Nova Scotians unable to find a regular family physician rising?
Presented By: Adrian MacKenzie, Senior Health Policy Researcher, Maritime SPOR SUPPORT Unit
Methods: Mixed Methods

Objectives: The objectives of this study are to estimate changes in population size and age structure, population health, levels of family physician service provision, the number of family physicians, and family physician participation, activity, and productivity in Nova Scotia between 2006 and 2016.

Approach: This was a quantitative, population-based, hypothesis-generating study based on repeated cross-sectional descriptive analysis. Existing data on seven immediate determinants of family physician supply and requirements between July 1st 2006 and June 30th 2016 were compiled based on an established analytical framework for needs-based health workforce planning. Data sources included provincial administrative health care databases, national population health surveys, and national surveys of physicians. Perspectives from Nova Scotians unable to find a regular family physician, practicing family physicians, and decision-makers from provincial government and health authorities were elicited to inform the analysis and interpretation of data.

Results: Changes in each determinant of the analytical framework – including 1) population size and age structure, 2) population health status, 3) levels of family physician service provision, 4) family physician productivity, 5) the number of licensed family physicians, 6) family physician participation levels, and 7) family physician activity levels – between 2006 and 2016 are described. Distinctions between long-lasting, gradual trends and more recent, larger changes are emphasized. Inadequacies of existing data sources on several determinants of family physician supply and requirements – specifically population health status, levels of family physician service provision, and family physician activity – are discussed, along with their implications for health services and health workforce planning in the province.

Conclusion: The identified changes have direct implications for physician and primary health care planning in Nova Scotia, and emphasize the need to broaden this planning beyond single professions such as physicians. Improving health workforce and service planning in Nova Scotia will require multi-faceted interventions to address the identified data limitations.

Authors: Adrian MacKenzie, Maritime SPOR SUPPORT Unit; David Gass, Dalhousie University; Gail Tomblin Murphy, Dalhousie University; Adrian Levy, Dalhousie University; Melanie Audette, Dalhousie University; Frederick Burge, Dalhousie Family Medicine; Elizabeth Jeffers, Maritime SPOR SUPPORT Unit; Mike Joyce, ; Beverley Lawson, Dalhousie Family Medicine; Emily Gard Marshall, Dalhousie Family Medicine; Kathryn McIsaac, Nova Scotia Health Authority; Karen Pyra, Doctors Nova Scotia; Ashley Ryer, Primary Health Care, Nova Scotia Health Authority; Tara Sampalli, Nova Scotia Health Authority; David Stock, Maritime SPOR SUPPORT Unit; Patty Weld Viscount, Nova Scotia Health Authority
A7.1
Exploring drivers and variations in positive care experiences in Canadian hospitals
Presented By: Seanna McMartin, Project Lead, Canadian Institute for Health Information

Methods: Statistics/ Econometrics

Objectives: Capturing the patient perspective of his/her care experience during the hospital stay is important to inform the quality of health service delivery. The overarching goal of this work is to report comparative results from across Canada to inform quality improvement initiatives in health service delivery and support patient-centred care.

Approach: The Canadian Patient Experiences Survey – Inpatient Care (CPES-IC) is a standardized national survey that enables patients to provide feedback about the quality of care they received during their hospital stay. A retrospective analysis from over 50,000 surveys over a period of 2 years across 4 provinces (ON, NB, MB and AB) will be performed. Patient-reported experience measures (PREMs) will be summarized and weighted, where necessary, to account for differences in sample design. Polychoric correlations will be calculated to identify potential drivers of PREMs. Where possible, data will be linked with administrative data to examine possible relationships with clinical outcomes.

Results: Comparisons of PREMs by hospital peer group, region and province will be reported to highlight how care experiences vary across different patient characteristics. Comparative information is intended to help foster quality improvement and to facilitate sharing of best practices. Initial results have shown overall patient experience varies by demographic characteristics such as age, self-reported ethnicity, self-reported education level, and self-reported physical and mental health status. The identified drivers of overall care experiences will be explored. Early findings highlight variations across hospitals and regions on overall and composite measures and that key drivers of overall experience include measures related to internal coordination of care, emotional support, information about condition/treatment and communication with nurses. Results exploring possible relationships between PREMs and clinical outcomes will also be showcased.

Conclusion: This is the first analysis of results from the survey and will provide valuable insight into the drivers of positive care experiences and opportunities for improvement. The results will help inform the use of patient experience data to support patient-centered care and inform quality improvement initiatives.

Authors: Seanna McMartin, Canadian Institute for Health Information; Jeanie Lacroix, CIHI; Doreen MacNeil, CIHI

A7.2
Results from the Canadian Patient Experiences Survey of Inpatient Care (CPES-IC): A Descriptive Study from 93 Alberta Hospitals
Presented By: Kyle Kemp, PhD Student, University of Calgary

Methods: Survey Research Methods

Objectives: The Canadian Patient Experience Survey-Inpatient Care (CPES-IC) was approved for widespread use in 2014. Thus, a gold standard for measuring adult inpatient experience in Canadian hospitals now exists. The study objectives were to describe the feasibility of the CPES-IC and to provide preliminary results from its use in Alberta.

Approach: This retrospective study examined survey responses obtained over a 30 month period from 93 Alberta hospitals. Surveys were administered by telephone within six weeks of the patient’s discharge from hospital. A quota of 10 percent of eligible discharges from each hospital was set. The survey took approximately 12 to 15 minutes to complete and contained 56 questions touching on various aspects of care (e.g., communication with nurses, communication with doctors, pain control and medications, discharge information). Survey responses were classified as percent in “top-box”, where “top box” represented the most positive answer choice to each question.

Results: From April 2014 to September 2016, 52,809 surveys were completed. Respondents were predominantly female (63.6%), and had a mean age of 53.4±19.4 years. Overall, 60.9% of respondents rated their overall care as 9 or 10 out of 10 (best), and 71.8% stated that they would “definitely recommend” the hospital to friends and family members. Top performing questions related to nurses treating patients with courtesy and respect (83.7% responding “always”), doctors treating patients with courtesy and respect (82.8% “always”), and hospital staff asking patients if they had the help they needed once returning home (82.7% “yes”). Poor-performing areas included staff describing side effects of new medications (47.7% “always”), night quietness of the hospital environment (48.9% “always”), and staff being up-to-date about the patient’s care (58.4% “always”).

Conclusion: Our results provide patient-reported feedback about elements of care which are highly rated, and potential areas for improvement in Alberta hospitals. In collaboration with the Canadian Institute for Health Information, the data may be used for future pan-Canadian comparative and case-mix analyses to ensure valid comparisons between jurisdictions and hospitals.

Authors: Kyle Kemp, University of Calgary; Sadia Ahmed, University of Calgary; Hude Quan, University of Calgary; María José Santana, Cumming School of Medicine, university of Calgary
A7.3
Patient Engagement and Involvement of a Broader Range of Health Care Professionals Changes Clinical Guideline Decisions: A comparison of two Irritable Bowel Syndrome (IBS) clinical guidelines using the same data

Presented By: Paul Moayyedi, Gastroenterologist, McMaster University/Hamilton Health Sciences

Methods: Policy Case Study

Objectives: The objective is to determine whether a more diverse group of healthcare professionals and a patient representative in a consensus group resulted in significant differences between the IBS clinical practice guidelines developed by the Canadian Association of Gastroenterology (CAG) and the American College of Gastroenterology (ACG).

Approach: The ACG consensus group included academic gastroenterologists while the CAG consensus group also included family physicians, a psychiatrist, and psychologist. Furthermore, given the CAG’s partnership with the IMAGINE SPOR Network, it also included a patient representative who participated in all aspects of the guidelines development process. Both CAG and ACG used the GRADE system to evaluate the quality of evidence, had one methodologist in common, and were presented with the same data for interpretation. The guidelines from the two groups were matched by topic and then compared to determine any differences with the final recommendations.

Results: A comparison between the two sets of guidelines revealed many similarities but there were instances where the groups reached different treatment recommendations. In particular, the Canadian guidelines were broader in scope, including recommendations on diagnostic testing and alternative therapies. Both guidelines evaluated pharmacological interventions for IBS but again differences were found. The US guidelines gave a strong recommendation for lubiprostone whilst the Canadian guideline gave this drug a conditional recommendation. Furthermore, while the American guidelines suggested the use the non-absorbable antibiotic rifaximin for reduction in global IBS symptoms as well as bloating in non-constipated IBS patients, the Canadian consensus group chose not to make a recommendation (neither for nor against) offering diarrhea-predominant IBS patients one course of rifaximin therapy to improve symptoms.

Conclusion: Input from a more diverse group of healthcare professionals and the inclusion of the patient’s perspective may have been an explanation for the differing interpretations of the same data in an IBS guideline. Taking a wider perspective resulted in more cautious recommendations in some instances.

Authors: Paul Moayyedi, McMaster University/Hamilton Health Sciences; Aida Fernandes, IMAGINE SPOR Network; Paul Sinclair, Canadian Association of Gastroenterology; Christina Korownyk, University of Alberta; Stephen Vanner, Kingston General Hospital; Sasha Sidani, McMaster University; Christopher Andrews, University of Calgary; Adriana Lazarescu, University of Alberta; Louis Liu, University Health Network; Glenda MacQueen, University of Calgary; Lesley Graff, University of Manitoba; Brent Kvern, University of Manitoba; William Paterson, Hotel Dieu Hospital; Megan Marsiglio, IMAGINE Network

A7.4
Minimizing and misinterpreting: Young men, sexual health, and help-seeking behaviour

Presented By: Kirk Furlotte, Graduate Student, Dalhousie University

Methods: Survey Research Methods

Objectives: The purpose of this study was to understand perceptions and attitudes which influence help-seeking behaviour in relation to sexual health among young men (aged 18-25) in Halifax, Nova Scotia. The research sought to answer questions relating to the cohort’s perceived barriers and gain understanding of their motivation to seek treatment.

Approach: A quantitative approach was used to explore how young cisgender men define opinions and illuminate the divide between health knowledge and health behaviour. Over a period of four months, surveys were offered at a sexual health clinic; participants provided data on demographics, use of the clinic, health behaviour, and help-seeking (through a modified version of the Barriers to Help-Seeking Scale [BHSS]). The BHSS measures participant agreement to how specific scenarios affect decisions to seek medical help through Likert-scale responses. All surveys were completed anonymously. Data from surveys was then compiled for descriptive statistical analysis.

Results: Of the total responses received (n=16), half met the inclusion/exclusion criteria (n=8) with an average age of 21. Sexual identity was fairly diverse (heterosexual, n=4; gay, n=2; bisexual, n=2). Participant education levels were high (some university or college, n=7). Ethnic background was primarily Caucasian (n=6; Aboriginal/First Nations, n=1, African/Caribbean, n=1). Most indicated no preference when it came to healthcare provider gender, though some preferred female clinicians. Of the five factors the BHSS measures (need for control and self-reliance; minimizing problem and resignation; concrete barriers and distrust of caregivers; privacy; and emotional control), distrust of caregivers ranked lowest, indicating comfort with healthcare professionals. Minimizing problem and resignation had consistent affinity across participants’ responses indicating unsure or moderate agreement to these questions.

Conclusion: While most young men demonstrated trust in healthcare professionals, they minimized or misinterpreted concerns; strongly deterring help-seeking behaviour. The inability to recognize problems earlier puts them at unnecessary risk. Campaigns to help them develop efficacy recognizing health concerns, leading to timely and appropriate care, are crucial in encouraging help-seeking behaviour.

Authors: Kirk Furlotte, Dalhousie University; Jacqueline Gahagan, Dalhousie University
**A8.1**

**Learning from centralized waiting lists for patients without a primary care provider across seven Canadian provinces**

*Presented By:* Mylaine Breton, Assistant Professor, Université de Sherbrooke

**Methods:** Program or Policy Evaluation

**Objectives:** Seven Canadian provinces (BC, MB, NB, NS, ON, PEI, QC) have implemented centralized waiting lists (CWL) to increase attachment of patients to primary care providers. We compared the design and implementation of these CWLs to each other and to the scientific literature to foster cross-provincial learning.

**Approach:** We conducted a logic analysis of CWLs in each province. Logic analysis is a theory-based evaluation conducted in 3 steps – 1) build logic models describing each CWL (n=42 stakeholder interviews; grey literature); 2) develop a conceptual framework based on two realist reviews: one on waiting list management (n=21 articles) and one on financial incentives to increase attachment (n=9 articles, n=15 interviews); 3) compare the logic models to the conceptual framework during a face-to-face symposium with stakeholders from across Canada. All interviews were recorded, transcribed. We conducted thematic content analysis. Articles were reviewed for relevancy and synthesized.

**Results:** The design and implementation of centralized waiting lists varied considerably. For instance, four provinces had first-come-first serve waiting lists, while the other three prioritized attachment for complex patients. Challenges identified across all provinces included: fluctuations in supply of providers, finding providers for complex patients and building trust between the centralized waiting list and primary care providers. Steady funding for CWLs, using local primary care connectors to work with providers and implementing transition clinics to stabilize complex patients were identified as promising strategies. Our realist reviews allowed us to identify key considerations for the design and implementation of centralized waiting lists, namely regarding the centralized management of patients and the decision of whether to include financial incentives for providers to register new patients.

**Conclusion:** Conducting a logic analysis provided provinces with an opportunity to identify potential strategies to improve their CWLs, by learning from each. This study resulted in NS completing an assessment of how they would implement a CWL, BC discussing how to provincially fund this intervention and NB maintaining the program.

**Authors:** Mylaine Breton, Universite de Sherbrooke; Sabrina Wong, UBC; Sara Kreindler, University of Manitoba; Jalila Jbilou, Université de Moncton; Mélanie Ann Smithman, Université de Sherbrooke; Martin Sasseville, Centre de recherche - Hôpital Charles-Le Moyne; Emily Gard Marshall, Dalhousie Family Medicine; Jay Shaw, Women's College Hospital; Astrid Brouselle, University of Victoria; Damien Contandriopoulos, University of Victoria; Jason Sutherland, University of British Columbia; Valorie A. Crooks, Simon Fraser University; Michael Green, Queen's University

**A8.2**

**Measuring patient attachment in primary health care in the context of enrolment policies in Quebec and British Columbia, 2000-2016**

*Presented By:* Caroline King, PhD Candidate, McGill University

**Methods:** Program or Policy Evaluation

**Objectives:** Patients’ relationships with, and attachment to, primary health care providers can influence patient experience, continuity and quality of care, and health outcomes. Enrolment policies that formally link patients to providers are intended to improve attachment. We identify attachment measures relevant to different stakeholders that can be measured using administrative data.

**Approach:** This work is part of a larger multi-stakeholder SPOR policy analysis grant on primary care reform. We conceptualize patient enrolment and attachment as distinct notions where enrolment constitutes a policy-driven formalized commitment, and attachment reflects the duration and quality of the actual patient-physician relationship. To identify facets of patient attachment which could be modified by enrolment policies we: 1) conducted a scoping literature review to examine how attachment is defined and measured; and 2) held a meeting with stakeholders including provincial learning.

**Results:** Attachment can be measured with administrative data at both the patient level (e.g., percent of visits with given physician) and at the physician level (e.g., percent of physician’s patients screened). Stakeholders identified commitment, continuity, quality, accessibility, care management, and the length of the relationship as important dimensions of attachment. Patient partners prioritized patient-level measures of attachment and capturing who physicians choose to enrol, whereas decision makers highlighted physician-level “productivity” measures. We provide examples of how these measures can be operationalized using administrative data, including with algorithms that combine several indicators. The impact of enrolment policies on attachment should be represented by a change in attachment indicators. A patient’s ability to benefit from enrolment and/or attachment is likely a function of their health status or vulnerability.

**Conclusion:** We identified aspects of attachment that can be affected by enrolment policies, are established in the scientific literature, can be captured in administrative data, and were prioritized by stakeholders, including patients. These can be used to evaluate the impacts of provincial enrolment policies on attachment.

**Authors:** Caroline King, McGill University; Erin Strumpf, McGill University; Ruth Lavergne, Simon Fraser University; Julie Fiset-Laniel; Megan Ahuja, CHSPR; Kimberlyn McGrail, School of Population and Public Health, University of British Columbia; Centre for Health Services and Policy Research, University of British Columbia
A8.3 How policy changes influenced the design of an organizational innovation to improve access to primary care for vulnerable populations: a participatory action research

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

Methods: Program or Policy Evaluation

Objectives: In this participatory action research, we aimed to design, implement and evaluate an organizational innovation to improve access to primary care for vulnerable populations, in partnership with stakeholders in Quebec. The objective here is to describe how policy changes influenced the design of the innovation.

Approach: A steering committee of managers, family physician leads, researchers and community representatives from two local health networks met periodically between 2014 and 2018 to identify a priority access need, design an innovation and oversee implementation. During this period, Quebec’s healthcare system underwent major restructuring and downsizing, including many policies changes targeting primary care. The influence of policy changes on the design of the innovation was captured through participatory observations of over 50 meetings with stakeholders, internal documents (meeting minutes, research diaries, logic models, process maps), Stange’s context description tool, the Template for Intervention Description and Replication (TIDier) and policy documents.

Results: Policy changes heavily influenced the innovation’s design. The committee prioritized a need to improve access to family physicians for patients from high deprivation neighborhoods. To align with the Ministry of Health’s priorities, this was operationalized to mean attachment of patients to family physicians through Quebec’s centralized waiting list. Stakeholders were interested in a community health worker (CHW) intervention to support patients to overcome barriers to attachment. However, in reaction to budget cuts and a province-wide reallocation of social workers to primary care practices, the innovation was adapted to integrate CHW elements into social workers’ existing roles. The innovation’s design was also influenced by threats and opportunities posed by Bill 20, which aimed to increase family physicians’ patient panels and improve continuity of care.

Conclusion: Partnering with various stakeholders allowed us to adapt the innovation’s design to a rapidly changing policy context. While adapting to policy changes made the process very time consuming (4 years), it enhanced the relevance, acceptability and feasibility of the innovation and may increase its chances of sustainability and spread.

Authors: Mélanie Ann Smithman, Université de Sherbrooke; Jeannie Haggerty, McGill University; Mylaine Breton, Universite de Sherbrooke; Christine Beaulieu; ; Ekaterina (Katya) Loban,

A8.4 The Association Between General Practitioner (GP) Patient Volumes and Health Outcomes

Presented By: Terrence McDonald, Assistant Clinical Professor, Department of Family Medicine, University of Calgary

Methods: Data Mining/Big Data Analytics

Objectives: Objective 1. To describe the practice patterns and demographics of high volume GPs in Alberta. Objective 2. To model the risk of an emergency department visit or hospitalization (i.e. treatment failure) for patients with one or more chronic conditions by GP patient volume adjusting for other variables.

Approach: GP claims (2011-2016) from Alberta Health have been linked to physician demographics from the College of Physician and Surgeons of Alberta, the National Ambulatory Care Reporting System, Discharge Abstract Database, and longitudinal data set for Clinical Risk Groups for the period 2011-2016. Phase I identified predictors of high volume GPs. Phase II will use hierarchical logistic regression to model the odds of any treatment failure by volume, controlling for patient demographics and burden of illness.

Results: Phase I results indicate high volume practitioners tended use fewer service codes representing time-intensive care, were typically older, male, worked part-time, and tended to practice in Northern Alberta. International Medical Graduates (IMGs) were also substantially more likely to be a high volume GP. Early Phase II results indicate two cohorts of high volume GPs likely exist in Alberta (rural/urban). Work to further characterize high volume GPs, risk adjust their patients and explore the relationship between treatment failure(s) and volume of patients seen per day and GP practice characteristics is underway. Further results are expected shortly.

Conclusion: There are differences in high volume providers based on geographic region, years in practice, sex, and IMG status. Pending results will inform physician supply physician supply and remuneration policies that might optimize patient outcomes, and inform whether a capping policy (limiting the patients seen by GP/day) is of value in Alberta.

Authors: Terrence McDonald, Department of Family Medicine, University of Calgary; Lee Green, University of Alberta - EnAct; Kerry McBrien, University of Calgary; Paul Ronksley, University of Calgary; Judy Seidel, Alberta Health Services; Alka Patel, Alberta Health Services; Allan Bailey, Department of Family Medicine, University of Alberta; Hailfeng Zhu, Alberta Health Services, Analytics Research and Evaluation Service (Primary Care); Lisa Cook, Alberta Health Services, Applied Research and Evaluation Services (Primary Care)
B1.1
Material Deprivation and Residential Instability are Associated with Increased Avoidable Mortality in Ontario, Canada, a Population-Based Study from 1993 to 2014
Presented By: Peter Tanuseputro, Investigator, Bruyère Research Institute & Ottawa Hospital Research Institute

Methods: Data Mining/Big Data Analytics

Objectives: To examine the association between marginalization and avoidable mortality (AM) in Ontario, Canada between 1993 and 2014.

Approach: Design: Retrospective, population-based cohort study
Participants: Ontarians who died between 1993 and 2014 (N=1,740,158). Each individual was assigned to a quintile of neighbourhood marginalization using the Ontario Marginalization Index based on four dimensions: material deprivation, residential instability, dependency, and ethnic concentration.
Outcome: Avoidable mortality (AM) reflecting preventable and treatable causes of death, using ICD-10 codes from the Canadian Institute for Health Information
Analyses: Multivariate logistic regression analyses examined the association between marginalization and mortality controlling for age, sex, urban/rural location, and chronic conditions. We examined AM vs. non-AM, AM – preventable vs. AM – treatable, and premature vs. non-premature mortality.

Results: Amongst premature deaths (age<75), those living in the most materially deprived (OR: 1.17, 95% CI: 1.15-1.20, p <.0001) and residentially instable (OR: 1.11, 95% CI: 1.09-1.13, p <.0001) areas were more likely to have an AM than the least marginalized areas. Those in areas of high dependency and ethnic concentration had the similar odds (OR: 0.91, 95% CI: 0.89-0.93, p<.0001) of having an AM than the least marginalized areas. Of AM’s, similar trends were noted amongst the dimensions for a likelihood of a preventable (versus treatable) cause of death. In analysis of all-cause mortality, those living in areas of increasing material deprivation were more likely to have a premature death while residential instability and dependency were strong predictors of having a non-premature death (age≥75)

Conclusion: Areas with higher residential instability and material deprivation have higher AM while areas with higher dependency and ethnic concentration offer a protective effect. Future studies may wish to examine how the association between marginalization and AM changes over time as one method to monitor the impact of targeted interventions.

Authors: Peter Tanuseputro, Bruyère Research Institute & Ottawa Hospital Research Institute; Austin Zygmunt, University of Ottawa; Claire Kendall, University of Ottawa c/o Bruyère Research Institute; Paul James, University Health Network; Isac Lima, ICES

B1.2
Canadian medical schools: Summary of admissions and support programs for Indigenous students
Presented By: Nicole Doria, Researcher, Dalhousie University

Methods: Mixed Methods

Objectives: This study sought to understand and compare the initiatives at Canadian medical schools aimed to increase the recruitment, admissions, and success of Indigenous students in their medical programs.

Approach: Data were collected from each of the 17 Canadian medical schools in the form of an environmental scan. An open-ended questionnaire and/or a one-on-one semi-structured follow up interview was also conducted with stakeholders from each university. All data were collated into a report that was reviewed by each university prior to finalization.

Results: Overall, the admissions and support programs for Indigenous students at Canadian medical schools were highly variable. Compared to a similar report published in 2010 by the Indigenous Physicians Association of Canada and the Association of Faculties of Medicine, most schools have not made significant updates to their admissions processes or programming. This is despite the Calls to Action of the Truth and Reconciliation Commission (TRC) stating that medical schools must increase the number of Indigenous professionals working in the healthcare field. Increasing the number of Indigenous physicians is a vital step towards reducing the disparity in health outcomes for Indigenous peoples and to providing culturally relevant and meaningful healthcare. This report is the first of its kind since the TRC Calls to Action were released.

Conclusion: Tracking the efforts of medical schools is critical to ensuring accountability and action towards the TRC recommendations. This report is a helpful tool for medical schools to identify both gaps and best practices in relation to admissions, policies, and programs for Indigenous students.

Authors: Nicole Doria, Dalhousie University; Maya Biderman, Dalhousie University; Amy Bombay, Dalhousie University; Liz Munn, Dalhousie University
**B1.3 Effectiveness of current curricula in adequately preparing Dalhousie University health professional students to work with Indigenous peoples**

Presented By: **Nicole Doria**, Researcher, Dalhousie University

**Methods**: Qualitative Research Methods

**Objectives**: This study sought to understand the perspectives of faculty who teach in the medicine, dentistry, nursing, pharmacy, and social work programs at Dalhousie University with respect to the current Indigenous health content in curricula.

**Approach**: One-on-one semi-structured interviews were conducted in 2016-17 with 32 faculty/lecturers across the aforementioned programs. Thematic analysis revealed a consensus that the current curricula were insufficient in providing a foundation of knowledge for students to work safely with Indigenous peoples in healthcare settings.

**Results**: Four main themes emerged: (1) more Indigenous content is needed, (2) there needs to be an Indigenous voice represented throughout the development and delivery of curricula, (3) support for improved content needs to “come from the top” of the institution, and (4) the content needs to be developed and implemented methodically, not merely to “check a box”. This research is being used at Dalhousie University to inform the introduction of policies that mandate first-rate Indigenous content in health professions curricula. This research presents important baseline data for universities across Canada working towards equitable healthcare delivery.

**Conclusion**: Improving the quality of Indigenous health education is crucial for producing culturally competent healthcare professionals who can serve Indigenous peoples and communities. Reforming health profession curricula to include sufficient content related to Indigenous health is therefore foundational in reducing the health inequities experienced by Indigenous peoples across Canada.

**Authors**: Nicole Doria, Dalhousie University; Maya Biderman, Dalhousie University; Amy Bombay, Dalhousie University; Jordan Boudreau, Dalhousie University; Jad Sinno, Dalhousie University; Michael Mackley, Dalhousie University

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**B1.4 Mapping maternity care services for First Nations women in Manitoba**

Presented By: **Karen Lawford**, Instructor, Carleton University

**Methods**: Qualitative Research Methods

**Objectives**: Describe the process related to maternity care services that First Nations women in Manitoba receive when they are subject to Health Canada’s evacuation policy.

**Approach**: This research employed intersectionality, institutional ethnography, and semi-structured interviews with First Nations in Manitoba to generate a visual and descriptive map of Health Canada’s evacuation policy. Mapping permitted the identification of care gaps and offers recommendations to address these important gaps.

**Results**: First Nations women and their family members were largely responsible for coordinating their own evacuation and prenatal care appointments once they were evacuated out of their communities. The lack of coordination and communication among staff working in the federal, provincial, and municipal health care systems resulted in the complete absence of prenatal education by public health nurses employed by the Winnipeg Regional Health Authority. Further, First Nations women are not referred to midwifery services once they are evacuated, even though registered midwifery training in Manitoba was developed to specifically serve First Nations populations. The lack of public documents in Manitoba that describe the content and timing of routine prenatal and postpartum visits is a gaping information void that must be addressed immediately. My research found

**Conclusion**: My research found that First Nations women and family members navigate Health Canada’s evacuation policy usually without systematic and transparent services. First Nations women and community members continue to support each other even in the face of systemic and colonial efforts to govern their bodies, their families, and community knowledges.

**Authors**: Karen Lawford, Carleton University
B2.1

The incidence of first chronic disease over the adult life course

Presented By: Ryan Ng, Epidemiologist / PhD Candidate, University of Toronto

Methods: Emerging methods (e.g. new developments in observational study design)

Objectives: Individuals with a chronic disease use the health care system more frequently and have higher health care expenditures than those without a chronic disease. The objective was to examine the incidence of an individual’s first chronic disease in relation to the adult life course (i.e. age-to-first chronic disease).

Approach: Ontario adults who completed one of the first six cycles of the Canadian Community Health survey were linked to administrative data starting January 1, 2000. Individuals were followed up until December 31, 2014 for the incidence of their first chronic disease: congestive heart failure, chronic obstructive respiratory disease, diabetes, lung cancer, myocardial infarction, and stroke. The cumulative incidence function of age-to-first chronic disease was estimated by sex with death as a competing risk. The cumulative incidence function of each chronic disease was also examined separately to observe the timing of different chronic diseases during the life course.

Results: The cohort had 112,870 adults, 15.1% of which developed at least one incident chronic disease. The most common first chronic disease was diabetes and the least common was lung cancer. Women had a greater cumulative incidence of chronic disease until age 48 years, after which males had a greater cumulative incidence. By age 66.3 years, 50% of males had at least one of the six chronic diseases, which was 4.2 years earlier than females (70.4 years). By the end of the life course (i.e. 105 years), 85.6% of females and 86.6% of males had at least one chronic disease. Diabetes and COPD were more likely to occur earlier in the adult life course versus congestive heart failure, lung cancer, myocardial infarction and stroke.

Conclusion: This study uses a novel approach to examine the incidence of chronic diseases relative to the life course, and provides health policymakers with additional insight into the occurrence of chronic diseases for an aging population. Future research will examine the associations of modifiable lifestyle risk factors with age-to-first chronic disease.

Authors: Ryan Ng, University of Toronto; Rinku Sutradhar, Institute for Clinical Evaluative Sciences; Zhan Yao, Institute for Clinical Evaluative Sciences; Walter Wodchis, University of Toronto; Laura Rosella, Dalla Lana School of Public Health, University of Toronto

B2.2

Determining preventable acute care spending among high-cost patients

Presented By: Claire de Oliveira, Scientist/Health Economist, CAMH

Methods: Statistics/ Econometrics

Objectives: A small proportion of patients accounts for a disproportionately large share of health care costs. Thus, focusing on high-cost patients is likely to yield the most impact on health care system costs. The objective of this analysis was to determine preventable acute care spending among high-cost patients in Ontario, Canada.

Approach: We used a population-based sample of high-cost patients obtained from linked administrative health care data housed at the Institute for Clinical Evaluative Sciences in Toronto, Ontario. High-cost patients were defined as those in the 90th percentile of the cost distribution; all other patients were defined as non-high-cost patients. We examined patients in 2013 and followed them until 2015. Persistent high-cost patients were defined as those in the high-cost category for all three years of the analysis. Preventable acute care (emergency department visits and hospitalisations) was defined using validated algorithms. We estimated costs of preventable and non-preventable acute care

Results: Among high-cost patients, roughly 40% of emergency department visits costs were considered preventable. Similar results were found for non-high-cost patients. For hospitalisations, roughly 10% of costs were considered preventable among high-cost patients, while close to 20% of costs were considerable preventable among non-high-cost patients. The most common reasons for preventable hospitalisations among high-cost patients were congestive heart failure, bacterial pneumonia and COPD, while the most common reasons for non-preventable hospitalisations were for orthopaedic conditions, ischemic heart disease and cancer. Slightly higher proportions of costs for preventable acute care were found for persistent high-cost patients (43% and 14% for emergency department visits and hospitalisations, respectively).

Conclusion: Only a small proportion of costs were related to preventable acute care. Strategies to lower costs through better outpatient care may be limited among high-cost patients. Additional savings may be obtained through prevention and/or the delivery of more efficient inpatient care.

Authors: Claire de Oliveira, CAMH; Joyce Cheng, CAMH; Kelvin Chan, Canadian Centre for Applied Research in Cancer Control; Craig Earle, CPAC; Murray Krahn, THETA Collaborative; Nicole Mittmann, Cancer Care Ontario
B2.3
Examination of prescription drug use following a traumatic spinal cord injury using Ontario administrative health data
Presented By: Sara Guilcher, Assistant Professor, University of Toronto

Methods: Mixed Methods

Objectives: People with spinal cord injury (SCI) have complex needs and are at risk for polypharmacy. Our research program examines factors related to medication management for SCI. The objectives for this study were to examine the prevalence of polypharmacy for traumatic SCI following injury and to determine risk factors.

Approach: We used a retrospective cohort design, drawing from administrative drug, hospitalization and rehabilitation data housed at the Institute for Clinical Evaluative Sciences (ICES), Toronto, Ontario. We examined prescription medications dispensed over a 1 year period following discharge from hospital or inpatient rehabilitation for persons 66+ years with an index traumatic SCI between 2004 and 2014. Polypharmacy was defined as being on 10 or more drug classes. Descriptive and analytical statistics were conducted. Relative risks and 95% confidence limits for factors related to polypharmacy were calculated using a robust Poisson multivariate regression model.

Results: We identified 418 cases of persons with traumatic SCI during the observation window, with 63% of the cohort being male. A total of 364 (87%) of patients were taking at least 5 drug classes and 233 patients (56%) were taking at least 10 drug classes in the year following discharge from care for traumatic SCI. The mean number of drug classes taken was 11 (SD=6). Continuity of care was significantly associated with polypharmacy, with a higher continuity of care reducing the risk of polypharmacy. Common drug classes prescribed were laxatives, opioid analgesics, cholesterol drugs, stomach acid suppressors, stool softeners, and antibiotics.

Conclusion: Polypharmacy is extensive in individuals 66+ years with traumatic SCI. We plan to examine high risk drugs and to expand the analyses to non-traumatic SCI and to those under 66 years of age. We will also interview persons with SCI, clinicians and unpaid caregivers to explore experiences with medication management.

Authors: Sara Guilcher, University of Toronto; Mary-Ellen Hogan, University of Toronto; Andrew Calzavara, Institute for Clinical Evaluative Sciences; Sander Hitzig, St. John’s Rehab, Sunnybrook Research Institute; Tejal Patel, University of Waterloo School of Pharmacy; Tanya Packer, School of Occupational Therapy, Dalhousie University

B2.4
Impact of chronic disease on Alternate Level of Care utilization in the Nova Scotia acute care population
Presented By: David Stock, Health Services Researcher, Maritime SPOR SUPPORT Unit

Methods: Statistics/ Econometrics

Objectives: Alternate-Level-of-Care (ALC) – designating patients who remain in acute care post medical discharge - utilization is common among older patients with certain chronic conditions. This Nova Scotia-wide study describes the distribution of prevalent chronic conditions among ALC patients and estimates the effect of these conditions on acute care ALC utilization.

Approach: The proportion of ALC patients diagnosed with common chronic conditions is provided for the Nova Scotia-wide acute care population spanning 2014 and 2015 fiscal years. Zero-inflated negative binomial regression was used to estimate the multivariable-adjusted effects of the most prevalent of these conditions on 1) the likelihood of an acute care episode ending in ALC and 2) the proportion of time spent in ALC relative to overall length of stay. Models were adjusted for age, sex, neighborhood income quintile, rurality and method of entry as a surrogate for patient complexity. Data was accessed and linked at Health Data Nova Scotia.

Results: There were 139,937 acute care discharges, 4,047 of which ended in ALC. Of the latter, 30.4%, 28.6%, 27.2%, 13.4%, 11.9%, 10.4%, 10.3% had diagnoses of hypertension, dementia, diabetes, cancer, COPD, ischemic heart disease, or heart failure. Women had higher prevalence of hypertension (31.7% vs 28.6%, p<0.04); men had more diabetes (31.5% vs 24.0%, p<0.001) and cancer (16.7% vs 10.9%, p<0.001). Dementia was associated with a 6-fold likelihood of transfer to ALC, while COPD and ischemic heart disease incurred reduced risk. Male sex, lower household income and rurality were associated with transfer to ALC. Dementia patients spent 20% more (RR: 1.20; 95% CI: 1.16-1.25) of their acute care stay in ALC; hypertension, diabetes and heart disease patients spent four to five percent less.

Conclusion: Patients with certain chronic conditions are substantially more likely to utilize ALC. Differences in the likelihood of ending an acute care stay in ALC and proportion of acute care stay spent in ALC by chronic disease diagnosis can guide patient need-based policy targeting discharge management and acute care efficiency.

Authors: David Stock, Maritime SPOR SUPPORT Unit; Adrian Levy, Dalhousie University; Adrian MacKenzie, Maritime SPOR SUPPORT Unit
B3.1
Using family physician Electronic Medical Record data to measure the pathways of cancer care
Presented By: Liisa Jaakkimainen, Scientist, ICES

Methods: Data Mining/Big Data Analytics

Objectives: To determine the feasibility of using family physician (FP) electronic medical record (EMR) data to identify care pathways for lung cancer and breast cancer patients from the description of symptoms, to the initiation of investigations, referrals to specialty care and the receipt of specific treatments (surgery, chemotherapy, radiation treatment).

Approach: Cancer Care Ontario has identified gaps in care along the disease pathway for specific cancers. However, there currently is no real world data to identify the wait times along these cancer pathways. Data from the Electronic Medical Record Administrative data Linked Database (EMRALD) held at the Institute for Clinical Evaluative Sciences (ICES) was used to identify a cohort of lung cancer and breast cancer patients. Data abstractors examined the FP EMR notes of these patients to identify pre-diagnostic symptoms, pre-diagnostic radiological test (chest x-rays, mammograms, CT scans results), biopsy results, oncology and surgical specialist referrals and post-diagnostic specialist consultations.

Results: To date, abstractors have reviewed the FP EMR notes for 160 lung cancer patients. We anticipate the completion of 2000 breast cancer and an additional 550 lung cancer patient records by the end of March 2018. For the 160 lung cancer patients reviewed so far, pre-diagnostic index test results were identified in 88.5% of EMR notes (66.7% based on abnormal chest x-rays and 60% based on abnormal CT scans). Pre-diagnostic symptoms were identified in 62.1% of FP EMR notes and 81.6% had post-diagnostic consultation notes. Wait time from abnormal test results to seeing a consultant physician were less than 3 weeks for all patients.

Conclusion: We were able to use FP EMR notes linked to administrative data to identify care organized received by patients prior to their cancer diagnosis. This information can be used to identify care gaps and measure wait times in receiving cancer care from a patient’s perspective.

Authors: Liisa Jaakkimainen, ICES; Lisa DelGiudice, Sunnybrook Academic Family Health Team; Karen Tu, University of Toronto; Bogdan Pinzaru, Institute for Clinical Evaluative Sciences

B3.2
Practice intentions among Canadian family medicine residents
Presented By: Ruth Lavergne, Assistant Professor, Simon Fraser University

Methods: Survey Research Methods

Objectives: Family medicine residents (FMRs) choose among a range of options as they enter practice, including both practice models (e.g. solo, group, interprofessional team) and type (e.g. practice with a clinical focus, comprehensive care). We describe practice intentions among Canadian FMRs and explore personal and contextual characteristics associated with them.

Approach: We use survey data from all residency programs collected by the College of Family Physicians of Canada. Data include personal characteristics (age, gender, marital status, parenthood, and urban/rural/remote childhood environment), and information on training (Canadian vs. international medical degree and region of residency). Practice intentions for various models and types are captured using a five-point scale, which we dichotomize to compare highly likely and somewhat likely vs. neutral, somewhat unlikely, or not at all likely. We use bivariate (chi2) and multivariate logistic regression to explore the relationship between personal and training characteristics and each dichotomous practice intention variable.

Results: Of 1,680 FMRs completing the survey as they exited residency, percentagies reporting it was somewhat or highly likely that they would choose each type of practice are as follow: solo practice, 8%; interprofessional team-based practice, 90%; comprehensive care that includes a special interest, 69%; practice with a focus only on specific clinical areas, 32%. Intentions for solo practice were higher among male residents and international medical graduates, and varied significantly by region. Intentions for interprofessional practice were higher among female physicians and residents with children. Intentions for comprehensive practice that includes a special clinical interest were higher among residents from rural and remote settings. Intentions for focus only on specific clinical areas were higher among male residents and residents with children.

Conclusion: Most FMRs, and especially female FMRs and FMRs with children intend to practice in interprofessional team-based models, though this option is not available in many places. The fact that 1 in 3 FMRs do not intend to do comprehensive practice should be considered when planning primary care health human resources.

Authors: Ruth Lavergne, Simon Fraser University; Megan Ahuja, CHSPR; Lindsay Hedden, Centre for Clinical Epidemiology and Evaluation; Kimberlyn McGrail, School of Population and Public Health, University of British Columbia; Centre for Health Services and Policy Research, University of British Columbia
B3.3  
The Five Types of Urban Family Doctors: The Implications of Style and Scope of Practice for Health Human Resources Planning  
Presented By: Rita McCracken, Associate Department Head, Family Medicine, Providence Healthcare (PHC)  
Methods: Survey Research Methods  
Objectives: There are approximately 1000 family doctors working in Vancouver; however, few details are known about their practice styles. As part of the Models and Access Atlas for Primary Care – Providence Health Care project (MAAP-PHC), we describe scopes of practice for a sub-group of family doctors in Vancouver.  
Approach: We developed a survey based on the MAAP study in Atlantic Canada, and adjusted the tool to match differences in local practice patterns and terminology. We administered the online survey to all members of PHC Department of Family Medicine in spring 2016 and achieved an 86% response rate (254/295). We categorized practice style into five distinct groupings and compared features across respondent groups, including personal and practice location characteristics, hospital and teaching work, payment and appointment characteristics, and scope of practice. We discuss the implications of styles of practice and associated characteristics on health human resources policy and planning.  
Results: Survey participants identified their practice style as either “continuous community-based primary care” (CCBPC) [75%], “hospital or facility-based care” [18%], or “locum only” [7%]. We further divided the CCBPC category into 3 groups based on their self-reported patient panel size: focused-practice (<500) [37%], mixed-practice (500-1000) [21%], and classic GP (>1000) [41%]. While we found diversity in the scope and style of practice across the five groupings, the medians of self-reported weekly work hours of all groups were similar. Newer family physicians (12 years or less away from medical school graduation) are moving away from the Classic GP characteristics (single location practice, fee for service payment) and are more likely to work at multiple locations, including specialty clinics, and be engaged in clinical supervision and teaching.  
Conclusion: Urban family doctors have diverse scopes and styles of practice and the classic GP model appears to be declining in popularity. Primary care health human resource policy and planning will need to evolve to account for and respond to the new variety of actual work patterns among GPs.  
Authors: Rita McCracken, Providence Healthcare (PHC); Lindsay Hedden, Centre for Clinical Epidemiology and Evaluation; Nardia Strydom, Vancouver Coastal Health & Providence Health Care; Kasra Hassani, Centre for Health Services and Policy Research; Gurkirat Randhawa, Providence Health Care; Melanie Catacutan, Providence Health Care; Setareh Banihosseini, Providence Health Care

B3.4  
Improving accessibility, efficiency and quality of care: How Integrated Primary Care Teams (IPCT) stand out?  
Presented By: Arnaud Duhoux, Professeur adjoint, Université de Montréal  
Methods: Program or Policy Evaluation  
Objectives: An efficient health system depends on its ability to establish a continuum of care accessible and efficiently delivered. Increasing interdisciplinary work and nursing practice is likely to improve performance. The objective is to compare changes in accessibility, efficiency and quality between IPCT and non-IPCT patients over a 2-year period.  
Approach: Design: cohort study with a comparison group  
Setting: 7 primary care team pilot sites relying on an expanded nursing role within a more intensive team-based, interdisciplinary setting in Quebec. Participants: 3048 patients recruited in the waiting rooms of the IPCT. Each patient was matched with 4 patients followed within a traditional primary care model on 4 criteria for a total sample of 15 240 patients.  
Outcome Measures: indicators of accessibility, efficiency and quality of care were measured over the year prior to the inception in the study and the following year using a combination of five medical-administrative databases.  
Results: The IPCT patients achieved different results on most of the measured indicators such as accessibility (primary care visits, emergency department visits, hospitalization and attendance rates) efficiency (relative costs of the care trajectories of each of the two cohorts) and quality of care (such as relational continuity) compared to non-IPCT patients. The 2-year period analysis also show variations in the performance indicators for IPCT patient before the inception in the study and the following year.  
Conclusion: Primary care teams with interdisciplinarity composition and work and a large nursing scope of practice achieve different results on performance indicators than traditional primary care organizations based on a 2-year period. Future analysis will be conducted on a 4-year period and may enable a better understanding of the effects.  
Authors: Arnaud Duhoux, Université de Montréal; Damien Contandriopoulos, University of Victoria; Dominique Laroche, Université de Montréal; Mélanie Perroux, Université de Montréal
B4.1 In-Utero SSRI and SNRI Exposure and the Risk of Long Term Adverse Mental and Educational Outcomes in Children: A Population-Based Retrospective Cohort Study Utilizing Linked Administrative Data

Presented By: Deepa Singal, CIHR Health Systems Impact Post Doctoral Fellow, The Manitoba Centre for Health Policy and Health Child Office, Government of Manitoba

Methods: Data Mining/Big Data Analytics

Objectives: Few studies investigate the impact of untreated maternal depression versus in-utero antidepressant exposure on long-term effects on children. We delineate effects of these medications from untreated depression using a population-based sample of women diagnosed with mood and anxiety disorder, thus restricting analysis to patients for whom pharmacotherapy is indicated.

Approach: Using population-level linked administrative data from a universal health system, this study included all mother-newborn dyads in Manitoba (born 1996 to 2009, with follow-up through 2014). High Dimensional Propensity Scores and inverse probability treatment weighting were used to address confounding by indication and disease severity. The final trimmed cohort consisted of mothers who had a mood/anxiety disorder diagnosis between 90 days prior to conception until delivery (n=4998); 16.8% had at least two dispensations of an SSRI or SNRI during pregnancy. Cox Proportional Hazard Regression models were used to estimate risk of mood and anxiety disorder in children and educational outcomes.

Results: Asymmetric trimming of the study cohort resulted in a total of 4998 mother-child dyads; 4159 children whose mothers did not use SSRIs/SNRIs during pregnancy and 839 children who were exposed to 2+ prescriptions in-utero. Use of SSRIs/SNRIs during pregnancy was not associated with an increased risk of mood/anxiety disorder in children HR 1.32 (95% CI 0.67 to 2.62). Initial results on the association between in-utero antidepressant use and early childhood development index (EDI) scores indicate no impact on school readiness (31.9% vs 29.3%), or scores on standardized tests of literacy and numeracy in Grade 3 (28.4% meeting expectation versus 31.4%) and in Grade 7 (68.8% versus 70.0%).

Conclusion: In a large population level sample, in utero exposure to serotonergic antidepressants compared with no exposure does not increase the risk of the onset of mood and anxiety disorders and adverse educational outcomes in children later in life.

Authors: Deepa Singal, The Manitoba Centre for Health Policy and Health Child Office, Government of Manitoba; Dan Chateau, University of Manitoba; Matt Dhal, Manitoba Centre for Health Policy; Shelley Derksen, Manitoba Centre for Health Policy, University of Manitoba; Laurence Katz, University of Manitoba; Chelsea Ruth, Manitoba Centre for Health Policy; Ana Hanlon-Dearman, University of Manitoba and FASD Centre/MB FASD Network; Marni Brownell, Manitoba Centre for Health Policy

B4.2 Somatic symptom and related disorders among children and youth: patterns of health system use and costs.

Presented By: Natasha Saunders, Pediatrician, The Hospital for Sick Children

Methods: Data Mining/Big Data Analytics

Objectives: Individuals with somatic symptom and related disorders (SSRD) may receive multiple investigations and delays in receipt of appropriate treatment. Our objective was to evaluate health care utilization and health system costs in a population-based sample of children and youth with health visits for SSRD in Ontario, Canada.

Approach: Hospital and emergency room discharge data and outpatient physician billings data from 2008 to 2015 identified children and youth (ages 4 to 24 years) with an index health visit for SSRD, living in Ontario. Individuals were grouped by setting (outpatient, emergency department, and hospital) in which their first diagnosis of SSRD in a health record occurred. Sociodemographic characteristics, health system use, and complete health system costs were analyzed using descriptive statistics in the one year preceding and one year following diagnosis.

Results: We identified 33,272 individuals with SSRD. 17,893 (54%) received their initial diagnosis as outpatients, whereas 13,310 (40%) and 2069 (6%) were diagnosed in emergency departments or during a hospitalization, respectively. 1167 (56%) hospitalized patients saw an outpatient physician for mental health in the year prior to their SSRD hospitalization. These patients had a mean of 10.4 (±19.5) outpatient and 3.5 (±5.4) emergency department visits prior to diagnosis with no differences in the year following diagnosis. Mean health system costs for hospitalized individuals were $33,288 (±$78,047) in the year prior to and $19,333 (±$39,439) in the year after diagnosis. Of all patients with SSRD, 14,203 (43%) saw an outpatient physician for mental health in the year following diagnosis and 5911 (18%) received specialist physician mental healthcare.

Conclusion: Youth with SSRD account for a substantial proportion of the population and have high health system utilization and costs. They may be under-recognized, receive inappropriate and costly medical care, and may not receive timely mental health support. Initiatives to recognize SSRD and ensure supports are in place early are warranted.

Authors: Natasha Saunders, The Hospital for Sick Children; Sima Gandhi, Simon Chen, Institute for Clinical Evaluative Sciences; Simone Vigod, Women’s College Hospital; Kinwah Fung, Institute for Clinical Evaluative Sciences; Claire De Souza, The Hospital for Sick Children; Hana Saab, The Hospital for Sick Children; Paul Kurdyak, CAMH
B4.3
Trends in utilization of Consultation-Liaison Psychiatry Services at an Ontario Paediatric Hospital
Presented By: Hina Ansari, Evaluation Specialist, Hospital for Sick Children

Methods: Program or Policy Evaluation

Objectives: Co-occurring medical and psychiatric disorders are a driver of higher hospital resource consumption. Consultation-Liaison Psychiatry (CL-P) services aim to treat this population of medically or surgically-ill patients with psychiatric comorbidities within hospital settings. The study objective was to quantify and describe the profile of the patients seen by CL-P.

