

Concurrent Sessions A: Wednesday, May 29, 2019 - 10:45am – 12:00pm

A1.1 ROOM 507

Theme: Access & Equity (includes Indigenous peoples, immigrant and other priority populations)

Ambulatory sensitive conditions (ACSC) in Manitoba First Nations

Presented by: **Alan Katz**, Professor, University of Manitoba

Objectives

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

Approach

Retrospective longitudinal observational study of all 63 Manitoba First Nations (FN) 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

The rates of ACSC hospitalization decreased over the study period for all models of care by an average of 3.3%. The 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 varied across PC service delivery models with the nursing station rates increasing 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.

A1.2 ROOM 507

Theme: Access & Equity (includes Indigenous peoples, immigrant and other priority populations)

First Nations' readmissions ending in death: what do we know?

Presented by: **Alan Katz**, Professor, University of Manitoba

Background & Objectives

This project is one of several studies within a program of research entitled Innovation Transforming Community-based Primary Healthcare (CBPHC) in First Nation and rural/remote communities of Manitoba. Our objective was to understand, and support initiatives aimed at improving CBPHC in Manitoba First Nations (FN) where inequities in access to responsive care have been well documented. A potential sentinel indicator of differential access to health care is the rate of readmission ending in death.

Approach

We focused on readmissions for Ambulatory Care Sensitive Conditions (ACSC) ending in death. In partnership between the University of Manitoba and the First Nation Health and Social Secretariat of Manitoba and eight FN in Manitoba, we conducted analyses of Manitoba-based 30-day hospital readmission rates for ACSC which resulted in the death of the patient, using health administration data at the Manitoba Centre for Health Policy from 1986-2016. The data was adjusted for age, sex, and socio-economic status (SES).

Results

After eliminating non-urgent and palliative care readmissions, 1,728 (.57%) of the 362,256 hospital admissions were for ACSC that ended in death in Manitoba over the 20-year period. Of these ACSC readmissions, 50 (2.89%) were for acute; 1642 (95.02%) for chronic; 8 (0.46%) were for vaccine-preventable and 28 (1.62%) were for mental health related conditions. FN represented 11 (5.61%) of the acute; 182 (92.86%) chronic and 1.53% of the vaccine preventable 28 (1.62%) mental health condition related deaths. We found rates of readmissions ending in death are slowly increasing and are increasingly more dramatically among northern and larger FN's not affiliated with Tribal Councils. Readmissions ending in death are occurring at disproportionately higher rates among First Nations in all RHA's.

Conclusion

The Truth and Reconciliation of Canada Calls to Action indicate that we must close measurable gaps in health outcomes for First Nation people in Canada. Inequitable health care and jurisdictional ambiguity must therefore be addressed. Access to primary healthcare in all First Nations is key to reducing readmissions rates.

A1.3 ROOM 507

Theme: Access & Equity (includes Indigenous peoples, immigrant and other priority populations)

Do First Nations fill more prescriptions for Opioids than other Manitobans?

Presented by: **Alan Katz**, Professor, University of Manitoba

Background and objectives

Little is known about the use of opioids in First Nations (FN) beyond the understanding that the morbidity and mortality from the opioid epidemic has disproportionately affected FN peoples. An understanding of prescribing patterns of opioids is a crucial step to understanding the use of opioids by FN. The objectives of this study are to compare the dispensation of opioids between FN and all other Manitobans.

Approach

We performed a cross-sectional observational study using data from the Population Research Data Repository housed at the Manitoba Centre for Health Policy. We linked the federal Indian Status Registry to the Repository data to assign FN status, with permission of a First Nations REB. We used a generalized linear modeling approach (negative binomial), incorporating interaction terms. Model parameters included age, sex, and area of residence. Because we were modeling rates not events, we used the logarithm of the population as an offset in the model. We compared FN living on reserve, off reserve and all other Manitobans by region.

Results

Our analyses assigned FN status to 144,965 Manitobans, which represents 11% of the Manitoba population. Of these 67% live on reserve. Fifty six percent of those living off reserve (29,299) live in Winnipeg. The rates for those receiving at least one dispensation of an opioid were higher for FN (25%) than those for all other Manitobans (10%) as were those receiving 3 or more dispensations (12% vs 3%). There were no statistically different rates between on and off reserve FN for those who received one opioid dispensation, however for those receiving 3 or more dispensations the rates were higher ($p=0.01$) for those living on reserve in 3 of the 5 health regions.

Conclusion

Overall, more FN members receive more dispensations per person for opioids than all other Manitobans. Despite a lack of primary care services on many FN reserves, FN living on reserve in 3 regions receive statistically more dispensations for opioids than FN living off reserve in the same regions.

A1.4 ROOM 507

Theme: Access & Equity (includes Indigenous peoples, immigrant and other priority populations)

Inequalities in Psychological Distress and Suicidal Behaviour Between Indigenous and Non-Indigenous Populations in Canada: What Explains the Differences?

Presented by: **Mohammad Hajizadeh**, Assistant Professor, Dalhousie University

Background and objectives: Inequalities in the psychological distress and suicide rates between Indigenous and non-Indigenous population continue to exist in Canada. Using data from the 2012 Canadian Community Health Survey – Mental Health ($n= 25,113$) we investigated demographic, socioeconomic, sociocultural and geographic factors underlying the variation in the prevalence of moderate-to-serious psychological distress (10-item Kessler Psychological Distress Scale [K10] scores > 24) and lifetime suicidal ideation and lifetime suicide plan between Indigenous populations living off-reserve and non-Indigenous population in Canada.

Approach: An extension of the Blinder–Oaxaca (BO) technique to non-linear models was used to decompose the differences in the prevalence into two parts: the proportion attributable to the different levels of the covariates between Indigenous and non-Indigenous populations (the endowment effect or explained part) and a proportion attributable to those covariates having different effects on psychological distress and suicidal behaviours in Indigenous and non-Indigenous populations (the response effect or unexplained part).

Results: The prevalence of moderate-to-serious psychological distress, lifetime suicidal ideation and lifetime suicide plan among the non-Indigenous population in Canada were found to be 5.8, 9.5, 2.4%, respectively. The corresponding figures for Indigenous peoples were 10, 18.6 and 7.8%, respectively. We found that the variation in psychological distress is mostly explained by the differences in the sociodemographic, socioeconomic and sociocultural factors between Indigenous and non-Indigenous populations in Canada. The results indicated that if covariates (e.g., income and employment status) were made to be identical in Indigenous and non-Indigenous populations, the difference in the psychological distress between these populations would have been reduced by 77%. The differences in the prevalence of lifetime suicidal ideation and lifetime suicide plan, however, were mainly explained by the response effect.

Conclusion: Improving covariates among Indigenous peoples through plans like income equalisation or education subsidies may reduce the gap in psychological distress between Indigenous and non-Indigenous populations in Canada. Since the response effect chiefly explains variations in suicidal behaviours, further research is required to understand these differences in Canada.

Exploring the association of sociodemographic factors and socioeconomic status (SES) on cancer care and outcomes: Applications of a national, record-level data linkage strategy

Presented by: **Andrea Coronado**, Specialist, System Performance, Canadian Partnership Against Cancer

Background and objectives There is increasing evidence on the relationship between socioeconomic factors, health outcomes, and access to health services. Most of this evidence is based on small area (e.g., neighbourhood income) analyses. For the first time in Canada, record-level cancer registry data has been linked with key national datasets, allowing researchers to better understand the associations between sociodemographic factors, cancer diagnosis and outcomes. This can much better address the critical need to understand the specific contributors to health disparities and tailor strategies that help underserved populations access much needed health care. **Approach** The record linkage was conducted at Statistics Canada within the Social Data Linkage Environment. Data from the Canadian Cancer Registry (CCR) were linked to the inpatient and ambulatory care hospitalization records (DAD and NACRS) and the Canadian Vital Statistics Death Database (CVSD) to obtain treatment information and death outcomes. To obtain sociodemographic information the following datasets were linked: T1 Family File (income), Immigrant Landing File (immigrant status, class and category) and the 2016 Census Long Form (education and ethnicity among other factors). **Results** About 2.2 million patients on the CCR were linked to DAD, 1.4 million to NACRS, and 3 million to T1 family file, between 1992 and 2014. Preliminary findings show poorer survival outcomes for the four most common cancers among lower-income populations compared with higher income. Lower-income patients are more likely to be diagnosed with later-stage cancer compared to higher-income patients. Differences in wait times from diagnosis to treatment and disparities in guideline concordant treatment practices between patients of high and low income will be available at the time of the conference. **Additionally**, changes in employment status and income following a cancer diagnosis will be examined across income groups. **Conclusion** Preliminary findings show that lower-income patients were more likely to be diagnosed at an advanced stage and have poorer outcomes than higher-income individuals. Final results from this study, and future analyses of other key sociodemographic factors (e.g., immigrant status) will provide a comprehensive picture on existing disparities experienced by patients. The understanding of these disparities will allow the development of targeted cancer control.

PROVIEW: Developing a predictive survival model for cancer patients that incorporates symptom and functional score data over time

Presented by: **Hsien Seow**, Associate Professor, McMaster University

Background

Generally, existing cancer prognostic tools are nomograms from diagnosis (not time-varying) and rely on laboratory data, which make it difficult for patients and families to use. They do not incorporate changing symptom and functional scores or health services use over time, which are highly predictive of death. Our objective was to develop and validate predictive survival models that combine cancer type, stage, and treatment with novel functional and symptom score data (e.g. pain, dyspnea) and health services use (e.g. hospitalization) that are updated over time. The models would become a tool called PROVIEW.

Approach

The study included all Ontario patients diagnosed with any cancer between 2008-2015. Cox proportional hazards models were fit at baseline, i.e. diagnosis date, 1-, 2-, 3- and 4-years post-diagnosis to predict one-year survival at each time point. Each model included individuals who survived to that baseline year. Covariates included: clinical variables (e.g. cancer type, stage, treatment from the cancer registry), functional status and symptom scores (e.g. pain from the Edmonton Symptom Assessment System), and health services use (e.g. hospital use). Variables included in the final models were selected using backward elimination. We used 60/40 (derivation/validation) split-sample and examined calibration plots and c-statistics to assess model performance.

Results

The derivation cohort consisted of 153,296 patients (102,198 in validation cohort). At baseline the median age was 65 (IQR 55-73) and breast cancer represented the largest cancer type. Most demographics remained stable across all 5 years. The final models all had high discrimination. c-stat on the validation models from baseline to 4-years post-diagnosis were 0.90, 0.91, 0.91, 0.91, 0.91. For instance, based on our model, the predicted probability of one-year survival after diagnosis for: 1) Male, age 62, stage III lung cancer, low pain, no dyspnea or depression was 0.59; 2) for a similar patient with high pain, dyspnea and depression was 0.36.

Conclusion

We developed and validated survival prediction models in a cancer cohort at diagnosis and at 1-year time points post-diagnosis, which uniquely incorporate functional status, symptom scores, and prior health services use. Future work will predict other outcomes such as poor function and high symptom burden, which can inform patient decision-making.

The cost of failed primary cancer treatment attributed to continued smoking in Canada

Presented by: **Nicolas Iragorri**, Health Economics Fellow, Canadian Partnership Against Cancer

Background: Smoking cessation after a cancer diagnosis is expected to improve health outcomes and reduce costs associated to primary treatment failures attributed to continued smoking.

Methods: We developed a decision model for the Canadian context that followed all annual incident cancer cases based on smoking prevalence and treatment efficacy (cure versus failure). This model estimated the proportion of patients that failed primary cancer treatment due to continued smoking (attributable failures) and their associated cost. A sub-analysis was conducted to determine the total cost of attributable failures across the main four cancer types in Canada (lung, breast, colorectal, and prostate). Key model parameters, such as smoking prevalence rates and treatment costs were varied through sensitivity analyses.

Results: Attributable failures were greater when smoking prevalence and the odds of failing primary treatment among smokers increased. The annual cost associated with the attributable failures was estimated at \$198M. This cost was 49% greater when we assumed that the second-line therapy cost was the same as the terminal-phase cancer cost (~\$60,000/year). Marginal reductions of smoking prevalence had a greater effect over attributable failures for prevalence levels above 10%. Lung cancer represented the highest economic burden (\$52M) out of the four most common cancer types.

Conclusion: The costs associated with failed primary treatment due to continued smoking among cancer patients in Canada is considerable. At-risk populations with high smoking prevalence levels and treatment costs are expected to benefit the most from smoking cessation programs.

Patient and Caregiver Experiences of Advanced Cancer Care

Presented by: **Sadia Ahmed**, MSc Student, University of Calgary

Background and objectives (75-word limit);

Palliative care is an approach that improves the quality of life of patients and families facing challenges associated with life-threatening illness.¹In Alberta, most people who received palliative care received it late.² Late palliative care negatively impacts patient and caregiver experiences & decreases quality of life.³This study aims to understand patient and caregiver experiences of advanced colorectal cancer care to inform development of an early palliative care pathway for patients with advanced colorectal cancer.

Approach (100-word limit);

A qualitative study that is embedded within a larger program of research on the implementation of the Palliative Care Early and Systematic (PaCES – an Alberta-wide project aimed at developing and delivering an early and systematic palliative care pathway for advanced colorectal cancer (CRC) patients and their caregivers)⁶ intervention. Semi-structured telephone interviews with patients living with advanced colorectal cancer and caregivers were conducted to explore their experiences with cancer care services received pre-intervention. Interviews were audio-recorded. Interviews were transcribed, and the data thematically analyzed supported by the qualitative analysis software, NVivo.

Results (125-word limit);

A total of 15 patients and 7 caregivers were interviewed over the phone (9 from Calgary, 13 from Edmonton). There was a total of 6 main themes generated: 1. Meaning of Palliative Care. Most participants had a negative perception of the term palliative care; 2. Communication (3 main subthemes: communication of diagnosis, communication between patient and oncologist, communication amongst providers); 3. Relationship with healthcare providers (including oncologist, family doctor, and nurses); 4. Access to care (cost of care, proximity to care, after hours care); 5. Patient readiness for advance care planning; 6. Patient and family engagement in care, with mixed experiences in how patients were involved in their care.

Conclusion (50-word limit).

Most participants misperceived palliative care to mean ‘end of life care’, suggesting a need for improvement in the way palliative care information is delivered to patients and caregivers. Understanding the care experiences of patients and caregivers will inform the development of a care pathway for early palliative care.

Quality of Care NL/Choosing Wisely NL- A collaborative effort between the leading healthcare entities in Newfoundland and Labrador

Presented by: **Robert Wilson**, Research Associate, Translational and personalized medicine initiative/Memorial University

Background: Quality of Care NL/Choosing Wisely NL (QCNL/CWNL) is a collaborative effort between the leading healthcare entities in Newfoundland and Labrador (NL) such as government, RHA's, associations of different healthcare providers and the NL Centre for Health Information. A Center of Health Information and Analytics was created to examine utilization data and the SPOR NL SUPPORT unit provided human resources to implement change which makes up the core infrastructure. As a research initiative, QCNL drives evidence-based health care practice and efficient use of resources.