Approach: Using hospital administrative data, we identified the inpatient admissions where patients (aged 0-18 years) were served by CL-P at our hospital between fiscal years 2012/13 and 2016/17. Admissions were characterized into fiscal years based on the admit date for that particular admission. Sociodemographic characteristics (age, gender, local health integration network), utilization volume (based on number of unique patients, as well as number of admissions), reasons for referral, length of stay (LOS), diagnostic complexity (in terms of the number of mental and physical health diagnoses on the patient’s record, and Case Mix Groups), and readmission rates were analyzed using descriptive statistics.

Results: Our findings indicate that the number of admissions requiring CL-P services increased by 31% in 2016/17 as compared to the previous 4 year average. This patient population was characterized by a LOS that was 3 times longer than the average hospital inpatient (20.3 days vs. 6.3 days). 49% of patient admissions in 2016/17 corresponded with an inpatient stay between 2 and 15 days, while 34% of admissions with >15 inpatient days. The youngest age group (<1 year old) was associated with the longest LOS, as compared to the 1-7 or 8-18 year olds. The psychiatric diagnoses that were associated with the longest length of stay and the highest resource intensity were delirium, anxiety, depression, adjustment disorders, post-traumatic stress disorder and somatization and somatoform-related disorders.

Conclusion: Improving a service requires an understanding of the composition, complexities and needs of the population served. Findings will help establish the hospitalization norms for this population and ensure that hospitals receive adequate funding and mental health resources to help support this severely ill group of patients.

Authors: Hina Ansari, Hospital for Sick Children; Claire De Souza, The Hospital for Sick Children; Sayani Paul, Hospital for Sick Children; Hana Saab, The Hospital for Sick Children

B4.4
Association Between Primary Care Continuity and Acute Mental Health Outcomes in Transition-age Youth with Severe Mental Illness
Presented By: Alene Toulany, Assistant Professor / Staff Physician, University of Toronto / Hospital for Sick Children

Methods: Statistics/ Econometrics

Objectives: To describe health service utilization for transition-age youth with severe mental illness and analyze the association between primary care continuity during the transition period and subsequent need for acute care mental health services.

Approach: Population-based retrospective cohort study using linked administrative health data of youth ages 12 to 17 with a hospitalization for schizophrenia and related psychotic disorders (SZ), eating disorders (ED), or mood and affective disorders (MAD) between April 1, 2002 and April 1, 2010 in Ontario, Canada. Primary and mental health care use was described before (age 12-17 years), during (age 17-19 years), and after the transition period (age 19-23 years) to adult care. Poisson regression models tested the association of primary care during transition (continuous care, different provider, or none) and mental health-related hospitalizations and emergency department visits after transition.

Results: Among 3183 youth with severe mental illness, the majority (n=2,052, 64.5%) received continuous primary care during the transition period. Rates of mental health-related outpatient visits to GP/FPs increased after age 19 for youth with SZ and MAD and decreased to psychiatrists for all mental health conditions (p < 0.01), whereas rates of mental health-related admissions increased for youth with SZ and MAD (p < 0.01), but not for ED. Compared with continuous care during the transition period, no primary care (n=190) was associated with a 50% increased risk of a mental health-related admission after the transition period (aRR 1.50, 95% confidence interval 1.11, 2.02). Continuous primary care was not associated with mental health-related emergency department visits.

Conclusion: In the context of decreasing specialist mental health visit rates after age 19, ensuring adequate access to primary care during the transition period may improve mental health outcomes in young adulthood.

Authors: Alene Toulany, University of Toronto / Hospital for Sick Children; Therese Stukel, Institute for Clinical Evaluative Sciences; Paul Kurdyak, CAMH; Longdi Fu, ICES; Astrid Guttmann, ICES
B5.1
We could do better: Results from a ten-year longitudinal analysis of Quebec’s physician compensation models
Presented By: Damien Contandriopoulos, Professor, University of Victoria

Methods: Mixed Methods

Objectives: In 2014 Quebec’s Commissaire à la santé et au bien-être funded a call for proposals to understand how Quebec’s physician compensation models shape clinical practice, what their impacts are on health-care system performance, and how they interact with other determinants of performance.

Approach: The nature of the objectives, combined with challenges related to practical data availability, prompted us to use a three-pronged mixed-method approach. First, we reviewed changes in physician payment schedules over ten years (January 2006 to December 2015) and analyzed the implicit causal relation between incentives and behaviour change. Second, we longitudinally analyzed 47 payment, capacity, and production indicators over the same period. Third, we conducted 33 in-depth interviews with practicing physicians and experts focused on the influence of compensation models on behaviour and performance. Finally, results from each component were combined in a systemic assessment of Quebec’s physician compensation model.

Results: Fee-for-service (FFS) was the dominant component of the compensation models (70% and 82% of gross income for GPs and specialists, respectively). In our study period GPs experienced significant changes in the compensation rules, with tagged incentives constituting a larger portion of the mix. There were no significant changes for most specialties. However, some specialties with below-average payments (psychiatry, pediatrics, etc.) experienced a move toward more FSS as part of a reallocation process. Global payments to physicians grew 60% in constant dollars between 2006 and 2015. Most of the increase went to specialists. Production indicators all converge to show either stagnation or decline in per-physician and per-capita care. Many undesirable side effects of the compensation models studied were documented at both the individual and system levels.

Conclusion: Despite massive investments in physicians’ compensation, the volume and accessibility of care did not improve between 2006 and 2015. This situation is explained in part by suboptimal characteristics of Quebec’s physician compensation models. The study provides six recommendations to improve the fit between physician compensation models and system performance.

Authors: Damien Contandriopoulos, University of Victoria; Astrid Brousselle, University of Victoria; Arnaud Duhoux, Université de Montréal; Mylaine Breton, Université de Sherbrooke; Geneviève Champagne, Université de Sherbrooke; Catherine Hudson, Université de Sherbrooke; Martin Sasseville, Centre de recherche - Hôpital Charles-Le Moyne; Marc-André Fournier, n/a; Alain Vedabeoncoeur, Institut de Cardiologie de Montréal; Dominique Laroche, Université de Montréal

B5.2
Les infirmières et médecins sont-ils utilisés de façon optimale à l’hôpital ?
Presented By: Roxane Borgès Da Silva, Professeure adjointe, Université de Montréal

Methods: Emerging methods (e.g. new developments in observational study design)

Objectives: L’objectif de cette étude était de dresser un portrait des activités réalisées par les professionnels de la santé pendant leur temps de travail. Quelle est la part des activités cliniques et non cliniques réalisées pendant leur temps de travail ? Comment ces activités affectent-elles l’efficience de l’organisation des soins?

Approach: Pour répondre à ces questions, nous avons réalisé une revue de la littérature de type examen de la portée (scoping review). Un total de 2346 articles a été recensé en appliquant des équations de recherche aux trois bases de données bibliographiques, Cinahl, PubMed et EconLit. Après un processus rigoureux de sélection, 26 études ont été retenues. La quasi-totalité des études (24) a été menée en milieu hospitalier à travers dix pays. Treize études ont porté sur les activités cliniques et non cliniques des infirmières, onze sur celles des médecins et deux sur les activités des deux professions.

Results: Les soins directs occupent 25 % à 41 % du temps de travail des infirmières et 15 % à 34 % du temps des médecins. Les soins indirects occupent 22 % à 59 % du temps des infirmières et 57 % à 69 % pour les médecins. Les activités non cliniques comptent pour 4 % à 38 % du temps des infirmières et 0,3 % à 15 % pour les médecins. Plusieurs activités représentent des sources d’inefficience. L’ajout de personnel paraprofessionnel à l’équipe de soins ressort comme une avenue intéressante pour permettre aux professionnels de se concentrer sur les tâches relevant de leurs compétences et sur les soins directs au patient.

Conclusion: Cette revue de littérature a mis en évidence le fait que les activités cliniques liées aux soins directs au patient qui sont au cœur des pratiques professionnelles reconnues efficaces et efficientes, ne constituent pas la plus grande part des activités des infirmières dans les milieux hospitaliers.

Authors: Roxane Borgès Da Silva, Université de Montréal; Carl-Arny Dubois, Université de Montréal
B5.3  
How are physicians delivering palliative care? Describing the mix of generalist and specialist palliative care models in the last year of life

Presented By: Catherine Brown, Resident in Public Health and Preventative Medicine, University of Ottawa

Methods: Data Mining/Big Data Analytics

Objectives: Little information exists about the mixes of generalist and specialist palliative care patients receive in their last year. This study (1) operationalizes a theoretical coordinated palliative care model of physician-based services and (2) characterizes the physicians who deliver palliative care.

Approach: This is a population-based retrospective cohort study using linked healthcare administrative data. Participants included physicians providing any palliative care services to a decedent cohort in Ontario, Canada. The decedent cohort consisted of all adults (18+ years) who died in Ontario, Canada between April 2011 and March 2015 (n=361,951). We present the decedent population distribution among each model of physician-based palliative care services. We provide descriptive statistics to characterize physicians delivering palliative care including age, sex, rurality, year of graduation, country of medical school graduation, and specialty.

Results: We describe four major models of palliative care services: (1) 53.0% of decedents received no physician-based palliative care; (2) 21.2% received only generalist palliative care (i.e. physicians who are not palliative care specialists); (3) 14.7% received consultation palliative care (i.e. both generalist and specialist palliative care); and, (4) 11.1% received only specialist palliative care. Among physicians providing care (n=11,006), 95.3% were generalists and 4.7% specialists; 74.2% were trained as family physicians and the remainder from a broad spectrum of specialties including internal medicine (8.3%) and medical/radiation oncology (3.1%). Only 12.1% of palliative care generalists and 2.7% of palliative care specialists worked in a rural practice, where about 15% of the population resides.

Conclusion: We operationalized a physician-based palliative care model that can be used to understand how physicians deliver services at a population level. This model has already been useful to identify care gaps, such as rural areas. Future planned research will evaluate how models of care impacts patient outcomes and costs.

Authors: Catherine Brown, University of Ottawa; Peter Tanuseputro, Bruyère Research Institute & Ottawa Hospital Research Institute; Amy Hsu, Ottawa Hospital Research Institute; Claire Kendall, University of Ottawa c/o Bruyère Research Institute; Denise Marshall, Department of Family Medicine; Jose Pereira, Bruyère Research Institute; Michelle Prentice, Ottawa Hospital Research Institute; Jill Rice, Bruyere Research Institute; Hsien Seow, McMaster University; Glenys Smith, Institute for Clinical Evaluative Sciences uOttawa; Irene Ying, Department of Family and Community Medicine

B5.4  
A Comparative Analysis of the Change in Pass Rates on the Nurse Licensing Exam for Canada’s Nurses: Implications for Health Human Resources

Presented By: Linda McGillis Hall, Associate Dean Research and External Relations, Kathleen Russell Distinguished Professor, Lawrence S. Bloomberg Faculty of Nursing, University of Toronto

Methods: Statistics/ Econometrics

Objectives: A considerable decline in the pass rate from the previous exam has resulted from Canada’s adoption of a US-based nurse licensing exam in 2015. A comparison of pass rates was conducted given stakeholder concern about the health human resources workforce implications of these changes.

Approach: A comparison of pass rate data for 2015 and 2016 was conducted using publicly available data released by the Canadian Council of Registered Nurse Regulators (CCRNR). The overall proportion of newly graduated Canadian nursing students writing the examination who passed at year-end, and the proportions who passed at each of first, second, third and all additional attempts were compared between years using a z-test.

Results: A statistically significant increase in pass rates from 2015 to 2016 was found for first-attempt examination writers (69.7% vs. 79.9%; p<.001). However, the overall year-end pass rates declined significantly between the two years (92.8% in 2015 vs. 88.9% in 2016; p<.001). Further analysis demonstrated that over three times more students in 2015 went on to re-write the examination a second and third time than in 2016, resulting in a substantial downward shift in the entry-level nursing workforce in 2016. Specifically, in 2015, 7.1% (n=642) of exam writers left the profession by the end of the year after failing to pass the exam, while in 2016 this increased to 11.1% (n=1,030) of writers leaving.

Conclusion: A consistent increase in number of nurses entering the profession has occurred in Canada in recent years. However, the adoption of a US licensing examination may be affecting retention of new nurses, as well as the available supply of nurses in Canada. Further monitoring of yearly pass rates is recommended.

Authors: Linda McGillis Hall, Lawrence S. Bloomberg Faculty of Nursing, University of Toronto; Michelle Lalonde, University of Ottawa, School of Nursing; Janice Feather, University of Toronto, Faculty of Nursing; Sarah Brennenstuhl, University of Toronto, Faculty of Nursing
B6.1 Association between nurse education and experience and the risk of mortality and adverse events in acute care hospitals: a systematic review of the literature
Presented By: Li-Anne Audet, Student, University of Sherbrooke

Methods: Statistics/Econometrics

Objectives: Systematically review the literature on the associations between nurse education and experience and the occurrence of mortality and adverse events, as well as the literature examining the beneficial effects of patients and organizations of the Institute of Medicine’s recommendation that 80% of registered nurses should hold a baccalaureate degree by 2020.

Approach: A systematic search of English and French literature was conducted in six electronic databases. Studies were included if they: a) were published between January 1996 and August 2017; b) were based on a quantitative research design; c) examined the associations between registered nurse education and experience and at least one independently measured adverse event; and d) were conducted in an adult acute care setting. Data were independently extracted, analysed, and synthesized by two authors. The methodological heterogeneity of the reviewed studies precluded the use of meta-analysis techniques. However, the methodological quality of each study was assessed using the STROBE criteria.

Results: Out of 2,109 retrieved articles, 27 studies met our inclusion criteria. These studies examined 18 distinct adverse events, with mortality and failure to rescue being the most frequently investigated events. Higher levels of education were associated with lower risks of failure to rescue and mortality in 75% and 61.1% of the reviewed studies pertaining to these adverse events. Nurse education was inconsistently related with the occurrence of the other events, which were the focus of only a small number of studies. Only one study examined the 80% threshold proposed by the Institute of Medicine and found evidence that it is associated with lower odds of hospital readmission and shorter lengths of stay, but unrelated with mortality. Nurse experience was inconsistently related with adverse event occurrence.

Conclusion: Further longitudinal studies are needed to ascertain the existing associations with mortality and better document the association of nurse education and experience with other nursing-sensitive adverse events, as well as the benefits to patients and organizations of the Institute of Medicine’s recommendation.

Authors: Li-Anne Audet, University of Sherbrooke; Patricia Bourgault, University of Sherbrooke; Christian Rochefort, University of Sherbrooke

B6.2 Patterns of opioid utilization in the 90-days post hospital discharge and risk of re-admissions and emergency department visits
Presented By: Siyan Kurteva, PhD student, McGill

Methods: Data Mining/Big Data Analytics

Objectives: To describe opioid utilization patterns after hospitalization for patients admitted to medical and surgical units at a tertiary care hospital in Montreal, Quebec between October 2014 and November 2016 and to estimate the association between patterns of opioid use and risk of adverse health outcomes in the 90-days post discharge.

Approach: Opioid utilization in the year prior to and 90-days after hospitalization was measured using medication dispensing data from the Quebec provincial healthcare databases (RAMQ) while hospital re-admissions and ED visits were obtained from RAMQ medical services. Patient characteristics and discharge prescriptions were obtained from the hospital chart. Time-varying utilization of opioids after discharge was modeled as: 1) current use, 2) cumulative duration of past use, and 3) cumulative duration of use within the last 10 days, using Cox models. All analyses were adjusted for age, sex, chronic conditions, concomitant medication use, and history of opioid use.

Results: Of the 3,308 included patients mean age was 70 (SD 12), 57% were male and 47% were discharged from surgical units. 856 (26%) patients had a history of opioid use in the 1-year prior to admission, 1528 (46%) were prescribed an opioid at discharge and 1481 (45%) filled an opioid in the 90-days post discharge. Among patients prescribed an opioid at discharge, 79% filled their prescription post discharge, where opioid naïve patients were less likely to fill their prescriptions compared to those with a history of opioid use (40% vs 81%). Our multivariable Cox models suggested that cumulative duration of opioid exposure in the past 10 days post-discharge was associated with a 10% increased risk of ED visits and re-admissions.

Conclusion: Patients with a history of opioid use were more likely to both receive an opioid prescription at hospital discharge and fill their prescription. Our findings suggest that longer-term utilization patterns of these medications after hospitalization may increase the risk of re-admissions and ED visits.

Authors: Siyan Kurteva, McGill; Robyn Tamblyn, McGill University - Institute of Health Services and Policy Research; Daniala Weir, McGill University
B6.3
**Medical Assistance in Dying: Residential Hospice policy formulation in Ontario.**

**Presented By:** Lyndavan Dreumel, PhD Candidate, McMaster University

**Methods:** Policy Case Study

**Objectives:** Palliative care Residential Hospices (RH) are a potential site for the provision of medical assistance in dying (MAiD). In Ontario, RHs are free to choose if they participate in MAiD. This study examined the factors influencing how a RH in Ontario formulated their policy on the provision of MAiD.

**Approach:** An explanatory case study was designed where one RH in Ontario was selected as a relevatory case. Semi-structured interviews were completed with key decision makers, employees, clients and families of the RH. Relevant policy literature was also examined, including MAiD policy documents and position statements from federal and provincial governments, residential hospice providers, hospice palliative care associations, regulated health professionals, and end of life interest groups. Findings were triangulated using MAiD academic literature from other jurisdictions and key informant interviews representing broader provincial perspectives. The influences of ideas, interests and institutions were analyzed utilizing a 3-i framework.

**Results:** Hospice palliative care has developed from a historical grassroots movement that promotes the idea that quality hospice palliative care neither hastens death nor prolongs life. Provincial policy funding legacies (institutions) have resulted in roughly half of RH funding coming from the province and the balance coming from community donors. The province’s key interest is to ensure that the public has access to palliative care services, including MAiD; while the donors’ primary interest is to support an organization that aligns with their values and beliefs. In formulating their position on MAID, RH decision makers are faced with resolving the tension between the historical values of the hospice palliative care movement and the interests of their provincial and donor stakeholders.

**Conclusion:** Institutional effects of RH funding structure influences RH decision makers to prioritize the interests of community donors, the less stable source of funding, in order to minimize financial impact to the organization. RH decisions on MAID policy are more likely to be aligned with community donor interests.

**Authors:** Lynda van Dreumel, McMaster University

B6.4
**Moving Low Value Care Lists into Action: Prioritizing Candidate Health Technologies for Reassessment Using Administrative Data**

**Presented By:** Lesley Soril, PhD Candidate, University of Calgary

**Methods:** Emerging methods (e.g. new developments in observational study design)

**Objectives:** To develop and implement a process, leveraging administrative health data assets and existing lists of ‘low value’ care recommendations (i.e., Choosing Wisely Canada, National Institute for Health and Care Excellence ‘do not do’ recommendations, and ‘low value’ technologies in the Australian Medical Benefits Schedule), to prioritize health technologies for reassessment.

**Approach:** An expert advisory committee comprised of clinical experts and healthcare system decision-makers was convened to determine key process requirements. The process was piloted tested for feasibility in British Columbia (BC). Selected health technologies considered for funding in the BC healthcare system are vetted through the Ministry of Health’s Health Technology Assessment Committee (HTAC). The scope of the HTAC includes both the assessment of new technologies and reassessment of technologies currently used in the healthcare system. This provided an ideal, collaborative opportunity in which to pilot test the proposed process.

**Results:** The expert committee identified five required attributes for the process: data-driven, routine and replicable, actionable, stakeholder collaboration, and high return on investment. Guided by these attributes, a 5-step process was developed. First, over 1300 published ‘low value’ technologies were identified. Using appropriate coding systems for BC’s administrative health data (e.g., International Classification of Diseases [ICD]), the ‘low value’ technologies were queried to examine frequencies and costs of technology use. This information was used to rank potential candidates for reassessment based on high annual budgetary impact. Lastly, clinical experts reviewed the ranked technologies prior to broad dissemination and stakeholder action. Pilot testing of the process in BC resulted in the prioritization of 9 initial candidate technologies for reassessment.

**Conclusion:** This is the first account of a systematic approach to move ‘low value’ care recommendations into action. This process has been adopted and operationalized by the BC Ministry of Health. This work demonstrates the feasibility and strength of using administrative data to identify and prioritize low value technologies for reassessment.

**Authors:** Lesley Soril, University of Calgary; Fiona Clement, University of Calgary; Stirling Bryan, University of British Columbia; Craig Mitton, University of British Columbia; Brayan Seixas, University of British Columbia
Defining frailty in acute care: Development of a frailty measure to inform quality of care
Presented By: Naomi Diestelkamp, Sr. Analyst, CIHI

Methods: Statistics/ Econometrics

Objectives: Identifying frail individuals is of increasing interest in the healthcare system. Frail individuals are more likely to have increased care needs, hospitalizations, and poorer outcomes. A frailty measure for acute care is proposed for tailored and improved patient care, better allocation of resources, and improved assessment of health system performance.

Approach: Using the Rockwood Frailty Index as a starting point and taking a pan-Canadian lens, data elements from acute care administrative databases were mapped to key variables in the index using ICD-10 codes and proxy measures where applicable. An expert advisory committee composed of geriatricians, researchers, health system administrators and frailty experts were consulted to refine the multi-dimensional nature of frailty. The developed measure is expected to represent a continuum of frailty and includes individuals of all ages impacted by this phenomenon.

Results: This presentation focuses on the development of the methodology used to calculate a frailty measure for application in acute care settings in Canada. The rationale for choice of variables will be discussed, including the mapping of the existing Frailty Index to acute care administrative databases. Strengths and weaknesses of various approaches will be noted. Furthermore, the process that will be used to validate the measure using interRAI databases and the Canadian Community Health Survey will be highlighted. Variations identified in frailty scores and the proportion of frail individuals, at the administrative health region and provincial levels, will be showcased along with the key drivers of frailty scores identified during measure development. Challenges and opportunities for further refinement will be discussed.

Conclusion: Developing and refining the methodology for this pan-Canadian frailty measure is an important step towards ensuring a better understanding of the volume, and degree of frailty, of patients in acute care. Future use of this measure to adjust models of other performance indicators has been identified as an added benefit.

Authors: Naomi Diestelkamp, CIHI; Joseph Amuah, Canadian Institute for Health Information; Jeanie Lacroix, CIHI; Tareq Ahmed, Canadian Institute for Health Information

The Palliative Care Quality Standard: Guiding evidence-based, high-quality palliative care in Ontario
Presented By: Lisa Ye, Lead, Health Quality Ontario

Methods: Mixed Methods

Objectives: To develop and implement a palliative care quality standard – a concise-set of evidence-based, measurable statements with associated quality indicators and supports for implementation – based on the best available evidence, for adults with progressive, life-limiting illness, their caregivers, and their healthcare providers.

Approach: Working in partnership, Health Quality Ontario and the Ontario Palliative Care Network conducted a systematic search for palliative care clinical guidelines published between 2011 and 2016 and an environmental scan for Ontario-specific measurement initiatives. A 25-member working group of clinicians and people with lived experience were recruited based on an open call and a skills matrix to ensure diverse representation. A modified-Delphi process was used to prioritize topic areas and overarching goals for focus of the standard. Quality statements and associated indicators were developed for each topic area based on clinical practice guidelines, evidence and working group expertise.

Results: Thirteen quality statements and associated indicators were developed based on the topic areas and overarching goals prioritized by the quality standard working group. The quality statements include: identification and assessment of needs, timely access to palliative care, advance care planning, goals of care and consent, person-centred care plan, management of pain and symptoms, psychosocial aspects of care, caregiver support, education, transitions, setting of care/death and interdisciplinary team-based care. In addition to statement indicators a set of indicators were selected to measure the overall success of the quality standard and include:

- Percentage of decedents receiving palliative care services (home care, home visits, hospice)
- Percentage of decedents who had unplanned emergency department visits
- Percentage of deaths by location
- Percentage of people/caregivers who rated their palliative care as excellent

Conclusion: The quality standard provides an evidence-based resource that defines what high-quality care should look like to help teams and providers prioritize improvement efforts and measure success. Associated products developed to accompany the quality standard include: a patient reference guide, an infobrief, and recommendations for adoption.

Authors: Lisa Ye, Health Quality Ontario; Naira Yeritsyan, Health Quality Ontario; Ahmed Jakda, Ontario Palliative Care Network; Melody Boyd, Royal Victoria Regional Health Centre; Tara Walton, Ontario Palliative Care Network; Candace Tse, Health Quality Ontario; Lacey Phillips, Health Quality Ontario; Taylor Martin, Ontario Palliative Care Network Secretariat; Deanna Bryant, Ontario Palliative Care Network Secretariat; Sneha Abraham, Health Quality Ontario
B7.3  
**Comparing trends in health system performance in men and women diagnosed with dementia: a population-based study in Ontario**  
Presented By: **Nadia Sourial**, PhD Student, Department of Family Medicine, McGill University  

Methods: Program or Policy Evaluation  

**Objectives:** The introduction of enhanced primary care models in Ontario may lead to improved health system performance for men and women with dementia; however, provincial-level information is needed. This study examines trends in health system performance over time and whether they are similar between men and women.  

**Approach:** Population-based, repeated, cohort study of community-dwelling adults 65+ years in Ontario, newly diagnosed with dementia in each year between 2002 and 2014 and followed for one year. Thirty indicators of primary care performance were derived from the Health Quality Ontario framework and the Canadian consensus guidelines in dementia. For each indicator, a negative binomial model was used to compute age-adjusted rates per person-year, separately for men and women. Variations in rates over time were represented graphically, stratified by sex.  

**Results:** The number of incident cases in men increased from 7,773 in 2002 to 10,070 in 2014; cases in women increased from 12,096 to 14,172. Visits to primary care (~11 per year) and specialists (~2 per year) were similar and stable over time in both men and women. Home care visits doubled from 13 to 26 visits in women and from 10 to 20 visits per year in men. Long-term care admissions decreased by 5% in both sexes. Non-urgent emergency department visits decreased from 52% to 30% in men and from 55% to 28% in women. The rate of avoidable hospitalizations decreased slightly by 1-2% over time in both sexes. Results on other indicators will also be presented.  

**Conclusion:** This study is among the first to track health system performance and to contrast sex differences in newly-diagnosed persons in Ontario. Few sex differences over time were observed. While some indicators improved overall, the relationship between the introduction of new primary care models and these changes needs to be further explored.  

**Authors:** Nadia Sourial, Department of Family Medicine, McGill University; Isabelle Vedel, McGill University; Jacob Etches, ICES; Tibor Schuster, McGill University; Erin Strumpf, McGill University; Susan Bronskill, Institute for Clinical Evaluative Sciences (ICES); Claire Godard-Sebillotte, McGill University  

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B7.4  
**Leadership, Collaboration & Creativity: Critical to Person- and Family-Centred Continuing Care Service Delivery for Older Adults with Dementia and Psychiatric Comorbidities**  
Presented By: **Katie Aubrecht**, Postdoctoral Fellow, Continuing Care, Nova Scotia Health Authority & Mount Saint Vincent University  

Methods: Qualitative Research Methods  

**Objectives:** 1) Clarify promising directions in continuing care service delivery for older adults living with complex dementia care needs, and 2) Develop an evidence base to support policy development for person- and family-centred continuing care service delivery for the growing cohort of older adults living with dementia and psychiatric comorbidities.  

**Approach:** This presentation shares results from a rapid scoping review, descriptive summary and qualitative thematic analysis of academic research and grey literature published 2000-2018 on the question of what quality person- and family-centred care looks like for older adults with complex chronic care situations involving dementia and psychiatric comorbidities.  

**Results:** National and international research reports the rising global prevalence of older adults living with complex chronic care situations that include dementia and psychiatric diagnoses. System sensitivity and responsiveness to the complexities of care for this growing cohort will influence how the dementia journey evolves and is experienced by people with dementia, as well as the paid and unpaid caregivers who support them. The co-presence of dementia and psychiatric disability, and difficulties health professionals, care providers, families and individuals often experience in distinguishing between dementia and mental illness, present unique challenges and opportunities for integration of service delivery within continuing care. Sectorial silos and risk-averse cultures of care pose significant barriers to quality care delivery and self-perceived quality of care.  

**Conclusion:** Inter- and cross-sectoral collaboration, and opportunities for providers and families to lead, be creative in their approaches to care and take dignified risks, represent exciting directions in person- and family-centred continuing care service delivery.  

**Authors:** Katie Aubrecht, Continuing Care, Nova Scotia Health Authority & Mount Saint Vincent University; Janice Keefe, Mount Saint Vincent University; Susan Stevens, Nova Scotia Health Authority
B8.1
Solving preventable hospital readmissions with an appropriate risk prediction tool
Presented By: Alexandra Constant, Health Economist, Logibec

Methods: Data Mining/Big Data Analytics

Objectives: Predictive models that identify patients at risk of readmission has become accessible for hospitals needing to properly trigger the delivery of resource-intensive discharge and care transition interventions. A public-private collaborative developed and validated a readmission risk prediction model that identify a patient’s likelihood of being readmitted within 45 days.

Approach: Adult inpatients discharged from three healthcare organizations in Quebec between April 1, 2014 and March 31, 2016 were identified retrospectively. Univariate comparisons between patients that were readmitted within 45 days versus those not readmitted were analyzed using Student’s t-test for continuous data and χ² test for categorical data. We have built the predictive model using both traditional statistical methods and machine learning methods to predict readmission, and compared model discrimination and predictive range of the various techniques so as to build a model that delivers the highest level of accuracy while maintaining the best fit to the data.

Results: Of the discharge patients included in the three-year study (n=97,600), 11% experienced an unplanned readmission to hospital within 45 days after discharge. Several variables were identified that predicted readmission, such as the patient’s demographic and social characteristics, condition of comorbidities, previous service utilization, medications, laboratory tests and discharge disposition. The readmission risk prediction model demonstrated modest discrimination ability, the Matthews correlation coefficient and the Brier’s score showed reasonable predictive performance during derivation and internal validation.

Conclusion: Rigorously constructed, a readmission risk prediction model is a powerful tool for hospitals to identify patients most likely to benefit from discharge and transitional care interventions and ensuring the return on investment of these interventions.

Authors: Alexandra Constant, Logibec

B8.2
Comparing the performance of several machine learning and conventional statistical methods for prediction of hospital and emergency department utilization among community-dwelling older adults
Presented By: Aaron Jones, PhD Student, McMaster University

Methods: Data Mining/Big Data Analytics

Objectives: The objective of this study was to compare the performance of conventional statistical approaches to methods from the machine learning literature for predicting emergency department (ED) and hospital utilization outcomes among patients receiving community-based care.

Approach: This study utilized a population-based, retrospective cohort of adult home care patients in Ontario receiving a comprehensive clinical assessment from 2014-2016. Using elements from the clinical assessment as predictors, logistic regression, neural networks, random forests, and gradient tree boosting were employed to predict the probability of three outcomes: ED visit from an injurious fall, unplanned hospitalization, and number of ED visits (0,1, or 2+) within 6 months of assessment. Predictive performance was measured with the logarithmic score, Brier score and AUC. Clinical importance of the differences was judged by comparing diagnostic test measures at multiple thresholds.

Results: Data from 58,410 patients assessed in 2014 and 2015 in were used to train and validate predictive models that were tested on the 29,935 patients assessed in 2016. Gradient tree boosting achieved the best performance on all three outcomes. Neural networks also outperformed the conventional statistical approaches across the outcomes. Performance gains over logistic regression were small however, with gradient tree boosting yielding an average AUC only 0.012 higher than logistic regression. Gains in diagnostic test measures were similarly small, with sensitivity increasing by an average of 1% when specificity was fixed.

Conclusion: Gradient tree boosting and neural networks provided slightly better performance than standard statistical methods at predicting three ED and hospitalization utilization outcomes among home care patients in Ontario. However, the clinical relevance of the predictive increases was negligible.

Authors: Aaron Jones, McMaster University; Paul McNicholas, McMaster University; Andrew Costa, McMaster University
B8.3
Dementia Population Risk Tool (DemPoRT): Predictive Algorithm for Assessing Dementia Risk in the Community Setting
Presented By: Stacey Fisher, PhD Candidate, Ottawa Hospital Research Institute

Methods: Data Mining/Big Data Analytics

Objectives: Existing population projections of dementia prevalence are simple and have poor predictive accuracy. The Dementia Population Risk Tool (DemPoRT) predicts incidence of dementia in the population setting using multivariable modeling techniques, and will be used to project dementia prevalence.

Approach: The Dementia Population Risk Tool, a predictive algorithm for risk of dementia, was developed using elderly Ontario respondents of the Canadian Community Health Survey (CCHS) (2001, 2003, 2005, 2007; 18 785 males and 25 316 females). Incident dementia was identified through individual linkage of survey respondents to population-level administrative health care databases. Using time of first dementia capture as the primary outcome and death as a competing risk, sex-specific proportional hazards regression models were estimated. The pre-specified model includes 32 predictors (63 degrees of freedom) capturing information on socio-demographic characteristics, general and chronic health conditions, health behaviors and physical function.

Results: There were 1 059 and 2 071 cases of incident dementia, and 120 280 and 171 574 person-years of follow-up, for males and females, respectively. The DemPoRT algorithm is discriminating (C-statistic: males 0.795 (95% CI: 0.776, 0.814); females 0.805 (95% CI: 0.791, 0.819)) and well-calibrated in a wide range of subgroups including behavioral risk exposure categories, sociodemographic groups, stroke, diabetes and hypertension status.

Conclusion: Health system planning in anticipation of growing dementia prevalence requires reliable projection estimates. DemPoRT is the first and most comprehensive population-based algorithm for predicting dementia incidence, with the potential to improve the ability to answer key policy questions with respect to the future burden of dementia in Canada.

Authors: Stacey Fisher, Ottawa Hospital Research Institute; Amy Hsu, Ottawa Hospital Research Institute; Monica Taljaard, Ottawa Hospital Research Institute; Doug Manuel, Ottawa Hospital Research Institute; Peter Tanuseputro, Bruyère Research Institute & Ottawa Hospital Research Institute

B8.4
Using text analytics to explore physicians’ questions about opioids: the CMPA experience
Presented By: Lisa Calder, Director, Medical Care Analytics, The Canadian Medical Protective Association

Methods: Data Mining/Big Data Analytics

Objectives: The Canadian Medical Protective Association (CMPA) generates a large amount of textual data while assisting and advising Canadian physicians on medical-legal matters. Until recently, such text-based data have not been systematically analyzed. This study explores text analytics techniques to gain insight on challenges Canadian physicians face in prescribing opioids.

Approach: The CMPA annually receives over 20,000 physician requests through telephone calls for medical-legal advice. These advice call requests generate thousands of pages of text-based documentation. This study focuses on requests related to opioids prescription between 2013 and 2017. CMPA researchers used SPSS text mining software to extract themes and trends from such documentation. The team built preliminary categories that informed general themes from the initial sample of 3,483 advice calls. Themes were then iteratively refined and developed through subsequent consultations with CMPA nurse researchers, analysts and physicians. The researchers sampled and verified output from the software before finalizing results.

Results: The number of advice requests related to opioid prescription rose steadily from 519 in 2013 to 915 in 2017. This represents a 76% increase in the volume of calls on this topic in the recent 5 years, or an annual increase rate of 19%. The researchers were able to identify 6 relevant themes from the text-based data: existing patients with chronic pain requesting opioids, accepting new patients who are taking high-dose opioids, challenging patient behavior, concerns regarding opioids contracts, patient and family complaints, and reporting opioids use to authorities such as police, transportation authorities, child protective services and professional regulatory authorities.

Conclusion: Text analytics allowed the CMPA to identify themes and trends in data that researchers would have otherwise been unable to detect. By gaining insight from rich sources of textual data, we are able to respond to emerging trends, and be more effective in medical-legal education and patient safety messaging.

Authors: Lisa Calder, The Canadian Medical Protective Association; Cathy Zhang, CMPA; Qian Yang, CMPA; Eileen Whyte, The Canadian Medical Protective Association
C1.1
Place of Care Trajectories in the Last 2 Weeks of Life: A Population-based Cohort Study of Ontario Decedents
Presented By: Danial Qureshi, Masters Student, McMaster University

Methods: Data Mining/Big Data Analytics

Objectives: Currently place of death is a commonly reported indicator of palliative care quality, but does not provide details of service utilization near end of life. To this study aims to explore place of care trajectories in the last 2 weeks of life in a general population and among distinct illness.

Approach: Design: A retrospective population-based cohort study of decedents using linked administrative health data. We analyzed place of care trajectories and place of care utilization trends.

Setting: Ontario, Canada.

Participants: All Ontario decedents between April 1st, 2010 and December 31st, 2012. Based on their cause of death, patients were categorized into several distinct illness cohorts: terminal illness (e.g. cancer), organ failure (e.g. congestive heart failure), frailty (e.g. dementia), sudden death, or other.

Main outcome measures: Place of care trajectories in the last 2 weeks of life.

Results: We identified 235,159 decedents in Ontario, among which 215,533 represented the major cohorts of our analysis (terminal illness, frailty, and organ failure). 61% of all decedents died in hospital-based settings, and 20% died in community care settings. Place of care utilization trends show us a marked increase in use of palliative-acute hospital care (13% to 26%) and acute hospital care (12% to 25%), and a small decrease in community care use (15% to 12%) in the last 2 weeks of life. We see clear disparities as those with terminal illness tend to receive more palliative-acute hospital care and community care than those with frailty and organ failure.

Conclusion: Exploring place of care trajectories can illuminate end-of-life utilization patterns not evident when reporting solely place of death. The place of care trajectories in the last 2 weeks of life differ greatly by illness cohort. Examining the variations that among place of care trajectories could inform disease-specific quality improvement activities.

Authors: Danial Qureshi, McMaster University; Hsien Seow, McMaster University

C1.2
Capacity Planning for Community-Based Dementia Health Care Services in Ontario; Using Administrative Health Care Databases and Agent-Based Simulation Methods
Presented By: Tannaz Mahootchi, Senior Methodologist, Operations Research, Cancer Care Ontario

Methods: Data Mining/Big Data Analytics

Objectives: Prevalence of dementia in Ontario is expected to reach 220,000 by 2020, with 65% of this population living in the community. Keeping persons living with dementia (PLwD) adequately supported at home requires expansion of community services capacity and innovative models of care.

Approach: PLwD between 2010 and 2015 in Ontario were identified using multiple administrative healthcare databases. Person-level data was used to establish personal and clinical attributes of this population, follow their health services usage longitudinally, and characterize transitions among care settings. An agent-based simulation model was developed using the results of these analyses and evidence from literature. The model is used to estimate the capacity requirements, the resulting changes to PLwD transitions from the community, and their health service utilization for the planned implementation of care-partner education and supports and adult day programs.

Results: If no programmatic interventions are applied, by 2020 the total number of PLwD awaiting their first LTC placement will increase by 80%, over 2015 estimates. However, if education and support programs for care-partners were to be implemented, we estimate this figure can be reduced by 32 percentage points to 48%. This is a prominent effect, given that PLwD awaiting their LTC placement use significantly more healthcare resources, including hospitalizations, emergency department visits, and homecare services, than those who are not. To realize the effects of such an intervention, Ontario needs to build capacity for 71,507 monthly counseling hours and provide monthly support groups for at least 34,304 persons by 2020.

Conclusion: Simulation models and other advanced analytics approaches calibrated at the local level is utilized to understand future demands and provide insights on the potential effects of programmatic interventions on the healthcare system while sizing the capacity needs at the system level.

Authors: Tannaz Mahootchi, Cancer Care Ontario; Dallas Seitz, Queen's University; Natalie Warrick, Cancer Care Ontario; Ali Vahit Esensoy, Cancer Care Ontario; Danielle Shawcross, Cancer Care Ontario
C1.3
Harnessing Big Data and Advanced Computing to Guide Transformation Towards Value-Based Health Systems
Presented By: Guido Powell, Research Assistant, McGill Clinical & Health Informatics

Methods: Data Mining/Big Data Analytics

Objectives: To drive decision-making from a value-oriented perspective, health system managers require contextual outcome measures that are patient-centered, longitudinal, and condition-focused. While creating these measures dynamically from massive amounts of data presents many challenges, new developments in computing, artificial intelligence, and analytics allow for an innovative platform for health system.

Approach: Our semantic web application introduces: a computational pipeline for creating and updating health system indicators across data sources, artificial intelligence approaches to organizing and presenting indicators, and sophisticated data analytics for identifying important patterns in indicators. The pipeline automates big data integration from heterogeneous sources (e.g., clinical/administrative records, surveys) by applying case-detection algorithms monitoring patient status, flexibly and rapidly generates indicators with detailed stratification/filtering. Ontologies, artificial intelligence tools encoding knowledge, define logical relationships between health concepts and indicators, enabling intelligent presentation and analysis of related indicators. Finally, advanced statistical methods help identify in indicators patterns that present opportunities for action.

Results: We implemented our design in software to create the Population Health Record (PopHR). The PopHR system is currently deployed using data for the Greater Montreal region and we are continually improving the system using feedback obtained through an iterative software development process and usability testing. We continue to expand the use of advanced statistical and machine-learning methods to make use of advanced computing to analyze multidimensional system-wide priorities as well as complex longitudinal indicators. Challenges remain, however, in areas such as encoding in the system evidence about effective health system interventions.

Conclusion: We have developed and deployed a software platform that incorporates multiple innovations to generate and intelligently analyze patient-centered indicators to guide health system transformation towards value-based care.

Authors: Guido Powell, McGill Clinical & Health Informatics; David Buckeridge, McGill University; Bernard Candas, INESSS; Maxime Lavigne, McGill Clinical & Health Informatics; Anya Okhmatovskaia, McGill Clinical & Health Informatics; Mengru Yuan, McGill Clinical & Health Informatics; Nikita Boston-Fisher, McGill Clinical & Health Informatics
C2.1
Supporting mammography screening policy in the face of uncertainty: Citizen and mammography program policy perspectives
Presented By: Laura Tripp, Research Coordinator, McMaster University

Methods: Mixed Methods

Objectives: Evolving scientific evidence has raised questions about the net benefits of organized mammography screening programs. In response, greater attention is being given to supporting women to make informed decisions about mammography screening. We engaged Ontario citizens and experts in this field to solicit their perspectives on this issue.

Approach: Expert and citizen perspectives on mammography screening were captured through: (1) three regional citizen deliberations held with women of screening-age (50 – 74 years, no history of breast cancer) and one provincial deliberation with citizens from across the province; (2) an online survey of 2,000 screen-eligible women (50 – 74 years); and, (3) interviews with experts in mammography screening. Qualitative data were analyzed using qualitative description and the principles of constant comparison. Survey data results were summarized using descriptive statistics. Results for screened vs. unscreened respondents were compared using two-sample t-tests (continuous) and chi-squared tests (categorical).

Results: Our results highlight women’s current decision-making processes and the barriers to informed decision-making from the perspectives of citizens and experts. Results from both the citizen deliberations and population survey revealed that women are often unaware of the risks of screening and are not confident when making decisions. There is a desire for informed decision-making supported by primary care providers yet there are barriers to achieving this. From the citizens’ perspective this includes the lack of balanced information, fear of breast cancer, long-held beliefs and social norms. On the expert side, challenges cited include the lack of agreement within the scientific community (particularly in relation to estimates of the magnitude of overdiagnosis), difficulties in measuring informed participation, and the challenges of working within a public-facing program.

Conclusion: Policy-makers, citizens and health care professionals are making decisions about mammography screening in the face of scientific uncertainty. Our results highlight the need for a careful weighing of evidence and values to support policy making in this scientifically challenging, emotion-laden and politically sensitive area.

Authors: Laura Tripp, McMaster University; Julia Abelson, McMaster University; Melissa Brouwers, ; Jonathan Sussman, McMaster University

C2.2
Support for reassessing post-approval cancer drugs: results from a series of public deliberations on cancer drug funding in Canada
Presented By: Colene Bentley, Health Services Researcher, Canadian Centre for Applied Research in Cancer Control - BC Cancer

Methods: Qualitative Research Methods

Objectives: Expenditures on cancer drugs have skyrocketed due to high drug prices and rates of use. Canada’s national drug review process doesn’t reassess approved drugs for cost-effectiveness, thereby limiting opportunities for policymakers to disinvest from in-use low-value therapies. We consulted Canadians on how to make drug funding decisions fair and sustainable.

Approach: Six deliberative public engagement events were held across Canada in 2016, with a total of 139 participants. A hybrid two-day model of deliberation was developed specifically for this project and was based on the McMaster Health Forum’s citizen panels and the deliberative public engagement approach developed by Burgess and O’Doherty. Transcripts were coded in NVivo and analyzed to determine where participants’ views converged and diverged. Recommendations were grouped thematically.

Results: Participants made 86 recommendations on a range of themes. Across all events, participants accepted the premise of resource scarcity and the need for trade-offs. They supported reassessing approved drugs as part of regular drug funding processes and based on principles of fairness, transparency, and funding drugs that are more versus less cost-effective. They recommended “delisting or reduced pricing” of approved drugs that are “found to be less effective than originally thought” (pan-Canadian event), and cost saving through disinvestment is “justified” even if the less expensive comparable drug “offers slightly less quality of life and quantity of life” (Ontario event). As a matter of fairness, participants specified including a grandfather clause so that patients on a delisted drug can complete their course of treatment.

Conclusion: Participants strongly supported developing cancer drug funding processes that compare new and post-approval drugs for real-world cost-effectiveness to improve efficiencies within cancer drug budgets. This support can bolster Canadian policymakers’ efforts to build decision frameworks that compare drugs for adoption or replacement to better manage scarce healthcare resources.

Authors: Colene Bentley, Canadian Centre for Applied Research in Cancer Control - BC Cancer ; Julia Abelson, McMaster University; Michael Burgess, University of British Columbia; Sarah Costa, BC Cancer; Canadian Centre for Applied Research in Cancer Control; Stuart Peacock, Canadian Centre for Applied Research in Cancer Control
C2.3
Cost-effectiveness analysis of the CALM psychosocial intervention for patients with advanced cancer
Presented By: Upasana Saha, Manager, Regional Cancer Program and Medical Affairs and PhD Student, Princess Margaret Cancer Centre and University of Toronto

Methods: Economic Analysis or Evaluation

Objectives: Managing Cancer and Living Meaningfully (CALM) is a brief supportive-expressive psychotherapy aimed to relieve depression in individuals with advanced cancer. In a randomized clinical trial comparing CALM to usual care, CALM was shown to be effective in reducing depression in this population. However, its cost-effectiveness has not been established.

Approach: A cost-effectiveness analysis from the perspective of the funder was conducted using a decision tree model to compare usual care alone versus usual care with CALM. Model inputs were derived from RCT data and costs were estimated using data holdings at the cancer centre. Patient Health Questionnaire-9 scores were allocated to one of four tiers, a low tier represents an increased severity of depression. Change in depression severity tiers at 6 months was the primary outcome. The incremental cost-effectiveness ratio (ICER) was calculated and one-way and probabilistic sensitivity analyses were conducted to assess the robustness of the findings.

Results: A total of 54 participants in the intervention arm and 59 in the control arm were included in the analysis. The ICER for the base case scenario was $1,439.15/tier. This represents the incremental cost of having one person reduce depression by 1 tier on the PHQ-9 scale. When sensitivity analyses were conducted, the ICER ranged from $798/tier to $4,949/tier. Monte Carlo probability distribution histogram showed that the ICER is less than $1,300/tier in 50% of simulations and less than $5,000/tier in 97.5% of model runs.

Conclusion: Cost-effectiveness analysis of data from a randomized controlled trial conducted in a comprehensive cancer centre indicates that CALM is a cost-effective approach to reduce depression in patients with advanced cancer. Further research is being investigated to confirm the generalizability of these findings to other settings.

Authors: Arlinda Ruco, University of Toronto and St. Michael's Hospital; Upasana Saha, Princess Margaret Cancer Centre and University of Toronto; Gary Rodin, University Health Network and University of Toronto; Christopher Lo, University Health Network; Sarah A Hales, University Health Network and University of Toronto

C2.4
Public Health Mode Personalized Medicine – Risk Stratification for Breast Cancer Screening
Presented By: Michael Wolfson, Prof., University of Ottawa

Methods: Statistics/ Econometrics

Objectives: Breast cancer screening is a major public health program, while using genetics to support personalized medicine would seem the antithesis. However, these two approaches can join powerfully with the possibility of using genetic information as the basis for risk-based screening. We provide quantitative results on the potential implications.

Approach: BOADICEA is a breast cancer risk stratification algorithm already in wide use around the world and in particular in Ontario for high risk screening. We have embedded the core BOADICEA algorithm into a simulation model for the Canadian population, the Genetic Mixing Model (GMM). GMM provides the empirical foundation for assessing risk stratification for a representative population by constructing an estimate of the multivariate joint distribution of family history (FH), presence of rare genetic mutations like BRCA1/2, and a polygenic risk score (PRS), derived from genome-wide association studies.

Results: Using a polygenic risk score (PRS) is far more useful for stratifying women according to their risk of breast cancer than the two most commonly used indicators at present: family history and rare genetic mutations. We have assessed a variety of combinations of these genetic indicators, in combination with offering universal risk assessment to women in Canada at various ages, and using different thresholds for categorizing women as being at high risk. The optimal age for risk assessment is in the 35 to 40 range. And the PRS is substantially more useful than family history or rare mutations for stratifying women for screening intensity by their risk of breast cancer.

Conclusion: Shifting from the current public health approach of primarily age-based screening for breast cancer, to one based on risk stratification, especially making use of recent advances in assessing polygenic risk, offers major potential benefits.