Approach: QCNL/CWNL focuses on the delivery of the right treatment to right patient to the right time and the reduction of unnecessary tests, treatments and procedures. A total of 40 projects are in implementation/planning phase using the template: analyze baseline utilization of the intervention, compare to best practice, implement actions using best practice guidelines, evaluate the effects of these actions, and inform policy. Campaigns targeting clinicians have included: CME accredited presentations, emails which include practice points journal and peer comparison data, clinic visits, online modules, and information resources for patients. Campaigns for patients included videos, traditional media (TV, Radio) and social media (Facebook, twitter).

Results: Campaigns such as antibiotic utilization and biochemical testing in general practice have shown a reduction of overall antibiotic prescriptions of 9%, and a reduction in blood urea, creatinine kinase and ferritin ordering by 62%, 31%, and 20% respectively from 2016 to 2017. Furthermore there has been a significant reduction in unnecessary pre-operative testing for low risk surgical procedures at two hospitals in St. John's NL. Further interventions being undertaken include the use of vascular testing with a focus on secondary stroke prevention, imaging for low back, Enhanced Recovery after Surgery (ERAS) program, and facility based reporting for institutional long-term care planning.

Conclusion: Implementation of QCNL/CWNL initiatives has been rapid. Interventions have successfully reduced unnecessary care and facilitated appropriate care at community and institutional levels. QCNL/CWNL continues to work to make better use of health care resources, enhance system quality, and improve health outcomes in the province.

System Learning from the Implementation of Quality-Based Procedures

Presented by: **Marian Severin Wettstein**, Research Fellow, Princess Margaret Cancer Centre

Background and Objectives: In April 2011, the Government of Ontario announced the multi-year phased-in implementation of "patient-based" hospital funding, including Quality-Based Procedures (QBPs). QBPs consist of pre-set reimbursement rates for managing patients with specific diagnoses or those undergoing specific procedures, with quality intended to be accounted for through adherence to best clinical practices outlined in QBP-specific handbooks. We examined whether this policy change led to improved system performance.

Approach: Following an integrated knowledge translation approach, we collaborated with researchers, clinicians, and decision makers in the Ministry of Health (MoH) to select four QBPs (congestive heart failure, pneumonia, hip fracture surgery and prostate cancer surgery) and define meaningful patient care outcomes in three domains: quality of care, access to care, and coding behaviour. We used interrupted time series analysis and linked health-administrative data from IC/ES to investigate the effects of QBPs.

Results: Across the 4 selected QBPs, we found mixed and generally limited response to the QBP funding reform, with some diagnoses and/or procedures appearing to be more sensitive to the change than others. The pattern of changes were not as expected. We did not observe a decrease in length of stay that might have precipitated increased patient throughput or decreased wait lists. Additionally, patients admitted for heart failure were slightly more likely to return to hospital, without any change in length of stay. However, among patients who received prostate cancer surgery, we observed no negative consequences of the QBP funding reform. Interestingly, the introduction of QBPs may have prompted more appropriate patient selection for prostate cancer surgery.

Conclusion: We saw a lack of large-scale changes in association with Ontario's introduction of QBP funding to hospitals. Coincident initiatives and long-standing pressures to limit length of stay may have muted the response. By collaborating with the MoH, our research influenced decision makers and contributed to a learning health system.

Innovative Health Policy-Maker / Researcher Arrangements Based on a Disembedded Research Model

Presented by: **Mark Dobrow**, Associate Professor, University of Toronto

Background and Objectives

The health sector has a rich history of connecting research to policy, enhancing our conceptualization of knowledge translation and experimenting with different models for embedding researchers in healthcare organizations. However, a policy-maker rather than a researcher orientation emphasizes access to the right research expertise at the right time with a distinct rigour/relevance balance. This presentation will compare/contrast two innovative approaches involving the Institute of Health Policy, Management and Evaluation (IHPME) at the University of Toronto.

Approach

IHPME is home to a large and diverse range of health services/policy researchers and supports numerous research centres/networks that work with health policy-makers in Ontario and elsewhere. Two of these centres, Converge3 and the Accessing Centre for Expertise (ACE) represent new and innovative but divergent approaches to supporting policy-makers. Converge3 is funded by the Ontario Ministry of Health and Long-Term Care to provide evidence on health, economic and equity implications for a pre-determined number of policy questions. With minimal core infrastructure, ACE provides services on a cost-recovery basis, facilitating timely access to IHPME's research expertise. Which model is better?

Results

The presentation compares results of formative evaluations, perspectives of key stakeholders including centre leaders, staff, governance representatives, funders, and other health system/policy stakeholders. We describe the origin and evolution of each centre, its organization and structure, funding arrangements and resource utilization, delivery models, approaches to engagement with a range of health system stakeholders (focusing principally on health ministry, public/patient stakeholders and researchers), and outcomes/impact. While the two centres draw on the same core research expertise at IHPME, the intensity of stakeholder engagement, responsiveness, quality of work, productivity, resource use, and ability to engage and leverage research expertise differs, providing important insights on disembedded research approaches for informing health policy.

Conclusion

IHPME researchers have a long history of supporting healthcare organizations. Two new centres, Converge3 and ACE, represent innovative approaches to connecting policy-makers and researchers, but despite operating within the same setting with overlapping principal players, the results differ. These findings can inform other efforts to re-envision researcher/policy-maker arrangements.

Integrated Knowledge Translation (KT) in practice: a collaborative approach for developing a KT plan for problematic substance use (PSU) in Manitoba

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

Background: The Canadian Centre on Substance Use and Addiction has called for improving the quality, accessibility and range of treatment for problematic substance use (PSU). Opioid-related overdoses and methamphetamine use has significantly increased in Manitoba in recent years, impacting individuals, their families, and health, social and justice services. This project aimed to develop a Knowledge Translation (KT) plan to identify gaps, barriers and facilitators, reduce stigma and provide treatment resources for key target populations.

Approach: This project was initiated by policy makers and undertaken by students using an integrated KT approach alongside healthcare providers in urban and rural Manitoba. An environmental scan was conducted to identify existing resources including clinical practice guidelines, reports, websites, and KT tools related to opioids, methamphetamines and harm reduction. In accordance with the Knowledge-to-Action Framework, this was complemented with 3 needs assessments targeted to individuals with lived experience, healthcare providers, and policy makers, and 17 stakeholder interviews to identify relevant gaps, barriers and facilitators. These were used to inform the KT plan, later to be implemented by provincial policy makers.

Results: Interviews were conducted with 17 stakeholders, groups or committees (e.g., family doctors, psychiatrists, addictions services) between May-August 2018. Gaps were identified and summarized into a framework relating to root causes (social determinants of health, cultural safety, community engagement, and harm reduction), health system response (emergency, crisis response, mental health/addiction supports), community supports (social service, public awareness), and evidence (monitoring, surveillance, research, KT) to manage PSU. Key actions outlined in the KT plan include enhanced multi-sectoral coordination and referral pathways, elder involvement and cultural practices in recovery, a centralized supply distribution program and a focus on harm reduction and polysubstance use, education, training, and information for health and social service workers, communication strategies for key populations, and effective measures to disseminate research and apply key resources.

Conclusion: To date, there are few KT plans related to addressing PSU. This project used a collaborative approach to outline potential KT strategies, target audiences, collaborative planning processes and suggested implementation actions for policy makers, ensuring alignment with the needs of end-users.

A4.1 ROOM 504

Theme: Health Economics/Financing/Funding (including cost and economic analysis)

Comparing the Cost of High Use Patients across Twelve Countries – with special emphasis on Canada and New Zealand

Presented by: **Richard Audas**, Associate Professor, Memorial University of Newfoundland

Background and objectives

High Use patients are a significant driver of health care expenditure in Canada and across the globe. Understanding how costs are decomposed across countries is an important comparison to facilitate possible avenues for cost reduction and greater system efficiency.

Approach

Examining four patient personas (Frail Elderly, Elderly with Dementia, Chronic Complex Cases and Young Patients with Severe Mental Health Conditions) using a range of administrative data sources the average annual cost of care for twelve developed countries. Costs are decomposed into seven categories (Inpatient Care, Primary Care, Outpatient Specialty, Outpatient Drugs, Home Health Services, Care at Nursing Facilities, and Long-term Care) although not all categories are captured in all countries. In addition, health service utilization metrics are captured for each persona.

Results

The most complete data source for all countries was the inpatient sector. Therefore, the personas that were most uniformly identifiable across all countries were the two personas that started with an index hospitalization: the frail elder and the older person hospitalized with heart failure with a comorbidity of diabetes.

The results show that providing care to high use patients is expensive, and this is consistently observed across all countries. However, there are large differences in reported costs decomposed into the seven categories. There are also marked differences in health service utilization. There are different data collection processes and mechanisms for data capture. Some countries were able to report on whole of population data, while others relied on samples. Few countries captured all seven cost categories.

Conclusion

Significant variation in expenditure suggests that there are potential mechanisms to reduce costs in the provision of care to high use patients. Collaboration across twelve countries revealed very different mechanisms of data capture suggesting further harmonization would be worthwhile.

A4.2 ROOM 504

Theme: Health Economics/Financing/Funding (including cost and economic analysis)

Validation of CIHI's Population Grouping Methodology using Ontario data

Presented by: **Sharada Weir**, Data Scientist, Ontario Medical Association

Background and Objectives

Until recently, the options for summarizing patient complexity in Canada were limited to health risk predictive modeling tools developed outside of Canada. This study aims to validate a new model created by the Canadian Institute for Health Information (CIHI) for Canada's healthcare environment.

Approach

Our study included the rolling population eligible for coverage under Ontario's universal provincial health insurance program in fiscal years (FYs) 2006/07-2016/17 (12-13 million per annum). To evaluate model performance, we compared predicted cost risk at the individual level, based on diagnosis history, with estimates of actual patient-level cost using 'out-of-the-box' cost weights created by running the CIHI software 'as is'. We next considered whether model performance could be improved by recalibrating the model weights, censoring outliers or adding prior cost.

Results

We were able to closely match model performance reported by CIHI for their FY 2010/11-2012/13 development sample (concurrent $R^2=48.0\%$; prospective $R^2=8.9\%$) and show that performance improved over time (concurrent $R^2=51.9\%$; prospective $R^2=9.7\%$ in 2014-16). Recalibrating the model did not substantively affect prospective period performance, even with the addition of prior cost and censoring of cost outliers. However, censoring improved concurrent period explanatory power for the FY 2014/15-2016/17 validation sample (from $R^2=53.6\%$, without censoring, to $R^2=66.7\%$, after censoring). We also found that the concurrent model performed best using 5-year prevalence of health conditions (i.e., a five-year look-back at diagnosis codes), whereas prospective model performance was optimized using a two-year look-back window.

Conclusion

We validated the CIHI model for two periods, FY2010/11-2012/13 and FY2014/15-2016/17. Out-of-the-box model performance for Ontario was as good as that reported by CIHI for the 3-province development sample (Ontario, Alberta and British Columbia). We found that performance was robust to variations in model specification, data sources, and time.

Can CIHI's Canadian health risk predictive model be used to predict high-cost health system users?

Presented by: **Mitch Steffler**, Sr. Economist, Ontario Medical Association

Background/objectives

Numerous studies across health systems have established that a small proportion of users account for a disproportionate share of the public costs of healthcare. It would be useful to be able to predict risk of future high cost utilization at the individual level ahead of time. We evaluated the ability of a new health risk predictive model produced by the Canadian Institute for Health Information (CIHI) to discriminate in predicting future high cost cases.

Methods

The CIHI model was run to predict the relative risk of the next year's cost for each individual in the study population, and their actual costs for the prediction period were estimated. The ability of the model to predict high cost users was evaluated for selected percentiles of cost based on the sensitivity, specificity, positive predictive value and accuracy of the model. Next, we examined the prevalence of multimorbidity and identified particular health conditions found most commonly among the heaviest users of health services.

Results

Ten percent of the population (n=1.17 million) had annual costs exceeding \$3,050 per person in fiscal year (FY) 2016, accounting for 71.6% of total expenditures, five percent had costs greater than \$6,374, accounting for 58.2%, and one percent exceeded \$22,995, accounting for 30.5%. The CIHI model was 93.1% accurate at the 95% risk percentile in predicting the top 5% of cases in terms of cost. The c-statistic was 0.81 (strong). Prevalence of multimorbidity rose with both risk score and actual cost.

Conclusion

High cost users account for a staggering share of public expenditures on healthcare. We found that the CIHI model did a good job of predicting high cost users even though it was not designed for this purpose.

Predicting high cost users of the healthcare system using a machine learning approach on clinical text from primary care electronic medical records

Presented by: **Elisa Candido**, Staff Scientist, ICES

Background and objective: Accurate prediction of future high cost users (HCUs) of the health care system may facilitate opportunities for intervention. This study aims to use machine learning (ML) techniques on clinical text contained within family physicians' (FPs) electronic medical records (EMRs) to predict patients who will become HCUs of the healthcare system (defined as the top 5% of healthcare expenditures) in the next 12 months.

Approach: Data was from the Electronic Medical Record Primary Care (EMRPC) database between April 1, 2015 and March 31, 2016. The study cohort consisted of 277,173 patients from across Ontario. Total healthcare costs (from the payer perspective) were assessed through linkage with health administrative data. Separate training and validation cohorts were created. ML techniques were applied to transform six text fields in the cumulative patient profile of the EMR into modelling features. Logistic regression models were fit to predict HCUs in the 12 months following data extraction. Model performance was assessed using the area under the receiver operating characteristic (AUROC) curve.

Results: Our preliminary models, derived from applying ML techniques on free-text fields from family physician's EMRs, demonstrated good performance in their ability to predict patients who will become HCUs of the healthcare system in the next 12 months. The AUROC for the models based only on information from the six free-text fields in the EMRPC database, as well as age and sex, ranged from 0.819 to 0.827. Models that included the patient's current year percentile of healthcare expenditure improved performance overall to an AUROC 0.893 to 0.896. Importantly, this improvement was due to improved predictions amongst current high cost users while performance for patients with lower healthcare expenditures were better without current cost information.

Conclusion: ML techniques can be successfully applied to clinical text data within primary care EMRs to predict future HCUs of the healthcare system. By using data that are readily available from FPs, these models may be helpful in identifying patients at-risk of becoming HCUs, who may benefit from early intervention.

'Separate estates' in hospital-based health human resources: exploring competency assessment of regulated health professionals

Presented by: **Leigh Chapman**, Doctoral Candidate; Research Fellow, Lawrence S. Bloomberg Faculty of Nursing; The Wilson Centre

Background and objectives

describe competence as a critical component in hospital health human resources; share findings from an exploratory qualitative case study about competency assessment in a large organization; analyze how distinctions between physicians and other regulated health professionals in healthcare workplaces is problematic

Hospital workforces are typically comprised of unionized and non-unionized regulated health professional employees and appointed staff, such as physicians. These distinctions create 'separate estates' which impede competency assessment, interprofessional practice and collaborative, team-based care.

Approach

This presentation will describe findings from a qualitative case study of competency assessment. The study explored how competency assessment processes and practices were understood and enacted by regulated health professionals in a Canadian academic hospital. I was particularly interested in how the process of individuals' competence was enacted and how administrators and other regulated health professions understood, perceived and experienced organizational competency assessment. I was deeply interested in the impact of context on competency assessment; an interest that was reflected in the use of a theoretical framework from organizational behaviour which contextualized competence as one component of effective performance.

Results

This qualitative case study explored participants' understanding of competency assessment processes and practices in an academic hospital, through analysis of key informant interviews, focus groups and organizational documents. In constructivist research, participants' answers do not reveal an unquestionable 'truth' but rather, contribute towards a better understanding of the phenomenon of interest – that is, competency assessment within an academic hospital. What I found were a variety of ways that competency assessment was understood and possibly misunderstood; how organizational structures such as professional practice and interprofessional dynamics divided different groups and resulted in these groups functioning as separate estates; and how these findings make conversations about competency assessment at an organizational level at the study hospital very difficult.

Conclusion

Competence of regulated health professionals is a key component in hospital-based health human resources. Yet, differences in the employment status of the hospital workforce created marked separations between the professions. These 'separate estates' hindered organizational competency assessment, interprofessional practice and collaborative, team-based care.

Developing a Novel Tool to Enable Acuity Based Staffing in Critical Care

Presented by: **Laura Rashleigh**, Professional Leader, Nursing, Sunnybrook Health Sciences Centre

Background

Healthcare leaders require evidence-based tools to inform nursing workforce and operational decisions. Currently within Critical Care, there is a paucity of validated tools to support decisions. To address this, a large academic acute care centre with 83 Critical Care beds developed a Critical Care Patient Needs Assessment Tool to identify patient to nurse ratios based on acuity. The tool underwent validation across all Critical Care units (levels 1 to 3) and the Emergency Department.

Approach

An environmental scan and literature review for predictive staffing methodologies was completed. An assessment tool was developed through a modified Delphi approach integrating assignment guidelines, predictive staffing and Synergy Model elements. Nine core components were identified to influence acuity. Inter/intra-rater reliability and face validity was verified with experts.

A nine week validation study across nine Critical Care units and the Emergency Department was completed for a total of 3290 assessments. Three experienced Critical Care nurses ensured consistent application across patient populations. Additional data collected included level of care, actual nurse ratio, expert identified ratio, and demographics.

Results

The tool was found to be valid across all Critical Care areas and surge spaces. A Spearman correlation was run to assess the relationship between tool-derived ratio and expert clinician assessed nurse to patient ratio; a strong positive correlation found between both ($r_s=0.78$ p

Three key tool components were assessed using logistic regression (stability, complexity and predictability) with all components identified to contribute evenly to overall tool-derived scores.

Additionally, Kendall's Coefficient was used to evaluate interrater reliability across the assessment period; results were 0.92, $p < 0.0001$, indicating strong correlation between clinically judged nurse to patient ratios across all three expert raters.

Conclusion

The tool is now being used to evaluate workforce and identify efficient models to meet demand for Critical Care beds. Future application includes daily predictive Critical Care staffing across the different levels of care and treatments spaces. Further analysis based on patient specific population data is underway.

Health Workforce Impact Assessment: A Complex Adaptive System Framework of Canadian Health Workforce Policy, Planning and Deployment

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

Background: Drawing inspiration from international efforts to integrate Health Workforce Impact Assessments (HWIA) into health policy and planning processes, Canadian policy-makers have expressed interest in the development of an HWIA Tool adapted to the Canadian context. Promising practices uncovered by the World Health Organization indicate that grounding the development of HWIA tools in established conceptual frameworks can promote targeted analyses that account for a comprehensive range of workforce considerations.

Approach: As a first step in the development of a Canadian HWIA Tool, this project aimed to produce a complex adaptive system framework of Canadian health workforce policy, planning and deployment. A review of existing conceptual frameworks describing the Canadian health workforce was conducted in order to inform the elaboration of a unified model of the system that shapes health workforce policy, planning, and deployment within the Canadian context. The review, analysis, and synthesis of existing conceptual frameworks was informed by the principles of complexity theory and the general properties of complex adaptive systems.

Results: This review produced an interdisciplinary model that accounts for a comprehensive array of factors, stakeholders, and sectors that influence the supply, distribution, and mix of the Canadian health workforce. This multi-level framework identifies interacting factors shaping the health workforce at the micro/practice-level, the meso/organizational-level, and the macro/system-level. The framework also treats the Canadian health workforce as a complex adaptive system composed of intersecting and interdependent sectors, including: 1) education and training; 2) governance and regulation; 3) funding, financing and remuneration; and 4) data infrastructure and technology. Finally, the framework enables stakeholder analysis by explicitly acknowledging that health workforce issues are shaped by the complex dynamics and adaptive behaviours of a vast network of stakeholders with distinct interests and levels of influence.

Conclusions: Embedding evidence-based HWIA into strategic planning cycles could support the development of a fit-for-purpose health workforce that enables effective and equitable achievement of health system objectives. This framework lays the foundations for such analysis by elucidating the complex adaptive system influencing the current and future state of the health workforce.

An International Survey of the Design of Innovative Models of Care for Patients with Complex Needs

Presented by: **Dara Gordon**, Policy Research Coordinator, Women's College Hospital Institute for Health System Solutions and Virtual Care

This research outlines an international study in partnership with the Commonwealth Fund to survey 11 countries on innovative models of integrated care for populations that are characterized as being “high need, high cost”; a small proportion of the population which account for a large proportion of health service expenditures. This group is often poorly served by fragmented health systems, with a poor experience of care and suboptimal outcomes.

This study's methodology involved case studies with a standardized survey. The study used a purposive sampling strategy that involved researchers and senior policymakers in 11 countries to identify innovative integrated health and social care programs. They were asked to collect data on potential programs using a structured nomination form and to submit these forms to the research team for review. 30 programs were selected for detailed data collection based on novelty, target population and maturity. A web-based survey tool with a mix of multiple choice questions and open-ended explanations was used to collect data from each program.

The sample included 16 models targeting people with multiple comorbidities, 10 for frail older adults and 4 for people with severe mental health concerns. We found that all of them reported activities within the functions of segmentation, coordination and engagement, with varying degrees of intensity. The majority used more rigorous approaches to defining eligibility and recruitment, but there was wide variation in the intensity of coordination strategies, particularly management of transitions and platforms for sharing information across providers. For engagement of patients and caregivers, 23 programs reported having intensive approaches to patient self-management support, but only 12 reported having intensive approaches to supporting caregivers. Twenty three of the models had scaled beyond their initial sites and were the subject of external evaluations.

Models of care for people with complex needs across a range of countries have a shared focus on segmentation of patients, coordination, and engagement. Though the intensity of each function varies, there are now many opportunities for shared learning through replication of promising features or adaptation to new settings.

Respite Care Models for Children with Medical Complexity and their Families: An Environmental Scan

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

Background and Objectives: Identifying respite care services for children and youth with medical complexity is an essential component of high quality health care. However, families still report difficulty in finding and accessing respite care services in their communities. This environmental scan sought to identify the range of programs, resources, or policies that support the delivery of respite care services for children with medical complexity and their families across Canada, Australia, the United Kingdom, and the United States of America. **Approach:** Environmental scans are a valuable tool to amalgamate multiples sources of data to inform health policies and programs. This scan employed a systematic search of pediatric health centres, pediatric societies, home care societies, and government websites in each of the countries of interest. Additionally, 45 emails were sent out to key stakeholders with an invitation to participate in our research by sharing any known information regarding this topic. Initiatives were included if their primary population of interest were children and/or youth with medical complexity. Our search was deemed completed once we were no longer identifying new programs/policies. **Results:** Our targeted search revealed a variety of respite care initiatives aimed at supporting families of children with medical complexity. Based on our results, we identified 6 overarching categories of respite care initiatives: government programs (n=6), private agencies (n=3), community facilities (n=9), resource repositories (n=8), policies/guidelines (n=8), and reports/reviews (n=12). Government programs included grants/benefits aimed at assisting families with the cost of respite services. Private programs were accessed by families through their personal financial resources or health care benefits. Community facilities were structural centres providing the option of care outside the home. Resource repositories ranged from a list of local services to search engines. Reviews, reports, policies, and guidelines were often developed by government and pediatric associations to inform the delivery/regulate the delivery of respite care. **Conclusion:** Respite care can provide families with the support to care for children with medical complexity. Regrettably, there remains a number of barriers to obtaining these services. This environmental scan identified a variety of programs, resources, and policies that support and inform respite care for children with

Evaluation of organizational attributes of primary care integration strategies for adults with multiple chronic health conditions: A systematic review

Presented by: **Joan Tranmer**, Professor, Queen's University

Background: There is a poor understanding of the organizational attributes of system-level primary care integration strategies associated with optimal outcomes for patients. Our review objectives were to: (1) identify and assess the quality of the evidence determining the impact of primary care based integration strategies on patient outcomes for adults with multiple chronic conditions; and (2) identify and synthesize common organizational attributes of effective integration strategies.

Approach: We conducted a systematic review, following Cochrane methods utilized by the Cochrane Public Health Group (CPHG). The primary outcome was clinical effectiveness, as determined through clinical and self-reported patient outcomes. Secondly, we examined the impact on health utilization and costs. The independent variables were primary care based organizational strategies that included integration of services across a minimum of 2 practice sectors for individuals with at least 2 chronic conditions. The effect of each integration strategy and attributes within each strategy were synthesized and assessed using harvest plot methods.

Results: We identified 2091 abstracts; reviewed 583 full-text articles; and identified 32 articles that met the inclusion criteria. Studies were conducted in the USA (33%), Canada (19%), Australia (13%), Italy (13%), Netherlands (13%), France (3%), Scotland (3%), and United Kingdom (3%). After assessment for quality with the CPHG tool, 24 studies were further excluded due to low-quality, leaving 16 studies of moderate-strong quality for synthesis. Patient outcomes assessed included self-reported changes in health and functional status (39%), utilization of health services (32%), costs of health services (23%), and clinical indicators (6%). Results suggest that integration strategies that include higher numbers of organizational attributes, particularly care coordination strategies, are generally related to better outcomes.

Conclusion: Care coordination, active physician involvement, and information-sharing mechanisms are critical attributes of integration strategies. Given the complexity of both integration mechanisms and the health system, we postulate that effective integration includes incorporation of multi-component interventions across sectors of care with appropriate organizational and system level supports.

Use of Human Factors-informed systems engineering to design care programs for clients with complex needs

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

Background and Objectives:

As health care systems and patient profiles grow increasingly complex, design processes used to create programs of care must be refined to respond. Human Factors-informed systems engineering is one approach which can support design or redesign of care processes to improve safety and increase likelihood of positive outcomes. This presentation will explore how we used this approach to support the co-design of care planning in a community reactivation program.

Approach:

The Systems Engineering Initiative for Patient Safety (SEIPS) model is a human factors model which guides investigation of the interactions between social and technical elements of complex systems. The SEIPS model considers the work system (including environment, technology, people, tasks and organization), care processes (technical and interactional) patient, provider and system outcomes, and hypothesizes about potential causal relationships within the model. Researchers created a site specific SEIPS model through multiple sessions of non-participant and participant observation and key informant interviews with staff.

Results:

The resulting SEIPS model was used to redesign the care planning process in the reactivation centre. Due to the comprehensive nature of the model, the design team was able to understand the impact of the various elements of the work system on the care planning process. They were able to use these insights to design a new process which streamlined processes at the local level, leveraged available resource to maximum potential, avoided duplication of effort, and supported improved patient and system outcomes. The new processes were acceptable to care providers at the site as they minimized disruption to the system and delivered improved patient and system outcomes.

Conclusion:

Though traditionally used specifically for patient safety initiatives, SEIPS modelling can provide a useful framework for program design for patients who have complex needs. Developing an understanding of the various constituent components of a complex socio-technical healthcare system and the relationships between components can maximize opportunity for success.

Spending among public drug program beneficiaries across Canada: A pan-Canadian Analysis

Presented by: **Diana Martins**, Research Program Manager, St. Michael's Hospital

Background and Objectives:

Drugs are the fastest growing cost in the Canadian healthcare system, largely due to the increasing number of high cost drugs entering the market. This is a major concern for the sustainability of public drug programs in the healthcare system. We sought to compare the contribution of spending on high drug cost beneficiaries between provinces in Canada.

Approach:

A cross-sectional analysis was conducted among all provinces (except Quebec) in Canada in fiscal year (FY) 2016. For each province, we identified the number of public drug beneficiaries and their total drug costs. Based on annual spending, beneficiaries were divided into 3 cost-groups; very high (top 1%), high (top 5%) and other (remaining 95%). We reported the following by province and cost-group: 1) total cost and proportion of total spending; 2) proportion receiving a high-cost drug (claim >\$1,000); 3) number of unique drugs dispensed per person; 4) top 10 most commonly reimbursed medications; 5) top 10 most costly medications.

Results:

Across all provinces in FY2016, the top 5% of beneficiaries accounted for approximately half of all drug costs (range: 40.8% [Nova Scotia] to 55.4% [Saskatchewan]), while the top 1% of beneficiaries accounted for approximately one-quarter of all drug costs (range: 21.0% [New Brunswick] to 29.2% [PEI]). High drug-cost beneficiaries used nearly double the number of medications compared to other beneficiaries (5-10 drugs [top 1%] and 8-16 drugs [top 5%] vs. 3-6 drugs [remaining 95%]). The majority of high and very high drug-cost beneficiaries received an expensive drug (range: 73.5%-99.5%), compared to other beneficiaries (range: 0.0% and 4.6%). Chronic oral medications were the most utilized medications for all 3 groups while biologics, HIV and hepatitis C treatments were the mostly costly medications for high-cost drug beneficiaries.

Conclusion:

There is a high degree of clustering of drug-costs among public drug beneficiaries across Canada, largely driven by the use of expensive medications and a higher number of medications. Potential interventions and policies to help reduce spending are likely different for both factors.