Authors: Michael Wolfson, University of Ottawa
C3.1 Evaluating the Impact of Delisting High Strength Opioids on Opioid Use in Ontario

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

Methods: Program or Policy Evaluation

Objectives: As part of Ontario’s Opioid Strategy, high-strength fentanyl, hydromorphone, and morphine were delisted from the public drug formulary for non-palliative care on January 31, 2017. We assessed the policy’s effect on opioid use stratified by prescriber palliative care status, opioid, and strength.

Approach: We conducted a population-based cross-sectional study among individuals who were dispensed long-acting fentanyl, hydromorphone, or morphine through the Ontario Drug Benefit Program between January 1, 2014 and July 31, 2017. We reported the total number of recipients stratified by prescriber type (palliative vs. non-palliative), and the total volume of each drug dispensed stratified by strength, monthly. We used interventional autoregressive integrated moving average models to assess the policy’s impact. In a secondary analysis, we compared a cohort of non-palliative care patients receiving high-strength opioids at the time of policy implementation to a historical cohort, to assess changes in patterns of access.

Results: We observed a 98% decrease in the number of publicly-funded high-strength opioid recipients between December 2016 and July 2017 (5,930 to 133 recipients) among all prescribers. The policy led to a significant decline in the total volume of all long-acting opioids dispensed; hydromorphone from 20,374,621 to 16,952,097mg (p<0.01), morphine from 40,644,190 to 33,555,480mg (p=0.03), and fentanyl from 9,604,913 to 5,842,405mcg/h (p<0.01). This reduction generally corresponded with an increase in use of low-strength formulations. In our secondary analysis, 5.4% of people in the intervention cohort ceased to receive publicly-funded opioids compared to 0.7% in the historical cohort (p<0.01). Similarly, the intervention cohort was much more likely to obtain high-strength opioids through cash or private insurance compared to the year prior (32.5% vs. 0.2%; p<0.01).

Conclusion: The delisting of high-strength opioid formulations in Ontario has substantially changed the landscape of opioid use in this province, by reducing the number of high-strength opioid recipients and overall volume of publicly-funded fentanyl, morphine and hydromorphone dispensed in Ontario. Changes in access to these opioids occurred among non-palliative care patients.

Authors: Qi Guan, University of Toronto; Wayne Khuu, Institute for Clinical Evaluative Sciences (ICES); Diana Martins, Institute for Clinical Evaluative Sciences; Mina Tadrous, St. Michael’s Hospital; Tara Gomes, St. Michael’s Hospital

C3.2 The Impact of a Household-level Deductible on Drug Use Among Lower Income Adults

Presented By: Heather Worthington, Research Coordinator, UBC Centre for Health Services and Policy Research

Methods: Program or Policy Evaluation

Objectives: Several Canadian public drug plans have income-based deductibles. However, we have limited rigorous information on their impact, particularly for vulnerable populations. Therefore, we studied the impact of the deductibles used in British Columbia’s Fair PharmaCare program on drug utilization among lower income adults.

Approach: We used a quasi-experimental regression discontinuity design to study the impact of BC rules that impose no deductible on households with incomes less than $15,000, compared to a 2% of household income deductible to those with incomes between $15,000 to $30,000. A second break at $30,000 requires households to spend 3% of net household income before receiving public coverage. We used 24 million person-years of data between 2003 and 2015 to study public drug plan expenditures and overall drug use.

Results: The move from no deductible to a 2% deductible and the move from a 2% deductible to a 3% deductible led to a decrease in the proportion of beneficiaries receiving benefits by 0.33 and 0.05 respectively, as well as substantial drops in the extent of public drug plan expenditures across the two thresholds ($59.94 and $26.12 respectively). Despite this difference in public subsidy, we found much smaller changes in total drug spending. We found a reduction of $26.00 in annual total drug expenditures at the $15,000 threshold (95%CI: -45.48 to -6.51, p=0.012). In contrast, we found no statistically significant change in total expenditures when households moved from deductibles of 2% to 3% of household income at the $30,000 threshold (estimate=-$6.10, 95%CI: -24.08 to 11.89, p=0.48).

Conclusion: Income-based deductibles considerably impacted the extent of public subsidy for prescription drugs. For lower-income households making around $15,000, a 2% deductible led to a notable reduction in overall drug use and costs. However, a 2% versus a 3% deductible at $30,000 had no notable impact on drug use.

Authors: Heather Worthington, UBC Centre for Health Services and Policy Research; Michael Law, UBC; Lucy Cheng, UBC Centre for Health Services and Policy Research; Muhammad Mamdani, Li Ka Shing Centre for Healthcare Analytics Research and Training; Sumit Majumdar, University of Alberta Department of Medicine; Kimberly McGrail, School of Population and Public Health, University of British Columbia; Centre for Health Services and Policy Research, University of British Columbia; Fiona Chan, UBC Centre for Health Services and Policy Research; Tracey-Lea Laba, The University of Sydney/University of British Columbia
C3.3
Pharmaceutical Promotion, Shared Patient Networks and Second Generation Antipsychotic Prescribing
Presented By: Simon Hollands, PhD Fellow, Pardee RAND Graduate School

Methods: Statistics/ Econometrics

Objectives: To examine the association between pharmaceutical manufacturer sponsored promotional payments for Second Generation Antipsychotics (SGA) and the likelihood of physicians prescribing them, considering both physician level and network level effects.

Approach: Cross-sectional exploratory analysis linking publicly available prescriber data, pharmaceutical promotion data, and shared patient networks, in the United States set in 2015. We use Care set labs root NPI graph to create shared patient networks for the population of physicians billing to Medicare. We link these networks to individual prescribing and pharmaceutical promotion data using National Provider Identifiers (NPI). Local shared patient networks are identified using the Louvain community detection algorithm. We use hierarchical binomial regressions to examine effects of promotion on prescribing at the physician and network level.

Results: Physicians who took 4+ payments for Abilify in 2015 had 13% higher odds of prescribing it than those with no payments, after adjusting for physician level variables. At the network level the odds of a physician prescribing Abilify were 44% higher for a physician in a network that was in the highest quartile of receiving Abilify payments compared to one in the lowest quartile.

Conclusion: Until now, research informing policy aimed at mitigating conflicts of interest related to pharmaceutical promotional payments and prescribing has only considered individual level effects. This work shows additional effects at the physician network level that should also be considered when forming and policy.

Authors: Simon Hollands, Pardee RAND Graduate School

C3.4
Classification Methodology and Small Area Variation Analysis of Prescription Drugs in a Publicly Insured Senior Population
Presented By: Maude Laberge, ,

Methods: Statistics/ Econometrics

Objectives: The objectives of this study are 1) to develop a classification methodology of prescription drugs that enables analyses of utilization by mutually exclusive drug classes; 2) test the methodology to estimate small area variations in prescription drugs in a publicly insured population.

Approach: This population-based study design used small area variation analysis methods to estimate geographical variations and rank prescription drug classes by their level of variation. Prescription drug data were extracted from the Régie d’assurance maladie du Québec database for the fiscal year 2016-2017 for all seniors. Drugs were categorized based on an adaptation of the World Health Organization ATC system. Age-sex adjusted prescription rates were calculated for each local health network (ca. 90,000). Systematic components of variation (SCV) and extremal quotients were calculated for each therapeutic indication. Drug classes were ranked based on SCV.

Results: After excluding drugs for which there were very few users, and drugs for rare diseases, our study population consisted of 1,086,248 seniors. There were 597 denominations for a total drug expenditure of CAD 2.192 billion. Drugs were classified into 47 therapeutic targets. SCV varied between 0.5 for antihypertensive drugs and 162.5 for HIV drugs, with a SCV weighted average of 2.8. Therapeutic targets with higher numbers of consumers had lower SCV. The top five therapeutic targets in terms of the numbers of consumers had SCV ranging between 0.6 and 2.7. Three therapeutic targets were identified as highly used and as having high utilization variations: benzodiazepines, laxatives, and non-ORL corticoids. Large variations were also observed in therapeutic targets with low scientific uncertainty such as anticonvulsants.

Conclusion: Our findings show variations in the consumption of many classes of prescription drugs across small areas in the senior population of the province of Quebec. The results can support prioritization strategies to improve practice quality, reduce variations and potential inappropriate use of prescription drugs.

Authors: Maude Laberge, ; Bernard Candas, INESSS; Caroline Sirois, Université Laval; Guillaume Boucher, INESSS; Houssem Missaoui, Université Laval
C4.1
Contributions of CIHR Health System Impact Fellows to Equitable Health Systems across Canada
Presented By: Samiratou Ouédraogo, CIHR-INS PQ-McGill University Health System Impact Fellow, Institut national de santé publique du Québec

Methods: Program or Policy Evaluation

Health inequities are avoidable differences in health that are socially unjust and limit the ability for individuals to reach their full potential. Health inequities are largely attributable to inequities in the social determinants of health (SDOH). It is widely accepted that the SDOH cause significant direct and indirect costs to health systems, thus requiring urgent, inter-sectoral, whole-of-government attention and action. While Canada has played international leadership role in generating global evidence about the SDOH and resulting health inequities, there has been limited, meaningful actions to reduce health inequities within health system transformation initiatives. To optimize health outcomes for all individuals in Canada, contemporary health systems must move beyond traditional delivery and service provision to embed health equity into their core business. Policy reforms integrating innovative frameworks and strategies within the health system may enable planning and implementing equitable health care, and SDOH. A diversity of evidence-informed initiatives and interventions focused on health services, health promotion and disease prevention, and broader determinants of health are also required to improve health system efficiency and support sustainable and population health outcomes.

The Health System Impact (HSI) Fellowship was launched by the CIHR to help prepare a cadre of the country’s up-and-coming brightest minds, with a doctoral degree in Health Services and Policy Research or a related field, for successful careers as leaders of evidence-informed health and health system improvement. This panel reports on how these Fellows, as embedded researchers in health system and health policy-related organizations across Canada, are contributing to reducing health inequities. The presentations and discussions with audience members will allow identifying needs, gaps and areas for improvement.

Samiratou Ouédraogo will present an overview of how inequities are perceived by the HSI fellows and mentors and integrated into the research projects.

Farah Mawani will share work of the Knowledge Translation Platform for Equity-focused Health Evidence and Research network’s non-communicable disease (NCD) Inequities Initiative, aiming to propose national- and global-level NCD equity indicators, and an inclusive process to developing them.

Fatheema Subhan will present an overview of the current health care programs and policies in Canada to improve diabetes management in Indigenous communities.

Jane Polsky will discuss the recent focus on incorporating data on SDOH into Ontario’s Institute for Clinical Evaluative Sciences, a research institute traditionally focused on administrative health data and health services research.

Jonathan Lai will present on the gaps in health care for people with developmental disabilities, particularly after they age-out of pediatric care and transition into adult care, and introduce a model of medical and dental care currently piloted in Montreal for adults with developmental disabilities to address this issue.

Meaghan Sim will present an overview of the development of the population health policy framework for the Nova Scotia Health Authority.

Following their brief presentations, panelists will each discuss their recommendations for integrating equity into:
- a. Canada’s health system;
- b. Training/fellowship programs.

Authors: Samiratou Ouédraogo, Institut national de santé publique du Québec; Jane Polsky, Institute for Clinical Evaluative Sciences - St. Michael’s Hospital; Meaghan Sim, Nova Scotia Health Authority; Dalhousie University; Farah N. Mawani, Dignitas International - University of Alberta; Jonathan Lai, McGill University; Fatheema Begum Subhan, University of Alberta
C5.1
Co-design, production, and usability testing of a communication toolbox for delivering evidence-informed health information to older adults
Presented By: Rebecca Ganann, Assistant Professor, McMaster University

Methods: Qualitative Research Methods

Objectives: 1. Determine how older adults gain access to trusted health information and identify their needs to inform the design of a communication toolbox. 2. Apply design principles to the production of a communication toolbox. 3. Evaluate preliminary toolbox usability and older adult user engagement in the co-design process.

Approach: An innovative persona-scenario method was utilized to determine user needs identified by diverse older adults. Data were analyzed to identify requirements for packaging health information. User requirements were converted into design specifications that informed production of a communication toolbox to enhance delivery of trusted health information on the McMaster Optimal Aging Portal website. Production involved development of an introductory video for the existing website, design adaptations to enhance presentation of evidence summaries, and outreach strategies. Preliminary usability testing using a Human Computer Interaction Lab and an evaluation of user engagement in the co-design process were conducted; both were analyzed descriptively.

Results: Eighteen older adults working in pairs participated in a persona-scenario exercise, creating 12 persona-scenarios. Personas varied in gender, age, comfort with technology, health concerns, available social support, and access to primary care. Persona-scenarios informed toolbox design and formatting requirements for diverse older adults including: non-electronic and multi-modal electronic approaches to accessing relevant, concise, clear language summaries; accessibility; and privacy. User specifications were grouped into four major categories: content, framing of content, technical formats and functionalities, and knowledge translation strategies. Preliminary usability testing supported value of an introductory video and integration of pictorial and multi-media approaches for content delivery. Users also offered valuable insights to further refine the prototypes (e.g., levelling of language, content clarity, depth of information presented, and ability to opt-in more as desired).

Conclusion: Evidence-informed health information to support community-dwelling older adults in maintaining their health is essential. Relevant users were meaningfully engaged in developing novel approaches to communicating evidence-based health information. The communication toolbox can inform knowledge translation approaches by researchers and providers targeting older adults and their caregivers.

Authors: Rebecca Ganann, McMaster University; Ruta Valaitis, McMaster University; Stephen Gentles, McMaster University; Cynthia Lokker, McMaster University; Alfonso Iorio, McMaster University; Tahir Irtaza, McMaster University; Opeyemi Okelana, McMaster University; Claudia Yousif, McMaster University; Nour El Shamy, McMaster University

C5.2
Evaluation of a conceptual framework (KaT) for creating KT tools and products: A Delphi study
Presented By: Monika Kastner, Research Chair, Knowledge Translation and Implementation, North York General Hospital

Methods: Mixed Methods

Objectives: Not all KT interventions (those that facilitate the uptake of evidence and aimed at improving care) are developed and implemented rigorously, nor created for sustained use, and their impact is variable. In response, we developed a conceptual framework for rigorously creating KT tools and products: Knowledge-activated Tools (KaT) framework.

Approach: The conceptual KaT framework was informed by a literature review, followed by a Delphi study with a panel of KT science and practice experts. The objectives of the Delphi study were to reach consensus on the framework’s organization and structure, and to ensure that it was understandable, comprehensive and useful to guide a wide range of knowledge users (patients, clinicians, researchers, policy makers) in creating and implementing KT tools. Consensus to include a KaT framework item was defined as a score of at least 5 of 7 by at least 80% of Delphi participants. We performed quantitative and qualitative analyses.

Results: Our Delphi study comprised three rounds: 1) online-survey (n = 35); 2) live discussions on items that did not reach consensus (n = 19); and 3) finalizing the KaT framework by re-rating any remaining non-consensus items (n = 26). KaT was iteratively changed after each round and includes the following components: a) Explore (users identify their KT purpose, scope, and existing knowledge base); b) 3 broad domains identified as important in KT tools creation (Develop, Implement, and Disseminate); c) 3 Impact Drivers identified as important to consider across any or all of the 3 domains (integrated KT, Sustainability, Scalability); d) Evaluation; and e) an Action plan, which represents a customized output summarizing the user’s inputs according to their identified KT purpose and applicable KaT components.

Conclusion: 35 KT experts informed the final KaT Framework, which represents what is needed to create rigorous KT tools with the best potential for impact. Once we survey a wide range of knowledge users on the potential usefulness of KaT, we will translate the framework into a user-responsive, interactive, online platform.

Authors: Sharon Straus, St. Michael’s Hospital; Monika Kastner, North York General Hospital; Julie Makarski, NYGH; Leigh Hayden, North York General Hospital; Yonda Lai, St. Michael’s Hospital; Victoria Treister, Li Ka Shing Knowledge Institute of St. Michael’s Hospital; Joyce Chan, North York General Hospital
C5.3
Testing integrated knowledge translation processes to improve the participation of children with disabilities in British Columbia in physical activity
Presented By: EbeleMogo, Postdoctoral Researcher, McGill University

Methods: Mixed Methods

Objectives: To develop an integrated knowledge translation to policy approach. To improve the methods to engage community and clinical partners in discussing solutions related to leisure promotion for children with disabilities, tailor and convey information about participation in leisure to policy makers and test knowledge translation to policy interventions

Approach: We used a mixed methods approach to identify key stakeholders, conducted a rapid review of the research literature on the priority areas identified by stakeholders, developed a targeted policy brief, conducted a policy dialogue and analyzed the effectiveness of the knowledge translation strategy. An open ended qualitative questionnaire and Likert type scale survey was administered to participants before and after the policy dialogue to understand their preferred formats for engaging with research data. We also explored participants’ experiences of the dialogue and their intent to act on the information gained

Results: Community grassroots organizations were highly engaged in the process and were able to convey local experiences to relate to research evidence. We identified policy, individual and organizational facilitators and barriers influencing the use and application of research evidence to policy in childhood disabilities. We also identified stakeholders’ preference on content, format and the presentation of policy information

Conclusion: Dissemination of research alone is not sufficient for influencing policy. Impacting population health requires not only evidence, but translation strategies that effectively address facilitators and barriers at the individual and organizational levels, and the context specific information brought by different stakeholder groups.

Authors: Ebele Mogo, McGill University; Keiko Shikako-Thomas, McGill University; Jonathan Lai, McGill University

C5.4
A PRACTICAL, EVIDENCE-BASED APPROACH TO BRIDGING THE VALLEY OF DEATH IN HEALTH SYSTEM INNOVATION
Presented By: KylieKidd Wagner, Primary Care Research Lead, TOP-AMA

Methods: Qualitative Research Methods

Objectives: The gap between innovation and widespread adoption (known within diffusion of innovation literature as the ‘valley of death’) needs to be “bridged” to spread health system innovation. We sought to understand how primary care teams approach the work of change, thus learning more effective strategies for broader engagement and implementation.

Approach: Within the context of adopting the Patient’s Medical Home model, we used Cognitive Task Analysis (CTA) to interview family physicians and 1-2 team members (18 interviews across 8 sites). CTA requires extensive training and is an effort-intensive method, but has a decades-long track record of understanding and improving team function in high-stakes settings such as civil and military aviation, firefighting, and intensive care. Group analysis meetings were held to review the coded transcripts and develop mental models of how teams approach and manage the work. Purposeful sampling for variation in clinic size, rurality and early majority vs early adopter status.

Results: Individual physician preference vs. clinic preference to engage in a change creates a complexity of differences in how teams approach change and what supports they require. Those considered early majority (those who are a bit slower to take up change) were open to try new innovations but in small incremental steps. Easy access to support when needed and the use of formal and informal structures and processes facilitated their team engagement. Working together to improve how the work gets done also fostered an “equal-footing” dynamic amongst team members.

Conclusion: Teams considered as early majority require more time and ongoing, local support to transform. Our findings will provide policy makers, leaders and other stakeholders with a framework for designing and modifying large-scale interventions to spread beyond innovators and early adopters.

Authors: Tanya Barber, University of Alberta - EnACT; Sandee Foss, AMA-TOP; June Austin, TOP-AMA; Kylie Kidd Wagner, TOP-AMA; Lynn Toon, TOP-AMA; Lee Green, University of Alberta - EnACT; Sue Peters, AMA-TOP; John Lester, AMA-TOP; Arvelle Balon-Lyon, AMA-TOP
C6.1
The future of collaborative mental health care in Canada: Moving from vision to reality
Presented By: Matthew Menear, Postdoctoral Fellow, Laval University

Methods: Qualitative Research Methods

Collaborative mental health care is an approach to patient-centered care that emphasizes interprofessional collaboration as the foundation for improving access to evidence-based mental health and substance use care in primary care. In collaborative mental health care, healthcare providers from a variety of primary care and mental health settings work together to offer mutual supports and more coordinated, complimentary services. In 2011, the College of Family Physicians of Canada and the Canadian Psychiatric Association published a position paper that outlined a vision for collaborative mental health care in Canada and presented recommendations for achieving this vision. However, more than five years later and in the midst of primary care and mental health care reforms, implementation of collaborative care remains highly variable both across and within Canadian provinces.

This panel will describe several avenues for shaping the future of collaborative mental health care in Canada and present clear recommendations that help researchers, practitioners and policymakers work together to make this new vision a reality.

Panel members will discuss the following topics:

• Dr. Nadiya Sunderji will discuss the importance of quality measurement and improvement for collaborative mental health care. Specifically, greater efforts must be made to implement evidence-based models of care and to evaluate what has been implemented, thus generating new practice-based evidence. Dr. Sunderji will present her team’s quality framework for collaborative mental health care, which can be used as a resource to better define, evaluate, and improve collaborative care.
• Dr. Matthew Menear will discuss the importance of patient and family engagement in the delivery and planning of collaborative mental health care. Strategies for engaging patients in families in care, such as involvement in shared decision-making, supports for self-management, and peer and family supports, are not well described in collaborative care models and not commonly adopted in practice. Similarly, little effort has been made to actively involve patients and families in the planning and evaluation of collaborative mental health care services. Dr. Menear will present findings from a realist review of patient and family engagement strategies in collaborative mental health care, highlighting the concrete steps that can be taken to achieve greater engagement.
• Dr. Rachelle Ashcroft will discuss the need for supportive contexts for collaborative mental health care. The ability of providers to delivery timely, high-quality mental health care in primary care is influenced by a range of factors operating within broader team, organizational and system contexts, notably the various financial and non-financial incentives that impact teams and clinicians. Ensuring that these incentives are aligned and supportive of effective collaborative care practices is of critical importance. Dr. Ashcroft will present findings from a large grounded theory study examining the influence of incentive systems on the quality of mental health care within Family Health Teams in Ontario.

Dr. Ruth Lavergne, Chair of the CAHSPR Primary Healthcare Theme Group, will moderate the session and explore panelists’ views on challenges and opportunities for advancing their vision, and offer concluding remarks on how recommendations apply to primary healthcare more broadly.

Authors: Matthew Menear, Laval University; Ruth Lavergne, Simon Fraser University; Rachelle Ashcroft, University of Toronto; Nadiya Sunderji, University of Toronto
What Matters to Patients: Integrating patients’ experiences into healthcare design, delivery and evaluation

Presented By: María José Santana, Assistant Professor, Cumming School of Medicine, University of Calgary

Methods: Mixed Methods

Patients bring a unique perspective and expertise to healthcare, their own. In Canada, some jurisdictions have been working hard to integrate what matters to patients into their care delivery models and performance evaluation strategies both at the point of care provider and at the system level. Given recent findings that patient-reported experiences and outcomes are associated with traditionally monitored metrics, such as readmission rates and patient safety measures, patient self-reports are now viewed not only as important, but necessary indicators of the quality of the healthcare system.

A patient-centred care (PCC) model encourages healthcare providers, researchers and policy-makers to partner with patients, families and communities to design and deliver care. A PCC model focuses on what matters to patients and their families at both individual and system levels.

However, despite concerted efforts by some, for the most part, there continues to be a focus on care delivery and quality evaluation through the lenses of healthcare providers, researchers and policy-makers.

Our panel will present initiatives underway across Canada that are collaborating with Patient Partners to embed the values, preferences and needs of patients, families and communities into healthcare delivery and evaluation. Specifically, members of the panel will address:

1. Why it is important to co-design healthcare delivery and evaluation strategies with patients, families and community stakeholders;
2. What strategies have been trialed through this partnership;
3. What the measurable results of this partnership are showing on direct care delivery and evaluation of care and services.

There will be five presentations:

Ms. S Zelinsky, patient research partner, will discuss from the patient’s perspective why partnering and co-designing our evaluation metrics with patients is important.

Dr. M.J. Santana will discuss various measurement approaches, how to engage patients, families and communities in the co-design of these measurements, and how these can be quantified and utilized to inform policy.

Dr. S Brien will discuss the importance of considering different audiences when reporting results that attempt to meaningfully include what matters most to patients, families and communities.

Ms. L Cuthbertson will present on British Columbia’s development of a central data warehouse that makes patient-reported experience and outcome data available to researchers and analysts for secondary analysis and linkage with other clinical and administrative databases to inform patient-oriented research.

Ms. K Leeb will address how collecting and reporting about what matters to patients from a pan-Canadian perspective permits national benchmarking and learning from best practices as an important first step to co-design with patient and family partners.

At the end of this discussion, participants will have learned about initiatives at the local and pan-Canadian level that strive to capture what matters most to patients, families & communities and that embed that voice in the design of care models and evaluation of healthcare quality. Participants will also have heard about the potential to use patient-reported data for research purposes that will ultimately inform policy. The goal of this panel is to provide participants with a deeper understanding of initiatives underway in Canada aimed at improving and evaluating care through the lens of patients.

Authors: María José Santana, Cumming School of Medicine, University of Calgary; Sandra Zelinsky, The Methods Hub; Susan Brien, Health Quality Ontario; Lena Cuthbertson, British Columbia Ministry of Health; Kira Leeb, CIHI; Jeanie Lacroix, CIHI
Adding Life to Years for Long Term Care Residents  
Presented By: Janice Keefe, Professor, Mount Saint Vincent University

Methods: Mixed Methods

Late life is time when older adults, and their caregivers, face health and social issues that can affect their well-being, particularly for those living in residential long term care (LTC) settings. Adding years to life is of little value without adding quality to those years. Yet, in this highly regulated complex environment, innovation in care practice that supports good end of life care can be stymied. The Seniors – Adding Life to Years (SALTY) team is a collaboration of well-established research teams in the area of residential LTC from across Canada with both national and international reach. The Team holds both scope and depth of expertise in clinical, critical, social and policy perspectives and employs an integrated Knowledge Translation (iKT) model engaging decision makers and individuals to whom the research will impact (residents, families, staff, volunteers). The Team, through multi-sites and multiple methods, aims to spread effective approaches to quality care and quality of life (QoL) within and across jurisdictions. This panel presentation brings together the Team’s lead investigators to demonstrate the dynamic work underway whose results will inform policy and practice. The objectives of the panel are: 1) to highlight, through evidence-based research, the multiple ways that QoL in residential LTC could be improved, despite the many challenges faced within this care environment, and, 2) to show how the project, through its innovative models of iKT, trainee environment, and key stakeholder engagement (including residents, their caregivers, families, friends and volunteers), can shape policy and practice, enabling the best QoL during a person’s last years in residential LTC. Dr. Janice Keefe, Director of the Nova Scotia Centre on Aging and the project’s Scientific Lead, will present the overall approach to the SALTY project highlighting the iKT model of stakeholder engagement which is at the heart of the SALTY project and will present results from her team’s analysis of policies from four jurisdictions that enable or act as barriers to resident QoL. Dr. Carole Estabrooks, Principal Investigator of the Translating Research in Elder Care (TREC) research program, will describe how her team is utilizing interRAI data to develop an approach that will enable researchers, policy makers and care facilities to validly and reliably measure quality of end of life care. Dr. Ivy Bourgeault, Lead of the Canadian Health Human Resources Network, will discuss a novel method for examining relational approaches to care in LTC and Dr. Denise S. Cloutier, Social Gerontologist and Health Geographer, will share insights from her team’s evaluation of an Island Health, British Columbia, implementation project aimed at integrating a palliative approach in LTC.

Authors: Janice Keefe, Mount Saint Vincent University; Carole Estabrooks, ; Ivy Bourgeault, University of Ottawa; Denise Cloutier, University of Victoria
D1.1

**Ethical issues associated with partnering with patients in healthcare research**

Presented By: Joë T. Martineau, Professeure adjointe d'éthique organisationnelle, Département de management, HEC Montréal. Patiente-partenaire, CHUM. Patiente-chercheure impliquées dans divers projets de recherche en santé., HEC Montréal

Methods: Qualitative Research Methods

As interest and activities related to patient participation in different spheres of health increase, researchers, members of research ethics boards, health facility managers and professionals encounter more frequently questions and/or ethical dilemmas related to patient engagement in health research. Research with, and not on, the patient involves significant changes in the governance of research projects, in the composition of research teams, in the relationships between team members, as well as in the design and conduct of research itself. In many cases, actors are confronted with the various issues that emerge from these changes, without any clear direction. Indeed, faced with the emergence of the practice of engaging patients as research partners, there is still little literature addressing the subject. Yet, within the Standing Committee on Ethics of the Canadian Institutes of Health Research (CIHR), there is a consensus on the imperative to clarify these issues, to empower researchers and research organizations to enforce high ethical standards, and to help patient-partners understand their roles, rights and responsibilities. Across the country, these reflections are needed to support research teams (researchers, professionals and patients), members of research ethics boards, and managers of research institutions in this area.

This presentation aims to identify and discuss the most important ethical issues associated with patient engagement in health care research. For example, issues of instrumentalization of patients, opportunism and moral intent in patient engagement, power relations between different stakeholders, representativeness, legitimacy, confidentiality, as well as the question of the compensation of the patient-researchers, will be addressed.

In order to reflect on these issues, the panellists will also mobilize their own experience as patient-partners engaged in research, or as a researcher with a strong background in research conducted in partnership with patients. This presentation is not intended to discourage researchers, future researchers and patients from engaging in partnership research. On the contrary, we recognize the many benefits of this approach and as such, our goal is to emphasize the ethical issues associated with these initiatives in order to raise awareness of key players and help them to prevent and address potential challenges.

Panelists:
- Antoine Boivin : MD, Researcher at the CHUM Research Center (CRCHUM), Canada Research Chair in Patient and Public Partnership.
- Nicolas Fernandez : Assistant professor, Université de Montréal. Co-chair of the working committee on the ethics of patient engagement, CIHR.
- Marjorie Montreuil : Nurse, PhD, Postdoctoral Fellow, Institut de recherches cliniques de Montréal (IRCM) & Université de Montréal
- Ghislaine Michèle Rouly : Patient-researcher at the CHUM Research Center.
- Joë T. Martineau : Assistant professor, Department of Management, HEC Montréal. Patient-researcher at the CHUM.

Authors: Joë T. Martineau, HEC Montréal; Antoine Boivin; Nicolas Fernandez, Université de Montréal; Ghislaine Michèle Rouly, Centre Hospitalier de l'Université de Montréal (CHUM); Marjorie Montreuil, Université de Montréal
D2.1 System change in residential long term care: The Translating Research in Elder Care (TREC) program of research

Presented By: Matthias Hoben, Postdoctoral Trainee, University of Alberta

Methods: Mixed Methods

Long term care (LTC) facilities provide 24-hour care to vulnerable older adults who cannot live safely at home. The majority of LTC residents are very old, have multiple chronic conditions, and experience significant physical and cognitive functional limitations. Unregulated care providers with little formal training (care aides) provide up to 90% of direct care in LTC – a physically and emotionally demanding job. Numerous quality concerns have persisted in LTC for decades, negatively affecting caregivers’ quality of work-life and residents’ quality of life. Translating Research in Elder Care (TREC) is a longitudinal program (2007-2022) of applied health services research, involving researchers, trainees, decision makers, care providers, residents and family/friend caregivers from across Canada, as well as researchers from the US and Europe. TREC’s mission is to find practical solutions to improve quality of care and life of frail older residents, and quality of work-life of LTC staff. We have now started to leverage the success of TREC’s 10-year history to contribute to a systematic transformation of residential LTC. In this panel, we will (a) give an overview of the TREC program of research, (b) present three studies in which trainees have key roles that illustrate how TREC is unique and innovative, and (c) outline TREC’s future plans to contribute to transforming the LTC system. Modifiable features of care unit work environments (e.g. leadership, culture, interactions) are a key focus of TREC. TREC has demonstrated that more favorable work environments are associated with improved quality of work-life and best practice use by care staff, and with decreased symptom burden of LTC residents in the last 12 months of life. After an introduction to TREC, we will present a project based on TREC data (3,608 care aides from 275 care units in 84 Western Canadian LTC facilities) that illustrates how modifiable features of care unit work environments are associated with care aides’ change-oriented organizational citizenship behaviours. Our third presentation will introduce one of TREC’s cluster-randomized intervention trials – Improving Nursing Home Care Through Feedback On Performance Data (INFORM). INFORM is an innovative, pragmatic trial in 67 Western Canadian LTC facilities. The intervention is based on goal setting theory and audit and feedback evidence. INFORM compares the effectiveness of three approaches to feed back research data to care unit managerial teams in order to improve care unit performance. We will specifically present results of our comprehensive process evaluation (intervention fidelity). The fourth presentation will illustrate, based on TREC data (7,817 LTC residents in 18 LTC facilities that have participated in TREC since 2007), how length of stay (LoS) of LTC residents has changed by admission year (2008-2015), how these patterns differ across three Western Canadian health regions, and which resident and LTC facility characteristics are associated with LoS. We will specifically discuss policy implications of our findings. We will conclude our panel with an outlook of next steps TREC will take to increasingly focus on system-level change (e.g. scale up and spread of effective interventions, policy analysis, increased citizenship engagement).

Authors: Matthias Hoben, University of Alberta; Carole Estabrooks; Tim Rappon, University of Toronto, Institute of Health Policy, Management, and Evaluation
D3.1

The Development of a universally accessible Canadian Medication Guide: A Panel Discussion

Presented By: Lise Bjerre

Methods: Qualitative Research Methods

Background: Ensuring universal access to high-quality, standardized medication information for both health care providers and patients would go a long way towards promoting evidence-based prescribing and patient safety, and, at a system level, cutting costs associated with treatment of medication-related ailments. A national stakeholder roundtable was convened in April 2017 to develop a vision, recommendations and action plan to address critical gaps in access to medication information in Canada. The vision and recommendations have been endorsed by a number of national health system stakeholders, and will be presented in a report of findings and recommendations from the panel to be published January 22, 2018.

Objective: To discuss the need for a Canadian Medication Guide, in the context of recent relevant developments in clinical practice, patient safety, digital health and health policy, and what it will take to build solutions that meet the medication information needs of both health care providers and patients.

Panelists: Dr. Lise M. Bjerre is a practicing family physician and Clinician-Investigator at the University of Ottawa Department of Family Medicine and Bruyère Research Institute whose research focuses on medication appropriateness. Dr. Bjerre leads the Rational Therapeutics and Medication Policy (RTMP) Research Group that hosted the above-noted Symposium and is Chair of the Steering Committee for the Canadian Medication Guide. Chris Power, CEO of the Canadian Safety Patient Institute delivered the keynote address at the Symposium, is a member of the Steering Committee for the Canadian Medication Guide and recently participated as a member of the federal advisory panel on healthcare innovation. Susan Sepa is Group Director of Clinical and Change Leadership at Canada Health Infoway, the national leader in digital health, and is also a Steering Committee member. Dr. Regis Vaillancourt is the President of the Ontario College of Pharmacy, an RTMP member and fellow of the Canadian Society of Hospital Pharmacists, the International Pharmaceutical Federation, and the Ordre de Pharmaciens du Québec. For 15 years he has collaborated extensively on the development of various tools to support clinicians in counselling vulnerable patients and is currently interested in the role women take in managing medication within their families. Joining them will be Maryann Murray, a patient representative with Patients for Patient Safety Canada, a program of the Canadian Patient Safety Institute. Together, this expert panel will be able to discuss, from a variety of critical perspectives, the need for a Canadian Medication Guide that addresses the medication information needs of both health care providers and patients, and what concrete steps must be taken to move towards that goal. Bilingual panelists will take questions in English or French.

Results: Audience members will develop a clear understanding of current gaps in access to medication information in Canada; the implications of these gaps for the practice of medicine, patient safety and our health care system; options to address these gaps and move towards a Canadian Medication Guide; and, the relevance of these issues in light of other recent, relevant developments in related fields.

Authors: Lise Bjerre, Christine Power, Canadian Patient Safety Institute; Chad Leaver, Canada Health Infoway - Inforoute Santé du Canada; Regis Vaillancourt, Children’s Hospital of Eastern Ontario
D4.1  
Learning Health Systems (LHSs) speed healthcare improvement  
Presented By: Merrick Zwarenstein, Director, Centre for Studies in Family Medicine  

Methods: Data Mining/Big Data Analytics  

Learning Health Systems (LHSs) speed healthcare improvement by…..  

1) integrating research into health systems, using  
2) electronic medical and administrative data, so that  
3) continuous improvement uses local real world evidence and monitoring to  
4) engage patients, clinicians, and managers in  
5) implement improved clinical, community and health system interventions.  

Our speakers will describe their experiences leading the implementation of Learning Health Systems in the United States and in Ontario, and a framework of competencies for a LHS.  

This will be followed by a 30 minute interactive discussion between audience and panelists to explore other issues and examples of LHS and next steps for advancing LHSs in Canada.  

Chris Forrest, Professor of Pediatrics at the University of Pennsylvania will describe how PedsNet was built. PedsNet is a long established LHS in the US, conducting clinical and health services research integrated with care improvement in a virtual system, which, for example, looks after 1/3 of all children in the US with Inflammatory Bowel Disease. Chris will also describe his recently published new framework for training LHS researchers, with 33 competencies in 7 domains: (1) systems science; (2) research questions and standards of scientific evidence; (3) research methods; (4) informatics; (5) ethics of research and implementation in health systems; (6) improvement and implementation science; and (7) engagement, leadership, and research management. The real-world milieu of LHS research, the embeddedness of the researcher within the health system, and engagement of stakeholders are distinguishing characteristics of this emerging field.  

Jennifer Rayner is the Director of Research at the Ontario Association of Health Centres (AOHC), a 107 facility provider of interdisciplinary, community and patient centred primary care (PC), focused on equity and the needs of 600 000 mainly disadvantaged patients. Jennifer will describe how AOHC is becoming a LHS, using its centralized, structured-data EMR and high stakeholder engagement to build a responsive health system that efficiently delivers individualized care.  

Nicole Mittman is the Chief Research Officer at CCO, formerly Cancer Care Ontario, the steward of publicly funded cancer and renal services. CCO is establishing a new program for Palliative Care delivery, and is structuring this as a learning health system. Nicole will describe how LHS approaches are embedded into CCO’s strategic plan, and how the LHS is being implemented in this new program.  

Merrick Zwarenstein, Professor of Family Medicine at Western University, and an ICES scientist has authored guidelines for conducting and reporting pragmatic randomized trials. He will describe how pragmatic trials support the improvement of real world health care delivery in LHSs: 5 KT trials in Ontario, conducted using ICES’s administrative databases, and 5 in South Africa, to guide development and national scale up of nurse–physician substitution.  

Merrick will then moderate a panel discussion with an emphasis on audience participation and interaction, rather than panelist presentations.  

Authors: Merrick Zwarenstein, Centre for Studies in Family Medicine
Driving change: Reflections and experiences of CIHR Health System Impact Fellows as embedded researchers

Presented By: Meaghan Sim, CIHR-NSHA-Dalhousie University Health System Impact Fellow, Nova Scotia Health Authority; Dalhousie University Health System Impact Fellow, Nova Scotia Health Authority; Dalhousie University

Methods: Program or Policy Evaluation

The complexity of today’s health systems necessitates an interdependence between health and academic sectors. Traditionally, the role of academic institutions has been to prepare the future health workforce and generate evidence that can provide solutions to many health system challenges. In turn, the health system makes valuable contributions to the health of individuals, families, and communities by governing service and delivery. An emerging concept of learning health systems suggests that the two sectors must work cohesively to enable actions that meaningfully change health system practice. This concept has led to the development of the CIHR Health System Impact (HSI) Fellowship, which takes post-doctoral fellows out of the traditional academic setting and places them within a health system and/or health policy-related organizations. Embedding researchers in this manner has the potential to combine the two sectors and to propel evidence-informed changes in health services and policy across the country. We are just beginning to understand the impact that this transformation will have upon participating institutions, as well as the impact that will be experienced by those individuals currently being trained to step into these emerging roles.

In 2017-2018, CIHR launched the inaugural cohort of the (HSI) Fellowship. This new fellowship is a key component of the Canadian Health Services and Policy Research Alliance’s Training Modernization Strategy, designed to provide a high quality, post-doctoral training environment to address critical challenges, and to optimize the impact of research within the health system and related organizations. HSI Fellows (n=45) across Canada are presently embedded within health system and health policy-related organizations with the purpose of developing professional and leadership experience, enhancing core competencies identified as critical for successful careers in health system and health policy settings (e.g., networking, project management, change management, knowledge translation), and fostering professional networks in areas that are not prioritized in traditional academic environments. The goal is to drive professional growth of recent PhD graduates, better preparing them for a wide range of career opportunities beyond the academy, and stimulating greater impact within health systems by leveraging the diverse backgrounds of the HSI Fellows.

Being an embedded researcher within a non-academic setting presents opportunities and challenges. Drawing on their diverse experiences, panelists will reflect on their experiences in the program, and how this unique training opportunity has impacted both their own career trajectories and contributions made within their embedded organizations in support of learning health systems. Panelists have been selected to represent diversity in background, geography, and host organization setting. This panel is closely aligned with the theme of CAHSPR 2018: “Shaping the Future of Canada’s Health Systems”, and will be of interest to academics and health system stakeholders alike.

Authors: El Kebir Ghandour, Centre de recherche de l’Hôtel-Dieu de Lévis CISSS de Chaudière-Appalaches (Site Hôtel-Dieu de Lévis); Meaghan Sim, Nova Scotia Health Authority; Dalhousie University; Jonathan Lai, McGill University; Katie Aubrecht, Nova Scotia Health Authority & Nova Scotia Centre on Aging; Ivy Cheng, Sunnybrook Health Sciences Center; Mark Embrett, Precision Health Economics; Margaret Saari, Saint Elizabeth Health Care and University of Waterloo; Megan Highet, University of Alberta and Alberta Health; Rebecca Liu, Region of Peel – Public Health, Family Health Team; University of Ottawa, School of Human Kinetics; Christiane Pereira Martins Casteli, Facultés des sciences infirmières (FSI) et de médecine (FMED) de l’Université Laval; Centre universitaire intégré de santé et de services sociaux (CIUSSS) de la Capitale-Nationale; Samiratou Ouédraogo, Institut national de santé publique du Québec
D6.1
Evaluation at the speed of implementation: Insights for scale-up and spread of virtual care technologies
Presented By: Jay Shaw, Scientist, Women’s College Hospital

Methods: Mixed Methods

Background and Objective:
The Ontario Telemedicine Network (OTN) pilot tested three new models of care supported by virtual applications for diabetes, mental health, and chronic kidney disease between the Autumn of 2015 and Summer of 2017. To determine efficacy and potential for scale, OTN partnered with the Women’s College Hospital Institute for Health System Solutions and Virtual Care (WIHV) to rapidly evaluate the tools and inform provincial roll-out, and to inform a pragmatic and timely evaluation framework for future scale and spread of virtual care.

The purpose of this presentation is to report on the central themes that emerged from this large, complex multi-component project, and critically discuss future innovative strategies for implementing, scaling and evaluating virtual care technologies in Canadian health care settings.

Methodological Approach:
The large scale evaluation drew on a mixed-methods approach, combining pragmatic randomized trial methodologies with qualitative process evaluation informed by Realist Evaluation. The methodologies were adapted to each individual technological intervention, which included:

• a mobile application designed to improve self-management and lower HbA1C among individuals with type 2 diabetes
• an online mental health platform to help with anxiety and depression
• a mobile application providing remote monitoring support for individuals receiving in-home peritoneal dialysis

Outcomes were assessed based on the Institute for Healthcare Improvement’s Triple Aim: 1) population health, 2) patient experience and 3) healthcare costs.

Results and Discussion:
The three individual studies showed both unique results and common themes across qualitative and quantitative data sources. As this panel is focused on the overarching lessons learned, here we highlight the lessons learned that pertain to implementation, scale, and evaluation of virtual care technologies in health care settings.

Technologies collecting data to support chronic disease management should share information with clinical teams: Where information related to chronic disease management was shared with health care providers, patients had greater opportunities to be engaged in their care.

Effort should be made to identify those patients who are most likely to engage with technological solutions: Engaged patients were more likely to receive benefit from the use of all technologies evaluated in this project; identifying appropriate patients who are more likely to be engaged is critical for wide scale technology implementation.

Health care providers should not simply be “engaged” in implementation, but should help to design the implementation process: Early, frequent, and sustained involvement of clinical teams regarding both the design of the clinical model and the implementation process was critical to success.

Procurement of virtual care technologies should be considered in advance: Building into the evaluation an examination of the complexities regarding how virtual technologies will be procured and sustained will promote more useful evaluation that directly informs scale/spread.

The panel will involve project leads summarizing the ways in which these key insights relate to each virtual care technology through specific examples, and reflections from OTN on the process of using evaluation insights for strategic and policy decision-making. The audience will be invited to engage in critical dialogue about future implementation, scale and spread of virtual care technologies.

Authors: Laura Desveaux, Women’s College Hospital; Jay Shaw, Women’s College Hospital; Sacha Bhatia, Women’s College Hospital Insitute for Health System Solutions and Virtual Care; Payal Agarwal, Women’s College Hospital; Jennifer Hensel, Women’s College Hospital Institute for Health Systems Solutions and Virtual Care; Rhonda Wilson, Ontario Telemedicine Network
D7.1
Health Research in Action: the Experience of Engaging Government Health Policy Makers with Evidence
Presented By: Robert Rivers, Parliamentary Affairs Advisor, Senate of Canada

Methods: Policy Case Study

Overview:
Health researchers are placed in a predicament when it comes to making policy recommendations. Recommendations are often based on an underlying assumption that all policy decisions are either evidence-based or evidence-informed. However, in practice, policy makers are bound by other considerations such as constitutional jurisdictions over health care, governmental administration practices, political will, and fiscal restraints.

Researchers working to reshape drug policy are at the forefront of bridging the divide between gathering evidence and influencing health policy decisions. The purpose of this panel is to offer audience members the opportunity to hear from researchers who have successfully engaged policy makers in evidence-based policy discourse.

Dr. Barbra Farrell is a researcher and practicing pharmacist who will share her experience on policies to reduce and improve prescribing for older Canadians. Dr. Tara Gomes will offer her insights on informing governments with her research on pharmaceutical policies surrounding opioid prescription. Dr. Marc-André Gagnon will discuss his work on the policies and politics behind drug pricing. Dr. Steve Morgan will share his expertise on the economics of a universal Pharmacare plan in Canada. Moderated by Dr. Robert Rivers who has experience advising on federal health legislation in the House of Commons and the Senate of Canada.

The panel will begin with a 10 minute introduction and overview from each of the four panel members on their areas of expertise and their experiences with getting evidence before policy makers. The remaining 20 minutes of the session will be dedicated to audience questions and discussion for panelists.

Academic researchers at all levels interested in learning about the role of evidence in the health policy and political process will benefit from attending this panel.

Authors: Barbara Farrell, University of Ottawa; Robert Rivers, Senate of Canada; Steven Morgan, University of British Columbia; Marc-Andre Gagnon,; Tara Gomes, St. Michael's Hospital
Big data, big opportunities: exploring careers in population data science
Presented By: Stephanie Garies, Research Associate / PhD Student, University of Calgary

Methods: Data Mining/Big Data Analytics

Population data science can be described as a multi-disciplinary field aimed at “integrating and analyzing data that pertain to individuals and their social, economic, biological and environmental characteristics and contexts.” (IJPDS 2018, in press.) This field has recently emerged due to the increase of large, digitized health information databases, improved linkage methods to other health and non-health sources, and the many advances made in computing technology and analytic techniques. Students are in a prime position to take advantage of the growing career and educational opportunities in population data science, specifically as it relates to achieving meaningful improvements to the healthcare system and patient outcomes.

Attendees at this panel presentation will learn about the skills and qualities that contribute to an effective career in population data science; how one would acquire those skills; how a career in population data science can contribute to improvements in the health system and patient outcomes; and what future applications and innovations for big health data science are anticipated in Canada.

Our panel will consist of the following presenters:
1. Dr. Tyler Williamson, PhD (Senior Scientist for the Canadian Primary Care Sentinel Surveillance Network [CPCSSN]; Assistant Professor in Biostatistics, University of Calgary): Dr. Williamson will introduce the emerging field of population data science and describe the skills, qualities, and training that may contribute to a successful career in this area.

2. Dr. Lisa Lix, PhD, P.Stat (Professor, Department of Community Health Sciences & Director of the Data Science Platform, George & Fay Yee Centre for Healthcare Innovation, University of Manitoba): Dr. Lix will discuss the training opportunities and programs available for population data science in Canada, including the new Visual and Automated Disease Analytics (VADA) Program at the University of Manitoba.

3. Dr. Andriy Koval, PhD (CIHR Health System Impact Fellow at the University of British Columbia): Dr. Koval will present a current example of how big data can improve mental health and additions surveillance in the province of B.C. through his work developing a framework for “messy” transactional electronic health record (EHR) data from secondary and tertiary sources (such as detox facilities, community support, etc.).

4. Nathalie Le Prohon, MBA (Vice President of Healthcare, IBM Canada). Ms. Le Prohon will describe the future of big health data science in Canada, including the emergence of novel, innovative technologies and applications.

This panel presentation is hosted by the CAHSPR Student Working Group (moderated by SWG member Stephanie Garies) and thus, is targeted towards trainees (undergraduate, graduate, postdoctoral fellows); however, anyone who is interested in learning more about careers and training in population data science is welcome to attend.

Authors: Stephanie Garies, University of Calgary; Tyler Williamson, University of Calgary; Andriy Koval, BC Centre for Disease Control; Lisa Lix, University of Manitoba; Claudia Sanmartin, Statistics Canada
E1.1
Engagement in primary health care among marginalized people who use drugs in Ottawa, Canada

Presented By: Lisa Boucher, Research Assistant, Bruyère Research Institute

Methods: Survey Research Methods

Objectives: Engagement in primary health care may be lower among people who use drugs (PWUD) compared to the general population, despite greater care needs as evidenced by higher comorbidity and more frequent use of emergency department care. We investigated which socio-structural factors were related to primary care engagement among PWUD.