Ranking criteria used in the selection of drugs for reimbursement: A stated preferences elicitation with Health Technology Assessment stakeholders across jurisdictional contexts

Presented by: **W. Dominika Wranik**, Associate Professor/ Associate Dean Research, Dalhousie University, Faculty of Management

Background and Objectives

The selection of drugs for reimbursement is an important decision problem for public drug plans. In many jurisdictions, including Canada, selection is guided by the Health Technology Assessment framework that combines clinical, economic, organizational, social and ethical criteria. Stakeholder groups, including expert advisory committees, political decision makers, clinicians, health administrators and clinicians, assign different weights to these competing criteria.

Approach

We conducted a stated preferences elicitation with HTA stakeholders in Australia, Canada and parts of Europe to measure the relative importance assigned to various criteria and to compare between stakeholder sub-groups. Our approach (i) combined discrete choice and best-worst scaling experiments into a hybrid model, and (ii) included a measure of conviction/hesitation; both are novel additions to preference elicitation among health policy stakeholders. Data were collected between February and May, 2018 for a total of 214 respondents and 1246 observations. Analysis relied on logistic regression methods.

Results

Respondents considered hypothetical drug submissions and voted in favour or against funding them. Results suggested that a high clinical benefit was the most important criterion across stakeholder groups and jurisdictions. While high costs were a deterrent, respondents were hesitant to reject effective drugs on account of high costs. European respondents appeared more concerned with adverse events than Canadian respondents. The number of potentially affected patients was not a strong influence on drug selection.

Conclusion

Results are important from the policy perspective. If expert committees focus on high clinical benefit as the primary criterion, we could consider a two-step decision process, where the clinical qualities are appraised as a first step, and a positive appraisal becomes a pre-requisite to the full Health Technology Assessment process.

Alignment of Oncology Drug Coverage Across Canada

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

Determining which drugs to cover is a key component in the development of a national pharmacare program in Canada. This study focuses exclusively on oncology drugs and explores the current gaps and overlaps among the provincial and federal public programs and private drug plans.

The analysis examines drugs reviewed by JODR and pCODR from 2007 through December 2017 for all submitted indications, and determines their coverage status as of September 2018 using pCODR drug reviews, public formularies, and Institut national d'excellence en santé et services sociaux (INESSS) recommendations. In conjunction with data from the Canadian Institute for Health Information (CIHI) NPDUIS Database and IQVIA MIDAS™ and Private Drug Plan database, the coverage rates were calculated for all 10 provincial public programs and for private drug plans. Comparative rates among the plans were also determined.

The results show that oncology drugs in public formularies have relatively high listing rates, with some variations. British Columbia, Saskatchewan, and Ontario cover the highest percentage of oncology drugs analyzed (79%), followed by Manitoba (76%) and Alberta (74%). Listing rates in the remaining provinces are below 70%. When we consider the relative share of expenditures for each of the drugs, the proportion of coverage increases moderately. Similarly, the data suggests that 75% of the oncology drugs analyzed were available in the private drug plans in Canada.

The findings from this study will inform policy discussions related to the drugs that may be funded under various models of national pharmacare.

Educating for Registered Nurse prescribing in Canada: Results from an environmental scan

Presented by: **Elaine Moody**, Postdoctoral Fellow, Dalhousie University

Background and objectives: Registered Nurse (RN) prescribing is a means of optimizing RN scope of practice and could contribute to the sustainability and effectiveness of the healthcare system. As Nova Scotia prepares to implement RN prescribing, it is necessary to consider how to ensure appropriate knowledge and skill development for RNs to safely and competently prescribe medication. We will outline the findings of an environmental scan exploring the education of nurses to take on a prescribing role.

Approach: We conducted an environmental scan explored national and international literature reporting educational practices for preparing RNs for a prescribing role. The research question was: What can we learn from countries with RN prescribing about the education programs needed to support competence development for this role? Relevant published literature was identified through a comprehensive search of databases including CINAHL, MedLine, and PsycInfo. The grey literature search included websites of countries with similar healthcare systems as Canada, particularly those noted in published sources, and a review of the Canadian provincial nursing regulatory body websites.

Results: We reviewed the regulation of RN prescribing in the United Kingdom (UK), New Zealand and Ireland. These countries require course work after initial registration, as well as a prerequisite minimum amount of practice hours in the clinical area where the RN plans to prescribe. Course content includes theory as well as supervised clinical hours. The majority of the published literature is from the UK and highlights the importance of pharmacological content, and clinical experiences to contextualize learning. As the regulation of RN prescribing in Canada is so new, and still evolving, there are various approaches to the preparation of RNs to prescribe across Canada. Many provinces require completion of specific course work after initial registration, however, they differ in the level of education programming required.

Conclusion: This environmental scan will inform the development of RN prescribing regulation and education in Canada. Further knowledge development will enable the integration of RN prescribing in the Canada to improve access to healthcare, and better support complex population health needs.

A8.1 ROOM 612

Theme: Health System Performance (includes quality, safety, efficiency, leadership)

Use and Outcomes Associated with General Practitioner Physician-Billed Comprehensive Annual Care Plans in Alberta

Presented by: **Jeffrey Johnson**, Professor, School of Public Health, University of Alberta

In 2009 Alberta Health implemented incentive payments for general practitioner physicians for the collaborative development of comprehensive annual care plan (CACP) with patients living with multimorbid chronic disease. Although this initiative was intended to improve quality of primary care and patient outcomes while containing costs, it is unknown if CACP are achieving these goals. We aimed to address these knowledge gaps, to inform future reimbursement negotiations and potential improvements to these initiatives.

We used linked administrative health care and laboratory data to examine use and outcomes for all patients who received a physician-billed CACP in Alberta from 2009 to 2015. We used interrupted time-series analyses to examine patterns of all-cause hospitalization, condition-specific hospitalizations, ER and physician visits, for 1-year periods before and after the billing of the CACP. We also examined patterns of guideline recommended processes of care (i.e. medication use and laboratory testing). To ensure our estimates were not confounded by temporal trends, we identified up to 2 control patients, matched (based on age, sex, provider, and qualifying CACP comorbidities).

Between 2009 and 2015, 880 529 CACP were billed by 1757 unique physicians per year on average, costing Alberta \$184,884,419 total. Across time, 45% had a CACP in the year before, and 25% in the two prior years. By 2015, 100% of CACP claims were for patients with at least one previous CACP. Hypertension was the most common documented chronic condition for patients to receive a CACP by a physician, followed by diabetes and mental health conditions. No changes were observed in the number of hospitalizations, ER visits, or physician visits among patients who received a CACP; similar patterns were observed among matched controls. There were no clinically meaningful changes in medication use, adherence or ordering of appropriate laboratory tests before and after the CACP.

Overall, we found that the general practitioner CACP program was expensive at the system level, but used by a relatively small proportion of eligible physicians, largely for patients living with hypertension and diabetes. We observed little impact on health care use and outcomes for individual patients in the short-term.

A8.2 ROOM 612

Theme: Health System Performance (includes quality, safety, efficiency, leadership)

Healthcare Provider Utilization of Prescription Monitoring Programs

Presented by: **Alysia Robinson**, Masters Student, Dalhousie University, Department of Community Health and Epidemiology

Background: Prescription monitoring programs (PMPs) are one of several initiatives aimed at promoting appropriate use of prescription opioids. PMPs allow healthcare providers to consult patient profiles, including patient opioid history, before prescribing or dispensing an opioid. We aimed to synthesize the literature on what proportion of healthcare providers access and use PMP data in their practice, and what barriers exist to using PMP data in this population.

Approach: We used a standard systematic review approach. We narratively synthesized PMP data use outcomes. We pooled proportions of healthcare providers who had ever used PMP data employing a random effects model using the metaprop command in Stata 15. We used Critical Interpretive Synthesis methodology to synthesize barriers to PMP data use. We included studies conducted in jurisdictions where a PMP had been implemented. Study participants were healthcare providers (i.e. physicians, pharmacists, etc.). We extracted any outcomes related to PMP data use (i.e. ever use, frequency of use). We extracted any barriers identified as interfering with PMP data use.

Results: We included a total of 53 studies in our review: 46 on PMP data use and 32 on barriers to PMP data use. Overall, the pooled proportion of healthcare providers that had ever used PMP data was 0.57 (95% CI 0.48-0.66), with no statistically significant difference between pharmacists, physicians and other healthcare provider populations. Common barriers to PMP data use included time constraints and administrative burden, not seeing the value in PMP data, and problems with PMP system usability.

Conclusions: Our study has found that healthcare providers do not use PMP data to its fullest potential, and that many barriers exist to PMP data use. Policy makers and PMP administrators can use these findings to optimize PMPs for use by healthcare providers, or to develop interventions to improve healthcare provider knowledge of PMPs.

A8.3 ROOM 612

Theme: Health System Performance (includes quality, safety, efficiency, leadership)

Calcium channel blockers and diuretics: A retrospective cohort study exploring a common prescribing cascade

Presented by: **Rachel Savage**, Postdoctoral Fellow, Women's College Research Institute

Calcium channel blockers (CCBs) are commonly prescribed and first-line agents for hypertension. A common side effect is peripheral edema which can result in the prescription of diuretics, representing a prescribing cascade. The extent to which prescribing cascades involving CCBs and diuretics occur at a population-level is poorly understood. We measured the association between new CCB use and subsequent receipt of a loop diuretic in a cohort of older adults with hypertension.

Our population-based, retrospective cohort study used health administrative data from Ontario to identify a cohort of community-dwelling adults aged ≥ 66 years with hypertension between September 30, 2011 and September 30, 2016. We compared individuals with new CCB use to those with no CCB use (non-user controls) and those with incident angiotensin-converting-enzyme inhibitor (ACEI) or angiotensin receptor blocker (ARB) use (other antihypertensive medication controls). Individuals were followed for 90 days to assess receipt of a loop diuretic. We estimated hazard ratios using combined and sex-stratified Cox proportional hazard models adjusted for key confounders.

Our cohort included 41,086 older adults newly dispensed a CCB, 231,439 non-user controls and 66,494 other antihypertensive medication controls. At 90 days, new CCB users had a higher cumulative incidence rate of receiving a loop diuretic than both control groups (1.37% vs. 0.48% (non-user) and 0.66% (antihypertensive medication user), $p < 0.001$). After adjustment, being newly dispensed a CCB more than doubled the hazards of receiving a loop diuretic compared to non-users over three time periods (hazard ratio (HR) = 2.51, 95% CI 2.13-2.96 for the first 30 days, 2.99 (2.43-3.69) for 31-60 days, and 3.89 (3.11-4.87) for 61-90 days). CCB users were also dispensed loop diuretics at higher rates than other antihypertensive medication users (HR=1.69 (1.39-2.05), 2.27 (1.76-2.93) and 2.41(1.85-3.13), respectively). No sex differences were observed.

New CCB users are dispensed loop diuretics at higher rates than unexposed controls, confirming the occurrence of this potentially inappropriate prescribing cascade in clinical practice. To optimize patient safety and health system resources, interventions to raise clinicians' awareness of the role of CCBs in new-onset peripheral edema are needed.

A8.4 ROOM 612

Theme: Health System Performance (includes quality, safety, efficiency, leadership)

Using a behavioural science approach to explore wicked problems in community pharmacy

Presented by: **Andrea Bishop**, Policy Development and Research Manager, Nova Scotia College of Pharmacists

Background and Objectives

Pharmacy stakeholders in Canada have been grappling with wicked problems impacting pharmacy practice, resulting in unrealized pharmacist potential. As pharmacists attempt to use the full extent of their knowledge and skills in their practice, the profession struggles to overcome workplace- and system-level barriers. The aim of the National Summit on Wicked Problems in Community Pharmacy was to better position the profession to develop a theoretically-sound and unified approach to current challenges through behavioural science.

Approach

Behaviour change experts introduced Summit participants to the Theoretical Domains Framework (TDF), COM-B model and the Behaviour Change Wheel (BCW). One half-day was focused on using a worked example to apply behavioural science and demonstrate its utility and value when designing a multi-faceted, multi-stakeholder strategic approach. In small groups, participants responded to a series of questions concerning how problems could be tackled using the COM-B Model. Representatives from each group shared their discussion with all participants and responses were mapped to the COM-B Model. Potential future interventions based on COM-B findings were then identified and discussed.

Results

The Summit brought together 120 pharmacy practice stakeholders representing regulators, employers, researchers, educators, practitioners, professional associations, government, and patient safety organizations. Attendees noted an increased appreciation for the complexity of the issues and challenges facing the pharmacy profession. While previously there may have been a propensity to tie many of the issues to current remuneration structures or interjurisdictional differences, respondents indicated that discussions at the Summit were instrumental in identifying many intra-professional behaviours. Using a behavioural science approach provided three key advantages: (1) it discouraged decision-making based on "it seemed like a good idea at the time," (2) it allowed for a deeper dive of the behaviours underpinning issues, and (3) it provided a systematic method and common language.

Conclusion

The Summit provided a foundational first step in establishing a theory- and evidence-informed approach to work the wicked problems of community pharmacy. Participants identified the need for more rigorous research and evaluation tools based on the TDF/COM-B to identify common barriers and challenges and allow for cross-jurisdictional evaluation.

A9.1 ROOM 613

Theme: Home Care & Long Term Care and Aging

Where do people with dementia spend their last year of life? Healthcare use and costs in a population-based cohort

Presented by: **Amy Hsu**, Investigator, Bruyère Research Institute

Background and Objectives: Our understanding of when and how persons with dementia who are nearing death move between care settings is limited, despite their elevated risk of experiencing potentially burdensome healthcare transitions (e.g., multiple emergency room [ER] visits or hospital admissions) and how these transitions may impact their dying experience.

Approach: Retrospective cohort study of decedents with dementia (n=181,117) in Ontario, Canada, between April 1, 2011, and March 31, 2017. The population was stratified by settings of care at one year before death: Long-stay nursing home (NH) residents, in the community with a subsequent transition to a NH (short-stay residents), in the community with long-stay home care (HC), and community-dwelling decedents with short-term or no HC support. Multivariable regression models were used to examine the association between care setting and the rate of ER visits, hospital admissions, as well as healthcare cost in the last 30 and 90 days of life.

Results: One-third of Ontarians had dementia at the time of death and most decedents with dementia (56.2%) were in a NH prior to death. Across all cohorts, hospitalizations, ER visits and healthcare spending escalated in the last 90 days of life. After controlling for individual-level characteristics, short-stay residents, long-stay HC recipients and decedents with limited HC support had 1.74, 2.15 and 1.98 times the risk of hospitalization and 1.65, 2.31 and 2.33 times the risk of ER visits in the last 90 days of life, respectively, compared long-stay NH residents. The estimated average healthcare costs across the same groups were 1.22, 1.50, and 1.53 times of the spending of long-stay NH residents. Findings were consistent for outcomes in the last 30 days of life.

Conclusions: People with dementia who reside in the community in the last year of life have a higher risk of experiencing transitions in care settings than those who were able to receive sustained support in NHs. Results of this study shed light on their care needs and correlation to care outcomes.