Approach: The Participatory Research in Ottawa: Understanding Drugs cohort study meaningfully engaged and trained people with lived experience to recruit and survey marginalized PWUD. We linked this survey data to provincial-level administrative databases held at the Institute for Clinical Evaluative Sciences. We categorised engagement in primary care over the 2 years prior to survey completion (March-December 2013) as: not engaged (<3 outpatient visits to the same family physician) versus engaged in care (3+ visits to the same family physician). We used multivariable logistic regression to determine factors associated with engagement in primary care.

Results: Among 663 participants, characteristics include: mean age of 41.4 years, 75.6% male sex, 66.7% in the lowest two income quintiles, and 51.1% with 6+ comorbidities. 372 (56%) were engaged in primary care (mean of 15.97 visits in year prior to survey). Engagement was most strongly associated with the following factors: receiving drug benefits from either the Ontario Disability Support Program (adjusted odds ratio [AOR] 4.48; 95% confidence interval [95%CI] 2.64 to 7.60) or Ontario Works (AOR 3.05; 95%CI 1.96 to 5.91), having ever taken methadone (AOR 3.05; 95%CI 1.92 to 4.87), mental health comorbidity (AOR 2.93; 95%CI 1.97 to 4.36), engaging in sex work in the last 12 months (AOR 2.05; 95%CI 1.01 to 4.13), and having stable housing (AOR 1.98; 95%CI 1.30 to 3.01).

Conclusion: Almost half of PWUD are not engaged in primary care, representing missed opportunities to improve health. Engagement in primary care may reflect both an increased need for health care, and increased access through other health and social services. Alternative strategies, such as co-located models of care, may address this gap.

Authors: Lisa Boucher, Bruyère Research Institute; Claire Kendall, University of Ottawa c/o Bruyère Research Institute; Mark Tyndall, BC Centre for Disease Control; Dave Pineau, PROUD Community Advisory Committee; Brad Renaud, PROUD Community Advisory Committee; Ahmed Bayoumi, Li Ka Shing Knowledge Institute; Nicola Diliso, PROUD Community Advisory Committee; Sean LeBlanc, Drug Users Advocacy League; Jessy Donelle, Institute for Clinical Evaluative Sciences (ICES) uOttawa; Rob Boyd, Sandy Hill Community Health Centre; Pam Oickle, Ottawa Public Health; Zack Marshall, McGill University; Alana Martin, Ottawa Hospital Research Institute

E1.2
Gaps in access to care: self reported use of family physicians, chiropractors and physiotherapists among adult Canadians with chronic back disorders

Presented By: Brenna Bath, Assistant Professor, University of Saskatchewan

Methods: Survey Research Methods

Objectives: Chronic back disorders (CBD) are prevalent, costly, and among the most common reasons for seeking primary care. The objectives of this research were to investigate the patterns of primary care use and to profile factors associated with self-reported use of family physicians, chiropractors, and physiotherapists among adult Canadians with CBD.

Approach: The combined 2009 and 2010 Canadian Community Health Surveys conducted by Statistics Canada were used to investigate self-reported health care use among adults with CBD. This complex survey employs population weights to help ensure representativeness of the Canadian population as well as bootstrapping to obtain variances. Following descriptive analyses, we used multiple logistic regression to establish comprehensive models predicting health care use while controlling for possible confounding. Understanding differences in self-reported use may help to identify potential gaps in access to care and inform the development of strategies to optimize equitable access.

Results: The majority of adult respondents with CBD sought care only with a family physician (53.8%) with an additional 20.9% and 16.2% seeking care with combined family physician/chiropractor or family physician/physiotherapist, respectively. Few respondents sought care only with a chiropractor (2.5%) or physiotherapist (1.0%). After adjustment, differential patterns of utilization (p<0.05) among those with CBD were evident between provider groups. Characteristics of adults with CBD who reported reduced use of care include: older adults (physiotherapists); men (physiotherapists and family physicians); lower educational attainment (physiotherapists and chiropractors); lower income (physiotherapists and chiropractors); Aboriginal or other ethnicity (chiropractors); rural residence (physiotherapists); smokers (chiropractors and physiotherapists); greater than three co-morbidities (chiropractors); and lower physical activity levels (chiropractors and physiotherapists).

Conclusion: This research highlights disparities in access to physiotherapists and chiropractors in relation to family physicians among adult Canadians with CBD. Ensuring equitable access to potentially beneficial non-physician services for people with CBD may require a rethink about the way front line back care is delivered in our health care system.

Authors: Brenna Bath, University of Saskatchewan; Joshua Lawson, College of Medicine; Dennis Ma, University of Bristish Columbia; Catherine Trask, University of Saskatchewan
E1.3
Geospatial access to physiotherapy services in Canada: mapping physiotherapist use and distribution
Presented By: Brenna Bath, Assistant Professor, University of Saskatchewan

Methods: Emerging methods (e.g. new developments in observational study design)

Objectives: Ensuring equitable access to non-physician care providers, such as physiotherapists, has traditionally received less policy attention in comparison to medical services. The objective of this research was to analyze how variations in the distribution of physiotherapists at health region levels are associated with self-reported physiotherapy use across Canada.

Approach: This study is based on the physiotherapy use question from the 2014 Canadian Community Health Survey. Physiotherapy distribution was measured in terms of the number of physiotherapists per 10,000 population at health region level (i.e. physiotherapist ratio). Physiotherapist primary employment information was obtained from the Canadian Institute for Health Information’s 2015 Database. Geospatial mapping in combination with correlation analysis was applied to explore the association between self-reported physiotherapy use and physiotherapist ratio across Canadian health regions. Understanding how physiotherapy use and physiotherapist distribution are related is important given that most provinces have a regionalized approach to health service delivery.

Results: Physiotherapy use is moderately associated with the distribution of physiotherapists (r(103) = 0.453, p < 0.001). Variables were converted into three categories using ± 0.5 standard deviations from national mean as cut-off values. Across 103 health regions, cross-tabulation of use with the distribution of physiotherapists (i.e. physiotherapist:population ratio) revealed that: 13.5% have high use/high ratio; 16.5% have a low use/low ratio; 5.8% have high use/low ratio; 2.9% have low use/high ratio. Health regions that have both low use and low distribution of physiotherapists tend to be in more rural, remote or northern parts of the provinces and those with high use and high distribution ratios tend to be in more urban areas.

Conclusion: There is variation in the distribution of physiotherapists and self-report use across Canada, indicating potential inequities in geographic accessibility to physiotherapy services. Comparison of health region differences within and between provinces at a health region level may help guide where and how access to physiotherapy services could be optimized.

Authors: Brenna Bath, University of Saskatchewan; Tayyab Shah, University of Saskatchewan; Stephan Milosavljevic, University of Saskatchewan; Catherine Trask, University of Saskatchewan

E1.4
Understanding long-term care needs of older gay and bisexual men
Presented By: Kirk Furlotte, Graduate Student, Dalhousie University

Methods: Qualitative Research Methods

Objectives: A Canadian Frailty Network-funded national study sought to understand later-life issues and end-of-life (EOL) planning of older lesbian, gay, bisexual, transgender, queer, intersex, and two-spirited (LGBTQI2S) adults. This research represents subset data analysis aimed at understanding unique experiences of gay, bisexual, and other men who have sex with men (gbMSM).

Approach: Focus groups were held at sites across Canada (Vancouver, Edmonton, Toronto, Montreal, and Halifax) with older LGBTQI2S adults (sorted by sexual orientation or gender identity) and service providers. Participants completed surveys on EOL planning and preparation. Focus groups were facilitated using semi-structured question guides covering three main areas: plans for EOL care, community connection/support, and technology use. Transcripts from the older gbMSM groups were thematically analyzed employing descriptive qualitative methodology and mapped to an inverted socioecological model prioritizing policy for health promotion interventions. Analysis included labelling participant-identified EOL planning and care barriers and facilitators for older gbMSM.

Results: In keeping with existing literature, preliminary data analysis indicates older gbMSM are marginalized in healthcare through heterosexism, excluded in LGBTQI2S community due to ageism, and experienced a dwindling support network from the effects of aging. Older gbMSM expressed plans to rely on long-term care facilities for their later life and EOL needs. Yet strong hesitance and fear of non-welcoming environments was a recurring theme with participants expecting neglect and/or abuse due to their sexual orientation. This fear extended to facility employees and other residents. Most participants felt they would need to go back into the closet, concealing their sexual orientation and much of their lives, to receive the best possible care. A desire for LGBTQI2S-specific facilities was a recurring point of discussion.

Conclusion: Long-term care facilities need to animate policies fostering LGBTQI2S-inclusive environments through staff training, representational promotional material, resident education, and community outreach. Home care services should duplicate these approaches and could benefit from proactively marketing their services to LGBTQI2S communities given the current reticence by many to use long-term care facilities.

Authors: Kirk Furlotte, Dalhousie University
E2.1 What happens to drug utilisation and expenditure when cost-sharing is removed? An example from British Columbia, Canada.

Presented By: Tracey-Lea Laba, Senior Research Fellow/Honorary postdoctoral researcher, The University of Sydney/University of British Columbia

Methods: Program or Policy Evaluation

Objectives: Removing cost-sharing for medicines, which is independent of health status, is under active discussion for many drugs and in value-based insurance design. Understanding the potential impact on medicine utilisation and expenditure ought be known. This study sought to estimate the impact of completely removing cost-sharing on medication use and expenditure.

Approach: Fair Pharmacare, British Columbia’s income-based public drug plan, includes a household maximum out-of-pocket limit. When one household member is prescribed a long-term high-cost drug surpassing this maximum, cost-sharing is completely removed for other family members independent of their health status. We used an interrupted time series design to study the impact of removing cost-sharing on these other household members. We studied the average prescription numbers and drug expenditures per month for 24 months prior to and following cost-sharing removal for other household members.

Results: After exclusions, 1895 individuals initiated a drug exceeding their family maximum and 2191 household members of those individuals were studied (69% annual household income <$CAD14,374). 533 household members initiated medication for the first time once cost-sharing was removed. Removing cost-sharing resulted in a sustained increase in the level of drug expenditure of $2.65 (95%CI $0.58-$4.52 P<0.001), representing an immediate increase of about 16%. For prescription numbers, there was a sustained and statistically significant increase in the level by 0.05 (95%CI 0.01-0.04, P<0.001), representing a relative increase of approximately 19%. Trends in both outcomes did not appear to change after cost-sharing was removed. Medication initiation by new users substantially increased average expenditure after cost-sharing removal primarily due to a threefold increase in expenditure for antiviral agents.

Conclusion: Completely removing cost-sharing, when it is independent of health status, significantly increased medication use and expenditure particularly due to the initiation of medicines by new users. While this suggests that costs are a barrier to use, the appropriateness of this additional use, especially among new users, requires further investigation.

Authors: Tracey-Lea Laba, The University of Sydney/University of British Columbia; Heather Worthington, UBC Centre for Health Services and Policy Research; Lucy Cheng, UBC Centre for Health Services and Policy Research; Michael Law, UBC

E2.2 DRUG USE AMONG SENIORS IN CANADA, 2016

Presented By: Jeff Proulx, Program Lead, CIHI

Methods: Data Mining/Big Data Analytics

Objectives: This report provides information on the number and types of drugs prescribed to seniors in the community and in long-term care facilities. It also examines the vulnerable populations at risk of polypharmacy and inappropriate medication use by measuring inequalities according to sex, age, neighbourhood income and geographic location.

Approach: Public drug claims data from all provinces, Yukon and one federal drug program (First Nations and Inuit Health Branch) were used to examine the number and types of drugs prescribed to seniors in Canada. Potentially inappropriate drug use was defined using the 2015 Beers criteria. Where possible, seniors were identified as living in the community or in a long-term care facility.

Results: The number and types of drugs prescribed to seniors changed very little between 2011 and 2016. Approximately one-quarter of seniors used 10 or more drug classes in each year. Statins remained the most commonly used drug class among seniors. Seniors living in low-income neighbourhoods and rural/remote areas used more drugs overall, and more potentially inappropriate drugs, as did women and older seniors. The use of antipsychotics and benzodiazepines decreased during the study period; which may be due in part to ongoing initiatives to reduce the use of these drugs in seniors. However, the use of proton pump inhibitors, which have also been the focus of such initiatives, has increased since 2011.

Results will be published in May 2018.

Conclusion: The need to reduce the number of drugs, the number of potentially inappropriate drugs and adverse drug events among seniors is a topic of increasing concern. Some initiatives focused on improving prescribing have shown promising results; however, their overall impact on the number of drugs used has been minimal.

Authors: Jeff Proulx, CIHI; Sara Allin, Canadian Institute for Health Information; Sara Grimwood, Canadian Institute for Health Information; Jocelyn Rioux; Jordan Hunt,
E2.3
The consequences of patient charges for prescription drugs in Canada: A cross-sectional survey
Presented By: Ashra Kolhatkar, Research Coordinator, Centre for Health Services and Policy Research, University of British Columbia

Methods: Statistics/ Econometrics

Objectives: Many Canadians face significant out-of-pocket charges for prescription drugs. While prior work suggests this causes some patients to not take their medications as prescribed, we have little understanding of whether charges for prescription medicines lead patients to forego basic needs or use more health care services.

Approach: As part of the 2016 Statistics Canada Canadian Community Health Survey, we designed and fielded cross-sectional questions to 28,091 individuals regarding prescription drug affordability, consequent health services utilisation, and trade-offs with other expenditures. We calculated weighted population estimates and proportions, and used logistic regression to determine which patient characteristics were associated with these behaviours.

Results: We found that 5.5% of Canadians reported being unable to afford one or more drugs in the prior year, (95% Confidence Interval: 5.1%-6.0%), representing 8.2% of those with at least one prescription. Our survey responses suggest that approximately 303,000 Canadians had additional doctor visits, 93,000 sought care in the emergency department, and 26,000 were admitted to hospital at the population level. Furthermore, we estimated that many Canadians forego basic needs such as food (730,000), heat (238,000), and other health care expenditures (239,000) because of drug costs. These 5 outcomes were more common among females, younger adults, Aboriginal Peoples, those in worse health, lacking drug insurance, and having lower income.

Conclusion: Out-of-pocket charges for medicines for Canadians are associated with foregoing prescription drugs and other necessary spending, as well as use of more health care services. Changes to protect vulnerable populations from drug costs might reduce these negative outcomes.

Authors: Ashra Kolhatkar, Centre for Health Services and Policy Research, University of British Columbia; Michael Law, UBC; Lucy Cheng, UBC Centre for Health Services and Policy Research; Irfan Dhalla, Health Quality Ontario; Steven Morgan, University of British Columbia; Laurie Goldsmith, Simon Fraser University; Anne Holbrook, McMaster University

E2.4
Patterns of borrowing to finance out-of-pocket drug costs in Canada: results from a national survey
Presented By: Ashra Kolhatkar, Research Coordinator, Centre for Health Services and Policy Research, University of British Columbia

Methods: Statistics/ Econometrics

Objectives: Due to gaps and other costs associated with the mix of public and private insurance that covers prescription drugs for Canadians, many patients must pay out-of-pocket for prescription drugs. We aimed to quantify the frequency and characteristics of Canadians who borrow money to pay for prescription drugs.

Approach: We worked with Statistics Canada to design and administer a rapid response module as part of the 2016 Canadian Community Health Survey. This cross-sectional, national survey was fielded between January 1 and June 30 2016. We restricted our analysis to respondents who answered the question regarding borrowing to pay for prescription drugs and reported spending money out-of-pocket on prescription drugs in the prior 12 months. Among respondents who spent money out-of-pocket for prescription drugs, we explored the frequency of borrowing and used logistic regression to identify characteristics associated with borrowing.

Results: Of the 15,395 respondents in our analytic sample, 2.5% (95%CI: 2.1% to 2.7%) reported borrowing money to pay for prescription drugs representing an estimated 731,000 Canadians. Those reporting borrowing tended to be younger, in poorer health, have more chronic conditions, and spend more out-of-pocket on prescriptions than those who did not borrow. Controlling for other factors, our multivariate model found younger age, low self-reported health status, government prescription drug insurance or no insurance, two or more chronic conditions, household income less than $40,000, and higher out-of-pocket spending on prescription drugs to be associated with higher odds of borrowing.

Conclusion: Many Canadians are borrowing money to pay for out-of-pocket prescription drug costs. Borrowing is more prevalent among already vulnerable groups such as those who are younger, have multiple chronic conditions, are low income, and have high out-of-pocket drug costs. Policy regarding drug costs should pay particular attention to these groups.

Authors: Ashra Kolhatkar, Centre for Health Services and Policy Research, University of British Columbia; Michael Law, UBC; Lucy Cheng, UBC Centre for Health Services and Policy Research; Steven Morgan, University of British Columbia; Laurie Goldsmith, Simon Fraser University; Anne Holbrook, McMaster University; Irfan Dhalla, Health Quality Ontario
E3.1
Why some patients who don’t need hospitalization can’t leave: A case study of reviews in 6 Canadian hospitals
Presented By: Paul Holyoke, Director, Saint Elizabeth Research Centre, Saint Elizabeth Health Care

Methods: Program or Policy Evaluation

Objectives: In Canada, many patients remain in hospital well after they no longer require hospital-based care. Reviews and activities have been undertaken over the past decade within hospitals, but the problem remains. What can be learned about this problem by taking a home and community perspective rather than a hospital perspective?

Approach: An instrumental, collective case study approach was used, examining in-depth reviews by home and community experts of 6 acute care organizations’ processes and structures, and their patients’ profiles, that led to the patients needing an Alternate Level of Care (ALC) but for whom this was the most difficult to achieve. The study included an analysis of final review reports and key informant interviews with experts involved in the reviews to identify commonalities and differences across the cases to generate general strategies for reducing the incidence of patients requiring an ALC.

Results: Across the cases, 393 patients needing an ALC were assessed, most of whom were age 70+. Although the majority of patients had a planned discharge destination of long-term care (LTC), the reviewers found that about half could have been cared for at home, either as an alternative to LTC or as an interim measure. This case study led to four general observations about the underlying causes for the ALC issues across the six cases: the insufficiency of home and community supports before hospitalization; the routine underestimation by hospital staff of these patients’ potential for independence; the deconditioning of patients while in hospital, jeopardizing their capacity for independence; and hospital staff’s lack of understanding of home care.

Conclusion: Many patients requiring ALC could have left hospital earlier, returning home with appropriate supports, rather than to LTC. The observations and recommendations provide an opportunity to bring about coordinated changes to beliefs, attitudes, processes and structures so that patients receive care in the most appropriate, least expensive setting.

Authors: Paul Holyoke, Saint Elizabeth Health Care

E3.2
Health care costs and outcomes associated with surgical site infection: a retrospective cohort study
Presented By: Yelena Petrosyan, Postdoctoral Fellow, Ottawa Hospital Research Institute

Methods: Statistics/ Econometrics

Objectives: This study aimed to: 1) examine the association between postoperative surgical site infection (SSIs) and mortality and hospital readmissions; and 2) estimate the attributable short-term and long-term costs of postoperative SSIs from the perspective of the healthcare system.

Approach: We conducted a retrospective cohort study of all patients at The Ottawa Hospital who underwent surgery and were monitored using the National Surgical Quality Improvement Program (NSQIP) between 2010 and 2016. The study exposure was defined as having any type of SSIs. The study outcomes included all-cause mortality and hospital readmission, and the average healthcare costs. All outcomes were estimated at 30 days, 90 days and 1 year following index date. We used multivariable Fine-Gray regression models to determine the association between the SSI and health outcomes, and generalized linear models to examine the association between SSI and healthcare costs.

Results: We identified 14,351 patients, including 795 patients with postoperative SSIs. Our analyses reveal that SSIs were associated with a significant increase in mortality at 1 year after surgery (HR=1.89, 95% CI 1.43-2.40), and hospital readmission at 30, 90 days and 1 year after postoperative discharge (HR=4.32, 95% CI 3.67-5.01, HR=2.74, 95% CI 2.35-3.12, and HR=2.20, 95% CI 1.96-2.50, respectively). The mean total incremental costs of SSIs at 30 days, 90 days, and 1-year following surgery amounted to $13,684 (95%CI 11,480-15,972), $21,965 (95% CI 19,865-24,279), and $30,592 (95% CI 26,203-34,967), respectively. Acute hospitalization accounted the largest component of 1-year incremental costs associated with SSIs (55%), followed by outpatient care costs (11%), home care costs (11%) and complex continuing care (6%).

Conclusion: SSIs, and in particular deep SSIs, are associated with short- and long-term adverse health outcomes and healthcare costs. If a causal relationship can be demonstrated, then the results of this study can be used to model positive effects of preventive programs.

Authors: Yelena Petrosyan, Ottawa Hospital Research Institute; Maclure Malcolm, Department of Anesthesiology, Pharmacology and Therapeutics, University of British Columbia; Daniel McIsaac, Clinical Epidemiology, Ottawa Hospital Research Institute; David Schramm, Department of Otolaryngology, Head and Neck Surgery, The Ottawa Hospital; Husein Mooloo, Department of Surgery, University of Ottawa; Alan Forster, Clinical Epidemiology, Ottawa Hospital Research Institute; Kednapa Thavorn, Ottawa Hospital Research Institute
E3.3
Effectiveness of interventions for improving inpatient electronic health record documentation: A Systematic Review
Presented By: Lucia Otero Varela, Research Assistant, University of Calgary

Methods: Mixed Methods

Objectives: Despite its widespread and increased use, the quality of electronic health records (EHRs) needs improvement. Therefore, the purpose of this systematic review was to assess the effectiveness of different interventions seeking to improve EHR documentation within an inpatient setting.

Approach: To identify relevant experimental, quasi-experimental and observational studies, a search strategy was developed based on elaborated inclusion/exclusion criteria, using the main themes of the topic of interest: EHR, documentation, interventions, and type of study. Three databases, Cochrane, Medline, and EMBASE, were searched. Study quality assessment and data extraction from selected studies were performed using a Downs and Black and Newcastle-Ottawa Scale hybrid tool, and a REDCap form, respectively. Data was then analyzed and synthesized in a narrative semi-quantitative manner.

Results: An in-depth search of the identified databases, grey literature and reference lists, revealed a final 20 studies for inclusion in this systematic review. Due to high heterogeneity in study design, population, interventions, comparators, document types and outcomes, data could not be standardized for a quantitative comparison. However, statistically significant results in interventions and affected outcomes were further presented and discussed. ‘Education’ and ‘Implementing a new EHR Reporting System’ were the most successful interventions, based on the number of studies that significantly improved EHR documentation. When implementing two or more interventions, more outcome measures were affected. There was no association between study quality and study design or number of interventions used. Only one of the 20 studies found EHR documentation worsened with the interventions used.

Conclusion: Interventions implemented to enhance EHR documentation are highly variable and require standardization. Emphasis should be placed on this novel area of research to improve communication between healthcare providers, enhance continuity of care, reduce the burden in health information management, and to facilitate data sharing between centers, provinces, and countries.

Authors: Lucia Otero Varela, University of Calgary; Natalie Wiebe, University of Calgary; Hude Quan, University of Calgary; Paul Ronksley, University of Calgary; Daniel Niven

E3.4
Improving the Measurement of Equity across Health System Performance Data
Presented By: Alexander Yurkiewich, Research Analyst, Health Quality Ontario

Methods: Statistics/Econometrics

Objectives: We have performed a methodological review of our health system performance measurement across an important stratification of equity in health care, geographic location. By applying a more robust methodology, we will be able to report more accurately on community health and outcomes of health care across the urban-rural continuum.

Approach: To advance our current methods for measuring equity in health care, we brought together an expert panel to review existing methods for stratifying health system performance data by geographic location. These methods were then tested against a core set of indicators reflective of health system performance. Future panel review will result in a recommendation that identifies the best method to use for measuring geographic stratification. Applying the recommended method across our suite of publicly-reported products will allow us to refine and standardize how geographic location is stratified, allowing us to better measure equity across health system performance.

Results: The expert panel identified three methods for consideration: Population Centre (POPCTR), Statistical Area Classification (SAC) and a hybrid POPCTR/SAC methodology. These three methods are currently being tested against a core set of health system performance indicators. Preliminary results for an indicator measuring ambulatory care sensitive conditions show that, across the health care quality domains of effectiveness and timeliness, there is variation in performance across the urban-rural continuum. This variation does not always present in a linear fashion, which may reflect differences in socio-demographic or socio-economic characteristics, health risk factors and health care access across the urban-rural continuum. When the full results become available, we will be able to expand on the preliminary results and provide conclusions for indicators across all quality domains of health care.

Conclusion: Identifying a robust methodology for measuring health system performance across geographic location will improve the rigour of our information, enabling better health system planning and decision-making. This review may also provide the basis for future methodological reviews and guide how we measure other stratifications of equity in health care.

Authors: Emmalin Buajjitti, University of Toronto; Alexander Yurkiewich, Health Quality Ontario; Sharon Gushue, Health Quality Ontario; Naushaba Degani, Health Quality Ontario; Laura Rosella, Dalla Lana School of Public Health, University of Toronto; Michael Campitelli, Institute for Clinical Evaluative Sciences; Matthew Kumar,
E4.1
Cross-provincial comparison of searches for walk-in clinics and emergency departments using Google Trends

Presented By: Joseph Ssendikaddiwa, Research Assistant, Simon Fraser University

Methods: Data Mining/Big Data Analytics

Objectives: Models of primary care, including arrangements for same day and after-hours access, vary widely across provinces. Use of walk-in clinics and emergency departments may also vary, but existing data sources that allow comparison are limited. We use Google Trends to compare searches for walk-in clinics and emergency departments across provinces.

Approach: We developed search strategies to capture the range of terms used for walk-in clinics (e.g. urgent care clinic, after hours clinic) and emergency departments (e.g. ED, emergency room) across Canadian provinces. We used Google Trends to determine the frequencies of these terms relative to total search volume, and standardized search frequencies to allow comparisons across provinces and over time (2011-2017). We completed a literature scan to document variation in primary care models, including walk-in clinics and approaches to improve access. We explore how care seeking captured by Google Trends corresponds to policy environments and models of care across provinces.

Results: Searches for walk-in clinics were most common in the western provinces of British Columbia, Alberta, and Saskatchewan, and lowest in New Brunswick, Newfoundland and Labrador, and Ontario. Relative search frequency increased steadily, doubling in most provinces between 2011 and 2017. Manitoba, British Columbia, and Nova Scotia had high search frequency for emergency departments, and Saskatchewan, Alberta, and Ontario had the lowest. The frequency of emergency department searches has increased less rapidly than for walk-in clinics, though marked increases for Manitoba, BC, and Nova Scotia were observed since 2013. Search frequencies may reflect patient care seeking, but may also be impacted by news coverage and other events. There were consistencies between the observed results in Google Trends and what is known in the literature.

Conclusion: Google Trends provides insights into patterns of care-seeking, as we observe substantial interprovincial variation, and marked growth in the frequency of searches for walk-in clinics. Variation in Google searches appears to correspond to differences in policies related to walk-in clinics, advanced access, and after hours care between provinces.

Authors: Joseph Ssendikaddiwa, Simon Fraser University; Ruth Lavergne, Simon Fraser University

E4.2
The feasibility of integrating a non-clinical patient navigation in primary care practices to enhance Access to Resources in the Community (ARC) – the ARC study

Presented By: Simone Dahrouge, Director of Research & Deputy Chair, Department of Family Medicine, University of Ottawa

Methods: Mixed Methods

Objectives: No standard process exists to facilitate “referrals” to health enabling community resources (CR) by primary care providers (PCP), or to support their patients to access these resources. This is especially problematic for individuals with social complexities. We studied the feasibility of a multipronged approach to improve equitable access to CRs.

Approach: We recruited four community practices in Ottawa (56 PCPs). In each, we promoted the availability and benefit of CRs (e.g. physical activity, caregiver support, falls prevention, self-management) to PCPs and patients, and provided the services of a patient navigator to support patients in overcoming access barriers and using the recommended CRs. We introduced standardized PCP referral and navigator feedback forms to support PCP-navigator information continuity. Data collection methods included surveys and interviews with PCPs and patients, a rapid cycle evaluation (RCE) of study progress completed by PCPs, and navigator and coordinator logs of study activities and encounters with participants.

Results: Preliminary results: Acceptability: PCPs were satisfied (80% agreement) with the implementation of study activities; 77% of patients rated the quality of navigation services as “good” or “excellent”; Demand: 106 patients were referred, 63 were enrolled. On average, each patient had 6 encounters with the navigator; Implementation: High fidelity. 74% of first encounters with the navigator were in-person. Navigator activities to support patients (%) included emotional support (82%), communicating with CR staff (62%), researching appropriate CRs (55%), and administrative assistance (24%); Adaptation: Minor changes to the referral form to reflect practice priorities. Referral process and navigator office hours negotiated with each practice; Integration: The referral form was integrated in EMR in all practices; Efficacy: 56% of patients reached a CR. Final results will be presented.

Conclusion: The integration of a non-clinical patient navigator in primary care practices is feasible on many levels. A randomized controlled trial of this model is starting in March 2018. This model of navigation offers many advantages and may help mitigate inequities for individuals with social complexities.

Authors: Simone Dahrouge, Department of Family Medicine, University of Ottawa; François Chiocchio, Professor, Organisational Behaviour and Human Resource Management; Alain Gauthier, Manon Lemonde, University of Ontario Institute of Technology; Denis Prud’homme, Institut de recherche de l’Hôpital Montfort; Marie-Hélène Chomienne, Institut du Savoir Montfort; Claire Kendall, University of Ottawa c/o Bruyère Research Institute; Justin Pressseau, Ottawa Hospital Research Institute; Andrea Perna, Bruyère Research Institute; Darench Toal-Sullivan, Bruyère Research Institute; Amélie Cardinal, Bruyère Research Institute; Tanya Karyakina, Bruyère Research Institute; Patrick Timony
E4.3
An innovative model of navigation services to improve Access to Resources in the Community (ARC) – patient profile, resource referrals, and social barriers to access
Presented By: Tanya Karyakina, Research Assistant, Bruyère Research Institute

Methods: Survey Research Methods

Objectives: We will describe 1) the socio-demographic characteristics of patients referred to a non-clinical navigator for support as part of the Access to Resources in the Community (ARC) feasibility study 2) the type of community resources recommended to patients and 3) the access barriers reported to the Navigator

Approach: The ARC feasibility study was conducted in four primary care practices. Navigators are non-clinical individuals attached to the primary care practices and trained to support patients with social barriers to access community health enabling resources. The community resource(s) identified during the patients’ visit with their primary care provider were documented on a referral form which was sent to the ARC navigator for follow up. Baseline surveys were used to collect sociodemographic characteristics of patients. The barriers to access were identified by the patients and recorded in a navigator-patient encounter log.

Results: 57 patients have met with the Navigator since August 2017. The majority of patients were female (68%), and between the ages of 30-65; 25% of patients were over 65 years of age; 21% were new Canadians; more than a third (34%) had only completed high school. Nearly a third (28%) of patients reported an income <$25,000. Nearly a third were retired (29%); 43% were unemployed and 34% reported living alone.

The most common resources referred by physicians included mental health/addiction services, healthy lifestyle support, and financial/employment assistance. About a third (34%) of patients required three or more resources.

The most common barriers reported by patients included a lack of awareness of available resources, financial issues, and transportation. Nearly half (48%) reported three or more barriers.

Conclusion: Data on patient characteristics, the resources they are referred to, and the barriers they experience will allow us to define the population that stands to benefit from a non-clinical Navigator intervention and will inform the development of the Patient Navigator model to suit the needs of this particular patient population.

Authors: Tanya Karyakina, Bruyère Research Institute; Alain Gauthier, ; Andrea Perna, Bruyère Research Institute; François Chiocchio, Professor, Organisational Behaviour and Human Resource Management; Manon Lemonde, University of Ontario Institute of Technology; Denis Prud’homme, Institut de recherche de l’Hôpital Montfort; Marie-Hélène Chomienne, Institut du Savoir Montfort; Claire Kendall, University of Ottawa c/o Bruyère Research Institute; Justin Presseau, Ottawa Hospital Research Institute; Daren Toal-Sullivan, Bruyère Research Institute; Amélie Cardinal, Bruyère Research Institute; Patrick Timony, ; Simone Dahrouge, Department of Family Medicine, University of Ottawa

E4.4
Access to Resources in the Community (ARC): Provider and Patient Perspectives of a Non-Clinical Patient Navigator in Primary Care.

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

Methods: Mixed Methods

Objectives: Community health and social resources (CR) can help individuals achieve better health and well-being; however, barriers often limit individuals’ ability to access these services. Our objective is to determine the effectiveness of a non-clinical patient navigator in optimizing access to CR from the perspective of primary care providers and patients.

Approach: This is a single arm, prospective mixed methods feasibility study of a non-clinical patient navigator intervention in primary care (PC). A non-clinical patient navigator trained to support patients overcome barriers to access CR was integrated in four PC practices in Ottawa, Ontario. Participating providers and patients will be surveyed, and some interviewed, at the end of the intervention period to assess the services provided by the patient navigator.

A mixed methods approach using quantitative (i.e., surveys) and qualitative (i.e., interviews) data will be used to determine the effectiveness of the patient navigator intervention in PC.

Results: Providers’ and patients’ assessment of the patient navigator will provide insight on the feasibility and acceptability of a non-clinical patient navigator intervention in PC.

Specifically, post-intervention surveys and interviews will assess providers’ overall satisfaction with the integration of the patient navigator in PC practices (e.g., navigator role and activities, scope of navigation services, communication (method and frequency) with PC team, etc.), and patients’ acceptance and satisfaction with navigations services, including the quality and frequency of encounters and enhanced access to appropriate CR.

Final results will be presented.

Conclusion: The integration of a non-clinical patient navigator in PC practices is a novel approach to supporting a broad patient population with varying health and social needs. Results from this feasibility study will inform the implementation of a larger randomized controlled trial.

Authors: Andrea Perna, Bruyère Research Institute; Alain Gauthier, ; François Chiocchio, Professor, Organisational Behaviour and Human Resource Management; Daren Toal-Sullivan, Bruyère Research Institute; Denis Prud’homme, Institut de recherche de l’Hôpital Montfort; Manon Lemonde, University of Ontario Institute of Technology; Patrick Timony, ; Claire Kendall, University of Ottawa c/o Bruyère Research Institute; Marie-Hélène Chomienne, Institut du Savoir Montfort; Justin Presseau, Ottawa Hospital Research Institute; Tanya Karyakina, Bruyère Research Institute; Amélie Cardinal, Bruyère Research Institute; Simone Dahrouge, Department of Family Medicine, University of Ottawa
E5.1
Advice or Advocacy? A Real-time Qualitative Study of Participants Views.
Presented By: P. Alison Paprica, VP Health Strategy and Partnerships, Vector Institute

Methods: Qualitative Research Methods

In an ideal world, policy and decision makers pay close attention to research and have mechanisms for nimble implementation of evidence-informed policy and practice changes. In reality, those of us who work at the interface of research and policy know how rare that ideal situation is. Policy and decision makers are very busy individuals who spend a significant percentage of their working hours responding to the day-to-day operational issues that inevitably arise in our complex health systems. They are exposed to multiple, sometimes conflicting, evidence of varying levels of quality and completeness and have finite amounts of time to consider and integrate research evidence alongside other inputs. Consequently, researchers and KT specialists who want their studies to have an impact often need to expend extra effort to draw attention to their study findings, helping policy and decision makers understand how to act on them. In some cases, this leads to researchers being actively involved with policy and decision makers in making the case for change to higher authorities and/or researcher involvement in the implementation of specific evidence-informed changes.

While the drivers and utility of deep involvement of researchers in evidence-informed change are understandable, the practice is not without risk. One of the reasons that policy and decision makers seek out and use evidence from the research community is the perception that it is more likely to be objective and unbiased relative to advice from other sources. This raises a critical question of whether the same person or team who is actively advocating for, or working on, a particular policy or practice change can also be a source of objective advice.

This panel will begin with a brief presentation on the multiple expectations of applied researchers, noting how this can lead to researchers being drawn into a position that feels like, or may be, advocacy, regardless of whether that role is sought. Next, scenarios will be presented that intentionally include elements for which there might be debate over whether what is being offered by the researcher is advocacy or advice. Participants who provide their electronic consent to participate at the beginning of the session will enter responses to online polls about the scenarios via live polling. Results will be revealed during the session, and discussed by the panel and participants. Research Ethics Board approval will be obtained before the panel presentation, and a full report of the responses (without identification of any respondents) will be available to all participants after the conference.

Authors: P. Alison Paprica, Vector Institute; Kimberlyn McGrail, School of Population and Public Health, University of British Columbia; Centre for Health Services and Policy Research, University of British Columbia; Walter Wodchis, University of Toronto
E6.3  
Current knowledge and needs of Canadian paediatricians delivering healthcare to children and youth in military families  
Presented By: Alyson Mahar, Assistant Professor, Manitoba Centre for Health Policy  
Methods: Survey Research Methods  
Objectives: Many healthcare professionals and policy-makers are unaware that military families are provided healthcare through the provincial system, and are unfamiliar with their unique healthcare challenges. This work sought to document the knowledge, experience, and professional development needs of Canadian paediatricians in the care of children and youth in military-connected families.  
Approach: We performed a one-time, nationally targeted survey of Canadian paediatricians, including generalists and subspecialists, through the established Canadian Paediatric Surveillance Program. Questions were focused in four areas: knowledge of Canadian Armed Forces families, how membership in a military family affected care, confidence in providing care to this population, and training or educational needs. Descriptive statistics are reported.  
Results: 2,799 participants received the survey; 764 (27%) responded. 44.5% were paediatric subspecialists, 78.1% practiced in urban settings, and 58.9% had an academic affiliation. One third of respondents incorrectly believed that the federal military healthcare system provides healthcare services to children/youth in military families, and half were unsure. Almost one quarter did not believe that identifying a child/youth as part of a military family informed patient care, while almost a minority believed it warranted further specific social or health history screening. Over half felt inadequately prepared to care for children/youth in military families. There was strong evidence that additional resources, information, or training would benefit the care of military families, including a better understanding of risks and the services available to military families.  
Conclusion: Canadian military families experience a constellation of risk factors that may negatively affect their health and access to services. These data provide clear evidence of a need to further military literacy amongst healthcare professionals, and provide clear direction for the development of enhanced resources and supports within the healthcare system.  
Authors: Alyson Mahar, Manitoba Centre for Health Policy; Heidi Cramm, Queen’s University; Linna Tam-Seto, Queen’s University; Anne Rowan-Legge, University of Ottawa  

E6.4  
Disparities in caesarean section rates by maternal socioeconomic status differs across diverse obstetric indications  
Presented By: Kamala Adhikari Dahal, PhD student, University of Calgary  
Methods: Statistics/ Econometrics  
Objectives: Previous literature reports an inconsistent association between caesarean section (c-section) rate and maternal socioeconomic status (SES); however, this inconsistency may be the result of a failure to examine the association across indications for c-section. This study examined the variation in c-section rates by maternal SES across diverse-obstetric indications.  
Approach: This cross-sectional study used data from the 2015 US Birth Certificate (representing all deliveries in the US: n=3,850,114). Data on demographics, SES (maternal education and health insurance status), medical conditions (e.g., diabetes, hypertension, and eclampsia), and obstetric characteristics (e.g., parity, fetal presentation, onset of labor, and previous c-section) were extracted. Multivariable log-binomial regression models were used to examine the association between the c-section rate and SES across the Robson’s 10-groups (10 clinically relevant, mutually exclusive obstetric indication/groups for c-section) after adjustment for confounding variables, such as maternal age and medical conditions.  
Results: The overall c-section rate was 32.0%. No statistically significant differences were observed by either measure of SES (education (p=0.12) and insurance (p=0.09)). However, a significant disparity in the use of c-section across SES was observed for particular obstetric-indications, even after adjustment for confounders. For example, women with graduate-education compared to those who did not complete high-school were more likely to have a c-section (RR: 2.4, 95% CI: 2.3-2.4) for low-risk indications (group 1: nulliparous with normal obstetric characteristics). Whereas, they were less likely to have a c-section (RR: 0.7, 95% CI: 0.6-0.9) for a strongly-medically-indicated condition (group 9: abnormal fetal lies). Women without private insurance or Medicaid coverage were less likely to have a c-section in almost all obstetric-groups, compared to those with private insurance.  
Conclusion: Examining the overall c-section rate obscures the relationship between SES and use of c-section for particular-indications. The unequal utilization of c-sections across maternal SES highlights inequities in obstetric care received by American women. The promotion of maternal health literacy and clinician’s advocacy may bridge the disparities in c-section across SES-groups.  
Authors: Kamala Adhikari Dahal, University of Calgary; Amy Metcalfe, Sheila McDonald, Alberta Health Services; Alka Patel, Alberta Health Services; Deborah McNeil, Alberta Health Services
E7.1
Bully Victimization and Binge Drinking and Smoking Among Boys and Girls in Grades 7 to 12 in Manitoba
Presented By: Shannon Struck, Student Research Assistant, University of Manitoba

Methods: Data Mining/Big Data Analytics

Objectives: Bullying victimization can lead to increased risky health behaviours. This study investigated if adolescents who have experienced various types of bullying victimization (i.e., traditional bullying, discriminatory harassment, and cyber-victimization) are associated with binge drinking or smoking and to determine if a dose-response trend exists.

Approach: Data were acquired from the 2012/13 Manitoba Youth Health Survey that included 475 participating schools (N=64,174). Students in grades 7-12 completed the survey. Logistic regression models were used to examine the relationship between the frequency of each type of bullying victimization and binge drinking and smoking. All analyses were stratified by gender and grade. Bullying victimization was measured over the past 12 months. Binge drinking was defined as having five or more drinks of alcohol within a couple of hours over the past 30 days and smoking was defined as ever taking even a few puffs in the respondent’s lifetime.

Results: 58.3% of boys and 67.8% of girls reported being a victim of bullying. Among all students, 17.5% reported using alcohol and 11.3% reported smoking. A dose-response trend was observed with increasing occurrence of bullying victimization types relating to greater odds of binge drinking and smoking for boys and girls in grades 7 to 9. Dose response relationships for boys and girls in grades 10 to 12 were also seen, but were attenuated compared to the younger age group. All occurrences of bullying victimization were significantly related to increased odds of smoking among boys and girls in grades 10 to 12. Cyber-victimization was related to the greatest odds of binge drinking and smoking among the different types of bully victimization assessed.

Conclusion: Findings indicate that all types of bullying victimization are associated with increased odds of youth participating in risky behaviours such as binge drinking and smoking. Efforts to reduce these 3 types of bullying and support victims need to be addressed at all grade levels to reduce these risky behaviours.

Authors: Shannon Struck, University of Manitoba; Tracie Affi, University of Manitoba; Sarah Turner, University of Manitoba; Samantha Salmon, University of Manitoba; Tamara Taillieu, University of Manitoba; Janique Fortier, University of Manitoba

E7.2
Clinical mental health and pharmaceutical characteristics of individuals with an alcohol use disorder
Presented By: Michael Paille, Graduate student, University of Manitoba

Methods: Data Mining/Big Data Analytics

Objectives: To describe the clinical mental health characteristics of those individuals with an alcohol use disorder (AUD) who received a prescription for acamprosate, naltrexone, or disulfiram – prescription drugs used to help manage withdrawals or cravings for alcohol – and to identify the medical specialty most likely to prescribe these medications.

Approach: 53,556 individuals with an AUD (i.e. with a mental and/or physical health diagnosis due to harmful alcohol consumption) were identified using administrative data in the Manitoba Population Research Data Repository between April 1, 1990 and March 31, 2015. 493 of these individuals received a prescription of interest between April 1, 1996 and March 31, 2015. Individuals with a prescription dispensed for these drugs (users) were age- and sex-matched to individuals with an AUD who did not have a prescription dispensed (non-users). T-tests and logistic regression models identified statistically significant differences between the two groups.

Results: Users had 2.40 (95% CI 1.98 – 2.90) times the odds of having a comorbid mood or anxiety related diagnosis at the time of their AUD diagnosis, after adjusting for age and sex. In the one year prior to their AUD diagnosis, 74.8% of users and 54.4% of non-users had a mental health related ambulatory visit (p<0.0001). Additionally, 16.5% of users and 11.4% of non-users were dispensed a selective serotonin reuptake inhibitor, a class of antidepressant (p=0.0001), and 14.6% of users and 5.6% of non-users were dispensed sedatives and anti-anxiety medications (p<0.0001). Finally, the majority of dispensed prescriptions for an AUD came from general practitioners from urban centers (53.6%), followed by psychiatrists (22.3%).

Conclusion: Drug therapies to aid in the recovery from AUD are being underutilized. Diagnosis of and treatment for mental health disorders is more common among those dispensed these medications. Programs that study clinicians’ use of AUD-targeted drug therapies should be considered, while psychiatric services in addiction care require significant improvement.

Authors: Michael Paille, University of Manitoba; Nathan Nickel, University of Manitoba; Christine Leong, University of Manitoba; James Bolton, University of Manitoba; Geoffrey Konrad, University of Manitoba; Heather Prior, Manitoba Centre for Health Policy; Leonard MacWilliam, Manitoba Centre for Health Policy; Jeff Valdivia, Manitoba Centre for Health Policy
E7.3
Burden of Alcohol Use Disorders in the Emergency Department: A Population-Based Cohort Study in Ontario, Canada
Presented By: Evgenia (Jenny) Gatov, Epidemiologist, Institute for Clinical Evaluative Sciences

Methods: Statistics/ Econometrics

Objectives: Alcohol use is a common reason for frequent emergency department (ED) visits. We sought to describe a population of patients with frequent ED visits for alcohol-related reasons with respect to sociodemographic and clinical characteristics, and examine their mortality and health service utilization.

Approach: In this population-based cohort study, we identified all Ontario residents aged 16 and older who were frequent users of the ED for alcohol-related reasons (≥2 unscheduled annual visits) between April 1, 2010 and March 31, 2015, and classified them into three severity groups: only 2 annual visits, 3-4 visits, and ≥5 visits. We examined their sociodemographic and clinical characteristics, including time between ED visits, and utilized Cox proportional hazards regressions to examine mortality and health service use in one year follow-up.

Results: Of 19,173 frequent ED users, 66.0% had only 2 annual alcohol-related ED visits, 27.9% had 3-4 visits, and 12.1% had ≥5 such visits. Frequent ED users were more likely to be male, aged 45-64, live in urban centres and lower-income neighbourhoods, and to be admitted by ambulance, compared to those with fewer annual alcohol-related ED visits. Approximately one in three individuals had two alcohol-related ED visits within a 30-day timeframe and 12.9% were hospitalized during their index visit. Overall, a 5.3% one-year mortality rate was observed; patients with 3-4 and ≥5 visits had 17% and 58% greater mortality rates, respectively, compared to those with 2 visits (HR=1.17, 95% CI 1.01-1.36 and HR=1.58, 95% CI 1.34-1.86), after adjustment for socio-demographic and clinical factors.

Conclusion: Individuals who frequent the ED for alcohol misuse are relatively young and live in urban regions. They have a very high mortality rate that increases with increased alcohol-related ED utilization, which suggests a need for more systematic engagement, harm reduction, and aligned public health interventions.

Authors: Evgenia (Jenny) Gatov, Institute for Clinical Evaluative Sciences; Paul Kurdyak, CAMH; Jennifer Hulme, University of Toronto; Edward Xie, University Health Network; Hasan Sheikh, University Health Network WebsiteDirections; Chenthila Nagamuthu, Institute for Clinical Evaluative Sciences

E7.4
Pragmatic randomized controlled trial of an on-line mental health platform among individuals seeking specialized mental health services in Ontario
Presented By: Jennifer Hensel, Innovation Fellow, Women’s College Hospital Institute for Health Systems Solutions and Virtual Care

Methods: Program or Policy Evaluation

Objectives: To determine if access to an anonymous on-line multi-component, moderated mental health platform with peer support, the Big White Wall (BWW), increases mental health recovery over 3 months among individuals seeking specialized mental health services. Additionally, we evaluated if extended access to the platform was beneficial among interested study participants.

Approach: A multi-site, pragmatic randomized controlled trial with a nested extension study. 812 individuals with a range of mental health needs were recruited from outpatient programs affiliated with three participating hospitals in Ontario. Participants were randomized 1:1 to receive immediate access to the BWW or delayed access after a 3-month waiting period. At 3 months, those who were interested were re-randomized 1:1 to another 3 months of the intervention or discontinuation. The primary outcome was mental health recovery assessed with the Recovery Assessment Scale-revised (RAS-r). Secondary outcomes were symptoms of depression and anxiety, quality of life, and community integration.

Results: A small, statistically significant increase in RAS-r score was found for intervention participants relative to control (5.28 points, 95% CI 3.29 to 7.28), as well as statistically significant decreases in measures of depression and anxiety, but not quality of life or community integration. 112 participants (46.7% of those eligible based on completion of the 3-month outcome assessment) opted into the nested extension study. There was no significant benefit of extended access into the intervention, although power in this nested study was limited. Utilization of the platform was highly variable, with a small proportion of users accounting for most of the activity. Only 58% of participants logged on 2 or more times.

Conclusion: The mental health platform conferred some benefit for mental health recovery and symptom reduction after 3 months, but not beyond. The lack of ongoing engagement among participants has implications for how to select and engage individuals who may benefit, and for delivery and funding models for similar interventions in Ontario.