A9.2 ROOM 613

Theme: Home Care & Long Term Care and Aging

Same-day physician access in long-term care homes is associated with reduced hospital transfer rates: A retrospective cohort study

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

Background and Objectives

Hospitalizations and emergency department (ED) visits are common among residents in long-term care (LTC) homes (also known as nursing homes). These hospital transfers are burdensome for residents and costly to the health care system. Time in hospital also increases the risk of infection, falls, delirium, and functional decline. We conducted a retrospective cohort study to examine the association between same-day physician access in Ontario LTC homes and resident hospitalizations and ED visits.

Approach

We administered a survey to Ontario LTC homes from March-May 2017 to collect their typical wait time for a physician visit. We linked the survey to administrative databases to capture resident characteristics, hospitalizations, and ED visits. We defined a cohort of residents living in survey-respondent homes between January and May 2017 and followed each resident for six months or until discharge or death.

We estimated negative binomial regression models on counts of hospitalizations and ED visits with random intercepts for LTC homes. We controlled for residents' sociodemographic and illness characteristics, LTC home size, chain status, rurality, and nurse practitioner access.

Results

We received survey responses from 161 LTC homes (response rate=26%), representing 20,624 residents. Fifty-two homes (32%) reported same-day physician access. During the six-month follow-up 2,273 residents (11%) were hospitalized and 4,440 residents (22%) visited an ED.

Among residents of homes with same-day physician access, 9% had a hospitalization and 20% had an ED visit. In contrast, among residents in homes without same-day access, 12% were hospitalized and 22% visited an ED during follow-up.

The adjusted hospitalization and ED rates among residents of homes with same-day physician access were 21% lower (rate ratio=0.79, p=0.02) and 14% lower (rate ratio=0.86, p=0.07), respectively, than residents of other homes.

Conclusion

Residents of homes with same-day physician access experience lower hospitalization and ED visit rates than residents in homes that wait longer for physicians, even after adjusting for important resident and LTC home characteristics. Improved access to physicians has the potential to reduce hospital transfers of LTC residents.

A9.3 ROOM 613

Theme: Home Care & Long Term Care and Aging

Evaluating hospital-to-community transitions for palliative care patients: A retrospective cohort study of healthcare utilization and place of death in patients discharged from inpatient palliative care in Ottawa, Ontario

Presented by: **Colleen Webber**, Clinical Research Associate, Ottawa Hospital Research Institute

Background and objectives: Patients receiving inpatient palliative care may be discharged to the community when clinically appropriate and when adequate supports are in place to manage their care in the community. Most patients prefer to receive care and die in the community, and good transitional care planning can help patients achieve those goals. The objective of this study was to describe the outcomes of patients discharged from an inpatient palliative care unit in Ontario.

Approach: We conducted a single-institution retrospective cohort study using institutional medical record data linked to regional acute care hospital and home care data. Study participants included all patients discharged to the community from a 31-bed inpatient palliative care unit in an academic continuing care facility in Ontario between January 1 and December 31, 2015. Outcomes post-discharge included survival, acute care hospital admissions or emergency department (ED) visits within 30 days of discharge, and place of death. Analyses described models of physician palliative care delivered post-discharge and examined the determinants of outcomes according to patient demographics, health status, and healthcare characteristics.

Results: Seventy-eight patients were discharged to the community from the PCU over a one-year period. Discharged patients had poor prognosis, with over one-third having a Palliative Performance Score < 5 0 at discharge. The median survival after discharge was 96 days and 36% of decedent patients died in an acute care hospital. 13% percent of patients were hospitalized and 23% visited an ED within 30 days of discharge, often for reasons that could have been managed in the community, such as pain or respiratory distress. Most patients received palliative care post-discharge, with varying models of care. Certain groups of patients were at greater risk of acute care use and in-hospital deaths, including younger patients, patients with non-malignant diseases, and patients discharged home compared to long-term care settings.

Conclusion: Patients discharged from an inpatient palliative care setting are at risk of post-discharge acute care use, including hospitalizations, ED visits and in-hospital deaths, despite having community palliative care supports in place. Variations in outcomes can point to groups of patients who may require greater intensity of supports post-dscharge.

A9.4 ROOM 613

Theme: Home Care & Long Term Care and Aging

The urgent need for timely, accessible and high-quality palliative health services: can technology fill the gap?

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

Background and objectives

Despite an increasing aging population and chronic disease prevalence, few Canadians have early access to palliative care – an important determinant of well-being and quality of life among those with life-limiting diagnoses. Integrating digital health solutions within palliative care may be an effective strategy to address inadequate access and transform current services to keep pace with demand. This qualitative study explored the utilization of technological innovations within palliative care from multiple stakeholder perspectives.

Approach

Our investigation was embedded within the context of two virtual palliative demonstration projects in two Ontario regions that tested videoconferencing, remote monitoring and electronic medical management for patients receiving in-home palliative care. Twenty qualitative, semi-structured interviews were conducted with administrative stakeholders, policymakers, clinicians, and patients involved in the demonstration projects or palliative care broadly. Participants were identified using a purposive and snowball sampling technique whereby project leads provided appropriate contacts. Interview questions were open-ended and exploratory to gain insight into participants' experiences with and perspectives of technology in palliative care. An inductive content analysis was undertaken to identify major themes.

Results

Our interviews identified potential technologies that could alleviate gaps in palliative care. To improve access to palliative services, two technology features were identified as high-value: videoconferencing and remote-monitoring to decentralize health services out of high-resource institutions and into home and community settings. While participants reported that digital health solutions can provide support in a variety of areas, they also felt that one technological solution will not address all gaps. Further, technology was seen as an enabler to connect multiple actors involved in a patient's circle of care, who often operate in silos. Critical factors for the implementation, scale, and spread of technologies within palliative care were also identified. Participants reported that successful implementation is contingent on ongoing collaboration across multiple stakeholder groups.

Conclusion

As the demand for palliative care escalates, technological innovations have the potential to address challenges with scarce resources and support timely, accessible and coordinated palliative care. Given operationalization of palliative care is often resource-constrained and fragmented, widespread engagement, resource allocation and collaboration across multiple stakeholders is required to transform care.

A10.1 ROOM BALLROOM 2

Theme: Primary Health Care

High Volume GPs and Health Outcomes in Alberta

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

Background: Alberta is considering alternate forms of physician reimbursement, fee-for-service (FFS) predominates. Alberta physicians are among the highest paid. British Columbia caps the number of patients that can be billed for per/day. Few studies have explored the relationship between GP patient volumes and health outcomes under FFS.

Objective: To explore the association between High Volume practice (HV) and the risk of Emergency Department (ED) visits and hospitalizations in patients with one or more chronic diseases.

Approach: Anonymized patient GP FFS claims data were linked with provider demographics from the College of Physician and Surgeons of Alberta (2011-16). Using hierarchical logistic regression, we explored the relationship between GP patient volumes and the odds of ED visit and hospitalization for patients within a HV (defined as > 50 patients/day) or non-HV GP panel with one or more of the following: Diabetes (DM), Heart Failure (HF), Ischemic Heart Disease (IHD), Chronic Obstructive Pulmonary Disease (COPD), and Asthma. Panels were calculated using a 4-cut method. Adjusted odds ratios (ORs) and 95% CIs were calculated adjusting for patient and provider characteristics.

Results: Preliminary results suggest that patients with asthma (1.09: 1.04-1.15 p-value 0.009) in HV GP panels were more likely to visit the ED or be admitted to hospital, (1.22: 1.03-1.44 p-value 0.02). No association between HV practice and acute care and hospitalizations was observed for patients with COPD, DM, HF, or IHD.

Conclusions: Alberta is considering physician payment changes that might discourage HV practice, improve quality and lower costs. HV practice may be necessary for access. Early results demonstrate limited association between HV practice and risk of ED visit or hospitalization, except for asthma patients. Analysis is ongoing to better understand these findings.

A10.2 ROOM BALLROOM 2

Theme: Primary Health Care

Models of primary care practice and priorities for structural reform in British Columbia: a cross-sectional survey

Presented by: **Lindsay Hedden**, Health System Impact Fellow, British Columbia Ministry of Health

Objectives

Despite increases in primary care physicians per-capita, BC is facing a substantial shortage. System-level reform is ongoing; however, we have limited information about how family physicians, who currently provide nearly all primary care in BC, structure their practices, nor their priorities for reform. We sought to 1) accurately describe family doctors' models of practice and the implications of these models for service capacity; 2) explore physicians' perspectives on priorities for structural reform to primary care.

Approach

We modified surveys developed for the Atlantic Canada Models and Access Atlas for Primary Care (MAAP) project to match local context. All primary care physicians credentialed within Vancouver Coast Health (VCH) Authority were invited to participate (N=1017). Respondents were asked to self-identify the model of practice that best describes their work: community-based family practice (CBFP), hospital or facility-based, locum, or non-clinical. We compared features within and across respondent groups, including personal and practice location characteristics, hospital and teaching work, payment and appointment characteristics, and priorities for system-level reform. We discuss the implications for access to CBFP and for ongoing reform.

Results

We received responses from 541 (53.2%) physicians. 355 (67.5%) identified their practice style as CBFP; however, only 112 of them (31.6%) work full-time in CBFP. The remaining 243 (68.4%) work part-time in non-CBFP locations. 139 (40%) physicians providing CBFP reported panel sizes < 500 patients. 399 (73.8%) physicians indicated a need for fundamental change to how primary care is delivered. 244 (47.6%) reported they would prefer to be an employee of a clinic, rather than a small business owner. Other identified priorities for reform included options to practice in a team (reported as somewhat/very important by 91.3% of respondents), direct funding for team roles (91.3%), direct clinic funding (83.2%), part-time work options (92.8%) and parental leave (92.8%). Priorities for reform were consistent across practice models.

Conclusion

Only 20% VCH's primary care physicians are working full-time in CBFP. Half would prefer to be employees of a clinic, a model that has very limited availability in the province. The lack of availability of this model may push physicians away from CPBC, contributing to ongoing access issues for patients.

A10.3 ROOM BALLROOM 2

Theme: Primary Health Care

The accessibility of after-hours care at community-based primary care clinics across Vancouver Coastal Health Authority

Presented by: **Lindsay Hedden**, Health System Impact Fellow, British Columbia Ministry of Health

Objectives

After-hours access to a patient's own primary care provider may be associated with decreased fragmentation of care and reduced use of emergency services. BC's the College of Physicians and Surgeons mandates that all physicians establish a schedule of on-call coverage outside of regular office hours or "make other arrangements to ensure that urgent medical advice is available". This census-based descriptive study characterizes the availability and accessibility of after-hours care across Vancouver Coastal Health (VCH).

Approach

This cross-sectional survey is part of the Models and Access Atlas for Primary Care – British Columbia (MAAP-BC) project. Between Oct 2017-Jan 2018, we identified a complete list of community-based primary care (CBPC) clinics within the VCH region (covering approximately 25% of the population of BC)/ We called the clinics outside business hours, between Jan-Apr 2018, and recorded after-hours phone messages. Messages were analyzed for whether patients could be directed to an on-call doctor, or other services, and how other services are described.

Results

We identified 410 clinics providing CBPHC within the VCH region. Of those 410 clinics, 383 (93%) had an outgoing voice message only, four (1%) answered directly through an answering service, 16 (4%) had a voice message that connected to a live person, and 7 (2%) did not have any after-hours message. The messaging for 264 (64%) clinics provided a mechanism to contact the on-call doctor. Of those, 35 (13%) messages mentioned a possible service fee to speak with the on-call doctor. 69 (17%) of the messages were also provided in a language other than English. 210 (51%) clinics advised calling 911 and 246 (60%) advised visiting the nearest emergency department "in case of emergency".

Conclusion

Less than 2/3 of CBPC clinics in BC provide a way to access an on-call physician after hours, despite the College standard. Visiting the ER was the most frequently mentioned alternative, raising concerns about care fragmentation and use of emergency services for concerns more appropriately addressed by CPBC clinics.

A10.4 ROOM BALLROOM 2

Theme: Primary Health Care

The impact of Ontario's after-hours premium on emergency department utilization

Presented by: **Michael Hong**, PhD Student, University of Western Ontario

Following Canadian primary care reform initiatives in the early 2000s, Ontario introduced patient enrolment models (PEMs) combined with the after-hours premium along with several pay-for-performance incentives in delivery of primary care to the population. The after-hours premium, introduced in 2003, was an incentive for specific services provided during after-hours (evenings, weekends, and holidays) by physicians in PEMs to their rostered patients. We investigate the impact of the after-hours premium on emergency department (ED) utilization.

We used linked health administrative data housed at ICES. A ten percent random sample of Ontario residents was followed from April 2001 to March 2016. We used linear and fixed-effects linear regression models to assess the impact of introduction of the after-hours premium in 2003 and subsequent increases in the value of the premium in 2005, 2006, and 2011 on ED utilization. The outcome of interest was the number of ED visits, measured as the number of visits per 10,000 patients per month, stratified by urgency (defined using the Canadian Triage and Acuity Scale) and timing of ED visit.

For patients whose physician opened practice after-hours, an increase in the after-hours premium by 10 percentage points was associated with 5.6 (95% CI: 4.4, 6.9) fewer total ED visits per 10,000 patients per month and 7.1 (95% CI: 6.4, 7.8) fewer non-urgent ED visits per 10,000 patients per month. The corresponding fixed-effects results showed that an increase in the after-hours premium by 10 percentage points was associated with 2.2 (95% CI: 1.1, 3.4) fewer ED visits per 10,000 patients per month, but the association with non-urgent ED utilization disappeared. Although associated with a reduction in ED utilization for patients whose physician opened practice after-hours, the after-hours premium was not associated with a reduction in ED utilization for all patients rostered in PEMs.

Improving access to after-hours primary care may be an effective means to reduce ED utilization. Ontario's experience suggests that incentivizing after-hours primary care has a limited impact on non-urgent ED utilization. A limitation of our study is the inability to account for individual-level socioeconomic factors that influence ED utilization.

CONCURRENT SESSIONS B: WEDNESDAY, MAY 29, 2019 - 1:00PM – 2:15PM

B1 - Capacity Building

ROOM BALLROOM 2

Training for Impact: Lessons Learned from the Health System Impact Fellowship's Enriched Core Competencies

Presented by: **Meghan McMahon**, Associate Director, Institute of Health Policy, Management and Evaluation, University of Toronto, **Stephen Bornstein**, NLCAHR, **Tom Noseworthy**, University of Calgary, **Janet Knox**, Nova Scotia Health Authority, **Deepa Singal**, British Columbia Academic Health Sciences Network

Objectives:

We will engage CAHSPR participants in discussion about competencies HSI fellows require to make an impact within health system organizations. Objectives include, to: (1) present results of a study that analyzed how the Fellows' ECCs evolved over the first year of fellowship and whether fellows' and supervisors' assessments aligned; (2) illustrate the competencies in action and the skills required to add value within the health system from the perspective of Fellows and health system supervisors; (3) open dialogue about how to institutionalize the ECCs in academic training programs to ensure all HSPR PhD trainees have opportunities for ECC development.

Approach:

The approach is multipronged and involves formal presentation, brief case studies and active dialogue between panelists and participants. The panel will commence with a brief presentation to set the context and present results of the ECC analysis. The lived experience of HSI Fellows and HSI health system supervisors will be shared through brief case studies that illustrate which competencies were most used, most valued, and in most need of further development. Panelists and participants will be invited to reflect on the role of universities in preparing PhD trainees for success in academic and applied health system settings and to vote on different potential models for expanding access to ECC training.

B2 - Healthcare Reform, and Health Accord

ROOM 501

Speaking to Americans about Canadian Health Care

Presented by: **Raisa Deber**, Professor, University of Toronto, **Steven Morgan**, University of British Columbia, **Gregory Marchildon**, University of Toronto, **Sara Allin**, Institute for Health Policy, Management and Evaluation, University of Toronto

Objectives:

The panel will discuss what Americans think/assume about Canadian health care, and what they want to know from us, and the implications for health reform on both sides of the border. It will also examine the extent to which their assumptions are an accurate portrayal of health care in Canada, and what this may teach us both about health care, and the politics affecting health care reform in both countries. It will also explore our experiences in dealing with US health services, policies and systems (at the federal and state levels), and what that tells us.

Approach:

The invited panelists have been asked to speak with a variety of audiences internationally (including in the US), including the media, policy makers (including staffers for legislators at the federal and state level), think tanks, academic advisors to state and federal governments, and the public. This educational session should be of particular interest to students and early career members. The panelists have learned that successful communication involves a number of factors including: advance assessment of audience; careful translation of country-specific terminology; useful cross-border comparisons that undermine existing assumptions, biases and misunderstandings; and effective use of metaphors and images in order to better connect with audiences. They have also noted what these conversations tell us about how we might speak to Canadians about potential areas for improving our strong system, and potential changes that should be avoided.

Developing Performance Indicators for Community-Based Healthcare: The Science Behind the Framework

Presented by: **Deirdre McCaughey**, Associate Professor, Cumming School of Medicine, University of Calgary, **Natalie Ludlow**, University of Calgary, **María José Santana**, Cumming School of Medicine, university of Calgary, **Sydney Haubrich**, University of Calgary/W21C, **Connie Yang**, University of Calgary/W21C, **Jill de Grood**, W21C, University of Calgary, **William Ghali**

Objectives:

Our panel will present the processes used by our research team to develop a set of CBHC indicators that cross all levels of CBHC initiatives (e.g. system, organization, frontline care) and the framework that emerged for organizing CBHC processes and outcomes. Specifically, members of the panel will address: 1. The process used to identify CBHC indicators; 2. The modified Delphi methodology and how indicators were examined and identified as clusters into system, strategic, tactical, and transactional levels; 3. The inter-relatedness of the indicators at each level and how they build upon each other at each successive level. 4. The framework that emerged to classify CBHC

Approach:

Approach (150-word limit) Using recent research designed to develop a CBHC evaluation framework, our panel of experts will share experiences and expertise on the importance of rigorous scientific approaches to developing performance measures health services research. Discussion will focus on the processes to used to develop a set of CBHC indicators. These processes include a) literature review to identify current CBHC evaluation frameworks and possible metrics, and of best practices in indicator selection and utilization, b) an environment scan of current indicators in use pan-provincially, and c) a modified Delphi process to organize and identify CBHC indicators at each level of CBHC programming (e.g. system, organization, frontline care). In this session, we will present our CBHC processes and share with the audience how these processes succeeded in creating our end results: an evidence-based framework for classifying and categorizing CBHC indicators and the indicator set that derived from our Delphi panel.

B4 – Home Care & Long Term Care and Aging

ROOM 612

Preparing for the National Dementia Strategy: Insights from the Canadian Academy of Health Sciences' Assessment on Dementia Care in Canada

Presented by: **Carrie McAiney**, Associate Professor, University of Waterloo, **Janice Keefe**, Mount Saint Vincent University, **Isabelle Vedel**, McGill University, **Howard Bergman**, Department of Family Medicine at McGill University, **David Hogan**, University of Calgary, **Debra Morgan**, University of Saskatchewan

Objectives:

The objectives of the panel presentation are: 1) To provide background information about the purpose and scope of the assessment on dementia, and the approach taken in conducting the assessment; 2) To outline the areas examined in the assessment and share the key findings; and 3) To provide an opportunity for attendees to reflect on the key findings and share insights.

Approach:

The CAHS convened a 6-member expert panel to conduct an assessment of dementia care in Canada. Because the assessment would be used to inform the development of the national dementia strategy, an expedited process was undertaken. The assessment examined literature and best practices in the identified areas, highlighting challenges, public policy responses, current and emerging best practices, and key findings. The act of parliament determined the scope of the assessment. Specifically, panel members examined the areas of: prevention, awareness, health and social care, education and support for caregivers, and research related to dementia. The act of parliament also invited the exploration of other areas based on current thinking and research in the field. Thus, the panel also examined literature and best practices related to the engagement of persons living with dementia, development and support of the dementia workforce, and considerations related to the implementation of dementia strategies.

Closing the research to practice to policy gap: How the Translating Research into Care (TRIC) funding program is making a difference in Nova Scotia

Presented by: **Sandra Crowell**, Program Leader - Research Development, Nova Scotia Health Authority, **Robin Urquhart**, Dalhousie University
Jill Hayden, Dalhousie University Department of Community Health & Epidemiology, **Erna Snelgrove-Clarke**, Dalhousie University, **Jill Hatchette**, IWK Health Center, **Kathryn McIsaac**, Nova Scotia Health Authority

Objectives:

- Provide an overview of the TRIC funding program
- Present program evaluation data and outcomes from three TRIC funded projects: Project 1: Improving care for patients visiting the Emergency Department with low back pain through collaboration and best-practice evidence (Hayden)
- Project 2: Enhancing post-partum breastfeeding through evidence to enhance maternal newborn outcomes (Snelgrove-Clarke)
- Project 3: Improving care and quality of life for hospitalized older adults with cognitive problems (Urquhart)
- Discuss strategies for closing the research to practice to policy gap in health care settings

Approach:

Sandra Crowell will introduce the TRIC healthcare improvement funding program, the panelists, panel objectives, and data from the recent TRIC program evaluation. Expert panelists – Drs. Jill Hayden, Erna Snelgrove-Clarke, and Robin Urquhart will each present funded implementation science research projects from diverse areas of health care. Each presenter will focus on the successes and challenges their team encountered in moving evidence into health care policy and practice, and the lessons learned. Dr. Jill Hatchette will conclude the panel session with insights about the impact of the TRIC funding program in Nova Scotia. She will lead the discussion about strategies to further close the research to policy gap in Canadian health care facilities.

Patient Enrolment in Primary Care: Policies, Perspectives, and Population Health Outcomes

Presented by: **Erin Strumpf**, Associate Professor, McGill University; **Laurie Goldsmith**, GoldQual Consulting & SF); **Marilyn Parker**, Patient Partner, **Catherine Hudon**, Université de Sherbrooke, **Emily Gard Marshall**, Dalhousie University

Objectives:

We will discuss results from an interdisciplinary, mixed methods, interprovincial research project, funded by the CIHR SPOR Network in Primary and Integrated Health Care Innovations. Research team membership includes four patients as research team members. Using the “enrolment-attachment-continuity” conceptual framework developed for this project, we will discuss how we worked together as a team, including our approaches to collaborating with patient partners. We will also present an overview of our project findings on how patients and physicians perceive patient enrolment policies and our estimates of the impacts of enrolment policies on patient-physician attachment and access to care.

Approach:

Our stakeholder team members – patient partners, primary care providers, and provincial decision makers – have shaped this project and they are represented on the panel. All team member panelists will reflect on the elements that helped with enrolment, attachment, and continuity to our research team and the research itself. Research team panelists will also consider research wish lists for similar work. An additional panelist is a content and methods expert from outside the project, who will help synthesize the discussion and provide reflections on future directions. We will also share some findings from our qualitative and quantitative investigations of whether and how patient enrolment may improve patient experiences, continuity of care, and policy-relevant health care system outcomes such as patient-physician attachment and access to care.

B7.1

Theme: Health Economics/Financing/Funding (including cost and economic analysis)

ROOM 507

How should we measure the psychosocial costs of cancer? A literature review

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

Background and objectives:

Psychosocial costs have been described as the intangible costs of the psychological and emotional burden associated with illnesses, such as cancer. This burden results from psychological distress and turmoil, pain and suffering and other negative experiences that are commonly associated with the cancer care trajectory. Psychosocial costs can include additional treatment costs and the costs associated with this burden and its impact on patients, including from compromised quality of life. While studies have described the nature of this burden and its impacts, few have quantified the associated costs to patients. Decision-makers lack complete information on the true burden of cancer on patients and families and this hinders opportunities to make the best cancer control policy decisions. This study aimed to describe and critically analyze approaches used for measuring the psychosocial costs of cancer.

Approach:

We conducted a comprehensive literature review of primary studies and reviews published in the academic and grey literature from 2008 to 2018 by searching ten electronic databases. This was supplemented with key-informant interviews. Results were analyzed using a narrative synthesis. Quality appraisals were conducted on included studies.

Results:

Forty-four primary studies and 13 reviews were included. Most of the reviews (85%) were published within the last five years and included studies of various cancer sites (69%). Various dimensions of the psychosocial burden were described, including: health-related quality of life; clinical diagnoses (e.g. anxiety or depression), or cancer-specific aspects of social, emotional, financial, and relational wellbeing and functioning. Few studies estimated the associated costs. Informants identified a) heterogeneity in the experience and impact of cancer (e.g. between population subgroups, age at diagnosis, prognosis) and; b) the lack of standardized tools as the key challenges for measuring and costing the psychosocial burden of cancer.

Conclusions

More methodological work is needed to better estimate the costs associated with the psychosocial burden of cancer. Further consultation with experts, including patients and their families, will help to estimate and validate the costs associated with the psychosocial burden of cancer. The development and validation of a tool to measure this burden would ensure consistency in measurement across studies.

B7.2

Theme: Health Economics/Financing/Funding (including cost and economic analysis)

ROOM 507

The Health and Financial Impacts of a Sugary Drink Tax across Different Income Groups in Canada

Presented by: **Kai-Erh Kao**, MSc student, University of Alberta

Background

Overconsumption of sugar leads to serious health issues such as obesity, cardiovascular diseases, and diabetes, and also increases healthcare costs. Sugary drink taxes have been implemented to curb sugar intake in several countries. A previous Canadian model by Jones et al. also showed that it could improve health. However, there is a concern that sugary drink taxes are regressive. This project assessed the impacts of a sugary drink tax by different income groups in Canada.

Methods

The existing multi-state life table model by Jones was extended to consider impacts on different income groups. The model compared a 20% sugary drink tax scenario with "business as usual" scenario. The changes in beverage consumption and BMI were modelled. These changes further affected relative risks, incidence, and prevalence of 19 obesity-related diseases and, in turn, healthcare costs. Data on cross- and own-price elasticities, mean BMI, and sugary drink consumption were stratified by income quintile.

Results

The consumption of sugary drinks was estimated to be reduced by 14.69% to 15.41%, with the smallest change in the middle-income quintile and the largest change in the lowest income quintile. BMI was estimated to be reduced by 0.21 to 0.33 units, with the greatest reductions predicted in the lowest income quintile and in males. The total disability-adjusted life years (DALYs) averted over 25 years increased with income, from 49,637 for the lowest income quintile to 59,103 for the highest income quintile. Tax revenue in the first year was estimated to vary by income quintile: \$209m for the lowest income quintile, \$227m for the middle-income quintile, and \$204m for the highest income quintile.

Conclusion

The model predicts that high-income Canadians would gain the most health from a sugary drink tax, while the lowest-income Canadians would pay the largest proportion of their incomes in tax. If this regressivity is a concern, policymakers may consider investing the revenue in policies that reduce health and/or income inequities.

B7.3

Theme: Health Economics/Financing/Funding (including cost and economic analysis)

ROOM 507

Economic Evaluations of Vision Screening Interventions for Children: A Systematic Review

Presented by: **Afua Asare**, Graduate student, Institute of Health Policy Management and Evaluation, University of Toronto and The Hospital for Sick Children, Toronto

Background and objectives: The Child Visual Health and Vision Screening Protocol was developed in 2018 to inform the creation of school-based vision-screening programs in Ontario. Evidence for the cost-effectiveness of such interventions compared to standard care are important for resource-allocation but are lacking in Canada. Study objective is to review the literature on economic evaluations of vision-screening interventions for children. Results will inform the design of an economic evaluation of vision-screening interventions in Ontario.

Approach: Electronic databases, grey literature and health technology assessment websites were employed in the structured search validated with search filters from the InterTASC Information Specialists' Sub-Group and the Peer Review of Electronic Search Strategy checklist. Studies were included if: (1) cost-utility analysis (CUA), cost-benefit analysis (CBA), cost-effectiveness analysis (CEA), or cost-analysis (CA) methods were used, (2) interventions targeting children under six years of age and designed to detect amblyopia and/or uncorrected refractive errors, (3) interventions were compared to alternative screening interventions, no screening or a usual care strategy, and (4) were published after 2002. Study quality was assessed with the Pediatric Quality Appraisal Questionnaire (PQAQ).

Results: Nine of 671 publications were included, published from 2003 to 2012 in Germany (n=2), UK (n=1), Sweden (n=1), Canada (n=1) and USA (n=4). Societal (n=3), third-party payer (n=4) and a combination (n=1) of cost perspectives were employed. Analytical techniques included a CUA/CEA combination (n=3), CEA (n=3), CUA (n=1), CBA (n=1) and CA (n=1). CUAs made assumptions of health utility and quality-adjusted life years using expert opinion or values from other studies. Study conclusions were most sensitive to the disutility of unilateral vision impairment (n=3) and the prevalence of the target condition (n=2). Highest scoring domains of the PQAQ were discounting (mean=0.86, SD=0.5), target population (mean=0.81, SD=0.27), and economic evaluation (mean=0.78, SD=0.34); lowest were: incremental analysis (mean=0.52, SD=0.50), costs and resource use (mean=0.44, SD=0.22), and analysis (mean=0.41, SD=0.22).

Conclusion: Significant variability exists in the quality of methods employed by published economic evaluations. Prospective studies on the impact of amblyopia and/or refractive errors on the health-related quality of life of young children are required to better inform the conduct of CUAs.