Authors: Jennifer Hensel, Women’s College Hospital Institute for Health Systems Solutions and Virtual Care; Jay Shaw, Women’s College Hospital; Noah Ivers, Women’s College Hospital; Laura Desveaux, Women’s College Hospital; Simone Vigod, Women’s College Hospital; Nike Onabajo, Women’s College Hospital; Trevor Jamieson, Women’s College Hospital Institute for Health Systems Solutions and Virtual Care; Sacha Bhatia, Women’s College Hospital Institute for Health System Solutions and Virtual Care
E8.1
The Future of Long-Term Care and Home Care: What Canada Can Learn from International Experiences
Presented By: Deirdre DeJean, Research Associate, University of Ottawa

Methods: Policy Case Study

Policy-makers around the globe face the steep challenge of developing high quality and sustainable strategies to address the needs of aging populations. Home care and long-term care (LTC) systems are confronting growing demand, more complex patient needs, and limited capacity. In Canada, provincial decision-makers face substantial fiscal pressures and are strongly motivated to examine alternative finance and delivery models for home care and LTC from other OECD countries.

Innovative funding models that encourage a shift, where appropriate, away from expensive and overflowing institutions, while acknowledging the costs of such a shift on family and other informal caregivers, have proved extremely popular reform initiatives across a range of countries. Cash benefits -- that is, direct transfers of cash to the care recipient, or the caregiver, to pay for, purchase or obtain care services -- are an example of such innovation, and play a significant role in LTC systems in OECD countries. In Germany, for example, cash benefits were introduced in 1995 and are set at approximately half of the monetary value of in-kind benefits, with nearly 50% of those receiving care at home opting for cash payment in lieu of formal services.

This panel features leading experts in law and policy from Canada, Germany and the United States, and will explore how innovations in financing and delivery have the potential to reshape the landscape of both home care and LTC. The panelists are part of a CIHR-funded research team that is generating alternative policy options for Canadians policy-makers in home care and LTC, based on international experiences. Lorraine Frisina-Doetter, Senior Research Fellow and Lecturer at the University of Bremen, will present an overview of the German LTC system, with a focus on its strengths and weakness and evidence of its experience with cash benefits. Ali Hamandi, Trudeau Foundation Scholar and PhD Candidate, Health Policy Program at Harvard University, will discuss the US approach to public funding of home care and LTC through Medicaid, discussing the move to shift public funding from LTC to home care as a cost-saving measure, and the implications of this policy initiative. Amélie Quesnel-Vallée, Canada Research Chair in Policies and Health Inequalities, and professor in the Departments of Sociology and Epidemiology, Biostatistics and Occupational Health, McGill University, will present on the results of the Health Insurance Access Database, monitoring changes since 1990 on the financing mechanisms for LTC across the Canadian provinces, with a focus on specific programs in certain provinces (e.g., le cheque emploi-service in Quebec) that offer innovative ways of delivering services in the Canadian context. Finally, Colleen M. Flood, Director of the University of Ottawa Centre for Health Law Policy & Ethics, will provide a typology of factors for policy consideration prior to introducing cash benefits, including issues of quality and safety and the impact upon women’s participation in the workforce.

Authors: Deirde DeJean, University of Ottawa; Colleen Flood, University of Ottawa Centre for Health Law Policy & Ethics; Amélie Quesnel-Vallée, McGill University; Lorraine Frisina, Centre for Social Policy University of Bremen, Germany; Ali Hamandi, Harvard University
F1.1
Are innovative models of community-based primary health care able to traverse the ‘barbed-wire fence’ between primary medical and non-medical care, and if so, how?
Presented By: Tim Tenbensel, Associate Professor, Health Policy, University of Auckland

Methods: Qualitative Research Methods

Objectives: In most health systems, the funding streams for primary medical care (ie family physician services) are effectively separated from the funding of non-medical care. Our paper explores the extent to which this ‘barbed-wire fence’ constitutes a significant barrier to providing/offering integrated models of community-based primary health care.

Approach: We conducted 60 semi-structured interviews with policy and organisational stakeholders from nine case studies of innovative, community-based primary health care models across three jurisdictions (Ontario, Quebec, and New Zealand) as part of the cross-national iCOACH (integrated care for older adults with complex health needs) research project. The data were coded and analysed in terms of three key questions – (i) how does the separation of funding streams operate in each case study?; (ii) how does it affect the capacity to deliver integrated services?; and (iii) what strategies are adopted to mitigate the effects of the separation of funding streams?

Results: Our findings are that the ‘barbed-wire fence’ between the funding of primary medical and non-medical care is a ubiquitous feature across all case study settings. It is sometimes formalised in policy and institutional arrangements, but also applies in contexts where policies enable, permit and/or openly encourage integrated funding. The ‘barbed-wire fence’ places significant constraints on the capacity of case study models to develop integrated models of care. Many case studies were adept at developing complex ‘workarounds’ to mitigate the effects of separated funding, but these required considerable time and effort to create and maintain.

Conclusion: While fragmentation of funding is commonly identified as a significant barrier to integrated care, our findings suggest a particular dimension of this fragmentation – the distinction between funding of primary medical care and broader primary health care services – requires further attention to its causes and strategies for mitigating effects.

Authors: Tim Tenbensel, University of Auckland; Mylaine Breton, Universite de Sherbrooke; Yves Couturier, University of Sherbrooke; Fiona Miller, University of Toronto; Frances Morton-Chang, University of Toronto; Allie Peckham, University of Toronto; Walter Wodchis, University of Toronto

F1.2
Why Is Soft Integration So Hard? Assessing System-Level Strategies for Primary Care Renewal in Manitoba
Presented By: Sara Kreindler, Manitoba Research Chair in Health System Innovation / Assistant Professor, University of Manitoba

Methods: Policy Case Study

Objectives: Primary care renewal (PCR) cannot succeed without substantive practice change on the part of fee-for-service physicians. Policymakers across Canada must balance two conflicting imperatives: fostering nonconflictual relationships with independent physicians and ensuring mechanisms of physician accountability. We examine the ramifications of this balancing act in the Manitoba context.

Approach: Our explanatory case study of primary-care system change combined interviews with 31 fee-for-service, 29 alt-funded physicians and 35 provincial and regional policymakers/managers; extensive document review, including synthesis of evaluation reports on PCR initiatives; and observation (meetings, engagement events). This presentation focuses on initiatives directed towards fee-for-service physicians, 2010-15. We examined the extent of top-down (“stipulation”) and bottom-up (“stimulation”) strategies, and how these were perceived by physicians and policymakers/managers. Qualitative analysis (content and thematic analysis, using NVIVO) was undertaken by two researchers, who coded independently and compared interpretations; emerging findings were discussed by the full researcher-stakeholder team.

Results: Policymakers eschewed strategies that they deemed to instantiate either excessive stipulation or excessive stimulation. Flagship initiatives, including My Health Teams (primary care networks), were characterized by voluntary adoption, indirect incentives, and an expectation of physician participation in governance, within predetermined parameters. Whereas policymakers perceived such initiatives as enshrining equal partnership, many fee-for-service physicians saw them as a bureaucratic enterprise in which physicians lacked voice; this was a barrier to their recruitment and active engagement. Initiatives that did not attempt large-system redesign but supported a specific behaviour change financially (e.g., electronic medical record adoption) or non-financially (e.g., Family Doctor Finder) were more successfully implemented; this approach seemed best suited to easily observable behaviours. Strategies continue to evolve as early learnings are incorporated.

Conclusion: Policymakers’ caution of extreme stipulation and stimulation is understandable; yet, when the strongest potential options are avoided, only weaker options remain. This may limit success establishing nonconflictual relations and physician accountability mechanisms for system transformation. Such dilemmas persist in all provinces, including Manitoba, as policymakers refine PCR strategies.

Authors: Sara Kreindler, University of Manitoba; Ashley Struthers, Colleen Metge, Centre for Healthcare Innovation; Catherine Charette, Paul Beaudin, George & Fay Yee Centre for Healthcare Innovation; Sunita Bapuji, George & Fay Yee Centre for Healthcare Innovation; Karen Harlos, University of Winnipeg; Jose Francois, University of Manitoba; Shauna Zinnick, George and Fay Yee Centre for Healthcare Innovation
F1.3
Program Integration in Primary Care: Challenges, Enablers, and Leadership
Presented By: Tujuana Austin, Graduate Student, University of Ottawa

Methods: Qualitative Research Methods

Objectives: Integrating similar programs within or across organizations may improve quality, access and efficiency. However, doing so can create challenges such as resistance to change and ambiguity in leadership and roles. This study examines challenges and enablers, readiness for change factors, and leadership dynamics in the integration of two health programs.

Approach: This study examined the integration of two programs – Health Links and Primary Care Outreach – within a Local Health Integration Network in Ontario. Using qualitative methodology, data were collected from community health centres that experienced the integration. Through semi-structured interviews with managers, administrators, and healthcare providers; non-participant meeting observations where the planning and implementation of the Health Links approach were discussed; and analysis of training and other documents, data pertinent to the integration were collected, categorized, and analyzed according to themes of challenges and enablers, individual readiness for change, and leadership dynamics.

Results: Results captured the challenges of integrating a new, provincially-mandated program with an existing local program, including tensions between ministerial priorities and local leadership autonomy; discrepancies in resource availability and long-term sustainability; and diverging expectations between management and frontline healthcare providers. Several aspects of readiness (i.e., valence, discrepancy, and appropriateness) were linked to leadership, in that clear understandings of the value and necessity of the integration, and high involvement of frontline staff in the planning and execution were linked to more positive accounts of local leadership. There was divergence across the Local Health Integration Network with respect to overall readiness for the integration. This may be explained by contextual factors including variations in rurality, community health centre size, and patient demographics.

Conclusion: In the context of program integration, readiness and leadership should be considered proactively, or prior to the change process. Organizations undergoing program integration in healthcare settings should ensure that readiness and clear leadership structures are in place at all levels and throughout the integration process.

Authors: Tujuana Austin, University of Ottawa; Samia Chreim, University of Ottawa; Agnes Grudniewicz, Telfer School of Management, University of Ottawa

F1.4
Exploring Opportunities to Optimize the Organization of Primary Healthcare Services for Individuals with Chronic Diseases Across Newfoundland & Labrador (NL)
Presented By: Richard Buote, PhD Student, Memorial University of Newfoundland

Methods: Survey Research Methods

Objectives: Across Canada, the prevalence and cost of chronic diseases is growing. In Newfoundland and Labrador (NL), the prevalence of chronic diseases is above the national average. This study aims to improve the understanding of primary healthcare organization, specifically with respect to chronic disease care, to inform healthcare system reform initiatives.

Approach: A cross-sectional survey of primary healthcare sites across NL (n=154) was conducted. Primary healthcare sites were identified by members of each respective regional health authority. An electronic survey was administered to site leads to determine programs and services offered. This included location of site, communities serviced, disease-specific chronic disease prevention programming, types of routine primary care, allied health prevention and promotion, chronic disease prevention and management services, and whether team-based care was offered. Mode of service delivery was identified (i.e., delivered by on-site staff, visiting healthcare provider, or telehealth) along with details of team-based care provided.

Results: Completed surveys were returned by 96% (n=148) of sites. Family physician services were available at 66% of sites and nurse practitioner services at 51%. Less than a third (32%) of sites offered 24/7 primary care services. If a site offered a healthcare service, most often it was through an on-site staff member (39-98%) followed by visiting healthcare professionals (2.0-63%), while few used telehealth (<15%). Of services typically offered by allied health providers, healthy eating (77%), tobacco cessation (74%), and blood pressure (67%) were most frequently available. Targeted prevention and management programming was most commonly available for diabetes (46%), autism (27%), and hypertension (25%). Use of team-based care was reported by 41% of sites, most often for diabetes (48%), mental health (24%), and primary care (18%).

Conclusion: There is considerable variety of primary healthcare services available across NL that have yet to be optimized. Access to 24/7 care and utilization of telehealth to deliver primary healthcare services is limited. Future research should examine how availability of these programs and services affects those with chronic disease in NL.

Authors: Richard Buote, Memorial University of Newfoundland; Julia Lukewich, ; John Knight, Primary Healthcare Research Unit; Shabnam Asghari, Memorial University; Kris Aubrey-Bassler, Memorial University
F2.1 Supporting high-quality public and patient engagement: Assessing the feasibility of the Public and Patient Engagement Evaluation Tool (PPEET)

Presented By: Laura Tripp, Research Coordinator, McMaster University

Methods: Program or Policy Evaluation

Objectives: The Public and Patient Engagement Evaluation Tool (PPEET) was developed to meet the growing demand for tools to evaluate engagement of citizens and patients in the health system. We assessed the feasibility of the PPEET, as a generic evaluation tool, across seven health system organizations in Ontario.

Approach: We assessed tool feasibility in a variety of different organizational settings, engagement activities and populations through real-time observation of tool implementation. We collaborated with 7 Ontario health system organizations, including health care delivery organizations (n=4), provincial health agencies (n=2) and local health integration networks (n=1). Each collaborating organization implemented the PPEET to evaluate 2–5 engagement activities. Feedback on the feasibility of the PPEET was collected through a series of usability questions at the end of the evaluation questionnaires and debriefing interviews with the tool implementers in each organization. Results from the participant questionnaire are the focus of the presentation.

Results: A total of 159 participants completed the feasibility questions and eight interviews were conducted with those involved in the implementation process. Overall, participants felt that the PPEET participant questionnaire was easy to use and that important questions were not missing. The tool was identified as being useful across a number of health system settings, and a number of different types of activities ranging from one-time meetings to longer-term panels. Some questionnaire modifications were suggested including changes to allow for greater tailoring of the tool to different respondent groups, ensuring the tool is useful for longer-term engagement activities, additional open-ended and/or engagement-specific questions, and the importance of outlining a mechanism for sharing evaluation results with respondents. Tool modifications to reflect these results are currently underway.

Conclusion: The PPEET aims to improve public and patient engagement practice by assessing the quality of engagement activities carried out within organizations across the health system using a common evaluation tool. Results suggest the PPEET can be successfully implemented across a range of organizations and engagement activities with some suggested modifications.

Authors: Laura Tripp, McMaster University; Julia Abelson, McMaster University; Sujane Kandasamy, McMaster University; Paula Rowland, Kristen Burrows, McMaster University

F2.2 Supporting high-quality public and patient engagement in Ontario’s health system: Results from the implementation of the Public and Patient Engagement Evaluation Tool (PPEET)

Presented By: Laura Tripp, Research Coordinator, McMaster University

Methods: Program or Policy Evaluation

Objectives: Health system organizations are increasingly engaging with patients and citizens to shape their organizations’ activities and programs. Using a recognized evaluation tool, we assessed a wide range of public and patient engagement (PPE) activities across seven health system organizations to provide a snapshot of current PPE efforts in Ontario.

Approach: The Public and Patient Engagement Evaluation Tool (PPEET) includes 3 questionnaires, each assessing the quality of engagement practice from the perspectives of public/patient partners, engagement practitioners and senior organizational leadership. The PPEET was implemented in seven health system organizations in Ontario including health care delivery organizations (n=4), provincial health agencies (n=2) and local health integration networks (n=1). Each organization implemented the tool to evaluate 2 – 5 engagement activities over a one-year time period. Questionnaires were administered in person or on line following completion of the engagement activity. The presentation focuses on the results from the participant questionnaire.

Results: 186 individuals completed the PPEET participant questionnaire across 19 engagement activities including knowledge exchange activities (n=2), single-day or short-term activities (n=10) and long-term patient advisory roles (n=7). Respondents were predominantly female (65%), well educated (30% completed a professional or graduate degree), evenly distributed across age groups and either working full time or retired (69%). Pooled mean ratings for the 14 scaled evaluation statements fell between 4.02 and 4.44 out of 5 on a 5-point scale with ranges between 1 and 5 for 9 of the 14 statements. Thematic analysis of open-ended comments yielded a more critical set of perspectives; specifically, the need for clearly-defined and communicated objectives, opportunities for ‘deep’ and ‘inclusive’ engagement, and a feedback loop demonstrating how engagement results will be used.

Conclusion: The use of a common evaluation tool provides the opportunity to evaluate PPE practice across a variety of health system settings. Our aggregated results highlight the strengths of current PPE practice and areas in need of attention to support high-quality PPE in the future.

Authors: Laura Tripp, McMaster University; Sujane Kandasamy, McMaster University; Julia Abelson, McMaster University; Kristen Burrows, McMaster University; Paula Rowland,
F2.3
Measuring Patient Experience: A Framework to Assess Patient Experience with Integrated Care
Presented By: Reham Abdelhalim, PhD Student, Institute of Health Policy, Management and Evaluation, University of Toronto

Methods: Program or Policy Evaluation

Objectives: Inclusion of the patient’s voice in evaluations of healthcare interventions, including integrated care initiatives, has increasingly gained momentum in Canada and across the world in recent years. A framework was constructed to guide measurement of patient experience in evaluation of integrated care interventions.

Approach: A multi-step literature review was conducted including peer-reviewed articles and grey literature published in English between 1990 and 2017 investigating integrated care, patient-centered care, or patient experience. The goals of the review were to: (1) identify the main processes of care that are common across integrated care interventions; (2) portray the processes that have important influence on the patient experience; (3) describe the mechanisms by which these processes can impact patient experience; (4) characterize potential confounding factors relating to the integrated care intervention or the patient’s characteristics.

Results: The study resulted in the construction of a framework that combines three highly important concepts: integrated care, patient-centered care and patient experience. Patient-centered care is viewed as the main philosophy behind integrated care that drives all the processes of care and enhance patient experience. Three key processes of care were identified as having direct impact on patient experience with integrated care. These processes are: personalized care planning, patient-engagement, and care coordination. These processes impact patient experience through mechanisms like; communication, shared decision making, improved access, and information sharing. Patient’s sociodemographic and health characteristics can impact their experience and need to be accounted for. Structural characteristics of the intervention can indirectly impact the patient experience through influencing the philosophy and processes of care.

Conclusion: This framework can be used as a theoretical base when developing tools (qualitative or quantitative) that aim at measuring patient experience. It can also be a useful guide when planning, implementing, or evaluating integrated care interventions that put the patient at the centre and aim at enhancing the patient experience.

Authors: Reham Abdelhalim, Institute of Health Policy, Management and Evaluation, University of Toronto; Walter Wodchis, University of Toronto

F2.4
The role of social identity in informing strategies for organizational-level patient engagement
Presented By: Lilian Jia Lu Lin, PhD Student in Health Services Research, University of Toronto

Methods: Program or Policy Evaluation

Objectives: Despite increasing attention to involving patients in various health system domains, cultural barriers and power differentials continue to hinder productive patient engagement. This study aimed to apply the social identity approach (SIA) to examine interactions amongst various stakeholders to inform the formulation of patient engagement strategies at the organization level.

Approach: A critical review of the literature on the social identity approach (SIA) was undertaken to establish an appropriate theoretical framework for examining the dynamic intergroup relations among health care providers, organizational leaders, and patients and families. Through the lens of the SIA, a series of propositions were developed to elucidate how social identity, social structure, group norms and values, and contextual factors influence the ability of diverse stakeholder groups to work collaboratively across disciplinary and social-structural boundaries in the context of organizational-level patient engagement activities.

Results: Based on the SIA, it follows that the divergent nature of the social identities among patients and families, health care providers, and organizational leaders are shaped by their differential experiences interacting with the health care system, as well as individuals’ readiness to internalize group norms and values. The stable intergroup differences in power and status add an additional layer of complexity to patient engagement efforts by breeding intergroup tensions, both real and perceived, among the stakeholder groups. Patient engagement efforts that acknowledge and embrace the unique social identities of distinct stakeholder groups while forging a sense of “we-ness” are more likely to build cohesive relationships, and be beneficial to both patients and health care professionals.

Conclusion: The social identity approach holds enormous promise in understanding patient engagement initiatives. Further research should examine real life patient engagement efforts to understand how features of the organizational context and contents of the initiative itself influence social identity and multi-stakeholder collaboration.

Authors: Lilian Jia Lu Lin, University of Toronto
F3.1

No Strings Attached: The Impact of an Unconditional Prenatal Income Supplement on First Nations Birth and Early Childhood Outcomes

Presented By: Marni Brownell, Research Scientist, Manitoba Centre for Health Policy

Methods: Program or Policy Evaluation

Objectives: In Manitoba, low-income pregnant women are eligible for the Healthy Baby Prenatal Benefit (HBPB), an unconditional income supplement provided during the second and third trimester of pregnancy. The objective of this study was to determine the impact of the HBPB on First Nations (FN) newborn and early childhood outcomes.

Approach: A research partnership between Nanaandawewigamig and the Manitoba Centre for Health Policy examined all FN women giving birth 2003-2010 (N=28,357). The majority (61.8%) were FN women living off reserve. To develop comparable groups of FN women receiving and not receiving HBPB, we included FN women receiving income assistance during pregnancy (n=7074). Propensity score weighting adjusted for differences between treatment (received HBPB; n=5283) and comparison (no HBPB; n=1791) groups. Multi-variable regressions compared the groups on breastfeeding initiation, low birth weight, preterm birth, small- and large-for-gestational age, Apgar scores, complete immunizations at 1 and 2 years, and developmental vulnerability in kindergarten.

Results: Receipt of the HBPB was associated with reductions in low birth weight births (adjusted Relative Risk (aRR): 0.77; 95% CI: 0.63, 0.93) and preterm births (aRR: 0.78 (0.68, 0.90)), and increases in breastfeeding initiation (aRR: 1.05 (1.00, 1.09)) and large-for-gestational age births (aRR: 1.11 (1.01, 1.23)). HBPB receipt during pregnancy was also associated with increases in 1- and 2-year immunizations for FN children (aRR: 1.14 (1.09, 1.19), and aRR: 1.28 (1.19, 1.36), respectively). Reductions in the risk of being developmentally vulnerable in the language and cognitive domain in kindergarten were also found for FN children whose mothers had received the HBPB during pregnancy (aRR: 0.85 (0.74, 0.97).

Conclusion: A modest unconditional income supplement during pregnancy was associated with improved birth outcomes, increased immunization rates, and improved language and cognitive development at kindergarten for children born to low-income First Nations women.

Authors: Marni Brownell, Manitoba Centre for Health Policy; Mariette Chartier, ; Nathan Nickel, University of Manitoba; Rhonda Campbell, First Nations Health and Social Secretariat of Manitoba; Jennifer Enns, ; Wanda Phillips-Beck, First Nations Health and Social Secretariat of Manitoba; Dan Chateau, Manitoba Centre for Health Policy, University of Manitoba; Elaine Burland, ; Joykrishna Sarkar, Manitoba Centre for Health Policy; Janelle Boram Lee, University of Manitoba; Farzana Quddus, Manitoba Centre for Health Policy

F3.2

Factors Maternity Care Providers Consider When Counselling Women about a Trial of Labour after Caesarean Section (TOLAC): Findings from a Discrete Choice Conjoint Experiment

Presented By: Christine Kurtz Landy, Associate Professor, York University

Methods: Emerging methods (e.g. new developments in observational study design)

Objectives: Non-medically indicated repeat Caesarean sections (CS) increase health care costs and add strain on the already existing shortage of maternity care providers. Maternity care providers are well positioned to influence women’s decisions about childbirth. We identified the factors providers consider when recommending TOLAC versus elective repeat CS.

Approach: A discrete choice conjoint experiment was implemented with 496 maternity care providers, i.e. obstetricians, midwives and family physicians who completed 15 choice tasks, each presenting 3 scenarios. Each scenario described 3 of 12, 3-level attributes (factors) thought to influence the decision to recommend a TOLAC. The attributes were derived from in-depth interviews with 39 maternity care providers and the literature. Using conditional logit and latent class analyses, we estimated the relative influence of each attribute on the decision to recommend a TOLAC and identified subsets of participants with different attribute preferences.

Results: Two subsets of providers were identified. The 5 most influential attributes in subset 1, in order of importance, were women’s preferred delivery method, women’s chance for a successful vaginal delivery, women’s anxiety regarding TOLAC, women’s understanding of the risks of TOLAC, and colleague support for TOLAC. The 5 most influential attributes in subset 2, in order of importance, were women’s chance for a successful vaginal delivery, body mass index, women’s preferred delivery method, women’s understanding of the risks of TOLAC, and provider payment/reimbursement for a TOLAC.

Conclusion: To reduce the rate of non-medically indicated repeat CSs, women must be adequately educated about the risks and benefits of TOLAC and repeat CS. Professional education to promote colleague support for TOLAC and improved reimbursement for TOLAC may further help increase TOLAC rates and thus decrease medically unnecessary repeat CS.

Authors: Christine Kurtz Landy, York University; Wendy Sword, University of Ottawa; Charles Cunningham, McMaster University; Heather Rimas, McMaster University; Bailey Stewart, McMaster University; Anne Bringer, Mount Sinai Hospital; Sarah D. MacDonald, McMaster University; Maureen Heaman, University of Manitoba; Pamela Angle, University of Toronto; Margaret Morris, University of Manitoba; Jackie Cramp, York University
**F3.3**

**Power and Knowledge: Understanding how Migrant Women and Canadian-born Women Participate in Obstetrical Decision-Making**

Presented By: **Priatharsini (Tharsini) Sivananthajothy**, Graduate Student, University of Alberta School of Public Health

**Methods: Qualitative Research Methods**

**Objectives:** This study aims to explore migrant women’s ability to make decisions during labour and delivery (L&D) including C-section decisions. Specifically, we wanted to understand whether the experiences differ from that of Canadian-born women, what barriers limit participation, as well as if and how women are able to overcome these barriers.

**Approach:** A qualitative study using a focused ethnographic approach was conducted at a teaching hospital in Edmonton over a ten-month period. The study population comprised: 1) migrant women who immigrated to Canada after 2004 (N=64) and 2) Canadian-born women (N=27). All women included had a higher risk of undergoing a C-section. Data were collected through observation of prenatal appointments (N=250), L&D observations (N=27) and postpartum in-depth interviews (N=44). Written informed consent was obtained from participants and ethics approval was received from the University of Alberta.

**Results:** Participation experiences were found to be similar between both migrant and Canadian-born women. Power imbalances prevented both groups from participating in decision-making. These included: the institutional authority of providers, limited opportunities to participate in decision-making, limited sharing of information and communication barriers specific to migrant women. However, ‘expert patients’ consisting of migrant and Canadian-born women maneuvered and overcame these power imbalances by having privileged knowledge of obstetrical interventions available and the learned ability to exercise their patient rights. Women’s awareness of patient rights, ability to negotiate during decision-making, and confidence in their demands were located in privileged knowledge, which was not universally accessible. This information was acquired either due to a close proximity with the healthcare system or through previous healthcare experiences.

**Conclusion:** In order to support both migrant and Canadian-born women’s participation in L&D decision-making, we recommend further training to healthcare providers to actively inform, and involve women. Improved provision of information on obstetrical care and patient rights is important to ensure patients are equipped to engage in conversations with providers.

Authors: Priatharsini (Tharsini) Sivananthajothy, University of Alberta School of Public Health; Zubia Mumtaz, School of Public Health, University of Alberta

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**F3.4**

**In-Utero SSRI and SNRI Exposure and the Risk of Neurodevelopmental Disorders in Children: A Population-Based Retrospective Cohort Study Utilizing Linked Administrative Data**


**Methods: Data Mining/Big Data Analytics**

**Objectives:** Studies demonstrating association between neurodevelopmental disorders in children exposed in-utero to serotonergic antidepressants are limited by confounding by indication and disease severity. We addressed these limitations by using a population-based sample of women diagnosed with mood and anxiety disorder, thus restricting analysis to patients for whom pharmacotherapy is indicated.

**Approach:** Using population-level linked administrative data from a universal health care system, this study included all mother-newborn pairs in Manitoba (born 1996 to 2009, with follow-up through 2014). High Dimensional Propensity Scores and inverse probability treatment weighting were used to address confounding by indication and disease severity. The final trimmed cohort consisted of mothers who had a mood/anxiety disorder diagnosis between 90 days prior to conception until delivery (n=4998); 16.8% had at least two dispensations of an SSRI or SNRI during pregnancy. Cox Proportional Hazard Regression models were used to estimate risk of Autism Spectrum Disorder (ASD), epilepsy and ADHD.

**Results:** Asymmetric trimming of the study cohort resulted in a total of 4998 mother-child dyads; 4159 children whose mothers did not use SSRIs/SNRIs during pregnancy and 839 children who were exposed to 2+ prescriptions in-utero. During 40,593 person years of follow-up, 2.27% of children were diagnosed with ASD, and 1.92% of children in the un-exposed group were diagnosed with ASD. Use of SSRIs/SNRIs during pregnancy was not associated with an increased risk of ASD HR 0.92 (95% CI 0.42 to 2.03). Additional analysis also demonstrated no association between Epilepsy HR 1.21 (0.48, 3.05), and ADHD HR 1.13 (0.78, 1.64) and in-utero exposure to serotonergic antidepressants.

**Conclusion:** In a large population level sample, in utero exposure to serotonergic antidepressants compared with no exposure does not increase risk of ASD, epilepsy or ADHD among children of women who have prenatal mood/anxiety disorder.

Authors: Deepa Singal, The Manitoba Centre for Health Policy and Health Child Office, Government of Manitoba; Dan Chateau, Manitoba Centre for Health Policy, University of Manitoba; Matt Dhal, Manitoba Centre for Health Policy; Elizabeth Wall-Wieler, University of Manitoba; Laurence Katz, University of Manitoba; Chelsea Ruth, Manitoba Centre for Health Policy; Ana Hanlon-Dearman, University of Manitoba and FASD Centre/MB FASD Network; Marni Brownell, Manitoba Centre for Health Policy
F4.1
**Redéfinir les services de santé mentale pour les jeunes: De la recherche à l’action**

Presented By: Angela Ly, Planning, Programming and Research Officer, CIUSSS Ouest-de-l’île-de-Montréal

**Methods:** Program or Policy Evaluation

**Objectives:** L’organisation actuelle des services impose une rupture à la majorité, alors que plusieurs troubles de santé mentale apparaissent, entraînant des répercussions quant au rétablissement des jeunes. Cette étude évalue les programmes desservant à la fois les adolescents et les jeunes adultes et analyse les enjeux d’implantation au sein d’un établissement.


**Results:** 1054 références ont été identifiées. Suivant les critères d’inclusion/exclusion, 5 RS ont été sélectionnées. La majorité des programmes identifiés ont été développés pour la psychose précoce. La preuve scientifique est prometteuse pour ces services quant à leur efficacité sur le rétablissement, mais n’a pu être établie pour l’accès. Aucun programme spécialisé spécifique à d’autres types de troubles de santé mentale ou aux jeunes à risque de développer un trouble de santé mentale n’a été identifié. Les données contextuelles et expérientielles convergent avec les données scientifiques et ont permis d’identifier plusieurs enjeux d’implantation liés à la réorganisation des services. Des facteurs facilitants et contraignants à l’implantation du modèle de soins centré sur la personne et du modèle de collaboration interagence ont été identifiés.

**Conclusion:** Les programmes devraient pouvoir accueillir tous les jeunes présentant une détresse psychologique ou à risque, et ce, sans égard à l’âge ou au diagnostic. Ces services peuvent s’inspirer des modèles développés pour la psychose. Les recommandations de cette étude sont présentement mises en action à Montréal.

**Authors:** Angela Ly, CIUSSS Ouest-de-l’Île-de-Montréal; Gilbert Tremblay, CIUSSS Ouest de l’Île de Montréal; Sylvie Beauchamp, Centre intégré universitaire de santé et de services sociaux de l’Ouest-de-l’Île-de-Montréal

F4.2
**“It’s Part of My Survival”: Navigating Access to Youth Mental Health Services and Supports in a Rural Nova Scotia Community**

Presented By: Holly Mathias, Graduate Student, Dalhousie University

**Methods:** Qualitative Research Methods

**Objectives:** Rurality is thought to be a barrier and facilitator of access to mental health services, yet little is understood from a rural Canadian youth perspective. How do youth living with mental health issues in rural Nova Scotia (NS) perceive and experience access to mental and emotional health services and supports?

**Approach:** Seven youth living with a mental health concern were recruited from a rural NS high school. Students shared their perceptions and lived experiences of accessing mental health services and supports in their community during a 45 minute face-to-face semi-structured interview at their high school. Interviews were audio-recorded and transcribed. Transcripts were coded using Atlas-Ti. Analysis was approached from a modified grounded theory perspective. Rooted in community-based participatory research, two students with lived experiences from the same high school were hired as research assistants. They assisted with the creation of the interview guide and knowledge translation activities in the community.

**Results:** Based on preliminary analysis, it was found that youth living in rural NS experience many barriers to accessing mental health services and supports (i.e. transportation, privacy), although several opportunities for accessing support exist (i.e. familiarity). All youth had accessed a mental health service in their community; however, the majority were not satisfied with the service they had accessed due to limited options in their community. All students stated they rely on support from family and teachers, with very few relying on friends. All students identified the school as being a potential point for increased access to services and supports, despite having a limited knowledge of services currently offered in the school. Analysis will be completed by April 2018 and final themes will be presented.

**Conclusion:** This study contributes the voices of rural Canadian youth to the current dialogue on research and policy concerning access to mental health services. Along with identifying barriers and opportunities for access, this presentation will highlight youths’ suggestions for improved access, and give insight on youth engagement in community-based research.

**Authors:** Holly Mathias, Dalhousie University
F4.3
Engaging vulnerable and disadvantaged populations in the experience based co-design (EBCD) and implementation of public services: the case of youth mental health
Presented By: Mark Embrett, Research Scientist, Precision Health Economics

Methods: Qualitative Research Methods

Objectives:
1. Explore experiences of youth, family members and front-line service providers’ development and early implementation of two co-designed innovations;
2. Examine how implementation science tools integrate into an EBCD study;
3. Develop a tool-kit and theory describing how to integrate EBCD and implementation science to support successful service redesign.

Approach: A mixed methods approach consisting of an ethnographic study design with an embedded quantitative survey component. Embedded in the overarching qualitative ethnographic design, we will collect information on readiness for implementation using a validated implementation science tool. Information will also be collected using video and audio recordings; journaling; meeting content and document analysis; interviews and surveys as participants refine the prototypes using EBCD approaches during the development phase and test them during the early installation phase of implementation. Consistent with EBCD research, this project will involve groups of youth with mental illnesses, support system partners, health professionals, and policy makers.

Results: The EBCD study brought youth, family members and service providers together to share perspectives and develop prototypes for child to adult mental health service transition improvement in the Hamilton region. Eight health service organizations and as many as 53 participants have been involved in various project stages. Participants co-designed six improvement prototypes and have since prioritized two prototypes for implementation planning – one a system navigator model and the other an online portal to improve access and communication among youth, family members and service providers - based on feasibility and impact considerations. Next steps are to engage these groups in assessing factors related to prototype implementation in Hamilton region. Initial results, including a pilot toolkit and initial theory will be developed by CAHSPR conference.

Conclusion: The EBCD process is valuable in including perspectives and ideas of stakeholders that assist to improve communication and knowledge mobilization for a user oriented service redesign. Results from the series of EBCD sessions create an evidence-based tool-kit for how to best integrate learnings from EBCD and implementation science.

Authors: Mark Embrett, Precision Health Economics; Gillian Mulvale, McMaster University; Ashleigh Miatello , McMaster University ; Samantha Brandow, McMaster University

F4.4
Involving Families with Lived Experience in Mental Health and/or Addiction Service Design and Implementation
Presented By: Roula Markoulakis, Research Associate, The Family Navigation Project

Methods: Qualitative Research Methods

Objectives: The objective of this study was to produce a rich description of the experiences of families with lived experience (LE) of caring for a youth with mental health and/or addictions issues with respect to factors contributing to their meaningful engagement in mental health and addictions service design and implementation.

Approach: Through a qualitative study with a narrative approach, past and present Family Advisory Council members (n=8) of the Family Navigation Project were interviewed regarding their experiences and involvement with the design and implementation of this service. Participants were asked to tell the story of their involvement with the Family Navigation Project, in order to produce an account of the process and value of LE informing the development, implementation, and on-going operations of this family-focused community mental health and addictions service. Thematic Analysis was conducted on the transcribed interviews to identify salient themes pertaining to this involvement.

Results: Engaging LE in the development, integration, and on-going operations of a community mental health and addictions service involved commitment at the individual and program level, and comprised five themes: 1) Motivation, 2) Individual Member Engagement, 3) Group Development, 4) Embedded Value of LE in the Program, and 5) Validation. The continued involvement of individuals with LE was motivated by their past experiences in the mental health and addictions sector. Inclusion in personally and organizationally valuable projects contributed to their sense of engagement in the service. This engagement was also guided by the development of and changes in group structure and vision. Finally, individuals with LE valued their involvement, and felt engaged when their efforts and roles were acknowledged and reinforced at the program level.

Conclusion: As family-informed mental health organizations continue to grow, it is important to explore factors contributing to successful service implementation. These include an embedded commitment to the voice of LE in all levels of the program and a dedication to collaboration while ensuring individuals with LE are engaged and valued.

F5.1
Do school physical activity policies and programs have a role in decreasing multiple screen time behaviours among youth?
Presented By: Tarun Katapally

Methods: Survey Research Methods

Objectives: Screen-time in youth has been associated with a wide range of poor health outcomes. This study aims to understand the association between physical activity (PA) policies and programs embedded into the curricula of 89 schools across two provinces in Canada and multiple screen time behaviours.

Approach: As part of COMPASS, a longitudinal cohort study based in Ontario and Alberta, a total of 44,861 youth aged between 13 and 18 years completed validated questionnaires for health behaviours and outcomes data. A policies and practices questionnaire was administered to school administrators to capture school PA policies and programs. Built environment data surrounding each school, and weather data were also obtained from Environment Canada. Five random-intercept linear regression models were developed for total screen-time, television-time, video game-time, Internet surfing, and time spent in communication-based screen-time behaviours.

Results: Participation in intramural programs was associated with significantly less time playing video games and total screen-time among Ontario males. Similarly, participation in before-school, lunch hour, or after-school intramural programs was associated with significantly less time watching television and total screen-time among Alberta youth. Males in Ontario who participated in varsity sports reported significantly less time playing video games and surfing the Internet. Females in Ontario who participated in varsity sports reported significantly less time watching television, playing video games, Internet surfing, and accumulating total screen-time. Alberta youth who participated in varsity sports reported significantly less time playing video games.

Conclusion: School PA policies and programs are positively associated with lower screen time among youth, after controlling for varying weather patterns across two geographically and climatically distinct provinces. Thus school PA policies and programs play an important role in reducing screen time behaviours among youth.

Authors: Tarun Katapally, Scott Leatherdale, University of Waterloo, School of Public Health and Health Systems; Rachel Laxer, Public Health Ontario; Wei Qian, University of Waterloo

F5.2
Comparison of Self-Report vs. Administrative Data in Defining Multimorbidity
Presented By: Lauren Griffith, Associate Professor, Department of Health Research Methods, Evidence, and Impact, McMaster University

Methods: Survey Research Methods

Objectives: While a number of researchers have examined agreement between self-reported and administrative data on individual chronic conditions, few have examined the implications for measuring multimorbidity. We used data from Ontario to: 1) examine agreement between self-report and administrative data sources on multimorbidity estimates, and 2) identify factors associated with agreement.

Approach: We use data on 71,317 community-living Ontarian residents aged 45+ from four cycles of the Canadian Community Health Survey (CCHS) linked with provincial administrative databases. Multimorbidity was determined based on 10 chronic conditions (CC) identified using predefined algorithms for administrative databases and self-reported clinical diagnosis from CCHS. We examined agreement between data sources on the number and type of chronic conditions and multimorbidity prevalence (using two common definitions: 2+ CC and 3+ CC). Logistic regression was used to explore the association between socio-demographic data from the CCHS and agreement on multimorbidity status.

Results: The average number of chronic conditions was higher using administrative data (1.87) compared to self-report (1.64); as was the prevalence of multimorbidity (administrative data: 2+: 55.0%; 3+: 30.0%; self-report data: 2+: 47.07%; 3+: 24.2%). The kappa for multimorbidity based on 2+CC was moderate (K=48.2) and generally declined with increasing age and number of chronic conditions. Agreement on the number of chronic conditions was 37.5%; but perfect agreement (both number and type) was 26.9%. For the 3+CC definition, the factors associated with agreement were younger age, immigrant status, higher income, occasional/non-smoker, not having a general practitioner, poorer physical health, and not being underweight. ORs for agreement on multimorbidity based on 3+ CC were more often in the direction expected (i.e., agreement increased as health status increased).

Conclusion: The average number of chronic conditions was higher using administrative data compared to self-report and disagreement between sources increased with age and number of chronic conditions. Perfect agreement on the number and type of conditions was low. Factors associated with agreement on multimorbidity status differed depending on the multimorbidity definition.

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F5.3  
The Impact of Chronic Condition List on Prevalence and the Relationship between Multiple Chronic Conditions and Disability, Social Participation and Health Service Use: Data from the Canadian Longitudinal Study on Aging  
Presented By: Lauren Griffith, Associate Professor, Department of Health Research Methods, Evidence, and Impact, McMaster University  

Methods: Survey Research Methods

Objectives: Multimorbidity prevalence estimates vary widely. To create a more consistent definition at least 3 chronic condition (CC) lists have been proposed. We use data from Canadian Longitudinal Study on Aging (CLSA) to explore the impact of different lists on multimorbidity prevalence and the association between multimorbidity and patient-important outcomes.

Approach: We used baseline data from 51,338 community-living women and men aged 45-85 years from across Canada who participated in the CLSA. Multimorbidity was defined using 3 CC lists; 1 proposed by Diederichs, 2 by Fortin. We separated the listed CCs into 3 types: 1) diseases, 2) risk factors and 3) symptoms, as suggested by Willadsen. We examined the impact of the lists and included CC types, on multimorbidity prevalence by age and sex. We then used weighted logistic regression to explore the impact on the magnitude of odds ratio for multimorbidity on disability, social participation restriction and self-rated health.

Results: Among 51,338 participants, the most common disease, risk factor and symptoms were osteoarthritis, hypertension and back pain, respectively. Diederichs list included diseases and one risk factor while Fortin lists included diseases, risk factors and symptoms. Multimorbidity prevalence differed among the lists; ranging from 33.5% having 2+ CCs based for Diederichs list, to 60.6% using Fortin’s list. We also compared prevalence estimates for each list restricted to diseases only. The addition of non-disease conditions increased the prevalence substantially.

Conclusion: It is important to consider not only the number, but also the type of conditions included in multimorbidity lists. Including risk factors increased only the prevalence of multimorbidity. Inclusion of symptoms, on the other hand, affects prevalence, gender differences, and the association with functional and health-related outcomes important to people.

Authors: Lauren Griffith, McMaster University; Anne Gilsing, McMaster University; Edwin van den Heuvel, Technische Universiteit Eindhoven; Derelie (Dee) Mangin, McMaster University; Christopher Patterson, McMaster University; Nazmul Sohel, McMaster University; Philip St. John, University of Manitoba; Parminder Raina, McMaster University

F5.4  
Developing surveillance survey modules for national health surveys: an example from the Physical Activity, Sedentary Behaviour and Sleep (PASS) Indicator Framework.  
Presented By: Stephanie Prince Ware, Post-doctoral Fellow, Public Health Agency of Canada

Methods: Survey Research Methods

Objectives: To outline the process that the Public Health Agency of Canada (PHAC) and Statistics Canada took in partnership with academic experts to develop a self-report sedentary behaviour (SB) module for the Canadian Health Measures Survey (CHMS) and population health surveys, and to establish a standard for tracking SB in Canada.

Approach: Development of the module followed a multi-step process. Initially, PHAC and Statistics Canada analysts worked together to identify key content required for a potential module through informal consultation with external experts. Next, this work was formalized through a contract with academic SB experts, the scope included: a) review of existing Canadian SB modules; literature review linking different SBs to health outcomes; and, international scan of SB survey modules currently in use in large national health surveys and research. The review compared the psychometric properties (validity/reliability) of the modules/questionnaires for best practices and performance.

Results: The key output of the contract was recommendations for a short (1-6 question) SB module (International Sedentary Assessment Tool) for use in future Canadian health surveys. PHAC shared the report with Statistics Canada survey methodologists and worked with them to operationalize the module for the CHMS. Future steps (to be described) involve conducting qualitative testing on the English and French versions of the modules before inclusion in an upcoming CHMS cycle. This work informs PHAC’s Physical Activity, Sedentary Behaviour and Sleep (PASS) Indicator Framework which organizes surveillance on the outcomes, risk and protective factors associated with physical activity, SB and sleep of Canadians. Specifically, it better informs the PASS indicator looking at amounts of SB in the Canadian population.

Conclusion: Inclusion in national surveys is limited due to demand to measure core content in addition to emerging health topics. Questions must therefore, be concise, evidence-based, and developed using best practices. We hope to share insight and a model for others looking to develop survey content for population health surveys.

Authors: Stephanie Prince Ware, Public Health Agency of Canada; Gregory Butler, Public Health Agency of Canada; Wendy Thomspn, Public Health Agency of Canada; Pam Lapointe, Public Health Agency of Canada; Travis Saunders, University of Prince Edward Island; Rachel Colley, Statistics Canada; Maria Foley, Statistics Canada; Karen Roberts, Public Health Agency of Canada
F6.1 Managing the Performance of Cancer and Renal Services in Ontario: Stakeholder Perspectives and a Research Agenda
Presented By: Jenna Evans, Staff Scientist, Cancer Care Ontario

Methods: Qualitative Research Methods

Objectives: There is an increasing push to not just measure health system performance, but also to actively ‘manage’ it by providing feedback, establishing accountability, and applying incentives. The aim of this study was to assess performance management (PM) of cancer and renal services in Ontario and prioritize future research directions.

Approach: Cancer Care Ontario (CCO) manages the performance of 13 Regional Cancer Programs and 26 Regional Renal Programs. We conducted semi-structured interviews and focus groups with internal, regional, and external stakeholders to identify strengths and weaknesses of CCO’s PM system, and to assess and rank five research directions we identified via a literature review. We used a hybrid approach of inductive and deductive coding for theme development, drawing from agency, actor-network, and social capital theories. We analyzed the rankings of each research direction using four methods: mean, mode, frequency ranked 1st or 2nd, and frequency ranked 5th.

Results: A total of 156 individuals participated in the study, including administrative, clinical, and policy stakeholders, as well as patients. Key strengths identified of CCO’s PM system included province-wide data management and reporting, clinician engagement, and a collaborative tone. The key weakness identified was the ‘opportunity cost’ associated with data collection and reporting, and the number and scale of improvement initiatives. Cross-cutting themes included: (a) PM as a dynamic socio-technical process, (b) the influence of multi-level contextual factors, and (c) a tension between PM for accountability versus improvement. Stakeholder groups prioritized different research directions based on their experiences and decision-making needs. However, they all ranked highly the need to better understand if/how the PM tools and processes motivate improvement among leaders and staff in regional programs.

Conclusion: Stakeholders agreed that CCO has a robust PM system that has positively impacted care delivery, but that further refinement is required. Despite differences in the maturity of the PM systems in cancer versus renal care, themes were overlapping. The results have implications for healthcare leaders, policy-makers, and researchers.

Authors: Jenna Evans, Cancer Care Ontario; Julie Gilbert, Cancer Care Ontario; Victoria Hagens, Cancer Care Ontario; Vicky Simanovski, Cancer Care Ontario; Philip Holm, Ontario Renal Network; Garth Matheson, Cancer Care Ontario

F6.2 Assessing the Delivery of Integrated Care to Patients with Chronic Kidney Disease in Ontario: Patient and Provider Perspectives
Presented By: Jenna Evans, Staff Scientist, Cancer Care Ontario

Methods: Survey Research Methods

Objectives: Patients with Chronic Kidney Disease (CKD) typically have complex health needs, and thus require care that is integrated across professionals and organizations. The extent to which patients with CKD in Ontario receive integrated care is unclear. This study assessed integrated care delivery province-wide from the patient and provider perspectives.

Approach: A five-item survey for providers was developed drawing from theory and existing validated surveys, and cognitively tested and revised with renal providers. This survey was administered during Fall 2017 via the web by the Ontario Renal Network (ORN) to 596 purposefully selected providers, including nephrologists, nurses and social workers, among others. Four items from the Patient Assessment of Chronic Illness Care (PACIC-26) were used to capture the patient perspective. The patient survey was administered during Summer and Fall 2017 by NRC Health to a random sample of 14,257 Multi-Care Kidney Clinic and chronic dialysis patients across Ontario.

Results: A total of 314 providers responded to the survey (52% response rate) and 2,447 patients responded to the survey (17% response rate). Among providers, key findings include: 36% reported their patients’ care was well-coordinated across settings; 54% reported participating in interdisciplinary discussions to develop care plans for their patients; and 51% reported they are aware of appropriate home and community services to support their patients (% reporting ‘always’ or ‘most of the time’). Among patients, key findings include: 20% were encouraged to attend programs in the community; 34% were told how their visits with other types of doctors helped their treatment, and 38% were asked how their visits with other doctors were going (% reporting ‘always’ or ‘most of the time’).

Conclusion: The survey results suggest that patients with CKD in Ontario are not consistently receiving integrated care. Key areas for improvement include linkages to community-based services and patient-provider communication. Standardized measurement of integrated care delivery over time, using surveys such as these, can support local quality improvement and broader system transformation.