B7.4

Theme: Health Economics/Financing/Funding (including cost and economic analysis)

ROOM 507

Développement et validation d'une grille d'observation « temps-mouvement » de mesure des coûts des pratiques cliniques préventives en prévention et contrôle des infections nosocomiales

Presented by: **Eric Tchouaket**, Associate professor, Université du Québec en Outaouais

Contexte et objectifs : Les infections nosocomiales (INs) constituent l'un des principaux accidents de soins évitables. Dans son plan d'action 2015-2020, le Ministère de la santé du Québec souhaite évaluer les coûts, les effets et la rentabilité du programme de prévention et contrôle des infections nosocomiales (PCI). Cette étude s'inscrit dans cet optique et vise à développer, valider et mettre à l'essai une grille d'observation de mesure des coûts des pratiques cliniques exemplaires (PCE) associées à la PCI.

Méthodes : Développement de la grille : Recension des écrits sur les PCE en lien avec la PCI : hygiène des mains ; hygiène et salubrité ; dépistage des INs (DACD, SARM, ERV et BGNPC) ; et précautions additionnelles. Validation : Approche Delphi. Sélection raisonnée de 18 experts selon leurs expertises théoriques et cliniques en PCI. Mise à l'essai : Étude pilote dans deux unités médecine et chirurgie du CISSS des Laurentides et deux du CIUSSS du Saguenay Lac Saint Jean.

Résultats : Développement d'une grille implémentée à l'aide d'une application web/mobile @néPCI. Cette grille comprend six rubriques : caractéristiques sociodémographiques de la personne observée ; zone ; précautions additionnelles ; hygiène des mains ; port ou retrait de l'équipement de protection ; hygiène et salubrité. Suivie de la pratique de PCI de 3 infirmières, 3 infirmières auxiliaires, 3 préposés aux bénéficiaires, et 3 préposés à l'hygiène et salubrité de ces unités durant le quart de jour et de soir. Le temps mis est noté à l'aide d'un chronomètre automatique intégré. Les produits et matériels utilisés sont systématiquement notés. Le coût du dépistage des INs sur une période d'observation d'un mois ainsi que le coût des activités de formation en PCI ont été calculés.

Conclusion : La grille d'observation construite et validée mérite d'être utilisée pour évaluer les coûts des PCE en PCI dans les hôpitaux du Québec. Cette analyse des coûts du programme PCI renseigne sur les bienfaits d'investir et de renforcer des stratégies de planification et de gestion en prévention des infections.

B8.1

Theme: Health System Performance (includes quality, safety, efficiency, leadership)

ROOM 504

Quality of diabetes mellitus care in Ontario's Family Health Group and Family Health Organization models

Presented by: **Mary Bamimore**, Graduate Student, The University of Western Ontario

Background and objectives: Following primary care reform in Ontario in early 2000's, Family Health Group (FHG) and Family Health Organization (FHO) models became Ontario's two predominant models for primary care delivery. Physicians in FHG and FHO models are remunerated through blended fee-for-service (FFS) and blended capitation, respectively. To date, physicians' performance in these models is very scant. We investigated the impact of physicians switching from FHG to FHO on quality of care provided to diabetic patients.

Approach: We used health administrative data from the Institute for Clinical Evaluative Sciences (IC/ES). Nine quality indicators were investigated, and analyses were conducted at the physician level. Propensity score methods (PSM) were employed to make the distribution of observable physician and patient covariates similar between the switchers and non-switchers, and then panel-data regression analyses were performed. Indicators that were proportions were analyzed using fractional regression models; indicators that were continuous measures were analyzed using linear fixed-effects regression models. We followed 2,120 physicians from the 2006 to 2015 fiscal years; thus we had 21,200 observations for our panel data.

Results: We found that switching from FHG to FHO was associated with 2.82% (95% confidence interval (CI): 2.00% - 3.65%) more HbA1c testing, 2.80% (95% CI: 1.97% - 3.62%) more lipid assessment, 2.89% (95% CI: 2.11% - 3.67%) more nephropathy screening, 1.12% (95% CI: 0.59% - 1.66%) more statin prescription, a decrease in mortality risk score by 19.67% (95% CI: 33.36% - 5.97%), and a decrease in comorbidity score by 10.34% (95% CI: 11.82% - 8.86%). However, switching was non-significantly associated with diabetes-related hospitalizations by -0.022% (95% CI: -0.050% - 0.0071%), annual eye examination by -0.019% (95% CI: -0.19% - 0.15%), and prescription of drugs for nephropathy by 0.358% (95% CI: -0.20% - 0.92%).

Conclusions: We found that, compared to blended FFS, blended capitation payment is associated with moderately better quality of care provided to patients with diabetes. Furthermore, we found that capitated payment was associated with lower mortality risk scores and lower comorbidity scores of enrolled patients compared to their blended FFS counterparts.

B8.2

Theme: Health System Performance (includes quality, safety, efficiency, leadership)

ROOM 504

Impact of Alzheimer Society Service Use on Caregiver Strain and Depression for Caregivers of Individuals with Dementia

Presented by: **Kathryn A. Fisher**, Assistant Professor, Lead - Health Sciences, School of Nursing

Objectives: Increases in prevalence and healthcare costs of dementia are motivating governments to shift care of these individuals to families and communities. Numerous studies have examined healthcare utilization within the context of dementia; however, most focus on health/medical services, and few consider caregivers' service use or the impact of their use on caregivers' health. This study examined the impact of caregivers' use of Alzheimer Society (AS) services on caregiver strain and depression over a 2-year period.

Approach: Study participants were 121 caregivers referred to the AS. Data were collected at baseline and every 6 months for 2 years on caregiver strain, depression, and AS service use (i.e., educational, support, counselling, total services). Baseline socio-demographic data included caregivers' age, sex, education, income, living status, and chronic conditions. Strain was measured using the Modified Caregiver Strain Index and depression using the Geriatric Depression Scale. Generalized estimating equations (GEE) were used to examine the association between AS service use and outcomes. Multiple imputation was used to address missing data, and unadjusted (AS service use only) and adjusted models were run.

Results: Caregivers were mostly female (70%), an average of 62.5 years old, and were living with an average of 1.4 chronic conditions. About one-half (52%) were caring for a parent and 36% for a spouse. Strain was highest at baseline and consistently declined over 2 years (baseline & 2 years: 11.14-7.46), as did depression (baseline & 2 years: 2.93-2.16). AS service use was highest at baseline. Results showed that, over time, decreased caregiver strain and depression were associated with increased use of AS support services (strain: $\beta=-0.19$, $p=.003$; depression: $\beta=-0.07$, $p=0.004$) and total services (strain: $\beta=-0.14$, $p=0.005$; depression: $\beta=-0.05$, $p=0.01$). Inclusion of socio-demographic variables in the GEE models resulted in only a slight attenuation of the effect of AS service use on the outcomes.

Conclusion: Caregivers' increased use of AS support and total services over a 2 year period was associated with a decrease in caregiver strain and depression. These results suggest that AS services may be instrumental in alleviating the high and ever-increasing healthcare and social system costs for caregivers of persons with dementia.

B8.3

Theme: Health System Performance (includes quality, safety, efficiency, leadership)

ROOM 504

Utilization and Outcomes Associated with Pharmacy-Billed Comprehensive Annual Care Plans in Alberta

Presented by: **Candace Necyk**, Clinical Associate Professor, University of Alberta

In 2012 Alberta Health implemented a reimbursement model for community pharmacies for the collaborative development of comprehensive annual care plan (CACP) with patients living with chronic diseases. While this initiative was intended to improve quality of chronic disease care and patient outcomes while containing costs, little evaluation of the program has occurred. The purpose of this study was to address this knowledge gap in order to inform future reimbursement negotiations and chronic disease healthcare delivery.

Linked administrative health care and laboratory data were used to evaluate utilization and outcomes for all patients who received a pharmacy-billed CACP in Alberta from 2012 to 2015. We used interrupted time-series analyses to explore patterns of all-cause hospitalization, condition-specific hospitalizations, ER and physician visits, for 1-year periods before and after the billing of the CACP. Two control patients, matched on age, sex, pharmacy, date of service, and qualifying CACP conditions, were identified for each patient who received a CACP in order to further control for secular trends in outcomes occurring over the same time period.

Between 2012 and 2015, 246,708 CACP were billed by pharmacies in Alberta, costing Alberta Health approximately \$27,754,650. Hypertension (83%) was the most common qualifying condition for a pharmacy CACP, followed by mental health disorders (72%) and diabetes (50%). Among those patients who received a CACP, the mean number of physician visits increased in the year following the CACP from 6.01 to 8.31, largely driven by additional GP visits rather than specialist visits. Similar trends were identified in the matched controls, however, suggesting a secular trend rather than a CACP effect. The mean number of hospitalizations and ER visits remained relatively stable 1-year before and after in both the CACP patients and the control group.

Overall, the uptake of the pharmacy CACP initiative was extensive and costly to the health care system. The CACPs were largely utilized for patients living with hypertension, diabetes and mental health disorders. Little impact on health care utilization for individual patients in the short-term was observed.

B8.4

Theme: Health System Performance (includes quality, safety, efficiency, leadership)

ROOM 504

Health and Social Service Use of children transitioning out of Child and Family Services custody

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

Background and 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 out of the custody of Child and Family Services in Manitoba.

Approach:

Using the Manitoba Population Research Data Repository housed at MCHP, we identified individuals in the custody of CFS at their 18th birthday through a comprehensive population database of families receiving services, from 2005/06 to 2014/15. 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. We were also able to identify individuals who had taken part in transitional planning program, who were eligible to remain in CFS and receive supports for an additional 1-3 years.

Results:

4,465 individuals were identified in the cohort, including 2828 permanent wards. Of these 1,674 participated in the transitional planning extension in care. For children in care, physician visit rates increased after the transition, while an index of continuity of care actually decreased, and visits with specialists also decreased. While overall psychotropic drug dispensations saw a modest, but significant decline, there were large significant increases in dispensations of anxiolytics (especially lorazepam) and opioids. Interestingly, while the rates of criminal accusations decreased for this cohort, the rates of being the recorded victim of a criminal incident increased significantly. For the most part, outcomes were better for individuals in the transitional planning program.

Conclusion:

The transition from child to adult status for those in the care of CFS can have a significant impact on health care service use and provision, and social service and involvement in the criminal justice system. Pharmaceutical drug dispensation patterns may be of particular concern for this population.

B9.1

Theme: Equity & Social Determinants

ROOM 505

Just Health Inequalities? : an Analysis Based on Canada's National Population Health Survey and the HealthPaths Microsimulation Model

Presented by: **Michael Wolfson**, Prof., University of Ottawa

Background and Objectives -- The well-known and ubiquitous socio-economic gradient in health is the result of a complex multi-factorial web of causality. While health inequalities are widely considered unjust in general, some causes may be just. The objectives of this analysis are first to discuss the criteria differentiating just and unjust sources of health inequalities, to posit and estimate using the HealthPaths microsimulation model the main causal pathways, and then to estimate their relative quantitative importance.

Results – The results focus on both life expectancy (LE) and health-adjusted LE (HALE). There are major differences in the impacts of various factors on LE and on HALE. While sensory functions and mental conditions have about a year impact on cause-deleted LE, their impacts on cause-deleted HALE are about 6 times as large. For health inequalities, it is fundamental to distinguish univariate and bivariate measures. Continuing with using cause-deleted LE and HALE estimates, but now looking at their distributions across heterogeneous population cohorts, eliminating all smoking would be mildly equalizing. Eliminating differences in incomes and educational attainments, however, would have considerable disequalizing effects for parts of the health distribution. So too would the elimination of pain for HALE, though not for LE.

Approach – Various philosophical approaches to the assessment of “just” health inequalities are first reviewed. Generally, the judgments are based on the “sources” of the observed inequalities. The comparative quantitative impacts of different sources or factors are inferred by counter-factual simulations using the HealthPaths microsimulation model. This model is based on very detailed statistical analysis of the longitudinal National Population Health Survey (NPHS), yielding a network of regression estimates in turn used to quantify a “web of causality” observed in Canada from 1994 to 2010. For the sake of argument, the estimated co-evolving dynamics are assumed to be causal.

Conclusion – Using microsimulation modeling, in turn based on sophisticated statistical analysis, it is possible to bridge the divide between the prose moral philosophy and empirical / statistical approaches to judging the extent to which observed health inequalities are unjust. Key is disentangling just and unjust sources of health inequalities quantitatively.

B9.2

Theme: Equity & Social Determinants

ROOM 505

Examining Early Childhood Oral Health Across Canada's Large Urban Centres: Rates and Income-related Inequalities in Day Surgery for Dental Caries

Presented by: **Junior Chuang**, Senior Analyst, Canadian Institute for Health Information

Introduction/Background: While dental caries are preventable, 19,000 day surgery operations are performed annually for cavities (due to caries) among young children, raising concerns that not all children benefit from prevention strategies and restorative practices. Since 1982, Calgary, Vancouver and Toronto have experienced the greatest increase in income inequality. This project with the Urban Public Health Network examines how income inequalities in the rates of day surgery for early childhood caries vary across and within large urban centres.

Approach: This project linked day surgery data for Early Childhood Caries (ECC) (ages 1-5), pooled across five years (2011-2015), with neighbourhood income quintile and geography data using patient postal code and Statistics Canada's Postal Code Conversion File Plus. Age-standardized rates were calculated and income-related health inequalities summarized using rate ratios (RR) and differences (RD) for large urban centres (outside the province of Quebec). Results were reported at the Census Metropolitan Area (CMA) (e.g. Greater Toronto Area) and Census Subdivision (CSD) (e.g. City of Toronto) levels.

Results: At CMA and CSD levels, wide variation in rates were observed. CMA rates ranged from 217 day surgery operations in Edmonton to 2,259 in Saskatoon per 100,000 children. Within the Edmonton CMA, CSD rates ranged from 111 day surgery operations per 100,000 children in Leduc to 283 in Leduc County.

An income gradient (rates being highest for people from the lowest neighbourhood income quintile) was also observed at both levels. RRs ranged from 1.6 in the Toronto CMA to 6.1 in the Winnipeg CMA (RD: 140 day surgery operations in Toronto; 1,081 in Winnipeg, per 100,000 children). Within the Toronto CMA, RRs ranged from 0.9 in Brampton to 6.0 in Richmond Hill (RD: -37.5 day surgery operations in Brampton; 1,182 in Richmond Hill, per 100,000 children).

Conclusion: These results demonstrate income-related inequalities in rates of day surgery for ECC in large urban centres. They build on evidence showing large inequalities in oral health and access to oral health care across social groups, and highlight the need for action that addresses gaps in oral care for low-income children.