Authors: Jenna Evans, Cancer Care Ontario; Saurabh Sati, Ontario Renal Network; Sharon Gradin, CCO; Marnie Mackinnon, ; Peter Blake, Ontario Renal Network
F6.3
Medication Predictors of High Cost Healthcare Use Among Older Adults
Presented By: Justin Lee, Clinical Scholar, McMaster University

Methods: Data Mining/Big Data Analytics

Objectives: To determine the relative contribution of medications to high cost user (HCU) healthcare expenditures and explore whether appropriate prescribing is a predictive factor in determining future HCU status and health outcomes.

Approach: Retrospective population-based administrative database cohort of incident HCUs aged ≥ 66 years in the top 5% of healthcare expenditure users in Ontario in fiscal year 2013 but not fiscal year 2012. Identified HCUs were matched to non-HCUs (1:3) based on age, sex and health planning region. Twenty-four medication classes were selected a priori for descriptive and regression analysis based on being either: (i) “high quality” with a strong evidence-base for the prevention of complications of common, high priority disease states in seniors, (ii) “high risk” where potential harms often outweigh benefits in seniors, or (iii) “higher-cost” (per unit).

Results: Senior HCUs (n=176,604) accounted for $4.9 billion in healthcare and $433 million in medications costs (FY2013). Medications represented the largest cost-category in the year prior to becoming a HCU (42% of healthcare costs). Annual medication expenditures alone triggered HCU status in 6258 (3.6%) HCUs—primarily biologics used for macular degeneration, those used for arthritis, IBD or MS, and those used for cancer (5216 [3.0%]). Use of these higher-cost medications significantly increased the likelihood of HCU status (OR 11.87, 30.85, 53.46, respectively). Use of high-risk medications such as benzodiazepines, opioids, and antipsychotics significantly increased the likelihood of HCU status [OR 1.62, 3.56, 4.45, respectively] and death in the incident year (OR 1.59, 1.22, 2.89, respectively). High quality medications did not show a strong effect on HCU status.

Conclusion: Medications are important contributors to high cost healthcare use. Use of higher-cost and potentially inappropriate high-risk medications increase the likelihood of HCU status. Interventions focused on improving medication appropriateness and cost-effectiveness may prevent HCU status and contain expenditures.

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F6.4
Implementation of Integrated Care Pathways: a developmental evaluation of a Quebec Integrated Academic Health and Social Services Centre (IAHSSC) project
Presented By: Marie-France Duranceau, post doctoral fellow, Université de Sherbrooke

Methods: Program or Policy Evaluation

Objectives: Health organizations are characterized by the complexity of their activities and a high level of fragmentation within their services. The implementation of care pathways is viewed as an answer to this problem. We conducted a developmental evaluation to support the implementation of care pathways in one IAHSSC in Québec.

Approach: In this study we describe the development of the care pathways and analyze the process of innovation within a developmental framework. Developmental evaluation is an approach well-suited for evaluating complex interventions. Evaluators provide real-time feedback to program implementers, and support the development of social innovation by 1-identifying relevant knowledge to inform the process and by 2-infusing evaluative thinking through collaboration between implementers and the evaluator. Using a qualitative approach, we conduct a process analysis with a single case study with multilevel of analysis. Empirical data were collected through documentation, observation (N=23), and semi-structured interviews with key informants (N=17).

Results: Our results give a detailed account of the practices put in place by the implementers and the impacts of the feedback on the adaptation processes.

Our findings show a partial use of scientific knowledge in decision-making and highlight the role sensemaking processes primarily to help promote change. The results also identify the struggle to disseminate the knowledge gained from the project within the rest of the organization. Finally, our results identify several individual, organizational and program design factors that facilitated and/or impeded the implementation of the care pathways within the organization.

Conclusion: The developmental evaluation, through data-informed approach was critical to addressing the uncertainty and complexity that might have otherwise inhibited development. Our study provided interesting insights into how the development came about and of the contributions developmental evaluation made in this case.

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F7.1
Lung Cancer-Related Clinical and Economic impacts of Achieving a 5% Smoking Prevalence by 2035
Presented By: Selena Hussain, Epidemiology Fellow, Canadian Partnership Against Cancer

Methods: Economic Analysis or Evaluation

Objectives: Smoking is responsible for approximately 30% of all cancer-related deaths and nearly 85% of lung cancer cases. Canada has set an ambitious target to reduce smoking prevalence from 18% to 5% by 2035. OncoSim was used to show the impact of achieving this goal on lung cancer outcomes and costs.

Approach: OncoSim-Lung (version 2.5) (developed by the Canadian Partnership Against Cancer and Statistics Canada) is a microsimulation model that incorporates Canadian demographics, risk factors, registry data, resource utilization and other data to project clinical and economic impacts of cancer control measures. Smoking cessation parameters were modified to reduce the current smoking prevalence (17.9%) over time to 5% in 2035. Impacts were compared to those in a reference scenario, which maintained the current prevalence rate. Outputs of interest included lung cancer incidence, mortality, treatment costs, and quality-adjusted life-years (QALYs). Costs and QALYs were not discounted. Costs are reported in 2016 Canadian dollars.

Results: Achieving a 5% smoking rate by 2035 would result in a 2017-2035 cumulative total of 31,000 fewer lung cancer cases, 21,000 fewer lung cancer-related deaths, and 457,000 additional QALYs compared to projections based on current smoking trends. When stratified by sex, there would be 15,600 and 15,700 fewer lung cancer diagnoses and 11,000 and 10,000 fewer lung cancer-related deaths for males and females respectively. Furthermore, treatment-related costs would be reduced by $680 million dollars. On average there would be 4,500 fewer lung cancer cases, 3,500 fewer deaths, and $35 million in cost savings annually. If a 5% smoking rate is sustained until 2050, then there would be a 15% reduction in lung cancer cases and a 13% reduction in deaths from 2017-2050.

Conclusion: Based on the OncoSim-Lung model, reducing Canada’s smoking prevalence to 5% by 2035 would result in a significant reduction in lung cancer cases, deaths and treatment costs. Averted treatment costs could be used to offset costs of aggressive smoking prevention and cessation programs or be redirected to other healthcare services.

Authors: Selena Hussain, Canadian Partnership Against Cancer; Natalie Fitzgerald, Canadian Partnership Against Cancer; Cindy Gauvreau, Canadian Partnership Against Cancer; Saima Memon, Canadian Partnership Against Cancer; William Flanagan, Statistics Canada; William Evans, McMaster University; John Goffin, Juravinski Cancer Centre; Anthony Miller, University of Toronto

F7.2
Alternative Level of Care Days: Non-payment for poor quality in Ontario hospitals
Presented By: Judith Wong, Health Economist, Cancer Care Ontario

Methods: Program or Policy Evaluation

Objectives: Ontario’s Quality-based Procedure (QBP) funding policy for cancer surgeries uses resource intensity weights, which may assign higher payments for alternative level of care (ALC) days. ALC days are a poor outcome for patients and health system. This funding policy research examines the impact of not remunerating hospitals for ALC days.

Approach: Cancer Care Ontario remunerates hospitals for cancer surgeries on a volume x price x average cost weight basis. The Canadian Institute for Health Information’s (CIHI) resource intensity weight (RIW) methodology for Ontario inpatient stays was replicated. The cost weights were revised to exclude ALC days from the weight calculation and applied to hospitals’ QBP cases. Using the provincial price for cancer surgery QBPs, the funding impact of removing ALC days from each cancer surgery case was determined. Hospital-level results were generated by aggregating the existing funding policy with a hypothetical policy of non-payment for ALC days.

Results: Revising payment policy by removing ALC days had a varying impact by cancer surgery disease site. For colorectal cancer surgeries, removing ALC days results in an average reduction in hospital cost weights of 0.047 with the largest reduction being 0.617. Relative to current payment amounts for colorectal cancer surgeries, the provincial price paid to hospitals was reduced by $52.78 per case. The aggregate impact on Ontario hospitals of non-payment for ALC days was $1.7 million. For prostate cancer surgeries there were no observed ALC days and therefore no change to funding from their removal.

Conclusion: Removing ALC days from QBP funding would better align funding policy with quality of care. Although the funding impact may not be large enough to impact hospital decision-making, and does not address care capacity in the community, this policy shifts financial risk of ALC days from the payer to hospitals.

Authors: Judith Wong, Cancer Care Ontario; Jason Sutherland, University of British Colombia; Katherine Sun, Cancer Care Ontario; Jonathan Wiersma, Cancer Care Ontario; Shannon Milroy, Cancer Care Ontario
F7.3
The impact of supplementary prescription drug insurance and cost-sharing on drug use, health services utilization and health in Canada: a systematic review
Presented By: Emmanuel Guindon, Assistant Professor, McMaster University

Methods: Economic Analysis or Evaluation

Objectives: To provide a comprehensive and systematic synthesis of evidence in both the international and Canadian contexts, to understand how current arrangements (such as cost-sharing schemes), and possible future expansion of benefits across Canada, may impact prescription drug use, health service use, and ultimately the health outcomes of Canadians.

Approach: We first conducted a systematic review of reviews. Second, we conducted a systematic review of individual studies that utilized Canadian data.

We draw upon literature from several disciplines – health economics, health services research, health policy, political science – to present comprehensive findings. Since each province has its own unique health system, its own health insurance plan and differing thresholds of eligibility, we emphasize studies using Canadian data, and highlight provincial differences to draw conclusions and policy implications.

Results: First, expanded prescription drug insurance coverage or subsidization of prescription drug cost-sharing through supplementary insurance coverage would likely improve medication adherence and uptake of essential medications (for which there are copays). Second, expanded insurance coverage would likely decrease ‘downstream’ utilization of acute care services – the effect on total health expenditure is unclear. Third, vulnerable populations (the elderly, poor and chronically ill) would experience a greater impact of expanded coverage in terms of improved health outcomes.

Conclusion: Expanding prescription drug insurance coverage would likely increase drug prescription use and overall health care services. Vulnerable populations would likely benefit the most. The effect on total health expenditure is unclear.

Authors: Emmanuel Guindon, McMaster University; Arthur Sweetman, McMaster University; Sophiya Garasia, McMaster University; Kimia Khoee, McMaster University; Tooba Fatima, McMaster University; Selene Miller, McMaster University

F7.4
The Impact of Bundling Care on Acute Hospital Use: Real world evidence from Ontario’s Integrated Funding Models
Presented By: Walter Wodchis, Associate Professor, University of Toronto

Methods: Economic Analysis or Evaluation

Objectives: We conducted a quantitative comparative effectiveness evaluation of six Integrated Funding Model (IFM) projects that began bundling care, including acute and post-acute care, for a variety of conditions ranging from heart failure to cardiac surgery. The objective was to determine whether IFMs affected acute hospital use during the bundle period.

Approach: IFM patients were identified by each project’s registry and/or CIHI special project field 615 and linked to health administrative data. A pool of historical comparators from the same facilities and concurrent and historical comparators from comparator facilities that met the same enrolment criteria as the IFM patients were identified. IFM patients were matched on age, sex, and propensity score, to each comparator group and Difference-in-Difference analysis was completed. Outcomes included index Length of Stay (LOS), readmissions and total inpatient days and Emergency Department (ED) visits within bundle periods (commonly 60- days) and up to 90-days.

Results: Results for the first year included 2,783 patients enrolled in the projects. Combined results across all programs demonstrated significant comparative reductions in all utilization measures at 30-days, though only total acute days were significant at 60- and 90-days. There were important differences between programs in results for intervention and comparative outcomes. One large program has had considerable success in reducing index LOS, as well as readmission LOS, leading to a 25% comparative reduction in total inpatient days at 90 days post-index event discharge. A surgical program achieved a 29% comparative reduction in ED visits within 30 days. Two projects achieved comparative reductions in LOS for index admission, one project reduced ED visits, and another reduced readmissions. Patient variability was high in some groups.

Conclusion: Our findings represent data from the first year of participation. Surgical pathways were likely easier to achieve and resulted in short term wins. Although pathways for chronic conditions, such as heart failure, did not significantly reduce readmissions relative to comparators, the total acute days could be reduced by shortening LOS.

Authors: Walter Wodchis, University of Toronto; Maritt Kirst, Wilfrid Laurier University; Gayathri Embuldeniya, University of Toronto; Kevin Walker, University of Toronto
F8.1

Long Term Care (LTC) and Canada’s Aging Population
Presented By: Michael Wolfson, Prof., University of Ottawa

Methods: Economic Analysis or Evaluation

Objectives: Given widespread concerns about the future costs of long term care for Canada’s elderly, this study provides projections of the population affected and estimates of the associated costs of care. These projections then form the basis for assessing the future affordability of LTC and options for financing needed LTC.

Approach: Statistics Canada’s LifePaths microsimulation model has been extended to incorporate a module on disability dynamics, estimated from the longitudinal National Population Health Survey, and modules drawing on a variety of other data sets to estimate both home care and institutional utilization by age, sex, and the severity of disability. In turn, stylized costs of LTC have also been incorporated. LifePaths has then been used to project disability prevalences, LTC utilization, and likely costs for coming decades. Additionally, the skewed distribution of LTC utilization has been projected.

Results: While LTC utilization will be increasing with Canada’s aging population, the main impacts remain at least 20 to 25 years out – since the baby boom cohort is only now reaching retirement age, and LTC utilization becomes substantial only after age 85. Further, the distribution of LTC utilization is highly skewed, which renders the option of private LTC insurance highly problematic. Thus, continuation of substantial public funding is warranted. However, the form of this funding merits consideration. We will be projecting individuals’ abilities to finance various amounts of deductibles and co-payments in light of projected maturation of the recently expanded Canada and Quebec Pension Plans.

Conclusion: We expect LTC costs will be increasing substantially over coming decades, but not as soon nor as rapidly as much of the popular press and is “demo doom” rhetoric suggests. Major uncertainty relates to the amount of unmet LTC needs, especially with declining availability of informal kin support.

Authors: Michael Wolfson, University of Ottawa

F8.2

Formal caregivers’ experiences in the provision of MAiD: A scoping review
Presented By: Valerie Ward, Student, UBC

Methods: Emerging methods (e.g. new developments in observational study design)

Objectives: The objective of this scoping review is to examine the professional experiences of formal caregivers in the provision of MAiD.

Approach: Medical Assistance in Dying (MAiD) became legal in Canada in 2016, joining Belgium, Netherlands, Luxembourg, Columbia, Switzerland, and some American States. Healthcare providers caring for patients at the end of life may report intense emotions, higher rates of burnout, and greater job dissatisfaction. Additionally MAiD contradicts typical medical philosophy, which posits that one should not hasten death, and should do no harm (Hippocratic Oath). However, what remains unknown is the experiences of formal caregivers in the provision of MAiD. A scoping review method was used on 7 databases, generating 761 results. 26 papers were analyzed in this study.

Results: Most of the research to date is from Europe, focusing on physicians and nurses. Some healthcare providers reported positive, such as increased meaning, spiritual growth, and negative emotions, such as anxiety, or fear, and some may experience intense moral conflict when responding to a patients request for MAiD and/or providing MAiD. Healthcare providers may benefit from discussing their experiences with their colleagues, or family, or professionals as a form of support. However, little research exists documenting the support strategies that are currently used by healthcare providers involved in the provision of MAiD.

Conclusion: Caring for terminally ill patients is associated with burnout, job dissatisfaction, compassion fatigue; putting supports in place may support HCP’s in the provision of MAiD. Understanding the experiences of healthcare providers in the provision of MAiD is of utmost importance in order to create optimal strategies to support caregivers.

Authors: Valerie Ward, UBC; Shannon Freeman, UNBC
F8.3
Access to Palliative Care in Canada
Presented By: Alicia Costante, Senior Analyst, Canadian Institute for Health Information

Methods: Mixed Methods

Objectives: Palliative care is a priority across Canada due to population aging. Understanding access to high quality palliative care is particularly relevant given new legislation on medical assistance in dying. This study examines palliative care policies and pan-Canadian use of palliative services across care sectors, and identifies service and data gaps.

Approach: An environmental scan of palliative care policies was conducted and results were sent to provincial and territorial ministries for validation. Information was collected on strategies/frameworks, dedicated routine funding, and eligibility criteria for palliative care. Service use was examined using administrative data from acute care, ambulatory and community care, physician billings and public drug programs. Service use in the last year of life was examined in order to better understand palliative care outcomes and appropriateness of care. Results from the policy scan and service use analyses were considered in the identification of service and data gaps.

Results: There is considerable variation across the country in terms of palliative care policies, and how service delivery is organized and funded. Analysis of administrative data found that most decedents did not have a record of palliative care service in the last year of life. Home care and acute care were the most common settings where decedents had a record of palliative care. Among acute-care deaths in 2016-17, 25% received palliative care during their final hospitalization. Palliative care in the community was provided earlier and was associated with fewer ED visits and ICU stays at the end of life. Sources of community-based palliative care included home care, physician visits, and palliative drug plans. Other non-hospital options for palliative care included long-term care and residential hospice care.

Conclusion: This analysis shows there are opportunities to improve the outcomes of end-of-life patients by integrating community palliative care earlier in the patient care pathway. It also highlights gaps in understanding the full scope of palliative services available to Canadians and how they differ across the country.

Authors: Alicia Costante, Canadian Institute for Health Information; Christina Lawand, Clare Cheng, Canadian Institute for Health Information

F8.4
Comparing physician palliative care service delivery across end-of-life trajectories
Presented By: Meng Zhu, Family Medicine Resident, University of Toronto

Methods: Data Mining/Big Data Analytics

Objectives: To compare physician palliative care service delivery models (palliative care specialist only, generalist only, or consultative care) and access to physician home visits in the last year of life across four end-of-life trajectories: terminal illness (TI), organ failure (OF), frailty (F), and sudden death (SD).

Approach: We identified Ontario decedents, aged 19 and above, who died between April 1, 2010, and March 31, 2015. Cause of death was obtained from the Vital Statistics database and categorized based on the leading cause. Palliative encounters, location of care, and physician specialty were obtained from billing data and the physician database at ICES. Palliative specialists were those who had more than 10% of their billings from palliative service codes. We used logistic regression, with any physician home visit as the outcome, to examine its relationship with end-of-life trajectories and physician service delivery models, while controlling for socio-demographics and comorbidities.

Results: We identified a total of 236,545 decedents (TI: 30.9%, OF: 40.2%, F: 19.7%, SD: 6.2%, and other: 3%). Overall, 53.8% of patients had no physician palliative care, 20.1% for TI, and approximately 67% for both OF and F. Among those who received palliative care, 35.8% with TI received consultative care, compared to 4-5% with F and OF, respectively. Among all patients with any palliative care encounter, 16% had physician home visits, 31.8% for TI, 9.7% for OF, and 8.6% for F. Logistic regression showed that, compared to F, the adjusted OR for TI was 1.83 (95%CI: 1.75-1.91) for receipt of home visits, and the OR for consultative care compared to exclusively palliative specialist care was 2.15 (95%CI: 2.08-2.23).

Conclusion: Overall, there is poor access to physician palliative care in the last year of life. Fewer patients with OF and F receive any palliative care, consultative care, or home visit compared to patients with TI. In addition, the consultative care model is associated with increased odds of physician home visit.

Authors: Meng Zhu, University of Toronto; Glenys Smith, Institute for Clinical Evaluative Sciences uOttawa; Peter Tanuseputro, Bruyère Research Institute & Ottawa Hospital Research Institute; Amy Hsu, Ottawa Hospital Research Institute; Catherine Brown, University of Ottawa; Hsien Seow, McMaster University
G1.1
Co-designing for quality: Creating a user-driven prototype to measure quality in youth mental health services
Presented By: Christina Hackett, PhD Candidate, McMaster

Methods: Qualitative Research Methods

Objectives: Although high quality mental healthcare for youth is a goal of many health systems, little is known about the dimensions of quality mental healthcare from users' perspectives. We engaged young people, family members and service providers to share experiences and co-design quality dimensions for youth mental healthcare.

Approach: Using Experience-Based Co-Design, we collected qualitative data from young people aged 16-24 with a mental disorder, identified family members, and service providers about their experiences with respect to youth mental health services. Experience data were collected using multiple approaches including interviews, a suite of smartphone and web applications developed by the research team in partnership with WeUsThem - the myEXP apps - and a co-design event, and analyzed to extract touch points. These touch points we used to prioritize and develop user-driven quality indicators.

Results: Young people, family member and service provider reports of service experiences were used to identify aspects of care quality at eight mental health service contact points: Access to mental healthcare; Transfer to/from hospital; Intake into hospital; Services provided; Assessment and treatment; Treatment environment; and Family member involvement in care. In some cases low quality care was harmful to users and their family members. Young people prioritized quality indicators for co-design; all participants supported the resulting quality indicators for youth mental health services.

Conclusion: The EBCD approach facilitated a user-centered process whereby the voices of young people, family members, and service providers could form a collaborative approach to service improvement. EBCD is a promising methodology to implement system-level quality indicators for mental health services for youth.

Authors: Christina Hackett, McMaster; Gillian Mulvale, McMaster University; Ashleigh Miatello, McMaster University

G1.2
Articulating the Strategic Value of Knowledge Resources: Results of a Case Study Exploring Nursing Intellectual Capital and Hospital Performance
Presented By: Alexandra Harris, PhD Candidate, University of Toronto

Methods: Qualitative Research Methods

Objectives: The growing need to identify and employ large stores of information and professional expertise for healthcare delivery necessitates a knowledge-based approach to resource management. Therefore, we study sought to identify elements of nursing intellectual capital (NIC), the conditions that help to develop it, and whether NIC relates to hospital performance.

Approach: We conducted an exploratory case study at an academic hospital, whereby two clinical programs, differentiable by performance, were selected using balanced scorecard data and served as embedded units of analysis. Organizational archival records and sixty administrative documents formed the basis of the case description. We conducted twenty-one key informant interviews with administrators (n=13) and clinical staff (n=8), reflecting nursing and non-nursing perspectives at both the program and organizational levels. Participant data was qualitatively analyzed using NVivo and the Framework Method approach to thematic analysis, facilitating within and cross-unit comparison. The knowledge-based view of the firm served as a theoretical lens.

Results: Thematic results revealed a range of knowledge resources at the individual and collective levels, manifesting as implicit and explicit in nature. Individual types of NIC included nurses’ academic and experiential knowledge, as well as sources of knowledge, such as educators. Collective forms of NIC encompassed clinical decision-making tools, structures that support learning, and knowledge embedded in nurse relationships. We also identified general (non-nursing) forms of intellectual capital, including individual employees’ knowledge, repositories of organizational knowledge, and structures supporting knowledge exchange. Seven contextual factors related to the development of NIC emerged: infrastructure, leadership, presence of nursing in the organization, financial support, organizational culture, workload and time, and individual-level factors. Participant responses regarding NIC and performance were varied, reflecting challenges in linking the two concepts.

Conclusion: This is the first study exploring the nature and potential influence of NIC on hospital performance. Findings provide insight into how knowledge resources can be measured and developed. Linkages between NIC and performance were tenuous; however, results inform future research on the strategic significance of (nursing) intellectual capital.

Authors: Alexandra Harris, University of Toronto; Linda McGillis Hall, Lawrence S. Bloomberg Faculty of Nursing, University of Toronto; Whitney Berta, University of Toronto; Adalsteinn Brown, Institute of Health Policy, Management and Evaluation, University of Toronto
G1.3
Is Violence Part of the Job? Are Violence Prevention Policies Enough?
Presented By: Adriane Gear, Acting Vice President, BC Nurses’ Union

Methods: Survey Research Methods

Objectives: Workplace violence is on the rise in healthcare. Nurses account for 31% of all workplace injuries due to violence. British Columbia legislation requires employers to implement policies and practices that mitigate risk. This presentation will examine the effectiveness of current policies, and recommend revisions.

Approach: Academic researchers and provincial nurses’ union data analysts used mixed methods to examine direct care nurses’ perspectives of current policy effectiveness. Two survey approaches were used: a) a convenience sample of 3000 nurses, and b) a stratified random sample of 500 nurses from acute, community, and long-term care sectors. Focus groups were conducted with a purposeful sample of 100 nurses.

Results: The majority of direct care nurses in all sectors reported verbal (80%) and physical abuse (68%). Review of policies and practices related to education, workplace drills, personal alarms, security, physical barriers, and alert systems revealed that nurses do not feel safe in their workplaces. For example, 80% of nurses did online education modules, but 67% stated that they never do ‘Code White’ drills (i.e., practice). 28% said that violent incidents are never reviewed with staff, although policy requires employers to assess hazard risks with them. 23% of nurses call security weekly for help, yet 20% of nurses did not know the role of security within their facilities.

Conclusion: This presentation will describe how these data will inform strategies for violence prevention including incident reporting, data sharing, and ongoing monitoring and evaluation. It is vitally important that consistent measures are used to track the extent of workplace violence, and we will therefore make recommendations of violence indicators that are of importance to nurses.

Authors: Adriane Gear, BC Nurses’ Union; Maura MacPhee, BC Nurses’ Union

G1.4
Development and validation of the multi-dimensional index of clinical utility: a novel outcome measure for genomic medicine
Presented By: Robin Hayeems

Methods: Mixed Methods

Objectives: Clinical utility is a term used to describe the value of genetic tests, but lacks a specific definition and measurement strategy. While laboratory performance of genetic tests has improved significantly, policymakers are seeking evidence of clinical value. This study aims to define and validate a novel measure of clinical utility.

Approach: A literature-derived index of items reflecting on the concept of clinical utility was generated. Semi-structured interviews were conducted with clinicians who routinely use genetic testing to refine the concept of clinical utility and feedback on the structure, understandability, and importance of each item. Using qualitative analysis and member checking, items were revised and grouped into core domains. Using a 2-step Delphi process, clinicians ranked the importance of items and domains to refine index content and scoring.

Results: The literature review identified 26 plausible items for the preliminary index. Interviews were conducted with 35 clinicians from 9 specialties (e.g. clinical genetics, cardiology, nephrology). Providers defined clinical utility as a multi-dimensional concept impacting on diagnostic thinking, patient management, family-centred care, and system efficiency. With the exception of oncology, there was general agreement on the level of importance of the items presented across specialty groups. Less important or redundant items were removed from the index and ambiguously worded items were revised. The 20 remaining items were organized into three emergent conceptual dimensions (i.e. role in diagnosis and prediction, role in patient management, family and psychosocial impact). Qualitative and Delphi-survey findings will be presented, along with a novel, empirically-generated index of clinical utility.

Conclusion: The development of a tool to measure clinical utility in genomics is an essential prerequisite to assess clinical utility of rapidly evolving genetic testing technologies on the cusp of clinical translation. Evidence of this sort will inform reimbursement and implementation decisions related to this complex technology.

Authors: Robin Hayeems, ; Stephanie Luca, The Hospital for Sick Children; Ayushi Bhatt, The Hospital for Sick Children; Eleanor Pullenayegum, The Hospital for Sick Children; M. Stephen Meyn, The Hospital for Sick Children; Wendy Ungar, The Hospital for Sick Children
G2.1
Prescription Opioid Use and Concurrent Psychotropic Drug Use During Pregnancy: A Population-Based Retrospective Cohort Study Utilizing Linked Administrative Data

Presented By: Deepa Singal, CIHR Health Systems Impact Post Doctoral Fellow, The Manitoba Centre for Health Policy and Health Child Office, Government of Manitoba

Methods: Data Mining/Big Data Analytics

Objectives: It is important to investigate the use of prescription opioids during pregnancy to gain insight into the potential impact of maternal opioid exposure during pregnancy on children. We report the prevalence of prescription opioid use and concurrent psychotropic drug use in a large, Canadian population-based cohort of pregnant women.

Approach: Using population-level linked administrative data from a universal health care system, this study included all women with a live birth in Manitoba from 1996 to 2014. Dispensing of opioids was determined from prescription drug claim data. Patterns of prescription opioids dispensed to pregnant women were investigated by demographic characteristics, region of residence, and socioeconomic status. Concurrent psychotropic therapies were also measured.

Results: In a large population level sample of pregnancies (N=245,784), 2.43% of pregnancies were exposed to 2+ dispensations of opioids. An additional 4.95% of pregnancies recorded at a single opioid dispensation. Compared to women who were not dispensed any opioid prescriptions, the proportion of opioid exposed pregnancies who were also prescribed anti-depressants (SSRI/SNRI) was sevenfold higher (22.5% vs 3.05%). The same pattern was found for anxiolytics (37.2% vs 1.5%) and antipsychotics (3.5% vs 0.34%).

Conclusion: A sizable proportion of women were dispensed opioids during pregnancy. Future research should be done on short term and long term effects of these medications on infants and children. Moreover, these results highlight the need for further investigation into the effects of exposure to multiple psychotropic drugs on the fetus.

Authors: Deepa Singal, The Manitoba Centre for Health Policy and Health Child Office, Government of Manitoba; Dan Chateau, Manitoba Centre for Health Policy, University of Manitoba; Matt Dhal, Manitoba Centre for Health Policy; Laurence Katz, University of Manitoba; Chelsea Ruth, Manitoba Centre for Health Policy; Ana Hanlon-Dearman, University of Manitoba and FASD Centre/MB FASD Network; Marni Brownell, Manitoba Centre for Health Policy

G2.2
Evaluating area-based socioeconomic status predictors of pediatric health outcomes in Manitoba

Presented By: Celia Rodd, Associate Professor, University of Manitoba

Methods: Data Mining/Big Data Analytics

Objectives: Socioeconomic gradients in health exist in Canada. Although multiple Canadian area-based socioeconomic measures (ABSM) have been developed, none have been specifically validated against relevant pediatric outcomes. Our objective was to use key pediatric health outcomes and compare the strength of association with a number of ABSM, including income quintile.

Approach: This is a retrospective cross-sectional assessment of the association between socioeconomic status (SES) measured by ABSM and key pediatric health outcomes at the population level. Data from the Manitoba Population Research Data Repository was used for residents aged 0-19y. The timeframe was 2010-2015. Outcomes included preterm births, birth weight, mortality, vaccination rates and teen pregnancy. Regressions used each outcome against various ABSM (e.g. CAN-Marg, SEFI2, etc) or income quintile. Best model for each outcome was assessed by goodness of fit measure (AIC). Measures of inequality included SII (Slope Index of Inequality and RII (Relative Index of Inequality, both RII mean and RII ratio).

Results: In our regression models, the 4 Can-Marg subcomponents consistently had about 15% lower AICs (best fit) across all 16 key pediatric outcomes compared to INSQ (Raymond-Pampalon), income quintile or SEFI2 (Socioeconomic Factor Index - Version 2). Sex differences were small and inconsequential. Whether ABSMs were treated as continuous or categorical predictors was of little statistical consequence. Of note, 15 of the 16 outcomes had socioeconomic gradients identified by SII or RII on at least one of the ABSMs. Income quintile detected 12 of 15, CAN-Marg material deprivation detected 9; the combination of CAN-Marg material deprivation and ethnicity detected 13 of 15. SEFI2 detected only 3 and the National INSQ detected 6.

Conclusion: There are significant health inequalities in pediatric outcomes in Manitoba (15 of 16 studied). Combining CAN-Marg measures of poverty (material deprivation) and ethnic concentration identified 13/15 cases of documented inequality and was the best ABSM for capturing pediatric health gradients; it was similar to income quintile alone.

Authors: Celia Rodd, University of Manitoba; Atul Sharma, University of Manitoba; Kristine Kroeker, University of Manitoba; Marni Brownell, Manitoba Centre for Health Policy; Dan Chateau, Manitoba Centre for Health Policy, University of Manitoba
G2.3
Increased prevalence and severity of high blood pressures in children using the 2017 AAP guidelines: A case-control study to characterize the new disease burden
Presented By: Celia Rodd, Associate Professor, University of Manitoba

Methods: Program or Policy Evaluation

Objectives: In 2017, the American Academy of Pediatrics (AAP) published new clinical practice guidelines for pediatric hypertension, replacing the 2004 NHLBI 4th Report. Our objectives were to determine their impact on the prevalence and severity of elevated blood pressure in children and characterize those who “progressed” to a worse clinical stage.

Approach: National Health and Nutrition Examination Survey (NHANES) cycles between 1999-2016 provide 15,647 generally healthy children aged 5-18y with measured systolic blood pressure (SBP), diastolic blood pressure (DBP), and height. BP was measured by auscultation as the mean of 3-4 measurements. For classifications. SBP and DBP percentiles under both guidelines were compared (Bland-Altman limits of agreement, LOA). Children with elevated BP who progressed (cases) were matched for age, sex, and height with normal BP controls. Anthropometric and cardiometabolic measures were compared. Results: With the 2017 charts, SBP and DBP percentiles shifted upwards. For SBP, the mean discrepancy was 5.1 95% LOA -2.4 -12.7). For DBP it was 0.7 (-4.4 - 5.9). As a result, the population prevalence of elevated blood pressure increased from 11.8% to 14.2% (p < 0.001). Under the AAP guidelines, 905 (5.8%) in these surveys progressed, with 381 moving from normal to elevated BP or Stage 1 hypertension, 470 from elevated BP to Stage 1 hypertension, and 54 from Stage 1 to 2. Only 73 children regressed. Cases ("progressed") had higher weight, BMI, waist circumference and waist:height z-scores and were more likely to be overweight and/or obese (23.5 vs. 11.6%, p < .001) than controls. Additionally, they were more likely to have abnormal metabolic risks (LDL cholesterol, triglycerides, dysglycemia).

Conclusion: In a sample of generally healthy American children, more than 5% were reclassified with either new onset elevated BP or a more advanced hypertensive stage. Those who progressed were more overweight/obese and had other risk factors. These data suggest we may have been under-estimating cardiovascular risk in otherwise healthy children.

Authors: Celia Rodd, University of Manitoba; Atul Sharma, University of Manitoba; Daniel Metzger, University of British Columbia

G2.4
Non-adherence to maintenance medications for women with inflammatory bowel disease differs by drug class during pregnancy
Presented By: Sangmin Lee, PhD Student, University of Calgary

Methods: Data Mining/Big Data Analytics

Objectives: Pregnant women with inflammatory bowel disease (IBD) and other chronic diseases often stop taking their medications, due to concerns about medication exposure during pregnancy. However, little is known about whether adherence differs by medication class.

Approach: A validated case definition was used to identify women with IBD before pregnancy from hospitalization, emergency room, and outpatient physician claims data in Alberta, between 2010 and 2016. Data on dispensed medications were obtained from the Pharmaceutical Information Network. Adherence to medication was defined by a prescription medical possession ratio (MPR) ≥0.8. Women who had two consecutive prescriptions (indicating a physician’s intent to treat), and MPR ≥0.8 for a relevant class of maintenance IBD medications in the one year prior to pregnancy were included. Chi-square tests were conducted to examine if medication non-adherence during pregnancy differed by drug class.

Results: Of the 370 women identified with IBD, 170 (45.9%) were adherent to maintenance medications in the year prior to pregnancy. During pregnancy, 50 (29.4%; 95% CI: 23.0%-36.8%) women, who demonstrated adherence in pre-conception period, discontinued or were not adherent to their medications. Adherence to medication during pregnancy differed significantly by drug class (p=0.004). Overall, 46.9% (95% CI: 33.1%-61.3%) of women taking thiopurines, 26.7% (95% CI 16.7 to 39.6%) of women taking 5-ASA, and 18.0% (95% CI: 10.1%-30.1%) of women taking biologic therapies were not adherent or discontinued their medications during pregnancy.

Conclusion: Almost a third of women discontinued or were not adherent to IBD medications during pregnancy; however, this differed by drug class. Examining patterns of medication adherence is an important first step in identifying areas for education and research on medication safety during pregnancy.

Authors: Sangmin Lee, University of Calgary; Cynthia Seow, University of Calgary; Kamala Adhikari Dahal, University of Calgary; Amy Metcalfe,
G3.1
Risk factors associated with sexual misconduct in the Canadian Armed Forces: Does it vary by sex and environmental command?
Presented By: Mohammad Hajizadeh, Assistant Professor, Dalhousie University

Methods: Statistics/ Econometrics

Objectives: Sexual misconduct is a key contributing cause of several serious social and public health problems among military populations. We aimed to determine risk factors associated with the experience of sexual misconduct in the Canadian Armed Forces (CAF).

Approach: Using a newly available unique dataset from the Survey on Sexual Misconduct in the Canadian Armed Forces (SSMCAF, n=43,440 active members), conducted by Statistics Canada in 2016, we aimed to identify the predictors of the three types of sexual misconduct (i.e., sexual assault, inappropriate sexualized behaviour, and discriminatory behaviour on the basis of sex and sexual orientation or gender identity) among the CAF members. We employed logit regression models to identify risk factors of sexual misconduct in the CAF. We also examined whether the predictors associated with the three types of sexual misconduct vary by sex and environmental command.

Results: Our results suggested that probabilities of being the target for sexual assault, or inappropriate sexual behaviour and discriminatory behaviour in the past year among females, was 1.83% (95% confidence interval [CI]=1.67 to 2), 12.79% (95% CI=12.01 to 13.57) and 6.35% (95% CI=6.02 to 6.69), respectively, higher compared to their male counterparts. The probabilities of experiencing one or more of the three types of sexual misconduct in the past year were associated with one or more of the following factors; younger, single, Indigenous, disabled, LGBT (lesbian, gay, bisexual or transgender), highly educated, or junior non-commissioned members of the CAF. Our findings were generally consistent when we stratified our analysis by sex and environmental command.

Conclusion: These results suggest that sexual misconduct is a problem within the CAF. There is a need for change within the CAF to prevent and reduce sexual misconduct among at-risk members including those who are female, young, single, Indigenous, disabled, LGBT, highly educated or junior non-commissioned members.

Authors: Mohammad Hajizadeh, Dalhousie University; Alice Aiken, Dalhousie University; Chelsea Cox, Dalhousie University

G3.2
Prevalence of past history of abuse among male and female psychiatric inpatients in Ontario, Canada: a population-based study.
Presented By: Evgenia (Jenny) Gatov, Epidemiologist, Institute for Clinical Evaluative Sciences

Methods: Statistics/ Econometrics

Objectives: Recent research has emphasized the importance of ascertaining past history of abuse in psychiatric populations, but little is known about differences between males and females. We sought to describe the prevalence of prior trauma and its variations among male and female psychiatric inpatients.

Approach: In this population-based cross-sectional study, we used linked health administrative data to identify all Ontario psychiatric inpatients between April 1, 2009 and March 31, 2016. We examined their sociodemographic and clinical characteristics, and quantified the prevalence of reporting a history of physical, sexual, emotional, and multiple types of abuse at the time of hospital admission in females, compared to males. We used modified Poisson regressions with robust standard errors to adjust for age. As sensitivity analyses, we stratified the cohort by discharge diagnosis, and examined individuals reporting more recent abuse (one year, one month).

Results: Among 160,436 psychiatric inpatients (51.1% males), one in three reported a lifetime history of abuse of any kind. The overall prevalence of lifetime abuse was 39.6% in females and 24.1% in males (adjusted prevalence ratio [adj-PR]=1.68, 95% CI 1.61-1.71). This disparity was greater among those reporting past year (adj-PR=2.21 95% CI 2.13-2.30) and past month (adj-PR=2.37 95% CI 2.25-2.49) abuse. Each type of lifetime abuse was more prevalent in females, although the difference was most pronounced for sexual abuse (adj-PR=2.82, 95% CI 2.74-2.89). Females were three times more likely to report a lifetime history of all three types of abuse, compared to males (adj-PR=3.00, 95% CI 2.90-3.11). The prevalence of self-reported abuse in both sexes was highest among those diagnosed with substances abuse and anxiety.

Conclusion: These findings have significant clinical implications, given the high prevalence of abuse among psychiatric inpatients. Different targeted approaches may be required for males and females given the variability in the types of trauma they experience. Future research is needed to examine the treatment trajectories of psychiatric patients who experience abuse.

Authors: Evgenia (Jenny) Gatov, Institute for Clinical Evaluative Sciences; Paul Kurdyak, CAMH; Astrid Guttmann, ICES; Natasha Saunders, The Hospital for Sick Children; Simon Chen, Institute for Clinical Evaluative Sciences; Simone Vigod, Women's College Hospital
G3.3
Effectiveness and cost-effectiveness of Housing First for mentally ill homeless people with different patterns of criminal justice involvement
Presented By: Marichelle Leclair, MSc student, McGill University

Methods: Program or Policy Evaluation

Objectives: This study 1) compares the impact of Housing First (HF) on criminal justice (CJ) outcomes, costs and residential stability by profile of criminal justice involvement; and 2) tests whether the cost-effectiveness of HF varies by profile, using days stably housed as the measure of effectiveness.

Approach: The At Home/Chez Soi (AH/CS) trial tested HF in five Canadian cities using a randomized controlled trial design. The sample consists of 1,541 AH/CS participants in Toronto, Vancouver and Montreal. Criminal justice involvement was measured using official police records, and profiles were identified using a latent class analysis. Using generalized linear mixed models, we will examine the impact of the intervention on two types of offending (survival/nuisance offending and violent offending), days stably housed and total costs at 12 and 24 months. We will explore the cost-effectiveness of HF using days stably housed as the measure of effectiveness.

Results: We hypothesize that HF will contribute to reducing survival/nuisance offending, but may not have an impact on violent offending. We expect that HF will show greater cost-effectiveness for profiles defined by multiple misdemeanors and poverty-driven offending in comparison to profiles defined by fewer but more violent offenses. The RCT design and the extensiveness of the justice-related administrative data for this large sample of mentally ill homeless individuals offer a unique opportunity to examine the impact of criminal justice profiles on the effectiveness of Housing First interventions.

Conclusion: Relative lack of effectiveness in one or more profile will suggest the need for adjunctive interventions tailored to the criminogenic needs of those profiles.

Authors: Marichelle Leclair, McGill University; Ashley Lemieux, Eric A Latimer, McGill University; Anne Crocker, Université de Montréal

G3.4
The Role of Supportive Housing and Marginalization on Readmissions to Inpatient Psychiatry
Presented By: Sebastian Rios, PhD Candidate, University of Waterloo

Methods: Data Mining/Big Data Analytics

Objectives: This presentation examines geographic clustering of inpatient psychiatry readmissions and whether clustering is related to the geographic accessibility to supportive housing services as well as to socio-economic indicators of marginalization.

Approach: This study combines patient data from the Ontario Mental Health Reporting System (OMHRS), location of supportive housing services from Connex Ontario, as well as the Ontario Marginalization Index, a census and geographically based index that measures domains such as residential instability and material deprivation. Readmission counts were mapped based on a geographical unit known as the Forward Sortation Area (FSA). Spatial regression and multi-level models were then used to test these relations.

Results: Geographic Information System (GIS) analysis indicated that in relation to the locations of supportive housing services, readmission rates into inpatient psychiatric are spatially autorecorrelated. The maps identified specific locations of high clusters of readmissions, confirming that mental health service use may be influenced by contextual factors as well as individual factors.

Conclusion: Helping identify the influence of supportive housing services provides an opportunity to plan and advocate for services based on where individuals live. In turn, allowing marginalized populations to receive services and resources and avoid further complications and relapses, and ultimately reduce the high social costs of mental illness and homelessness.

Authors: Sebastian Rios, University of Waterloo; Christopher Perlman, University of Waterloo
G4.1
"Missing in Action: The absence of evidence of support for health system leaders in health system partnership research"

Presented By: Ingrid Botting, Assistant Professor, University of Manitoba

Methods: Qualitative Research Methods

Objectives: The aim of this research was to identify and review available website resources providing guidance and support to health system leaders in establishing and managing research partnerships with academic researchers.

Approach: Websites expected to provide resources for Canadian health leaders on selecting and managing academic research partnerships (n=38) were reviewed using a standardized template. Websites included those: from Canadian research funding bodies; that address health system organization and functioning; and that promote knowledge translation or evidence use in healthcare. Inclusion criteria for resource review were if content: a) addressed health system change or health service organization; and b) provided practical guidance for academic–health system research partnerships. Exclusion criteria included content limited to: a) clinical research; b) knowledge ‘transfer’ activities; or c) resources to build decision-maker research literacy.

Results: Although many sites refer to “partners”, “collaborations” or “sponsors,” few provided resources meeting inclusion criteria. The absence of resources to support health leader–academic researcher collaboration was in sharp contrast to resources available for other forms of partnership, and the few resources available were directed at researchers rather than health leaders. Knowledge translation resources continue to emphasize end-of-project knowledge transfer rather than partnership. Evidence of a potential surge of interest in a more active role for health systems in research activities was identified in some key international documents and blog posts. Explanations for the greater number of resources to support patient or community engagement, inter-professional collaboration, or collaboration with clinicians or policy makers —rather than health system/academic research partnerships—are explored.

Conclusion: The review suggests that research partnerships for purposes of improving health systems or organizing health services, in contrast to other partnerships, has not been identified as a priority issue. Strategies to support meaningful participation and engagement of health leaders in health system research are needed.

Authors: Ingrid Botting, University of Manitoba; Martha MacLeod, University of Northern British Columbia; Sarah Bowen, Applied Research and Evaluation Consultant; Ian Graham, University of Ottawa/ OHRI; Karen Harlos, University of Winnipeg

G4.2
How to build transformative capacities among organizational actors through public healthcare reforms: a realistic evaluation

Presented By: Élizabeth Côté-Boileau, PhD student, University of Sherbrooke

Methods: Qualitative Research Methods

Objectives: We explored how organizational actors mobilize transformative capacities to expand the academic mission across the care continuum within an Integrated Academic Health and Social Services Centre (IAHSSC) in Quebec, in the context of the latest healthcare reform in Quebec (2015).

Approach: We conducted a realistic evaluation to elucidate the causal chain between context, mechanism and outcome (C-M-O) involved in the development of transformative capacities through the expansion of the academic mission. We used the Model of Forms of Institutional Work in the Enactment of Policy Reform as our candidate theory (Cloutier et al., 2015). We conducted a qualitative embedded single-case study in an IAHSSC in Quebec. Data were collected through documentation and semi-structured interviews with key informants (N=27). We first categorized our empirical data as either context, mechanism or outcome, and secondly as structural, conceptual, operational or relational work.

Results: By means of our “candidate program theory” of the development of transformative capacities through the expansion of the academic mission across the care continuum in the IAHSSC, four mid-range C-M-O configurations emerged. First, in a context of centrally managed policy reform, actors seek to both integrate and differentiate their new organizational identities to generate structural capacities. Secondly, the alignment of conceptual capacities across organizational actors at different levels of care develops from frequent and inclusive local interactions. Thirdly, in a context of high performance pressure, a lack of perceived value and feasible guidelines jeopardize operational capacities from senior to front-line leadership. Finally, the mobilization of relational capacities is central to accelerating the potential for expanding the academic mission across the care continuum.

Conclusion: This study support that the development of transformative capacities among organizational actors in a reform context is a relational process. While many health systems are moving towards integrated structures, we suggest to align these efforts with interactive and inclusive mechanisms within and across actors from primary care to policy levels.

Authors: Élizabeth Côté-Boileau, University of Sherbrooke; Jean-Louis Denis, University of Montreal; Marie-Andrée Paquette, Centre de prévention et de réadaptation de l'incapacité au travail (CAPRIT)
G4.3
Peer review of physiotherapists managing patients with hip fracture can improve compliance with guidelines: a before-and-after observation study
Presented By: David Snowdon, PhD Candidate, La Trobe University

Methods: Mixed Methods

Objectives: To determine if a peer review intervention for physiotherapists can improve compliance with clinical practice guidelines and outcomes for patients with hip fracture.

Approach: A before-and-after observational study design, with a comparison site, was conducted on acute orthopaedic hospital wards. Peer review was delivered by an experienced physiotherapist and involved: direct observation of physiotherapist clinical management of patients with hip fracture; and monitoring and feedback about compliance with guidelines. It was typically completed in 30-minute sessions once every fortnight. The primary outcome was compliance with hip fracture guidelines including mobilization on the day following surgery and mobilizing every day thereafter. Secondary patient outcomes included physical function, length of stay, falls, re-admissions and discharge destination. Compliance with guidelines was analyzed using logistic regression.

Results: Four physiotherapists and 290 patients with a traumatic hip fracture participated in the study. Approximately 30% of patients with hip fracture resided in residential care and 55% required the use of a walking aid to mobilize pre-fracture. Physiotherapists attended 96% of scheduled peer review sessions. Compliance with the mobilization guideline with the addition of peer review improved from 9% to 35% on the day after surgery (OR 5.23, 95% CI 1.98-13.80; P=0.001) and from 32% to 68% by the second post-operative day (OR 4.46, 95% CI 2.18-9.15; P<0.001). There was no significant improvement in any patient outcomes.

Conclusion: Peer review of physiotherapists improved compliance with hip fracture guidelines, but did not improve patient outcomes. Further research is required to investigate the applicability of hip fracture guidelines to a population of patients with hip fracture who are frail and who reside in residential care.

Authors: David Snowdon, La Trobe University; Sandra Leggat, La Trobe University; Nicholas Taylor, La Trobe University

G4.4
Success factors and challenges in implementing, scaling up and sustaining health innovations in a changing context: Case of Tunisia
Presented By: Marie-Claire Ishimo, PhD Candidate in Public Health, School of Public Health & Public Health Research Institute - University of Montreal

Methods: Qualitative Research Methods

Objectives: Major efforts are invested in health innovations, which tend to be very successful at the local level but fail to be scaled up, and very few are scaled up sustainably. This study seeks to identify key factors that contribute to the success/failure in implementing, scaling-up and sustaining of health innovations.

Approach: We used a synthetic qualitative research strategy with a multiple case study design with several embedded levels of analysis. The innovations are: 1) the mobile outreach services for family planning, 2) the development program of health districts for primary health care, 3) the hospital management reform, and 4) the optimization of the vaccine supply chain. Data was collected by interviews, observations, and review of field notes and official documents. In total, 40 interviews (45min-1hour) were conducted, followed by a 10-day observation period for each innovation. Interviews were analysed using thematic analysis in QDA-Miner software (4.1.27 version).

Results: The study observed different levels of implementation, scaling-up and sustainability (in terms of structures, processes and outcomes) and uncovered successes (e.g. relevance and compatibility of innovation within the local context, historical and legal context, political engagement, availability of resources, technical support, etc.) and challenges (changing context, bureaucracy, low operational management, insufficient resources, low institutional capacity, low level of skills, etc.) when assessing the implementation, scale-up and sustainability of these innovations. And, also the study highlighted the nature (contextual, organizational, individual and innovation characteristics) and the level of their influence (national, regional and local).

Conclusion: The study highlights the importance of individuals and the adaptability to changing contexts in implementing, scaling up and sustaining health innovations in resource-limited settings. It showed that an innovation can be effective at the local level and scaled-up but decline over time.

Authors: Marie-Claire Ishimo, School of Public Health & Public Health Research Institute - University of Montreal; François Champagne, Université de Montréal; Lambert Farand, University of Montreal
G5.1

**Researcher and Patient Competencies For Meaningful Patient Engagement in Health Research: Are you ready?**

*Presented By:* Elizabeth Manafo, Research Coordinator, Patient Engagement Platform, SPOR

**Methods:** Emerging methods (e.g. new developments in observational study design)

**Objectives:** While there is a growing appetite for both researchers and patients to engage in health research, how can either stakeholder be sure they are ready? The purpose of this research was to explore the existing evidence about the competencies (i.e., knowledge, skills, attitudes, and beliefs) needed for meaningful patient engagement.

**Approach:** We conducted a systematic scoping review to identify engagement competencies within five domains: Communication, Interpersonal or Individual, Team Function, Patient-centeredness, and Leadership, as well as in relation to the six "Levels of Patient and Researcher Engagement in Health Research". To better ensure that we captured a broad range of evidence about this emerging phenomenon, we included academic and public literature in our analysis.

**Results:** This rapid review yielded 43 records. Notably, there was a greater focus on researcher competencies compared to patient competencies for patient-oriented research. Additionally, competencies do not exist in isolation and competencies in the Communication, Interpersonal or Individual, and Team Function domains were most frequently cited as critical and precursory for meaningful engagement in research. The fact that fewer competencies at the deeper levels of engagement (i.e., Collaborate, Lead/Support) were discussed in the literature suggests that these competencies need attention through training and education opportunities. Leadership competencies are particularly important within the context of promoting partnerships and patient autonomy. Re-framing stakeholder roles can help move us towards a more participatory model of research activity, one that understands patients as ‘experts’ of their own situation.

**Conclusion:** The dual roles of researcher and patient enacted by one individual requires a close investigation of the competencies needed. Competencies which are less inherent need greater ‘upstream’ attention so that patients and researchers are ready to engage meaningfully in health research.

**Authors:** Ping Mason-Lai, Alberta SPOR SUPPORT Unit, Patient Engagement Platform; Virginia Vandall-Walker, AbSPORU and Athabasca University; Elizabeth Manafo, Patient Engagement Platform, SPOR

G5.2

**Development of a questionnaire to assess the quality of patient-researcher partnerships**

*Presented By:* Clayon Hamilton, 

**Methods:** Mixed Methods

**Objectives:** Engaging patients as partners in research projects has grown in Canada over the last decade, but no tool is available to measure success. This study aimed to identify items for a scale to measure the degree of meaningful patient engagement in research.

**Approach:** We generated 120 items across the eight domains of our published empirically-based Patient Engagement In Research Framework. A 3-round Delphi process, involving online questionnaires and a teleconference discussion, was then undertaken. Eligible panelists were patients or informal caregivers 18 years or older who engaged as research partners in Canada within the last three years and had internet access. Panelists rated the level of importance of each item. Our decision to retain, revise, or remove each item was guided by three criteria: a median rating of >3.25, rating of >3 by >70% of panelists, and comments on its wording and importance.

**Results:** We recruited 12 participants (10 women; 11 Caucasians and 1 Asian), from Alberta (n=1), British Columbia (n=9), and Ontario (n=2). They represented a variety of diseases, health-related conditions, and use of healthcare services such as rheumatoid arthritis, inflammatory bowel syndrome, multiple sclerosis, diabetes, stroke, neurodevelopmental disabilities, obesity, and nutrition intervention implementation. Highest formal education varied from high school diploma (n=1) to master’s degree (n=2). They were aged between 18 and 85 years old. All panelists completed the questionnaires, except for one person in round two. Forty-three items were retained across the eight domains: procedural requirements (n=16), convenience (n=4), contributions (n=4), support (n=5), team interaction (n=3), research environment (n=3), feel valued (n=4), and benefits (n=4). These items formed the initial Patient Engagement In Research Scale (PEIRS).

**Conclusion:** This project is the first to develop a tool for evaluating meaningful engagement of patients in research projects. Importantly, the Delphi process involved a synergy of patient partners who were either participants or members of our research team to ensure the PEIRS is grounded in a patient perspective.

**Authors:** Clayon Hamilton, ; Linda Li, Arthritis Research Centre of Canada; Alison Hoens, BC SUPPORT Unit; Kelly English, Arthritis Research Canada; Shanon McQuitty, Arthritis Research Canada; Annette McKinnon, Arthritis Research Canada; Tara Azimi, Arthritis Research Canada
G5.3

The PREFeR (PRioritEts For Research) Project: Patient priorities for primary care research in British Columbia

Presented By: Louisa Edwards, Research Fellow, Faculty of Health Sciences, Simon Fraser University; Centre for Clinical Epidemiology and Evaluation, Vancouver Coastal Health Research Institute

Methods: Mixed Methods

Objectives: Primary care research often focuses on understanding patient needs and gaps in care, but patients are infrequently included in prioritizing research ideas. Patient and clinician priorities may significantly differ. PREFeR (PRioritEts For Research) aims to identify patient-generated priorities for primary care research in British Columbia, comparing patient and clinician perspectives.

Approach: Framed by the Dialogue Model and employing Nominal Groups Technique, a Patient Advisory group explored experiences of primary care. Patients reviewed, discussed, and individually ranked the topics that emerged. Online surveys were administered province-wide to capture patient and primary care provider ratings of importance of the top 10 topics. Overall and between-group (e.g., rural-urban) importance ratings were compared and linear regressions tested socio-demographic predictors of topic importance. Rapid literature reviews evaluated research hits within a Canadian and provincial context. A final dialogue event will bring patients and clinicians together, identifying areas of agreement and disagreement.

Results: The 10 members recruited to the Patient Advisory provided over 80 experiences of 'what stood out' in BC primary care, which were grouped thematically into 18 topics. Amongst the top 10 ranked topics, 'patient-centred care', 'information sharing/electronic medical records', and 'lack of regular primary care provider' scored highly. Preliminary survey results of patient and provider priorities overall and by socio-demographic groups will be forthcoming. Findings from rapid literature reviews indicate variability in the extent of research amongst the 10 topics within Canada and BC.

Conclusion: Involving patients in primary care research priority setting is important to patients, feasible, and fruitful. Ultimately, this benefits the intended end-users, leading to more efficient resource use. Patient-identified priorities are broad themes that future projects could develop into specific research questions. Topic importance, patient-provider alignment, and under-researched areas require consideration.

Authors: Louisa Edwards, Faculty of Health Sciences, Simon Fraser University; Centre for Clinical Epidemiology and Evaluation, Vancouver Coastal Health Research Institute; Melody Monro, Fraser Health Authority, Population & Public Health Office; Hayley Pelletier, BC Primary Health Care Research Network Patient Advisory; Yaron Butterfield, BC Primary Health Care Research Network Patient Advisory; Regina Cid, BC Primary Health Care Research Network Patient Advisory; Kent Cadogan Loftsgard, BC Primary Health Care Research Network Patient Advisory; Sabrina Wong, University of British Columbia; Ruth Lavergne, Simon Fraser University

G5.4

Co-design d’une infrastructure de soutien et de coordination des partenariats de recherche avec les patients-citoyens

Presented By: Maman Joyce Dogba, Assistant Professor, Université Laval Département de médecine familiale et de médecine d’urgence

Methods: Mixed Methods

Objectives: Identifier ce qui se fait dans la grande région de Québec en matière de partenariats de recherche avec les patients et les citoyens et déterminer les conditions optimales pour mettre en place une infrastructure de soutien et de coordination des partenariats de recherche avec les patients et les citoyens.

Approach: Nous avons adopté une approche de recherche-action pour ce projet dont cinq des huit étapes ont été réalisées, à savoir : 1) Sondage en ligne des chercheurs, cliniciens et décideurs afin d’identifier leurs pratiques d’implication des patients et de citoyens dans la recherche ; 3) Synthèse rapide de la littérature sur les modèles organisationnels d’infrastructures d’implication de patients et de citoyens dans la recherche; 4) Participation des membres de l’équipe de recherche à des conférences; 5) Consultation des patients-citoyens; 6) Recrutement et formation des « représentants » des parties prenantes pour le co-design; 7) Atelier-pilote de co-design.

Results: Sur les 223 répondants au sondage (Taux de réponse = 223), 92 (43 %) ont déjà impliqué des patients/citoyens dans la recherche alors que 121 (54%) ne l’ont jamais fait. L’implication se situe davantage au niveau du recrutement des participants à l’étude (N =44) et de l’identification des priorités de recherche (N =43) qu’au niveau de l’évaluation du protocole de recherche (N = 22) ou de la conception du devis de recherche (N =19). Quatre grandes moyens d’implication des patients et des citoyens dans la recherche : l’inscription à un registre; le jumelage avec des chercheurs; le réseautage, la consultation et la référence. Les 27 participants à l’atelier ont proposé un format flexible et mixte de partenariats de recherche.

Conclusion: Il existe des formats multiples, adaptables et flexibles pour faciliter les partenariats de recherche avec les patients et les citoyens. Toutefois, malgré le consensus sur le bien-fondé de ces partenariats, les chercheurs qui en font une pratique usuelle sont peu nombreux.

Authors: Maman Joyce Dogba, Université Laval Département de médecine familiale et de médecine d’urgence; France Légaré, Laval University; Marie-Pierre Gagnon, Faculté des sciences infirmières; Jean Légaré, c/o Université Laval, Faculty of Medicine; Priscille-Nice Sanon, c/o Université Laval
G6.1 Follow-Up, Return to Hospital, and Death After Hospital Discharge During the December Holiday Period: The Home for the Holidays Study
Presented By: Lauren Lapointe-Shaw, Doctoral Student, University of Toronto

Methods: Statistics/Econometrics

Objectives: Reduced staffing levels during the December holiday period may result in decreased coordination of and access to follow-up care. We aimed to determine whether patients discharged over the December holiday period have lower rates of outpatient follow-up or higher rates of readmission than patients discharged from hospital at other times.

Approach: This was a retrospective cohort study of patients discharged home following an urgent admission to an acute care hospital in Ontario, Canada. Patients discharged home during the 15-day December holiday period were compared to those discharged during two control periods in late November and January, from November 2002 to January 2016. The primary outcome was unplanned return to hospital or death at 30 days. 7- and 14-day outpatient physician follow-up and unplanned return to hospital or death was secondary outcomes. Multivariable logistic regression with generalized estimating equations was used to adjust outcomes for patient, admission, and hospital characteristics.

Results: The 217,549 (32.4%) patients discharged from hospital during the December holiday periods and 453,397 (67.6%) patients discharged during control periods had similar baseline characteristics and prior healthcare utilization. Patients discharged during a December holiday period were at higher risk of unplanned return to hospital or death at 7 days (12.6% vs 11.1%, adjusted OR 1.16, 95% CI 1.14-1.17), 14 days (17.9% vs 16.4%, adjusted OR 1.12, 95% CI 1.11-1.14) and 30 days (24.9% vs 24.0%, adjusted OR 1.06, 9% CI 1.05-1.08). Holiday-discharged patients were also significantly less likely to have outpatient physician follow-up at 7 days (36.2% vs 47.6%, adjusted OR 0.61, 95% CI 0.60-0.62) and 14 days (59.4% vs 68.5%, adjusted OR 0.65, 95% CI 0.65-0.66) after leaving hospital.

Conclusion: We found that patients discharged from hospital during the December holiday period were at higher risk of readmission, yet are less likely to have outpatient follow-up after discharge. These findings can be used to further investigate a potentially modifiable risk factor for hospital readmission following December holiday discharge.

Authors: Lauren Lapointe-Shaw, University of Toronto; Chaim Bell, Mount Sinai; Noah Ivers, Women’s College Hospital; Don Redelmeier, University of Toronto; Peter Austin, University of Toronto; Jin Luo, Institute for Clinical Evaluative Sciences

G6.2 N/A

G6.3 Influence des politiques organisationnelles sur les soins de physiothérapie pour les travailleurs blessés
Presented By: Anne Hudon, Postdoctoral researcher, University of Waterloo

Methods: Qualitative Research Methods


Approach: Nous avons employé un devis qualitatif appelé « description interprétative » pour réaliser la recherche. Nous avons conduit des entrevues individuelles d’une durée moyenne de 60 à 90 minutes auprès de 30 physiothérapeutes et de 10 leaders et administrateurs œuvrant au sein de groupes professionnels (ex. ordre professionnel) ou de commissions d’indemnisation du travail, dans trois provinces canadiennes (Colombie-Britannique, Ontario, Québec). Nous avons ensuite analysé chacune des transcriptions en suivant un processus inductif et de comparaison constante entre les données. Nous avons regroupé les codes en catégories et avons ensuite dégagé les grands thèmes illustrés par les récits des participants.

Results: L’analyse des récits des participants révèle que les soins de physiothérapie prodigués aux travailleurs blessés sont fortement modulés par les politiques établies par les commissions provinciales d’indemnisation et par les cliniques de physiothérapie elles-mêmes. Les politiques décrites par les participants ont des influences parfois positives, mais plus souvent néfastes sur les soins de physiothérapie offerts aux travailleurs blessés. Parmi les politiques identifiées on retrouve celles qui touchent : les tarifs de remboursement des soins, les modes de communication entre les intervenants, les exigences cliniques liées au traitement, la rémunération des physiothérapeutes et la durée pré-déterminée de certains programmes de traitements. Ces politiques administratives et cliniques sont aussi sources d’enjeux éthiques pour certains participants. Des pistes de solutions intéressantes ont également été suggérées par les participants.

Conclusion: Malgré les données probantes enseignées et les formations offertes aux physiothérapeutes, cette étude démontre de façon éloquente que les soins de physiothérapie sont largement influencés par les politiques organisationnelle des agents payeurs (commissions d’indemnisation) et des établissements de santé (cliniques de physiothérapie) plutôt que par des considérations cliniques individuelles.

Authors: Anne Hudon, University of Waterloo; Matthew Hunt, McGill University; Debbie Feldman, Université de Montréal
G6.4
Un modèle de collaboration interprofessionnelle entre physiothérapeutes et médecins de famille afin d’améliorer la prise en charge des personnes atteintes de troubles musculosquelettiques en première ligne

Presented By: Simon Deslauriers, PhD student, Université Laval

Methods: Program or Policy Evaluation

Objectives: L’objectif de la présentation est de décrire un modèle de collaboration novateur entre les physiothérapeutes et les médecins et résidents en médecine familiale ainsi que de documenter les activités de collaboration interprofessionnelle observées dans ce modèle.


Results: Nos résultats indiquent qu’une moyenne de 220 ± 44 références en physiothérapie étaient effectuées annuellement. Les trois motifs de références les plus fréquents étaient des troubles musculosquelettiques aux membres inférieurs (19%), les lombalgies et sciatalgies (18%) et les conditions pédiatriques (18%). De plus, les physiothérapeutes étaient impliqués dans 307 ± 73 discussions informelles par année avec les médecins et résidents. Depuis 2009, les physiothérapeutes ont collaboré à 62 séances d’enseignement destinées aux résidents en médecine familiale. Les résultats suggèrent une tendance à l’augmentation des activités de collaboration au fil des ans, mais aucune différence significative n’a été détectée (p > 0.05). L’implication du physiothérapeute à des comités interprofessionnels permet aussi de promouvoir le rôle de la physiothérapie en première ligne au sein de l’organisation.

Conclusion: Le modèle d’organisation des soins dans lequel des physiothérapeutes sont intégrés à un GMF-U favorise une variété d’activités de collaboration et d’éducation interprofessionnelle. Un tel modèle novateur offre le potentiel d’améliorer la prise en charge des personnes qui souffrent de troubles musculosquelettiques en première ligne.

Authors: Simon Deslauriers, Université Laval; Marie-Eve Toutant, Université Laval; CIUSSS Capitale-Nationale
G7.1
Asthma hospitalizations decreasing among children and youth in Canada: gaps remain by income and education level
Presented By: Christina Catley, Senior Analyst, Canadian Institute for Health Information

Methods: Statistics/ Econometrics

Objectives: This study draws on hospitalizations data and newly available linked data to address the questions of whether asthma hospitalizations in children and youth (age 0-19) have declined over the past decade, and to shed light on the trends and magnitude of inequalities by income, geographic location and education.

Approach: To examine asthma hospitalization rates overall, by geographic location, and neighbourhood income, we used the Hospital Morbidity Database housed at the Canadian Institute for Health Information (CIHI) for 2006-2015; Statistics Canada’s Postal Code Conversion File (PCCF+) assigned neighbourhood income and urban and rural/remote status. We stratified asthma hospitalization rates by household education and individual-level income using Statistics Canada data that links the 2006 Census (long-form) and CIHI’s Discharge Abstract Database for 2006-2009. Age-standardized rates were analysed by sex/age group at the national/provincial/territorial levels. Inequalities were measured on the absolute and relative scales, using rate differences and rate ratios, respectively.

Results: Asthma continues to be a leading cause of hospitalization among children and youth, with over 6,000 hospitalizations in 2015-2016. Over the past decade, however, these hospitalizations have declined by 50%. In spite of this improvement, rates of hospitalization remain 1.5 times higher among children and youth living in lower income neighbourhoods compared to those living in higher income neighbourhoods. These income-related inequalities are present across different age groups and for boys and girls. Large inequalities in asthma hospitalizations were observed by household education, with children and youth living in households with less than high school completion 2.3 times more likely to have been admitted to hospital for asthma than those living in households with a university degree at the masters or doctorate level.

Conclusion: Results suggest opportunities to improve asthma management for children and youth, particularly within lower education/income households. Promising interventions include patient/parent self-management plans and school/community-based programs. This work illustrates the value of data linkage to measure inequalities across socio-demographic variables; future work could evaluate the effects of interventions on vulnerable sub-populations.

Authors: Sara Allin, Canadian Institute for Health Information; Christina Catley, Canadian Institute for Health Information; Erin Pichora, Canadian Institute for Health Information; Geoffrey Hynes, Canadian Institute for Health Information; Stephanie Ko, Canadian Institute for Health Information; Claudia Sanmartin, Statistics Canada; Philippe Finès, ; Sarah Roberts, CIHI; Jean Harvey, Canadian Institute for Health Information

G7.2
Associations between socioeconomic status and receipt and completion of cancer treatment and supportive care in Ontario, Canada
Presented By: Rachel Warren, Research Assistant, McMaster University

Methods: Survey Research Methods

Objectives: This study examined associations between socioeconomic status and receipt of treatments and services, and completion of prescribed courses of radiation and chemotherapy, at a regional cancer centre in Ontario, Canada.

Approach: A longitudinal cohort study design involving 297 breast cancer patients. Individual level demographic data were collected from patient surveys. Indicators of need for cancer treatments (disease stage at diagnosis) were obtained from pathology reports and clinician notes. Indicators of need for supportive care (patient-reported assessments of depression, anxiety and wellbeing) were collected from cancer centre databases, as were data on chemotherapy and radiation therapy regimens and treatments. Analysis examined whether, for a given level of need, receipt of treatments and services, and completion of prescribed number of chemotherapy or radiation treatments, varied by patient income, education or occupation.

Results: No association was found between socioeconomic status and type of surgery received, or receipt of radiation or chemotherapy. However patients with highschool education or less were significantly less likely to receive the number of treatments expected for their chemotherapy regimen. Among patients who reported high levels of depression, anxiety or lack of wellbeing, there was no association between SES and use of supportive care services.

Conclusion: Population studies often cite access to a cancer centre as a factor in SES disparities. This study supports the conclusion that, among patients who consult with an oncologist, receipt of treatment and services appears equitable. The finding that treatment completion is associated with patient education merits further study.

Authors: Rachel Warren, McMaster University; Diane Burns, Cancer Care Ontario; Christina Sinding, McMaster University; Jonathan Sussman, McMaster University
G7.3
Mortality and other ‘bad’ outcomes for adults with intellectual and developmental disabilities (DD): Implications for policy and planning
Presented By: Elizabeth Lin, Robert Balogh, UoIT; Tiziana Volpe, Centre for Addiction and Mental Health; Avra Selick, Centre for Addiction and Mental Health; Anna Durbin, Canadian Mental Health Association, Centre for Addiction and Mental Health; Laura Holder, Institute for Clinical Evaluative Sciences; Yona Lunsky, Centre for Addiction and Mental Health

Methods: Data Mining/Big Data Analytics

Objectives: Adults with intellectual and developmental disabilities (DD) have complex needs and poor health service outcomes (e.g., poor primary care). We describe mortality rates, long-term care use, repeat hospital and ED visits, and Alternate Level of Care within a cohort of adults with DD and relative to adults without DD.

Approach: A population-based cohort of Ontarians with DD (H-CARDD), aged 19-65 in 2010, was linked to health administrative data to identify five outcomes –30-day repeat ED visits, 30-day readmissions, Alternate Level of Care (ALC: still hospitalized although cleared for discharge), long-term care admission, and mortality. These outcomes were described for the H-CARDD cohort (n=64,699) and compared to a sample of adults without DD. Additionally, three H-CARDD subgroups of provincial policy interest were defined and described: adults with autism (ASD, n=10,695), Down syndrome (DS, n=5,432), and comorbid psychiatric disorder (DD-plus, n=29,476). The outcomes were also studied within subgroups.

Results: H-CARDD percentages for the five outcomes were consistently higher than for adults without DD. Over one-third had repeat ED visits (vs 20%, adults without DD); 7% had hospital readmissions (vs 2%), 5% an ALC designation (vs 1%); and 6% died within the study period (vs 2%). Compared with the H-CARDD cohort, the subgroups showed different patterns of outcomes. The ASD subgroup was less likely to revisit the ED (27 vs 35%) or to have an ALC designation (3 vs 5%). The DS subgroup was more likely to die (12 vs 6%) or be admitted to long-term care before age 65 (8 vs 4%). The DD-plus subgroup had higher rates of repeat ED visits (42 vs 35%) and readmissions (11 vs 7%).

Conclusion: The comparatively higher H-CARDD percentages across the five outcomes support the need for greater policy and planning attention for adults with DD across health and social support systems. However, the subgroup profiles indicate that narrow solutions may have different direct and indirect impacts on adults with DD.

Authors: Elizabeth Lin, Robert Balogh, UoIT; Tiziana Volpe, Centre for Addiction and Mental Health; Avra Selick, Centre for Addiction and Mental Health; Anna Durbin, Canadian Mental Health Association, Centre for Addiction and Mental Health; Laura Holder, Institute for Clinical Evaluative Sciences; Yona Lunsky, Centre for Addiction and Mental Health

G7.4
Prevalence of intellectual and developmental disabilities among newcomers, and the health and health service use of this group: A retrospective cohort study
Presented By: Anna Durbin, Scientist, Ms

Methods: Data Mining/Big Data Analytics

Objectives: Although attention has increasingly been devoted to newcomer health, newcomers with intellectual and developmental disabilities (IDD) are poorly understood. This study first compared the prevalence of IDD among newcomers and non-newcomers in Ontario, Canada and second assessed how having IDD affected the health profile and health service use of newcomers.

Approach: This population-based retrospective cohort study of adults aged 19-65 in 2010 was conducted in Ontario, Canada using linked health and social services administrative data including data on newcomers from the Immigration, Refugees and Citizenship Canada database that identifies newcomers to Ontario after 1984. To address the first objective, the prevalence of IDD among newcomers (n=1,649,633) and non-newcomers (n=6,880,196) was compared. For the second objective we compared newcomers with IDD (n=2,830) to newcomers without IDD (n=1,646,803) in terms of health conditions, community service use and hospital service use. Age- and sex-adjusted risk ratios were calculated from modified Poisson regression models.

Results: While newcomers represent a lower proportion in the population with IDD than in the general population, newcomers also had a lower prevalence of IDD than non-newcomers (171.6 versus 898.3 per 100,000 adults, p<0.001). Among newcomers, those with IDD had a higher age-and sex-adjusted prevalence of diabetes, hypertension, chronic obstructive pulmonary disease, congestive heart failure, cancer, asthma, non-psychotic, psychotic, substance use, and concurrent disorders than those with no IDD. Newcomers with IDD were also more likely than their comparators to visit primary care physicians, psychiatrists, and other specialist physicians. They were also more likely to make 1+ ED visit and frequent ED visits as well as 1+ hospital admission and frequent hospital admissions. Largest differences were in mental health and addictions disorders, and frequent hospital use.

Conclusion: Newcomers with IDD had higher medical and psychiatric comorbidity than other newcomers. While these results parallel findings that people with IDD are more vulnerable than others in the general population, they also emphasize the need for newcomers with IDD and their families to have access to appropriate supports upon arrival.

Authors: Anna Durbin, Ms; Yona Lunsky, Centre for Addiction and Mental Health; Hannah Chung, Institute for Clinical Evaluative Sciences; Elizabeth Lin, Robert Balogh, UoIT; James Jung, University of Toronto
**G8.1**

The relationship between receipt of home care at the end of life, cost and place of death: A population-level retrospective cohort study

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

**Methods:** Data Mining/Big Data Analytics

**Objectives:** The purpose of this study was to describe and understand the impact of home care services on place of death and total health care cost for all Ontario decedents in the last three months of life.

**Approach:** A retrospective cohort study of all decedents in Ontario who died between April 1, 2011, and March 31, 2015. Key variables were derived from linked Ontario health administrative databases, including place of death (acute vs. non-acute), receipt of home care services (type and intensity), and total health care cost. Regression analyses were conducted to determine the relationship between the receipt of home care services and the place of death as well as total health care cost.

**Results:** In the last three months of life, decedents who received end-of-life (OR = 0.248, p < 0.001) and other home care service packages (OR = 0.84, p < 0.001) were significantly less likely to die in an acute care setting than those who did not receive home care. Palliative visits by nurse practitioners demonstrated the largest effect on reducing the risk of acute care deaths (OR=0.948, p<0.001) and health care cost (OR= 0.982, p<0.001). Personal support services, receipt of an end-of-life home care package, having a neurological condition (e.g., dementia, mood and anxiety disorders), being male, of greater age, and a rural resident were significantly associated with the reduction of the total cost of care.

**Conclusion:** Decedents who received home care with end-of-life intent, particularly from a palliative care nurse practitioner, were significantly less likely to die in an acute care setting and had lower total health care cost. Next steps include understanding how intensity and timing of home care initiation can influence outcomes.

**Authors:** Suman Budhwani, Institute of Health Policy, Management & Evaluation, University of Toronto; Ashlinder Gill, IHPME, University of Toronto; Sarah Spruin, ICES UOttawa; Peter Tanuseputro, Bruyère Research Institute & Ottawa Hospital Research Institute; Amy Hsu, Ottawa Hospital Research Institute

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**G8.2**

Where are all the Veterans? A population-based analysis of length of stay in nursing homes in Ontario, Canada

*Presented By:* Karen Pacheco, Research Assistant, The Ottawa Hospital

**Methods:** Data Mining/Big Data Analytics

**Objectives:** Little is known about Canadian Veterans’ use of long term health care and personal support services. The objective of this study was to describe the characteristics of Veterans who are in nursing homes in Ontario, Canada, and to estimate their length of stay (LOS) in these facilities.

**Approach:** A prospective, population-based study. The study cohort is newly admitted (n=26,009) nursing home residents (April 2010 – March 2013), who were classified as Veterans if they were admitted into The Perley and Rideau Veterans’ Health Centre or if Veteran Affairs Canada was responsible for paying for their care, as indicated in the Continuing Care Reporting System (CCRS). The primary outcome was LOS (in days) in nursing homes. We estimated a Generalized Linear Model to examine the effect of Veteran status, age, sex, marital status, geography, morbidity, functional capacity, and Changes in Health, End-Stage Disease, Signs and Symptoms Scale on LOS.

**Results:** Of the 26,009 residents, only 1.2% were Veterans. In general, Veterans were older (56.8% were aged 90 and older), tended to be male (87.5%), and lived in urban areas (83.5%). Chronic health conditions that were prevalent among our Veteran cohort were dementia (47.8%), depression (36.0%), congestive heart failure (25.4%), stroke (23.2%), chronic obstructive pulmonary disease (22.9%) and cancer (19.5%). Without adjusting for confounding factors, the average LOS among Veterans was 377 days (SD=514 days); this was 168 days fewer than non-Veterans (Mean=546 days, SD=564 days) on average. After controlling for age, sex, geography, chronic conditions, functional and cognitive capacity, Veteran status remained significant in its impact on LOS, where Veterans spent approximately 87 fewer days compared to non-Veterans (RR=0.84, p<0.01).

**Conclusion:** After controlling for confounding variables, Veterans had significantly lower LOS in nursing homes. Given the availability of additional financial support and access to home supports through Veteran Affairs Canada, we hypothesize that Veterans may be able to stay longer in the community and thereby reduce their LOS in nursing homes.

**Authors:** Karen Pacheco, The Ottawa Hospital; Robert Talarico, Institute for Clinical Evaluative Sciences; Amy Hsu, Ottawa Hospital Research Institute; Peter Tanuseputro, Bruyère Research Institute & Ottawa Hospital Research Institute; Heidi Sveistrup, Bruyère Research Institute
**G8.3**

**Factors associated with entering facility-based long-term care in Nova Scotia**

Presented By: **Steve Patterson**, postdoctoral fellow, Nova Scotia Department of Health and Wellness

Methods: Statistics/ Econometrics

**Objectives:** To identify what factors are associated with entering facility-based long-term care (LTC) in Nova Scotia using the Andersen and Newman framework of health services utilization.

**Approach:** InterRAI minimum data set home care (MDS-HC) assessments were extracted for all publicly funded continuing care clients in Nova Scotia with an active care plan on May 4, 2017. Clients were stratified based on whether (n = 1,084) or not (n = 11,844) they were waiting for placement in a LTC facility. Logistic regression was used to identify what assessment items (selected apriori based on the Andersen and Newman framework) were associated with entering LTC. Individual assessment items were used in place of outcome scales to permit a detailed understanding of the factors associated with entering LTC.

**Results:** The Andersen and Newman framework divides the factors that influence health service use into three categories: predisposing factors (socio-cultural characteristics prior to illness), enabling factors (the logistical aspects of obtaining care), and need factors (functional and health needs).

Within each of these categories, the factors that had the greatest influence on entering LTC in NS were:

- **Predisposing factors:** Age; Whether the client lives with their informal caregiver.
- **Enabling factors:** Whether the client has an informal caregiver; Whether the informal caregiver is distressed; Geographic zone (entering LTC is more likely in some geographic zones than in others).
- **Need factors:** Difficulty with instrumental activities of daily living (IADLs), particularly managing medications; Diseases, particularly dementia.

**Conclusion:** Identifying the factors associated with entering LTC may help in designing policy to keep people in the community. These could include expanding programs to alleviate caregiver distress, or adding more support for lighter-care IADL needs in addition to the more extensive support already available for heavier-care ADL needs.

**Authors:** Steve Patterson, Nova Scotia Department of Health and Wellness; Andrew Knight, Nova Scotia Department of Health and Wellness

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**G8.4**

**Going it alone: Quality of care and quality of life of unbefriended residents in long term care**

Presented By: **Stephanie Chamberlain**, PhD Candidate, University of Alberta

Methods: Qualitative Research Methods

**Objectives:** Residents are under public guardianship are ‘unbefriended’ if they lack decision-making capacity and a family member or a friend to act as their legal representative. Our objectives were to identify the characteristics of unbefriended residents, their unmet care needs, and implications for quality of care and quality of life.

**Approach:** We conducted semi-structured interviews with thirty nine long term care staff and with three public guardian representatives. We purposively sampled a variety of care providers (regulated, unregulated, allied, managers) in order to examine experiences working with residents who have a public guardian. Long term care staff were recruited from seven facilities. These facilities represented three regional health zones and a mix of owner-operator models. We interviewed public guardian representatives who worked in two different health zones. We developed the interview guides using the domains of Guberman and Lavoie’s framework of social exclusion and analyzed the interviews using content analysis.

**Results:** The majority of the participants were female (93%) and 40+ years of age (54%). Long-term care staff had worked seven years in their current position compared to public guardian representatives who had worked three years in their current position. Characteristics of unbefriended residents include mental health issues, substance abuse, previous homelessness, never marrying, and childlessness. Unbefriended residents do not have anyone to assist in multiple areas, e.g., one-on-one social interaction, accompanying them to outside appointments, purchasing personal items. LTC staff report significant issues with their care at the end of life. These residents often experience more aggressive medical intervention vs. palliative approaches, and experience more inappropriate practices such as repeated transfers to hospital.

**Conclusion:** Our findings demonstrate alarming issues in the quality of life, quality of care, and quality of end of life for unbefriended residents. Unbefriended residents have limited social support and in some cases issues with accessing even basic personal care items. We discuss implications for policy and practice.

**Authors:** Stephanie Chamberlain, University of Alberta; Carole Estabrooks, ; Wendy Duggleby, University of Alberta
**H1.1**

**OPTIMISE: A collaborative intervention designed to improve the accessibility and quality of primary care delivered to refugees in Australia.**

Presented By: Grant Russell,Mixed Methods

Methods: Mixed Methods

Objectives: Australia is struggling to deliver quality primary healthcare to increased numbers of resettled refugees. This paper outlines the design and early insights from OPTIMISE, an outreach practice facilitation intervention designed to improve access, integration and quality of primary healthcare received by refugees resettled in two large Australian cities.

Approach: The study brings together 11 national, state and regional organisations responsible for delivering community based care to refugees, and is set in three areas of high refugee resettlement in Melbourne and Sydney. In each area we have formed Regional Partnerships comprising community members, academics, decision makers and clinicians. Following region based needs assessment, we trained expert refugee health staff to facilitate improvements in refugee care within family practices. Our mixed methods quasi-experimental trial design uses secondary analysis of practice software to identify primary outcomes. A parallel quality improvement intervention is being developed within each region’s state funded refugee health services.

Results: The family practice intervention is being delivered by the facilitators in 36 family practices, randomly allocated to early and late intervention groups. Outreach facilitation within the family practices has followed consensus priorities identified from Regional Partnerships’ needs assessment: recording of refugee status; use of interpreters; conduct of comprehensive physical and mental health assessments; and timely referral to appropriate external services. Baseline data collection has been completed and analysis is underway. The ease of practice recruitment and findings from a scoping exercise in each practice reinforced the felt need among participating family physicians. Our baseline data further confirms the suspected evidence/practice gap and highlights the burden faced by the system responsible for delivering accessible coordinated and high quality care to refugees.

Conclusion: Oriented to principles of participatory research and implementation science, OPTIMISE views the care of resettled refugees as a system wide responsibility. Our early experiences are showing the potential of system aligned quality improvement interventions in developing Australia’s ability to meet the primary healthcare needs of this highly vulnerable population.

Authors: Grant Russell, Virginia Lewis, LaTrobe University; Mark Harris, Centre for Primary Health Care and Equity (CPHCE); Sue Casey, Foundation House; I-Hao Cheng, Monash University; Nilakshi Gunatillaka, Monash University; Joanne Eenticott, Monash University

**H1.2**

**High Cost Healthcare Use on PEI**

Presented By: Mary-Ann MacSwain, Data Analyst, Centre for Health and Community Research

Methods: Mixed Methods

Objectives: A small proportion of the PEI population (5%) has been found to account for almost three-quarters of healthcare spending. Our research aims to identify the main drivers of high cost healthcare use to identify key actionable areas to target in order to improve care to this population.

Approach: A mixed methods approach was employed utilizing both administrative health data and qualitative interviews with patients and health care providers. Services examined included acute inpatient hospitalizations, emergency department visits, prescription drugs, physician visits, and ground ambulance services. Patterns in healthcare usage in the top 5% of healthcare users were examined in the data. To provide depth to the analysis, an institutional ethnography was conducted to open up the private realm of these individuals’ lived-experiences in accessing health care services and explicate how their experiences are organized to happen as they do.

Results: Inpatient hospital costs accounted for a significant proportion of costs among high cost users. A deeper examination of this data revealed a large proportion of days spent in hospital for this population when the intensity of care that a hospital is designed to provide was no longer required (alternate level of care). Chronic disease prevalence and neighbourhood level material and social deprivation were both associated with high cost healthcare use. Further trends were explored, and qualitative interviews are underway to gain depth of understanding. Preliminary analyses of these interviews will be presented.

Conclusion: This mixed methods study identifies key, actionable areas to help reduce costs and improve the quality of life of this population of high cost users.

Authors: Mary-Ann MacSwain, Centre for Health and Community Research; Michelle Patterson, Centre for Health and Biotech Management Research; Juergen Krause, University of Prince Edward Island; Robyn Kydd, Centre for Health and Community Research, UPEI; Hailey Arsenault, University of Prince Edward Island; Michael Corman, PEI Department of Health and Wellness
H1.3
Innovations in Health Service Delivery - Critical Success Factors for Implementing Evidence Based Health Protection Programs in Primary Care
Presented By: Serena Humphries

Methods: Mixed Methods

Objectives: Primary Care is the ideal setting to deliver evidence-based health protection programs targeting patients at risk of developing cancer and chronic diseases. Understanding the barriers and facilitators to program implementation in diverse primary care settings is essential to enable access to effective health protection programming for patients at risk.

Approach: Lifestyle interventions delivered by inter-disciplinary teams in primary care are effective for improving health outcomes. A mixed methods approach is used to evaluate the implementation of an evidence-based lifestyle intervention in 8 diverse primary care settings. Qualitative and quantitative research methods used include participant observation, documentation review, interviews, and surveys.

Results: The primary care environment is rich with diversity in the organization, funding and delivery of health services. In this study, 8 primary care settings in Alberta implemented an evidence-based lifestyle intervention delivered by a team of family physicians, Registered Dietitians and Exercise Specialists. The diverse settings included Primary Care Networks as well as individual health home clinics and included practices servicing the general population as well as specific sub-sets of the population. The organizational structure influenced the approach required to successfully implement and manage the lifestyle intervention. The funding model also affected the program implementation. Critical success factors include: organizational leadership and commitment; adaptation of program to local context; funding and organizational stability; program champions; and ongoing access to an

Conclusion: The implementation of innovative health service delivery models in primary care is feasible. An understanding of the critical success factors for the implementation of lifestyle interventions in diverse primary care settings will support the uptake of evidence-based programs. Tools and resources that address the critical success factors are

Authors: Serena Humphries; Doug Klein, Department of Family Medicine, University of Alberta.

H1.4
Promoting the use of a self-management strategy among novice chiropractors treating individuals with spine pain: A mixed methods pilot cluster-clinical trial
Presented By: Owis Eilayyan, Student, McGill University

Methods: Program or Policy Evaluation

Objectives: To evaluate the feasibility and the potential effects of a Knowledge Translation (KT) intervention promoting the use of self-management support (SMS) strategies among chiropractors and chiropractic interns and individuals with spine pain compared to “wait list”.

Approach: This is a pilot clustered clinical trial. Clusters consist of 20 Patient Management Teams (PMTs) across 5 Canadian Memorial Chiropractic College clinics. Each PMT is composed of 6-9 interns supervised by a clinician. The 20 PMTs were allocated to either a theory-KT intervention (Brief Action Planning (BAP) training workshop, BAP webinar, BAP online module, and opinion leader) or to a waiting list. Routine electronic data collection across PMTs will serve to measure clinicians’ and interns’ use of BAP. Questionnaires will assess clinicians’ and interns’ BAP knowledge, skills and self-efficacy, and patients’ BAP self-efficacy, SMS participation level, pain intensity, and disability.

Results: We are still collecting data, and we will have results by the conference time to present

Conclusion: This study will provide new knowledge on the impact of a tailored KT intervention and the factors influencing guideline implementation in chiropractic clinical teaching settings. Ultimately, this study may contribute towards sustained use of SMS strategies in future clinicians, and improve patient health outcomes.

Authors: Owis Eilayyan, McGill University; Andre Bussières, McGill University; Aliki Thomas, McGill University; Sara Ahmed, McGill University; Alzubi Fadi, McGill University; Craig Jacobs, Canadian Memorial Chiropractic College; Anthony Tibbles, Canadian Memorial Chiropractic College
H2.1
What predictors of new-onset distress are available in routinely collected administrative health databases? A population-based cohort study of breast cancer patients
Presented By: Ania Syrowatka, Postdoctoral Fellow, Canadian Foundation for Healthcare Improvement / University of Toronto / McGill University
Methods: Data Mining/Big Data Analytics
Objectives: The primary objective was to identify the predictors of new-onset distress available in routinely collected administrative health databases to help guide allocation of supportive care resources after breast cancer diagnosis. The secondary objective was to explore whether the predictors vary based on the period of the cancer care trajectory.

Approach: A population-based cohort study followed 16,495 newly diagnosed female breast cancer patients who did not experience distress during the 14 months prior to breast cancer diagnosis to identify the characteristics of women at higher risk of new-onset distress. The incidence of distress was reported overall and by type of mental health problem. Time-varying Cox proportional hazards models were developed to identify predictors of new-onset distress during two key periods of the cancer care trajectory: (i) hospital-based treatment where women undergo active treatment with breast surgery, chemotherapy and/or radiotherapy, and (ii) 1-year transitional survivorship where women begin follow-up care.

Results: The incidence of distress was 16% within each period. Anxiety accounted for 85% and 66% of new cases during hospital-based treatment and transitional survivorship, respectively. Predictors of new-onset distress during both periods were: younger age, axillary lymph node dissection, rheumatologic disease, and baseline menopausal symptoms as well as new opioid dispensations, emergency department visits and hospital contacts that occurred during follow-up. Predictors also varied based on the period of the cancer care trajectory. More advanced breast cancer and type of treatment (specifically, chemotherapy and radiotherapy) were associated with onset of distress during hospital-based treatment. Distress during transitional survivorship was predicted by diagnosis of localized breast disease, shorter duration of hospital-based treatment, receipt of additional hospital-based treatments in survivorship, and newly diagnosed comorbidities or symptoms.

Conclusion: This study identified the predictors of new-onset distress available in routinely collected administrative health databases, and showed how the predictors change between hospital-based treatment and transitional survivorship periods. The results highlight the importance of developing predictive models that are tailored to the period of the cancer care trajectory.

Authors: Ania Syrowatka, Canadian Foundation for Healthcare Improvement / University of Toronto / McGill University; Robyn Tamblyn, McGill University - Institute of Health Services and Policy Research; Daniala Weir, McGill University; James Hanley, McGill University; Ari N. Meguerditchian, McGill University; William G. Dixon, The University of Manchester

H2.2
Reasons for lack of follow-up colonoscopy among persons with a positive fecal occult blood test result for colorectal cancer screening: qualitative findings from Ontario
Presented By: Diego Llovet, Staff Scientist, Cancer Care Ontario
Methods: Qualitative Research Methods
Objectives: In Ontario, rates of follow-up colonoscopy among persons with a positive guaiac fecal occult blood test result (gFOBT+) remain suboptimal. This study’s objectives were to understand the reasons for a lack of follow-up colonoscopy among gFOBT+ persons, and the action plans, if any, that were made to address follow-up.

Approach: We conducted semi-structured interviews with 30 gFOBT+ persons and 30 primary care providers (PCPs). In Ontario, PCPs are responsible for arranging follow-up colonoscopies for gFOBT+ persons. To be eligible, gFOBT+ persons had to be ages 50-74, have a 6-12 month old gFOBT+ and no record of follow-up colonoscopy within six months; those with a prior colorectal cancer diagnosis or a colectomy were excluded. Eligible PCPs had at least one rostered gFOBT+ person without follow-up. Participants were identified through health administrative databases. Transcripts were analyzed inductively for themes using Nvivo 11 (QSR International Pty Ltd., 2015).

Results: gFOBT+ persons were 53% female; 30% had completed no more than high school. PCPs were 50% female; 60% practiced in urban settings. Reasons for lack of follow-up colonoscopy were: person and/or provider believed the gFOBT+ was a false positive; person was afraid of colonoscopy; person had other health issues; and breakdown in communication of gFOBT+ results or colonoscopy appointments. PCPs who initially recommended follow-up colonoscopy did not change the minds of the persons who dismissed the gFOBT+ as a false positive and/or who were afraid of the procedure. Instead, some PCPs allowed gFOBT+ persons to negotiate an alternative follow-up action plan such as repeating the gFOBT or not following up.

Conclusion: PCPs may not be able to adequately counsel gFOBT+ persons who believe the gFOBT+ is a false positive and/or fear colonoscopy. PCPs may lack fail-safe systems to communicate gFOBT+ results and colonoscopy appointments. Using trained navigators may help address these barriers and increase follow-up rates.

Authors: Diego Llovet, Staff Scientist, Cancer Care Ontario; Mardie Serenity, Sunnybrook Research Institute; Lesley Gotlib Conn, Sunnybrook Research Institute; Caroline Bravo, Cancer Care Ontario; Bronwen McCurdy, Cancer Care Ontario; Catherine Dubé, University of Ottawa; Nancy Baxter, University of Toronto; Lawrence Paszat, Institute for Clinical Evaluative Sciences; Linda Rabeneck, Cancer Care Ontario; Amanda Peters, McMaster University; Jill Tinmouth, Cancer Care Ontario
H2.3
Early palliative care in the community: A propensity score matched cancer cohort including novel interRAI covariates
Presented By: Hsien Seow, Associate Professor, McMaster University

Methods: Data Mining/Big Data Analytics

Objectives: Randomized trials of early palliative care (PC) showed benefits. However these have not been validated in community-based cohorts. The objective: to assess the impact of early vs not-early PC among cancer decedents on the risk of receiving aggressive care (ED/hospitalization), supportive care (home care/physician home visit), or hospital death.

Approach: We took a retrospective cohort of Ontario decedents between 2004 and 2014. We identified those who were “early” PC users (i.e. used a validated PC service between month 12-6 before death [exposure]). We used propensity score matching to identify a control group of “not-early” PC users. We hard matched on age, sex, cancer type and stage. The propensity score included region, income, year, radiation, etc. Among those with InterRAI assessments in exposure period, we additionally controlled for health instability, and dependency, depression, cognitive performance, pain, and caregiver presence via propensity score. McNemar test used to examine differences between pairs.

Results: 51,001 decedents received early PC vs 85,979 not-early PC (i.e. late or none). After matching among those with no interRAI assessments, we found 34,184 pairs of early and not-early PC users. Both groups had equal distributions of age, sex, cancer type (e.g. 25% lung cancer) and stage (e.g. 24% stage 3 or 4). Compared to not-early PC users, early PC users had a 10% lower absolute risk to die in hospital and have any aggressive care respectively and a 24% higher absolute risk to any receive supportive care. In a mutually exclusive cohort, matching among those with interRAI assessments, we identified 3,419 pairs of early and not-early PC users. Both groups had equal scores in various health scales. Outcomes were similar to the non-interRAI analysis.

Conclusion: Using propensity score matching, decedents receiving early PC are likely to receive more supportive care and less aggressive care compared to not-early PC users. Our study uniquely focuses on a population receiving community palliative care. In a distinct sample using interRAI assessments, we control for several confounders previously unmeasured.

Authors: Kelvin Chan, Canadian Centre for Applied Research in Cancer Control; Dawn Guthrie, Wilfrid Laurier University; Hsien Seow, McMaster University; Lisa Barbera, University of Toronto, Department of Radiation Oncology; Kimberlyn McGrail, School of Population and Public Health, University of British Columbia; Centre for Health Services and Policy Research, University of British Columbia; Frederick Burge, Dalhousie Family Medicine; Beverley Lawson, Dalhousie Family Medicine; Stuart Peacock, Canadian Centre for Applied Research in Cancer Control; Rinku Sutradhar, Institute for Clinical Evaluative Sciences

H2.4
Bringing Netflix technology to video narratives of experiences of breast surgery: helping women navigate the information tsunami
Presented By: Susan Law, Director of Research and Scientist, Institute for Better Health

Methods: Qualitative Research Methods

Objectives: To design and pilot a mobile application to support decision-making about surgery for breast cancer patients, drawing upon a qualitative collection of personal narratives from a diverse sample of Canadian women, using video/audio recording (published on www.healthexperiences.ca).

Approach: In a previous study, we conducted in-depth interviews with 35 women using video/audio recording to collect Canadian stories about lived experiences of breast cancer. Participants highlighted the need for more specific information between diagnosis and surgery relevant to their personal situation and preferences. They also wanted to learn from other women’s experiences. We have worked with patients, clinicians and informatics experts to develop a mobile app to help search the existing narratives for information relevant to their personal situation and preferences. We completed secondary analysis of the original collection, software design, and evaluation using focus groups and the heIQ tool.

Results: Secondary analysis of the breast cancer narratives revealed key themes, and their interconnections, relevant to the experience of surgery, including: preparation, treatment decisions, impact on life, after care, reconstruction, prostheses, lumpectomies and mastectomies, and complications. This informed the development of the structure and content for the app. Working with a recommender system, we designed the app using content-matching (user and speaker profiles; user interests and video content), as well as collaborative filtering to identify clips ‘liked’ by the user, and by similar users. Key messages from clinical experts and patient experience were synthesized into a 2-minute introductory Powtoons video. Pilot testing and final design is in process in collaboration with patients and clinicians; we will present the results of this evaluation and prototype app.

Conclusion: Developing reliable, evidence-based tools and electronic applications that are based on diverse collections of other peoples’ experiences of illness offers a novel approach to support information seeking about treatment options, consequences and experiences, and to inform decision-making.

Authors: Susan Law, Institute for Better Health; Ilja Ormel, St. Mary’s Research Centre; Charles Onu, St. Mary’s Resarche Centre; Mona Magalhaes, St. Mary’s Research Centre; Donna Tataryn, St. Mary’s Hospital Center; John Hughes, McGill University
H3.1
Is ‘Health Equity’ Bad for the Public’s Health? A Qualitative Study of Public Health Policy-Makers’ Perspectives
Presented By: Maxwell Smith, Banting Postdoctoral Fellow, McGill University

Methods: Qualitative Research Methods

Objectives: The objectives of this study were to understand public health (PH) policy-makers’ perspectives on how two ‘core values’ in PH (health equity and social justice) are conceptualized in practice, and to examine the extent to which these perspectives align with how these concepts are conceptualized in the PH ethics literature.

Approach: This study involved twenty in-depth, qualitative interviews with public health policy-makers recruited from public health organizations at the municipal (Greater Toronto Area), provincial (Ontario), and federal levels in Canada. With the aim of examining whether different perspectives exist in different programmatic areas of public health, policy-makers were recruited from two key programmatic areas of public health policy: chronic disease prevention (ten participants) and public health emergency preparedness and response (ten participants). Resulting interview data were then analyzed using an ‘empirical ethics’ methodology that combined empirical data with ethical analysis involving theories of social justice.

Results: Study participants viewed health equity and social justice as distinct, and perceived the meaning of the former to be ‘clearer’. Health equity was conceptualized as focusing on ‘proximal’ disparities in access to public health services and ‘materialistic’ determinants of health, whereas social justice was conceptualized as focusing on structural issues that lead to disadvantage, like sexism and racism. Health equity was characterized as ‘neutral’ and ‘comfortable’ whereas social justice was characterized as ‘political’ and ‘uncomfortable’. Participants suggested that equity is easier to ‘sell’ in practice. These findings reveal the problematic ways in which considerations of social justice and health equity are, and are not, taken up in public health policy, which in turn may have negative implications for the public’s health.

Conclusion: These findings indicate that health equity dominates the discursive space wherein justice-based considerations are brought to bear on public health activities at the policy level. As a result, ‘uncomfortable’ justice-based considerations of power imbalances and systematic disadvantage can be eschewed in practice in favour of attending to ‘proximal’ inequities.

Authors: Maxwell Smith, McGill University

H3.2
Places of death and places of care for Indigenous people in Ontario: a retrospective cohort study
Presented By: Sarah Funnell, Resident, University of Ottawa

Methods: Data Mining/Big Data Analytics

Objectives: This study aims to describe the places of care and places of death for Indigenous decedents in Ontario that received provincially-funded homecare services. This study also describes the characteristics of Indigenous decedents and how these characteristics compare to non-Indigenous decedents.

Approach: Particular care was spent in engaging a national Indigenous health care organization throughout the research process. A transparent research agreement guided prior to beginning the study was created and incorporated Indigenous ways of knowing. A retrospective population level cohort of Indigenous and non-Indigenous decedents, who died between April 1, 2010 and March 31, 2015, was created using encrypted unique identifiers in health administrative databases housed at the Institute for Clinical Evaluative Sciences, Ontario. Characteristics, places of death and places of care was described by linking to several other databases.

Results: Indigenous decedents were younger, had more chronic diseases and were more likely to live in lower income neighbourhoods. Indigenous decedents spent more time in acute care settings in the last year of life and a greater proportion died in acute care settings. When controlling for age and sex, Indigenous decedents received fewer home care hours. When controlling for age, sex, presence of diabetes and other socio-economic factors such as neighbourhood income, Indigenous decedents were less likely to have received a palliative physician home visit (OR 0.72). Having had a palliative physician home visit among Indigenous decedents decreased the odds of dying in acute care (OR 0.50), and decreased the likelihood of days in acute care (RR 0.82).

Conclusion: Our study identified a health care gap in end of life care for Indigenous people in Ontario. There likely are changes needed in the health care system in order for Indigenous patients to have their end-of-life health care needs met.

Authors: Sarah Funnell, University of Ottawa; Peter Tanuseputro, Bruyère Research Institute & Ottawa Hospital Research Institute; Doug Manuel, Ottawa Hospital Research Institute; Angeline Letendre, Canadian Indigenous Nurses Association; Lisa Bourque-Bearskin, Canadian Indigenous Nurses Association; Jennifer Walker, Laurentian University
H3.3
Reducing waiting time in ambulatory and community health services: A Stepped Wedge Cluster RCT
Presented By: David Snowdon, PhD Candidate, La Trobe University

Methods: Statistics/ Econometrics

Objectives: Long waits for outpatient and community services are common, leading to reduced health outcomes, anxiety, economic costs and pressure on other parts of the health continuum. This study aimed to test an evidence based approach access and triage designed to reduce waiting time in these services.

Approach: The STAT model (Specific timely Appointments for Triage) involves a single injection of resources to reduce existing backlogs, coupled with an analysis of supply and demand and creation of protected initial appointments that aim to maintain patient flow at the rate of demand.

A stepped wedge cluster randomised control trial was conducted involving 8 sites (paediatric and adult rehabilitation services and specialist clinics) and 3116 participants. The study included (1) a pre intervention period (2) progressive introduction of STAT at one new site per month, in random order and (3) A 12 week post intervention period across all sites.

Results: The intervention resulted in a 33.8%, estimated mean reduction in the primary outcome of waiting time for first appointment (IRR = 0.662, 95% CI 0.628 to 0.698, P < 0.001). Waiting time was observed to decrease from a median of 42 days (IQR 19 to 86) in the control period to a median of 24 days (IQR 13 to 48) in the intervention period. Variation in waiting time was also reduced, suggesting a reduction in the ‘tail’ of patients previously classified as low priority waiting excessively long periods for assessment.

Conclusion: The STAT model is designed to reduce waiting times for ambulatory services by maintaining patient flow and encouraging service providers to make priority decisions in the context of demand. This is a feasible way to reduce waiting time, resulting in improved access to care and increased patient flow.

Authors: Katherine Harding, Eastern Health/La Trobe University; David Snowdon, La Trobe University; Nicholas Taylor, La Trobe University; Sandra Leggat, La Trobe University

H3.4
Building Capacity for Overcoming Systemic Inequities in Healthcare Access and Quality, and Health Outcomes
Presented By: Miranda Saroli, Project Coordinator Health Equity Indicators Project, Access Alliance Multicultural Health and Community Services

Methods: Program or Policy Evaluation

Objectives: The presentation will share operational framework, lessons learned and resources developed from a collaborative capacity building project among CHCs in Ontario focused on improving health equity practice. The session will highlight the role of collaborative approach, effective tools, and tailored coaching in promoting uptake of health equity framework and practice.

Approach: Despite a long history of effort and investment to improve health outcomes for poor and vulnerable groups, outcomes have not improved and the special needs of these groups have not been adequately addressed through program interventions. Given this, equity should be considered as a fundamental factor in any systematic approach to evaluation. Access Alliance, along with partner agencies, received funding from the Ministry of Citizenship and Immigration, Partnership Grants Program, to develop a set of common equity indicators that, support community-based organizations throughout Ontario to improve program quality, reduce inequities and demonstrate best value for resource investments.

Results: While partner CHCs employed good practices around collecting sociodemographic data, practices were not uniform. There was varied capacity around using/analyzing data for program planning and improvement, and varied understandings of health equity. CHCs acknowledged an eagerness to improve and standardize data collection and analysis practices, and identified a need for sectoral level capacity-building around planning/evaluation practices to serve most vulnerable using an equity lens. Through training, equity considerations were incorporated in organizational planning and evaluation, including risk identification, monitoring, benchmarking, reporting. We will discuss the impact of the capacity-building activities using a continuous quality improvement framework, and the impact of training products, as measured by reach, relevance, efficiency, effectiveness, and sustainability. We will further share successes, challenges and lessons learned.

Conclusion: A shared equity framework, paired with tailored coaching, and user-friendly decision-support tools and resources, can enable health centres to better understand and implement a health equity framework. Commitment from senior leaders on health equity and building capacity in analyzing and using equity data are key success factors.

Authors: Tayyeba Darr, Access Alliance Multicultural Health and Community Services; Miranda Saroli, Access Alliance Multicultural Health and Community Services; Akm Alamgir, Access Alliance Multicultural Health and Community Services
**H4.1**

**The Future State of Patient Engagement? Personal Health Information Use & Attitudes Towards Health**

**Presented By:** Deirdre McCaughey, Associate Professor, Cumming School of Medicine, University of Calgary

**Methods:** Survey Research Methods

**Objectives:** In a momentous cultural shift, the healthcare industry has seen an increased emphasis on information transparency across all healthcare domains. One such facet of transparency is the idea that greater access to personal health information by patients will facilitate greater engagement in healthcare decision-making on the part of the patient.

**Approach:** Our study builds upon insights from the health behaviour and health communication literatures to develop hypotheses about the relationship between access and use of personal health information and health behaviours. This study explores how engaging individuals in their well-being may lead to better overall self-care. Using multivariable path analysis and data from the 2017 Health Information National Trends Survey (HINTS), this study investigates whether the use of personal health information is associated with positive, engaged preventative health behaviours, and if this relationship is mediated by patient confidence in their ability to care for themselves and self-perceived health status.

**Results:** We found that the use of health information worked indirectly on health activating behaviours. These behaviours (smoking tobacco, fruit consumption, vegetable consumption, and exercising) require an individual to internalize health information and act upon it, translating health attitudes into action. We also examined the role of two individual attitudes as potential mediators between health information use and health behaviours. The findings suggest individual attitudes about one's health in the form of self-assessed health status mediates the association between personal health information and the behaviours of not smoking and exercising. Individual attitudes act as a mediator of personal health information use and fruit and vegetable consumption when both confidence in one's ability to care for him/herself and self-assessed health status are considered simultaneously.

**Conclusion:** As the accessibility of health information continues to grow, it is incumbent on providers and healthcare systems to discern what patients need in the form of personal health information to optimize their engagement in care and wellness while balancing their capacity to effectively absorb such volume of information.

**Authors:** Larry Hearld, School of Health Professions; University of Alabama at Birmingham; Deirdre McCaughey, Cumming School of Medicine, University of Calgary; Kristine Hearld, University of Alabama at Birmingham; Henna Budhwani, University of Alabama at Birmingham; Allyson Hall, University of Alabama at Birmingham

**H4.2**

**Patient Engagement in Primary Care: Results from the Commonwealth Fund's 2017 Survey of Older Adults in 11 Countries**

**Presented By:** Grace Cheung

**Methods:** Survey Research Methods

**Objectives:** There is increasing demand to provide efficient and high quality care globally as senior populations continue to grow. This analysis examines how Canada and its provinces compare internationally for patient engagement in different aspects of primary care for seniors: disease prevention, chronic condition management, and end-of-life care planning.

**Approach:** The Commonwealth Fund's 2017 International Health Policy Survey of Older Adults (age 65+) reflects self-reported experiences from random samples in Canada and 10 of its peer countries. In Canada, 4,549 respondents were interviewed by phone in spring 2017. The survey explored a variety of topics: health status, access to care, primary care, coordination, specialist care, hospital care, home care and end-of-life planning. The data were weighted by age, gender, and province to reflect Canada's population distribution. Significance tests compared patient engagement related questions for provinces and Canada against the average of all 11 countries.

**Results:** More Canadian seniors felt engaged by their doctor, who spent enough time with them, encouraged them to ask questions, explained things in an easy way, and involved them in treatment decisions. Results were mixed for disease prevention: more Canadian seniors had healthy eating and exercise discussions, but similar to the international average for alcohol use and stress discussions. For Canadian seniors with chronic conditions, more have discussed treatment goals and plans, and were very confident in self-management; less Canadian seniors had health care providers that they could easily contact between doctor visits. More Canadian seniors have had discussions and had written plans for end-of-life care. There were provincial variations in all patient engagement activities.

**Conclusion:** This study shows that more Canadian seniors are engaged in their care than those in other countries. However, there is room for improvement, particularly for disease prevention and chronic condition management.

**Authors:** Patricia Sidhom, Canadian Institute for Health Information; Grace Cheung; Katerina Gapanenko,
H4.3
Exploring patient engagement for women with ductal carcinoma in situ: A qualitative study
Presented By: Bryanna Nyhof, Graduate student researcher, University Health Network

Methods: Qualitative Research Methods

Objectives: Ductal carcinoma in situ (DCIS) is benign in most cases but surgery and adjuvant therapy are standard. As a result, patients experience confusion and anxiety similar to those with invasive breast cancer. Person-centred care (PCC) improves health care experiences and outcomes. This study explored how to improve PCC for DCIS.

Approach: Clinicians who manage DCIS were interviewed by telephone about communication and decision-making practices and challenges, and the support they or patients needed to achieve PCC. Patients treated for DCIS were asked during in-person focus groups about communication and decision-making expectations and experiences, and how PCC could be improved in the future for other patients. Sampling for both groups was purposive by province; clinicians were sampled by specialty and referral from those interviewed. Themes were analyzed in duplicate using constant comparative technique, described using a published framework of PCC, and compared to identify similarities within and across clinician and patient groups.

Results: Forty-six clinicians from 6 provinces were interviewed. Challenges included misperception of risk among patients, need for multiple consultations to achieve understanding, and lack of patient information or supportive services. Recommendations included educational and communication aids for patients, and patient navigators. During focus groups, 35 DCIS patients from 5 provinces reported variable understanding of the distinction between DCIS and invasive cancer. Involvement in treatment decision-making varied between sites; decisions were largely based on clinician recommendations, and patients felt uninformed about treatment risks and outcomes. Patients desired greater psychological support, information about self-management, and longer-term follow-up. Clinicians said they felt equipped to handle discussions with DCIS patients, yet most patients said they lacked support and information needed from their clinician.

Conclusion: Patient and clinician DCIS communication experiences differed. However, both groups recommended informational and supportive care resources for patients. The findings, detailed by a PCC framework, can be used by clinicians and health care managers to improve PCC for DCIS, and by researchers to evaluate PCC interventions for DCIS.

Authors: Bryanna Nyhof, University Health Network; Anna Gagliardi, ; Frances Wright, Sunnybrook Health Sciences Centre; Nicole Look Hong, Sunnybrook Health Sciences Centre; Gary Groot, University of Saskatchewan; Pamela Meiers, University of Saskatchewan; May Lyn Quan, Foothills Medical Centre; Robin Urquhart, Dalhousie University; Rebecca Warburton, Mount Saint Joseph Hospital; Lucy Helyer, IWK Health Centre

H4.4
Generating Self-care Information through Machine Learning for Supporting Patient Self-management of Chronic Disease
Presented By: Mei Chen, President and Chief Research Officer, Seenso Institute for Public Health

Methods: Data Mining/Big Data Analytics

Objectives: The objectives of this project are twofold: (a) to automatically generate high-quality, up-to-date, and practical self-care information from the Internet to support patient education, medical decision making, and self-management of chronic diseases throughout the patient journey; (b) to help healthcare providers achieve better treatment outcomes while reducing costs.

Approach: We use rule-based Natural Language Processing (NLP) and data mining methods in conjunction with a world model and cognitive frameworks to automatically analyze, rank, select, and extract self-care information from the best health-related websites. The world model represents things existing in the medical world (diseases, symptoms, drugs, and medical procedures, dietary plans, etc.) whereas cognitive frameworks specify similar patient interactions with this world (e.g., undergoing a medical procedure, performing needed self-care tasks before, during, and after the procedure). Our system gives priorities to the types of information that are essential for understanding the illnesses, medical interventions, and needed self-care.

Results: Our system scanned and analyzed 9.2 million webpages from 12,000 quality medical websites and generated a large database that contains useful information on 25,000 diseases, 4,500 symptoms, 1,500 Injuries and accidents, 9,500 medical procedures, 8,000 drugs, and many other health related objects. The system was able to generate knowledge maps and exploratory interfaces on the majority of these medical entities, providing a wealth of information to help users acquire knowledge and skills necessary for dealing with their illnesses. Using big data and multiple selection algorithms and metrics, our system also generated machine learning insights into the meaningful relationships between different health-related entities, e.g., for each disease, our system extracted related symptoms, tests, treatment modalities, drugs, medical procedures, potential complications, and suitable dietary plans.

Conclusion: Our NLP and data mining methods enables us to identify, prioritize, extract, organize, and display useful self-care related information; Patients can explore the complex hidden relations that are essential for them to understand, decide, and manage their health conditions, helping them overcome certain challenges they face in their self-care.

Authors: Mei Chen, Seenso Institute for Public Health; Michel Decary, Seenso Institute for Public Health
H5.1
Designing a Patient Navigator Intervention for Supporting Total Knee Arthroplasty Patients Using Patient Engagement
Presented By: Laurie Goldsmith, Assistant Professor, Simon Fraser University

Methods: Emerging methods (e.g. new developments in observational study design)

Objectives: Total knee arthroplasty (TKA) is the most common joint replacement surgery in Canada. However, up to 20% of patients report dissatisfaction post-surgery. Our research team previously documented multiple areas for improvement for TKA patients. This follow-up work develops patient-centred interventions to improve patient experience and satisfaction with TKA surgery.

Approach: We used patient perspectives and patient engagement to develop interventions to improve patient experience and satisfaction with TKA surgery. Previous research by our team suggested multiple interventions to improve information sharing and support for TKA patients. To consider these interventions for future research, we recruited 15 former TKA patients (the “Patient Partners Group;” PPG) from our earlier research and a clinical registry. We purposefully recruited patients of varying ages, genders, ethnicities, and TKA experiences. We met with the PPG multiple times to review and revise the previously suggested interventions and to design research on the intervention endorsed by the PPG.

Results: Early PPG meetings endorsed all three interventions suggested by earlier research, and ultimately suggested the three interventions should be bundled together. Later meetings refined the bundle approach and highlighted a patient navigator program as the key intervention, with augmentation by a patient buddy program and systematic sharing of patient’s TKA stories. The PPG also reflected on key outcome measures, ultimately endorsing overall quality of life as a replacement for the literature’s reliance on patient satisfaction. We developed an implementation-effectiveness study with further assistance from the PPG, including developing the logic model for the design of the patient navigator program and its mechanisms and effects on patient quality of life and revising previously used data collection instruments.

Conclusion: Patient engagement resulted in nuanced and detailed planning of patient-centred interventions to improve patient experience and satisfaction with TKA surgery and challenged the dominant patient outcome measure in orthopedic research. Collaborating with patient partners produced a rich and detailed study design, with an accompanying comprehensive research team including patient members.

Authors: Laurie Goldsmith, Simon Fraser University; Nitya Suryaprakash, Centre for Clinical Epidemiology and Evaluation

H5.2
Role and Effectiveness of Telephone Peer Coaching for Persons with Type 2 Diabetes.
Presented By: Patrick McGowan, Professor, School of Public Health, University of Victoria

Methods: Mixed Methods

Objectives: Four major aspects of diabetes peer coaching were investigated, specifically: 1) feasibility and viability of recruiting, training and pairing peer coaches with patients; 2) whether peer coaching brought about improved outcomes; 3) whether covariates (e.g., sex & age) influence program effectiveness; and 4) how the coaching process works.

Approach: The "thick description" process recording method was used to investigate the question relating to the feasibility and viability of recruiting and training peer coaches and then pairing them with persons with type 2 diabetes who were experiencing difficulty managing. Quantitative research was used to investigate effectiveness. Both clients and coaches completed questionnaires containing 14 outcome measures at baseline, and at 6 and 12 months. Grounded theory qualitative research methodology was used to acquire a comprehensive understanding the process of peer coaching.

Results: Patients improved in 6 areas from baseline to six months and these improvements were maintained at 12 months, namely: A1C (-9%); patient activation (+15%); diabetes empowerment (+10); self-efficacy (+23%); depression (-24%) and communication with physician (+22%), and these outcomes were not influenced by covariates of sex, age, education level, and the number of chronic health conditions participants were experiencing. The remaining outcome measures (i.e., self-ratings of health, fatigue and pain, medication adherence, and health literacy did not reach statistical significance, however changes were all in the predicted direction. A description of the role of the diabetes coaches emerged in five main themes: 1) teaching self-management skills; 2) providing accountability; 3) giving encouragement; 4) pointing to resources; and 5) clarifying boundaries.

Conclusion: This study found that a pragmatic low-cost telephone peer coaching intervention assisted persons with type 2 diabetes to improve healthy behaviours and better self-manage their diabetes. The central feature of the program is that persons who have a chronic condition themselves can acquire training and then help others.

Authors: Patrick McGowan, School of Public Health, University of Victoria; Frances Hensen, Fraser Health; Sherry Lynch, University of Victoria
H5.3
Uncontrolled High Blood Pressure and Mild Cognitive Impairment Risk at Baseline of the Canadian Longitudinal Study on Aging Study
Presented By: Zhiying Liang, Statistical Associate, University of Calgary

Methods: Statistics/Econometrics

Objectives: Dementia is a common in the elderly population, which is often preceded by mild cognitive impairment (MCI). Considering clinical mechanisms of cardiovascular disease and MCI, this cross-sectional study explored associations between uncontrolled high blood pressure (BP) and MCI, using data from the Canadian Longitudinal Study on Aging (CLSA).

Approach: We identified MCI by characterizing typical performances of neurologically healthy people on the cognitive measures employed in the CLSA as standards. We have defined MCI as performance on 2 or more cognitive tests with 1.5 standard deviations (SD) below the age- and sex-adjusted mean with preserved activities of daily living (ADL), excluding self-reported dementia or Alzheimer’s disease. We used adjusted mean systolic BP (SBP) ≥ 140 mm Hg or adjusted mean diastolic BP (DBP) ≥ 90 mm Hg with self-reported history of elevated BP or hypertension at baseline to identify individuals with uncontrolled high BP.

Results: Of the 30,097 individuals included in this analysis, 50.9% (n=15320) were female and, mean(SD) age was 63.0(10.3) years. We identified 2214 individuals with MCI, 49.9% (n=1105) of which were female and mean(SD) age was 62.6(10.1) years. We identified 7.9% (n=2224) individuals has uncontrolled high BP. Unadjusted analyses revealed association between uncontrolled high BP and MCI (p =.02). After controlling for sex, age and other comorbidities, logistic regression analysis showed that high BP was associated with all-cause MCI (Odds Ratio [OR], 1.2; 95% CI, 1.0-1.4, p =.01 ). We did a sensitivity analysis using mean systolic BP (SBP) ≥ 135 mm Hg or mean diastolic BP (DBP) ≥ 85 mm Hg, which also showed association between high BP and MCI (p = .04 ).

Conclusion: High BP is associated with MCI, even after adjustment for age, sex and other comorbidities. These findings suggest BP control may be a prevention strategy for lowering MCI incidence.

Authors: Mohammad Chowdhury, University of Calgary; Mingkai Peng, University of Calgary; Zhiying Liang, University of Calgary; Guanmin Chen, Alberta Health Services; Hude Quan, University of Calgary; Alexander Leung, University of Calgary; Eric Smith, University of Calgary

H5.4
Patient reported quality of life and personal financial impact following treatment for rare blood cancers: A longitudinal study
Presented By: Sonya Cressman, Health Economist, BC Cancer Agency

Methods: Survey Research Methods

Objectives: This study objective was to use the infrastructure of a multi-centered clinical study to assess quality of life (QoL) and patient-reported financial impact following treatment of newly diagnosed acute myeloid leukemias (AML) and myelodysplastic syndromes (MDS); two rare and serious forms of blood cancer.

Approach: We administered the EQ-5D-3L, FACT-LEU and societal cost questionnaires to participants in the observational clinical study (NCT01685619) at: baseline, 3, 6, 12, 18 and 24 months. The key exploratory endpoints were baseline-to-12 and 24 month changes in QoL and measurement of societal costs including: changes in income, employment, caregiver effects and out-of-pocket expenses. The EQ-5D-3L was scored according to the preference weights of the Canadian population and univariate and multivariate regression models were used to identify socio-demographic and clinical risk factors for death or QoL gained following treatment. Risk of increased societal costs was confirmed with Mann-Whitney tests.

Results: A total of 138 (94% of eligible) participants completed at least one quality of life or societal cost questionnaire. The median overall survival was reached over the term of the study (463 days, 95% CI: 353-724). Over the first year of treatment, QoL scores increased significantly; the mean 12 and 24 month changes in QoL for the study survivors (n=52, 37 % of enrolled) appear to stabilize. Having AML was associated with greater QoL gains from treatment, compared with MDS; however, out of pocket expenses, lost productivity and caregiver constraints were significantly higher for patients with AML.

Conclusion: AML patients report significantly higher QoL gained from treatment yet their personal financial outcomes are worse than patients with MDS.

Authors: Sonya Cressman, BC Cancer Agency; Stephen Couban, QEII Health Sciences Centre; Raewyn Broady, University of British Columbia and The Leukemia and Bone Marrow Transplant Program; Emily Mcpherson, Mathematica; Jessica Weng, BC Cancer Research Centre; Stuart Peacock, Canadian Centre for Applied Research in Cancer Control
H6.1
Conducting Environmental Scans for Comparative Policy Analysis
Presented By: Allie Peckham, Post-Doctoral Fellow, University of Toronto

Methods: Qualitative Research Methods

Objectives: This research was intended to develop a protocol for conducting environmental scans for comparative policy analysis. We established a framework for conducting a multi-jurisdictional (British Columbia, Ontario, Newfoundland and Labrador, Vermont, New York State), international study of policy programs to support people with dementia and their unpaid caregivers.

Approach: We developed a framework that guided our data collection and analysis. We were able to identify key policy and program elements of three policy programs in Ontario. The framework serves as an analytical tool for comparing policy programs in four other jurisdictions: British Columbia, Newfoundland and Labrador, Vermont and New York State. We adapted Rose’s (2005) comparative policy methodology to conduct an environmental scan on three policy programs in Ontario: Health Links, Behavioural Supports Ontario, and First Link. The framework includes 10 dimensions: regulations; strategic frameworks; organizational setup; personnel; money; program objectives; program recipients; goals; information management; and leadership.

Results: The environmental scan on Ontario’s policy programs revealed relevant information on important contextual elements policy levers and environmental contexts that need to be considered in conducting inter- and cross-jurisdictional policy comparisons. The framework not only offers a tool for policy comparison but also for informing the development of key-informant interview guides – a critical step in completing a thorough environmental scan. The next phase in the Ontario arm of our study is to conduct interviews with key informants (policy makers, organizational leaders and administrators, and informal caregivers), using semi-structured interview guides based on the results of the environmental scan that was guided by the comparative policy analysis framework.

Conclusion: A comparative policy analysis framework that considers the contextual details about policy programs is a useful approach to conducting multi-jurisdictional comparative studies of policy programs.

Authors: Allie Peckham, University of Toronto; Julia Ho, University of Toronto; Gregory Marchildon, University of Toronto

H6.2
Rapid qualitative reviews – a scoping review of existing guidance and examples
Presented By: Andrea Smith, Qualitative Research Officer, Scientific Affairs, CADTH

Methods: Qualitative Research Methods

Objectives: Health care decision makers are increasingly demanding qualitative evidence, typically in the form of qualitative evidence syntheses of patients’ perspectives and experiences. Given the tight times of policy making, a new form of evidence synthesis has emerged – rapid qualitative reviews.

Approach: Rapid qualitative syntheses requires either a substantial increase in resources or, more commonly, a compromise in rigor, yet guidance on what the ideal or optimal compromises are is lacking. In order to inform de novo guidance, we conducted a systematic scoping review to identify existing guidance and published examples of rapid qualitative reviews. We searched Medline and CINAHL using medical subject headings and keywords and searched the grey literature and solicited examples from other agencies supporting evidence-informed decision making through evidence synthesis.

Results: We summarized the X included studies using the Search, Appraisal, Synthesis, Analysis (SALSA) framework to identify deviations and abbreviations in the synthesis process by authors of published examples and advocated or proposed by guidance documents. We contacted authors for details of methods used when not reported. Our main findings are that there are few peer-reviewed published examples of rapid qualitative reviews and no guidance documents that are specific to rapid qualitative reviews. Rather, there appear to be a trend towards publishing rapid mixed methods and realist reviews. A number of agencies are producing rapid qualitative reviews, however the methods used are only limitedly reported.

Conclusion: Our review identifies the urgent need to develop and explore methods for the synthesis of qualitative research that balance the need for rapidity with rigour. In the meantime, producers and users of rapid qualitative reviews ought to acknowledge the potential limitations rapid methods.

Authors: Andrea Smith, CADTH; Laura Weeks, CADTH; David Kaunelis, CADTH; Andrew Booth, School of Health and Related Research (ScHARR) University of Sheffield; Fiona Campbell, ScHARR, University of Sheffield
H6.3
Clinical outcomes and health care use in medically uninsured populations in Canada: a systematic review
Presented By: Sophiya Garasia, Student, McMaster University

Methods: Emerging methods (e.g. new developments in observational study design)

Objectives: This study aimed to gain a comprehensive understanding of health outcomes and trends in health care use in medically uninsured populations in Canada as well as the associated health care costs, using a systematic review approach.

Approach: The review was accomplished by 1) establishing a search strategy a priori 2) conducting a literature search in four databases 3) screening articles for relevance 4) extracting data from relevant articles and assessing their risk of bias and 5) summarizing and reporting the results.

Exclusion criteria included articles that did not provide any quantitative data on health outcomes and health care use in provincially uninsured populations (e.g. undocumented individuals, asylum-seekers not eligible for the federal health program, international students, newly arrived immigrants waiting to obtain provincial health insurance, etc.) or its associated costs in the Canadian context.

Results: The search strategy resulted in 1894 citations, with roughly an equal proportion from each database searched. After removing duplicates and screening articles using the inclusion and exclusion criteria, a total of nine articles were deemed relevant and were included in the review. The results showed that differences exist amongst insured and uninsured groups in reported health outcomes and health care use. Notably, poor mental health was reported frequently in uninsured populations followed by injuries, respiratory conditions and gestational diabetes. In terms of health care utilization, many uninsured women were reported to utilize midwives and community health clinics rather than hospital or physician services. No studies on economic costs, either to the health care system or the medically uninsured individuals studied, were captured in the search.

Conclusion: Being provincially medically uninsured is associated with poorer health outcomes and low levels of health service use. These results can be used to prioritize future research on uninsured populations in Canada as well as inform decision-makers on the need to expand insurance coverage to medically uninsured populations.

Authors: Sophiya Garasia, McMaster University

H6.4
REAL WORLD IMPACT OF DIRECT ACTING ANTIVIRAL THERAPY ON PATIENT REPORTED OUTCOMES
Presented By: Sahar Saeed, Doctoral Candidate, McGill University

Methods: Emerging methods (e.g. new developments in observational study design)

Objectives: Clinical trials evaluating direct-acting antivirals (DAA) show substantial improvements in patient-reported outcomes (PROs) in HIV-HCV co-infected patients. However, trials have limited generalizability and patients are seldom followed post treatment response. We investigated the impact of oral-DAA therapy on health-related quality of life (HR-QOL) in a generalizable HIV-HCV co-infected population.

Approach: The Canadian Co-Infection Cohort Study prospectively follows 1785 HIV/HCV co-infected participants from 18 centers. Data on sociodemographic, clinical, PRO and prescriptions are collected biannually through self-administered questionnaires and chart review. A segmented multivariate linear mixed model compared changes in HR-QOL post-DAA compared to pre-treatment trends. HR-QOL was measured using the EQ-5D® questionnaire in English or French. Current health was scored on a visual analog scale (VAS) from 0 to 100 (worst to best health) and participants reported extent of difficulty (no/some/extreme problems) in five health domains: mobility, self-care, usual activities, pain/discomfort, anxiety, or depression.

Results: Between 2014-2016, 318 participants initiated oral DAAs, 200 completed at least 1 visit before and after DAA treatment (total of 1868 visits) with a mean of 3.2 years (SD 2.6) pre- and 0.7 years (SD 0.5) post-DAA follow up time. 70% of DAA regimens consisted of ledipasvir/sofosbuvir. Median age at DAA initiation was 52 (IQR 48, 56), 76% were male, 90% had an detectable HIV viral load and 27% had evidence of liver fibrosis. Sustained virologic response rates were 95%. No changes in HR-QOL were observed before DAA initiation. The immediate effect of DAA therapy resulted in a 2 unit (95% CI, -1.0- 4.9) increase in patient’s current health state and continued to increase post-treatment by 1.6 units/year (-1.3, 4.4).

Conclusion: Limited data currently exists on real world PROs post DAA treatment. To our knowledge this is the first report to investigate changes in PROs in a real-world setting where we found slight improvements in HR-QOL in the short-term following DAA treatment.

Authors: Sahar Saeed, McGill University; Erica Moodie, McGill University; Erin Strumpf, McGill University; Marina Klein, McGill University Health Center
H7.1

Trajectories of cognitive decline among people needing long-term care in Ontario

Presented By: Sarah Spruin, Methodologist I, ICES UOttawa

Methods: Data Mining/Big Data Analytics

Objectives: Many residents in long-term care facilities (LTCFs) experience declining cognition. However, the varying rates of cognitive decline, including the impact of dementia, have not been previously examined at a population level. This study describes the patterns of change in cognitive function among residents in LTCFs over three years.

Approach: Ontarians in a LTCF with 2+ Residential Assessment Instrument records in the Continuing Care Reporting System (CCRS) database between January 2009 and April 2016 were identified (n=202,593). Baseline Cognitive Performance Scale (CPS) score, demographics, and functional characteristics were obtained from the earliest assessment within the study period. Cognitive decline was characterized by an increase in residents’ CPS score between their first and last assessments within the three-year window. Deciles of monthly change in CPS were used to create three trajectories of cognitive decline (slow, moderate, rapid). Multinomial logistic regression was used to investigate characteristics that differentiated residents in these groups.

Results: Approximately 57% of residents showed no cognitive decline; the remaining 43% were categorized as slow (40%), moderate (40%), and rapid decliners (20%). Rapid decliners were able to perform less activities of daily living, and a smaller proportion of them had dementia (79.2%) compared to slow decliners (86.3%), suggesting poorer baseline health influences rapid decline more than dementia status. Although dementia was less prevalent among rapid decliners, they were shown to decline 13 times faster than slow decliners, with a mean monthly decline in CPS of 0.55 CPS/month (1.8 months/CPS). This trend was consistent with the results of the multinomial logistic regression; rapid decliners had the lowest odds of dementia (OR=1.32), and slow decliners the highest (OR=2.41), compared to those who did not decline.

Conclusion: These results give a better understanding of cognitive decline and its relationship with dementia at the population level. Rapid decliners were less likely to have dementia but had poorer functionality than slow decliners indicating that large health insults may influence rapid decline more than dementia among LTCF residents in Ontario.

Authors: Sarah Spruin, ICES UOttawa; Stacey Fisher, Ottawa Hospital Research Institute; Amy Hsu, Ottawa Hospital Research Institute; Doug Manuel, Ottawa Hospital Research Institute; Geoffrey Anderson, Institute of Health Policy, Management and Evaluation of University of Toronto; Peter Tanuseputro, Bruyère Research Institute & Ottawa Hospital Research Institute

H7.2

Experiences of health and aging: Younger adults with disabilities in long-term care

Presented By: Brittany Barber, Researcher, Dalhousie University

Methods: Qualitative Research Methods

Objectives: The objectives of this study were to explore multi-level experiences of health and aging among younger adults with disabilities living in long-term care facilities. Given this younger population will live for longer periods of time in long-term care, research must explore which factors influence processes of health and aging.

Approach: Using qualitative research methods, this study applies the social-ecological theory for a multi-level analysis exploring individual, interpersonal, and institutional experiences of health and aging for younger adults in long-term care. Through semi-structured interviews and photovoice methods, this study addresses a knowledge gap by applying health promotion theory to understand complex systems of health and aging for a marginalized population within long-term care. A multi-level analysis was gathered from individual perceptions of health and aging for younger adults, interpersonal relationships of younger adults with older residents, and institutional factors influencing experiences of health and aging for younger residents.

Results: Results from this study provide an in-depth understanding of experiences for younger adults in long-term care, including largely negative individual perceptions and experiences of health and aging. Through interpersonal relationships with older residents, younger adults shared both positive and negative experiences of health and aging. Within an institutional setting, participants experienced largely negative environmental characteristics influencing poorer health and aging. Overall, younger adults shared the importance of recommending five structural changes to re-orient health care services in long-term care including: 1) younger adults living in closer proximity to other younger adults; 2) improving access to kitchen amenities; 3) increase in number of private bathrooms; 4) increase in number of staff providing care during morning and evening times; and 5) increase in activities for recreational programs.

Conclusion: The novelty and importance of this study was focused on engaging younger adults in research to deconstruct multiple factors that influence health and aging within long-term care. This study provides a new way of exploring biopsychosocial aspects of health and aging, and re-orienting healthcare policies and services across long-term facilities.

Authors: Brittany Barber, Dalhousie University
H7.3
Integrated care as boundary spanning: Organizational workarounds in the delivery of community-based primary health care
Presented By: Frances Morton-Chang, Post-Doctoral Fellow, University of Toronto
Methods: Qualitative Research Methods
Objectives: The fractured and siloed nature healthcare in Ontario can pose challenges for integrated care, with implications for addressing the complex needs of growing populations of seniors. Here we explore the efforts of three organizations to provide integrated community-based primary health care (CBPHC) to support the independence of the frail elderly.
Approach: As part of a wider CIHR-funded multi-jurisdiction comparative case study (ICOACH project) this research investigates three CBPHC organizations in Ontario, each with distinctive approaches to coordinating a continuum of primary health care and support services for their clients.
Results: In Ontario, organizations striving to offer integrated CBPHC work in complex and rapidly changing policy environments that result in the need for proactive and reactive strategies to overcome system challenges. Four common strategies include:
1. Building organizational “capacity” to coordinate a continuum of care through varied and complex partnerships, linkages, mergers and service arrangements.
2. Pursuing multiple and diverse funding sources and opportunities to overcome historical funding patterns and build greater capacity and be resilient in a dynamic and often volatile policy
3. Performing well and measuring what is required to show value to funders and the individuals served while noting the information paints an incomplete picture.
4. Increasing political profile and associated social/political capital.
Conclusion: With no formal mechanisms to ensure or support efforts toward greater integration of care, CBPHC organizations struggle with overburden and workarounds to maintain cohesiveness of care. The creation of boundary-spanning policy frameworks to better identify and integrate elements identified as areas of consistent challenge may help to move CBPHC forward.
Authors: Frances Morton-Chang, University of Toronto; Allie Peckham, University of Toronto; Fiona Miller, University of Toronto; A. Paul Williams, University of Toronto

H7.4
Shaping the future of Canadian residential care: creating an organizational decision support tool
Presented By: Cristina German, Program Consultant, Canadian Institute for Health Information
Methods: Mixed Methods
Objectives: Resource Utilization Groups version 3 Plus (RUG-III Plus) case mix index (CMI) values are organizational decision support tools that provide an estimate of resource use in residential care organizations. This work presents a novel approach for deriving and applying CMI values in residential care.
Approach: The RUG-III Plus residential care case mix system can be used to for a variety of applications such as planning, evaluating, funding and risk adjusting key performance measures. This presentation introduces RUG-III Plus CMI values created by the Canadian Institute for Health Information (CIHI) in partnership with stakeholders across Canada. The approach to derive these CMI values will be discussed including applying mixed methods to Canadian staff time measurement and assessment data, and devising novel approaches to account for data and methodological challenges. Additionally, applications of RUG-III Plus CMI values will be illustrated through case study examples.
Results: RUG-III Plus CMI values have been uniquely calibrated to be powerful Canadian residential care organizational decision support tools. Our work applies innovative methodological approaches to residential care assessment and staff time measurement data to improve resource use estimates. The resulting methodology to derive the CMI values addresses challenges such as interactions, confounding effects and low volumes. Sensitivity analyses were performed at various stages of this work and will be highlighted.
Policy makers and program managers can use RUG-III Plus CMI values to shape the future of Canada’s health systems by improving delivery of care for Canadian seniors in residential care facilities. The CMI values provide an estimate of residential care organization resource use and may be applied to plan for and evaluate programming and policies.
Conclusion: RUG-III Plus CMI values provide policy makers and program managers with a powerful decision support tool they can use to shape the future of Canada’s health systems and improve delivery of care for Canadian seniors in residential care facilities.
Authors: Cristina German, Canadian Institute for Health Information; Jeff Poss, University of Waterloo; Jeff Hatcher, CIHI
**H8.1**

**Risk of fall-related injuries in residents of nursing homes receiving low-dose trazodone compared to benzodiazepines: a matched cohort study**

Presented By: **Susan Bronskill**, Senior Scientist, Institute for Clinical Evaluative Sciences (ICES)

Methods: Statistics/ Econometrics

Objectives: The prevalence of low-dose trazodone is rising over time in nursing homes, yet evidence is limited on the comparative safety of this medication relative to other psychotropic drugs, particularly benzodiazepines. We evaluated the risk of fall-related injuries among residents newly dispensed low-dose trazodone compared to those newly dispensed benzodiazepines.

Approach: A retrospective cohort study using linked health administrative data from Ontario, Canada examined older residents in nursing homes between April 1, 2010 and March 31, 2015. We considered 7,791 propensity-score-matched pairs who received a full clinical assessment and either new use of low-dose trazodone or a benzodiazepine within ±7 days. Matching was based on propensity score (± 0.2 standard deviations), age (± 1 year), sex, frailty status, and history of dementia. Primary outcome was hospitalization (emergency department visit or acute care admission) for a fall-related injury within 90 days of exposure. Sub-distribution hazard functions accounted for competing risk of death.

Results: The risk of fall-related injury among individuals newly dispensed low-dose trazodone was not statistically different than the risk among those newly exposed to benzodiazepines. The cumulative incidence of a fall-related injury in the 90 days following index was 5.74% for low-dose trazodone users and 6.03% for benzodiazepine users (between-group difference, -0.29 [95% confidence interval (CI) -1.02-0.44]; hazard ratio (HR) 0.94 [95% CI 0.83-1.08]). The results of our primary analysis were robust to censoring residents upon switching or discontinuing their initial exposure drugs (HR 0.96 [95% CI 0.82-1.14]) and to an analysis where new low-dose trazodone users were matched with new low-dose benzodiazepine users (HR 0.99 [95% CI 0.84-1.16]).

Conclusion: Low-dose trazodone was no safer than benzodiazepines in protecting against fall-related injuries. Given rising trends in the use of low-dose trazodone in nursing homes, increased vigilance related to off-label substitution for other psychotropic drug therapies is recommended and additional studies to assess the comparative effectiveness and risks are required.

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**H8.2**

**Is cholinesterase inhibitor (ChEI) use and discontinuation during transition to long-term care associated with frailty: a population-based cohort study**

Presented By: **Laura Maclagan**, Quality Improvement Epidemiologist, Institute for Clinical and Evaluative Sciences (ICES)

Methods: Statistics/ Econometrics

Objectives: Understanding the determinants of continued use or withdrawal of ChEIs during the transition into long-term care (LTC) may help in assessing the appropriateness of this decision-making. Patterns of ChEI use at and following LTC admission among persons with dementia are described. We examined whether frailty was associated with discontinuation.

Approach: Linked clinical and administrative health databases were used to conduct a retrospective cohort study of 47,851 adults (aged 66+) with dementia newly admitted to LTC in Ontario between April 2011-March 2015. ChEI use at admission and during the following year was identified. Frailty when admitted was calculated using a validated 72-item index derived from the Resident Assessment Instrument (RAI-MDS 2.0).

Discontinuation was defined as a 30-day period when no dispensations occurred and no supply of ChEI was available. Subdistribution hazard models were used to estimate the association between resident characteristics and discontinuation, accounting for the competing risk of death.

Results: Over a third (36.7%) of residents were receiving a ChEI at admission. Among this group, 82.3% continued use and 17.7% discontinued during the following year. After accounting for resident characteristics, ChEI type and history of use, the incidence of discontinuation was 15% higher in frail residents compared to non-frail residents (hazard ratio (HR)= 1.15, 95% confidence interval (CI) [1.01,1.30]). Residents with aggressive behaviours (HR=1.82, 95% CI [1.60, 2.07]), and higher levels of cognitive impairment (HR=1.29, 95% CI [1.10, 1.51]) were also more likely to discontinue. Residents aged 85+ (HR=0.69, 95% CI [0.61, 0.77]) and those who were widowed (HR=0.84, 95% CI [0.77, 0.91]) were less likely to discontinue.

Conclusion: Most LTC residents who entered LTC on a ChEI continued treatment during the subsequent year. Frailty, severity of cognitive impairment and aggressive behaviours were associated with ChEI discontinuation. Future work should examine long-term outcomes associated with cholinesterase inhibitor discontinuation in this population.

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H8.3
Validation of a prediction model for the top 5% of health system users: High Resource User Population Risk Tool
Presented By: Laura Rosella, Canada Research Chair in Population Health Analytics, Dalla Lana School of Public Health, University of Toronto

Methods: Statistics/ Econometrics

Objectives: Forecasting high health resource users (HRUs) from a social determinants perspective is important for informing prevention strategies. We aimed to cross-provincially validate the Ontario derived High Resource User Population Risk Tool (HRUPoRT), a predictive model that uses socioeconomic and behavioural information to estimate the 5-year risk of becoming a HRU.

Approach: The HRUPoRT logistic regression model, developed and validated in Ontario, was applied to an external validation cohort of 10,504 Manitobans who responded to the 2007/08 and 2009/10 Canadian Community Health Surveys (CCHS). Health care utilization for 5 years following CCHS interview date were determined by computing all health sector costs in the Manitoban CCHS linked administrative databases. Discrimination and calibration of the model were assessed using c-statistic and Hosmer-Lemeshow (HL) X2 statistic. The model was subsequently recalibrated for use in Manitoba.

Results: The 12 self-reported risk factors identified in the Ontario generated HRU model were predictive of 5-year HRU status in Manitoba, with the strongest predictors being age (≥80 vs. <30: OR 27.34; CI, 18.52–40.33), perceived health (poor vs. excellent: OR 3.83, CI: 2.85–5.14), and smoking status (heavy vs. never: OR 2.97, CI: 2.17–4.05). The Ontario generated HRU model had good discrimination in the Manitoba validation cohort (c statistic = 0.82), but poor calibration (HL x2 = 49.08, p <0.001). Calibration of the Ontario generated model demonstrated an overall 27.8% under-estimation of HRU probability. After recalibration, the overall difference narrowed to 6.82% and also improved across all deciles of risk.

Conclusion: HRUPoRT can accurately project the distribution of future HRUs in both Manitoba’s and Ontario’s single-payer health care systems. The model may need to be recalibrated before applications in other provinces. HRUPoRT applies a social determinants perspective in assessing the HRU burden in communities.

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H8.4
Survival among long-term care residents aged 75 years and older prescribed intensive-dose and moderate-dose statins: a propensity-score matched cohort study
Presented By: Susan Bronskill, Senior Scientist, Institute for Clinical Evaluative Sciences (ICES)

Methods: Statistics/ Econometrics

Objectives: There is no direct evidence from randomized trials to support clinicians when making statin treatment decisions among residents of long-term care (LTC) facilities, including the selection of the appropriate statin dose. We examined the 1-year survival rates of older LTC residents prescribed intensive-dose statins compared with moderate-dose statins.

Approach: We conducted a retrospective cohort study of Ontario LTC residents aged >75 years between April 1, 2013 and March 31, 2014 using linked health administrative data. Residents who were prevalent statin users upon clinical assessment were included. Intensive-dose statin users were matched to moderate-dose users on the basis of propensity-score (± 0.2 standard deviations), age (± 1 year), sex, frailty status, and history of atherosclerotic-related hospitalization. The computed propensity-score included demographics, clinical diagnoses, measures of cognitive and functional status, past hospital and emergency department use, and concurrent drug therapies. The primary outcome was death within 1-year of assessment date.

Results: Propensity-score matching produced 4,634 pairs of intensive-dose and moderate-dose statin recipients; resident characteristics were well-balanced across the treatment groups. One-year survival for matched intensive-dose and moderate-dose statin users were 74.38% and 73.85%, respectively. The absolute difference in 1-year mortality between the treatment groups was not significant (0.53%; 95% Confidence Interval [CI] -1.26% to 2.32%). Cox proportional hazard modeling resulted in no significant association between receiving an intensive-dose and survival (Hazard Ratio [HR] 0.98, 95% CI 0.91-1.06, P-value 0.663). Hazard ratios within males and females, residents with and without a history of atherosclerotic-related hospitalization, and residents who were frail and pre-frail/not frail were all non-significant.

Conclusion: There was no significant difference in 1-year survival for LTC residents prescribed intensive-dose compared with moderate-dose statins. Reduced statin doses for aged LTC residents at heightened risk of statin-related adverse events may be warranted. Additional research using rigorous study designs are required to address continued uncertainty in this field.

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