B9.3

Theme: Equity & Social Determinants

ROOM 505

Exploratory Research on the Health and Social Outcomes of Public Housing

Presented by: **Mark Smith**, Associate Director, MCHP

Background: Under the National Housing Strategy the federal government will make historic investments in housing over the next decade. The Canadian Mortgage and Housing Corporation is leading a research strategy to evaluate the impact of these investments. As part of this initiative, the Manitoba Center for Health Policy is conducting a pilot study to determine whether administrative data can be used to assess these, specifically looking at health, education and involvement in the justice system.

Approach: Using administrative data we tested for changes in healthcare use and justice involvement in the two years before and after a cohort of individuals moved into public housing. Additionally, to determine if changes in the outcomes over time were unique to public housing, we included a matched comparison group of individuals who did not reside in public housing. GLM with generalized estimating equations tested for differences over time and between cohorts in the number of hospitalizations, inpatient days, emergency department visits, and contacts with the criminal justice system. The data were modeled using a Poisson distribution (rate ratio, RR).

Results: Compared to the matched cohort, individuals accepted into public housing showed a significant decline in number of hospitalizations (pre RR=1.58 (1.53, 1.63), post RR=1.23 (1.19, 1.27), days in hospital (pre RR=1.66 (1.64, 1.68), post RR=1.24 (1.23, 1.26) and visits to the emergency department (pre RR=1.57 (1.52, 1.62), post RR=1.42 (1.38, 1.47). A trend towards fewer involvements with the criminal justice system was also observed (pre RR=1.37 (1.32, 1.43), post RR=1.28 (1.22, 1.34). No significant differences were noted for total respiratory morbidity.

Conclusion: Administrative data show good potential to be used for the evaluation of public housing impacts on a wide range of health and social outcomes. Additional indicator comparisons will be reported at the conference.

B9.4

Theme: Equity & Social Determinants

ROOM 505

Policies Influencing Health and Social Services for Women Who Have Experienced Intimate Partner Violence in Rural Ontario: A Critical Discourse Analysis

Presented by: **Edmund Walsh**, PhD Student, Western University

Intimate partner violence (IPV) is a significant health concern and prevalent issue in Canada that is associated with negative consequences for women's physical and mental health as well as substantial financial costs. Women who have experienced IPV face many barriers to accessing necessary health and social services. This study examined the influence of provincial, hospital, and women's shelter policies on health/social services utilization in rural southwestern Ontario. A case study using a critical discourse analysis was undertaken using a critical, feminist, intersectional lens. This study focused on publicly available policies that impacted a rural Ontario community including the Domestic Violence Action Plan for Ontario and local rural women's shelter policy. The aim was to include the local hospital policy but no relevant policy was available. The team became immersed in the policies and independently engaged in open and axial coding, categorization, and the discovery of themes guided by Fairclough's framework for identifying problems, obstacles, function of the problems, ways past the obstacles, and reflection. The policies examined offered substantial strategies for supporting women who have experienced IPV; however, considering the complicated and multifaceted essence of this issue, several concerns were identified. Through analysis, the following themes regarding the interaction of the policies were uncovered: (1) problems: missing link between policies, (2) obstacles: ambiguity in perspective, disconnectedness in training goals, affirmative action required, absence of hospital policy, (3) function of the problem: working in silos, and (4) ways past the obstacles: need for hospital policy to bridge the gap between provincial and women's shelter policies. Work is needed to address discrepancies between provincial and rural women's shelter policies to ensure the needs of women are meaningfully addressed. Through promoting the creation of hospital policy and the integration of health and social services, women's needs may be more appropriately and fully met in the future.

B10.1

Theme: Cancer, Chronic Disease Management

ROOM 506

Impact of Delisting High-Strength Opioid Formulations from a Public Drug Benefit Formulary on Opioid Utilization in Ontario, Canada

Presented by: **Diana Martins**, Research Program Manager, St. Michael's Hospital

Background and Objectives:

To reduce the risk of prescription opioid-related adverse events and diversion, high-strength opioid formulations were removed from Ontario's public drug formulary in January 2017, except for palliative care patients. We evaluated the impact of this policy on access to opioids and opioid dose.

Approach:

We conducted a cross-sectional time-series analysis among recipients receiving publicly-funded, high-strength opioids from August 2016 to July 2017. We measured the proportion of recipients who discontinued or changed method of payment for high-strength opioids, and all opioids, in the 6-month post-policy period. We also measured the impact on weekly median daily opioid dose dispensed (in milligrams of morphine equivalent; MME) using interrupted time-series analyses. Stratifications included palliative care status and prescription payer (publicly-funded vs. all). As a test of specificity, we repeated the analyses in a historical cohort.

Results:

Following the policy, 33.2% of non-palliative patients and 21.1% of palliative patients accessed high-strength opioids through cash or private insurance (compared to 0.2% and <1% in the historical cohort, respectively; $p < 0.05$). The weekly median daily dose of publicly-funded opioids immediately decreased among non-palliative patients (-10.0MME, 95% confidence limit [CL] -16.8 to -3.1) and gradually decreased among palliative patients (additional -3.9MME per week, 95% CL -5.5 to -2.3). Among all opioid prescriptions, weekly median daily doses only declined for non-palliative patients (additional -0.7MME per week, 95% CL -1.3 to -0.2).

Conclusion:

The delisting of publicly-funded high-strength opioid formulations was accompanied by changes in payer and small reductions in the weekly median daily doses dispensed. Although observed dose reductions of less than 1 MME per week are likely not clinically relevant, safety implications of these changes require further monitoring.

B10.2

Theme: Cancer, Chronic Disease Management

ROOM 506

Validation of provincial health administrative case definitions to identify patients with obstructive sleep apnea

Presented by: **Tetyana Kendzerska**, Clinician Investigator, The Ottawa Hospital Research Institute/ University of Ottawa

Background and objectives

While consistent evidence supports an association between obstructive sleep apnea (OSA) and all-cause and cardiovascular mortality, the evidence on impact of OSA on other health outcomes is limited. Health administrative data are a high-quality resource to further examine the relationships between OSA and health outcomes; however, the diagnosis of OSA is often not specifically coded.

We aimed to derive and validate case-ascertainment algorithms for patients diagnosed with OSA using population-based health administrative data.

Approach

We conducted a retrospective study linking clinical data from adults who underwent a diagnostic sleep study from 2015 to 2017 in an academic health center to health administrative data. The Ontario Health Insurance Plan (OHIP) and Discharge Abstract Databases were used to identify characteristics of patients and their physician's, health conditions, surgical procedures, repeated sleep studies and the use of assistive respiratory devices from three years before to one year after their sleep study. Presence of OSA was defined using clinical data as the reference standard where the apnea hypopnea index (AHI) > 15. Multivariable stepwise logistic regressions and expert opinion were used for variable reduction. We then used classification regression tree to identify both the most parsimonious and most complex models with the best predictive characteristics.

Results

5,099 of 5,155 (99%) were successfully linked to health administrative data (mean age of 50 years and 54% males). 1,664 patients (33%) had OSA (AHI > 15). The parsimonious model (consisting of an outpatient visit with OHIP code for OSA from a physician registered with the assistive device program, patient sex and age, and prevalent hypertension) had a sensitivity, specificity, area under the curve (AUC), positive likelihood ratio (+LR) and negative LR (-LR) of 64%, 79%, 0.76, 3.0 and 0.5, respectively. The complex model with all 23 factors had a sensitivity, specificity, AUC, +LR and -LR of 68%, 86%, 0.88, 4.8 and 0.4, respectively.

Conclusion

Case definitions of OSA are reasonable at identifying people with OSA at the population level. Future study will be required to validate these findings across our provincial health system and in other jurisdictions. These findings will support future population-based studies on OSA.

Opioid Use in Adults Referred for Sleep Disorder Assessment and Associated Long-Term Consequences: A Population-Based Study

Presented by: **Tetyana Kendzerska**, Clinician Investigator, The Ottawa Hospital Research Institute/ University of Ottawa

Background and Objectives

Opioid use is associated with impaired breathing in sleep and impaired sleep architecture. Despite these risks, there are no large-scale population studies investigating the long-term consequences of this relationship. We conducted a population-based cohort study using provincial health administrative data in Ontario (Canada) to (i) investigate the prevalence of opioid use among adults who underwent an initial diagnostic overnight sleep study, and (ii) assess the relationship between opioid use, positive airway pressure (PAP) treatment, and long-term outcomes in this population.

Approach

We included all adults who underwent an initial diagnostic sleep study in Ontario between 2013 and 2016, and followed them until March 2017, excluding individuals who received palliative care or resided in a long-term care facility prior to the sleep study. Our exposure, opioid use at the date of the sleep study, was identified from the Narcotics Monitoring System. PAP therapy initiation was defined through the Ontario Assistive Devices Program database. Our composite outcome was time from sleep study to the first of emergency department visit, hospital admission, or all-cause death. We used Cox models to investigate the relationship between opioid exposure, PAP initiation and the outcome, controlling for income status, comorbidities, primary care exposure and use of controlled substances at baseline.

Results

A total of 267,461 adults (median age 51 years; 57% men), were included in our analyses of whom 12,205 (5%) were on opioids at the time of the sleep study. Over a median follow-up of 24.5 months, 103,398 (39%) initiated PAP and 140,080 (52%) developed a composite outcome. Controlling for confounders, opioid use was significantly associated with an increase hazard of the composite outcome (HR=1.21, CI: 1.19-1.24), but not with PAP prescription (HR=1.03, CI: 0.99-1.06). The results were driven by all-cause death: HR=1.52, CI: 1.39-1.66.

Conclusions

In a large population-based study, we found that among adults referred for a sleep disorder assessment, opioid exposure was associated with a 21% increased hazard of hospital visits or death from any cause. These findings suggest the need for better management in these individuals and can be used to identify those at the most risk, ultimately improving clinical outcomes.

C1.1

Theme: Access & Equity (includes Indigenous peoples, immigrant and other priority populations)

ROOM 507

Food insecurity and preventable hospitalizations among Canadians with diabetes: a population-based assessment using linked survey and administrative data

Presented by: **Neeru Gupta**, Associate Professor, University of New Brunswick

BACKGROUND AND OBJECTIVE: The accessibility of food and other societal investments in human capital development has been linked to health inequalities. Some studies have found food insecurity to be more prevalent among persons with diabetes mellitus. Others have pointed to a social gradient in diabetes hospitalizations, but have tended to be limited in terms of scale or accounting for individuals' health status. This research takes advantage of national health survey data linked to clinical records to assess the association between food insecurity and potentially avoidable hospitalization, focusing on the high-risk diabetic population.

APPROACH: We link multiple years of Canadian Community Health Survey data (2007, 2008, 2011) with hospital records from the Discharge Abstract Database (2005/06 to 2012/13), covering 98% of the population in 12 of Canada's 13 provinces and territories (excluding Quebec). We use multiple logistic regression to test the association of household food insecurity with the risk of hospitalization for types 1 and 2 diabetes and comorbid ambulatory care sensitive conditions among persons aged 12 and over living with diagnosed diabetes. Results are expressed in terms of odds ratios and associated 95% confidence intervals.

RESULTS: Data linkage allowed us to analyze hospital records for 10,260 survey respondents living with diabetes. Among the community-dwelling diabetic population, 10.5% experienced food insecurity, and 5.5% had been hospitalized for diabetes or a comorbid chronic condition in the period of observation. The regression results indicated that the odds of experiencing a diabetes-related hospitalization were significantly higher among diabetic persons who were food insecure compared to their counterparts who were food secure (OR=1.88 [95%CI=1.06-3.32]), after controlling for age and other demographic characteristics. Being female was slightly protective of the risk of hospitalization, but the association was not statistically significant (OR=0.97 [95%CI=0.70-1.35]).

CONCLUSIONS: We found food insecurity to significantly increase the odds of hospitalization among Canadians living with diabetes. These results reinforce the need to consider food insecurity in public health and clinical strategies to reduce inequalities in the hospital burden of diabetes and other chronic diseases with shared risk factors, from primary prevention to post-discharge care.

C1.2

Theme: Access & Equity (includes Indigenous peoples, immigrant and other priority populations)

ROOM 507

Characterizing program models for diabetes management among those experiencing homelessness

Presented by: **Rachel Campbell**, Project coordinator, St. Michael's Hospital

Background and objectives

Cardiovascular disease, for which diabetes is a major risk factor, remains one of the leading causes of mortality among those experiencing homelessness. Optimal diabetes management, which is rare among those experiencing homelessness, can prevent long-term complications. Organizations have developed novel models to provide diabetes care. These are often developed in the community and are rarely shared between organizations. The objective of our environmental scan was to document how diabetes care is delivered to individuals who are experiencing homelessness.

Approach

We contacted individuals in five major Canadian cities (Toronto, Ottawa, Calgary, Edmonton, Vancouver) from four groups: (1) those who provide diabetes care to the homeless; (2) those who provide primary care services to the homeless; (3) those who provide diabetes-specialty care; and (4) those who provide social care/housing. We began with personal contacts and proceeded with directed snowball sampling. Data was collected using detailed open-ended interviews and participant observation. Transcripts and field notes were analyzed using thematic analysis.

Results

We interviewed over 50 stakeholders in the five cities, and conducted observations of three programs. We found that care providers face many of the same challenges across jurisdictions. Despite these similarities, most providers and organizations do not communicate with others who are likely struggling with similar issues – meaning that they are often attempting to respond to challenges in isolation. While some tailored practices may require large changes in policy to be scaled, many creative solutions can be described as “micro-innovations” which could be implemented at the organization/practice level. Examples include: peer counselors/support workers, diabetes group care specific for this population, endocrine outreach clinics, embedded diabetes education, case management, and enhanced access to medications and supplies.

Conclusion

There are significant challenges and barriers to providing diabetes care for individuals who are experiencing homelessness. In the face of these challenges, numerous organizations have created innovative solutions to improving diabetes-related outcomes. Sharing experiences across organizations and jurisdictions can facilitate development of successful program models.

C1.3

Theme: Access & Equity (includes Indigenous peoples, immigrant and other priority populations)

ROOM 507

Identifying priority needs and populations from the perspectives of providers and people with lived experience to improve the health of homeless and vulnerably housed people in Canada: a Delphi consensus study

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

Background and Objectives:

Homelessness is a concern in many jurisdictions across Canada and has become one of the most disabling and deadly underserved conditions. Homeless and vulnerably housed people experience a high proportion of physical and mental health concerns compared to the general population. We set out to identify need and population specific priorities for homeless and vulnerably housed populations that are used to inform the development of policy and practice guidelines.

Approach:

In May 2017, we drafted a list of initial needs and population subgroups based on a literature review. Further input was solicited from ten experts providing care for homeless and vulnerably housed people and five people with lived homelessness experience. We modified the list based on their feedback. Between June and November 2017, we conducted a 3-step Delphi consensus survey with multi-stakeholder experts, including 84 practitioners and 76 people with lived homelessness experience from across Canada, who identified and rated health and social priorities for homeless populations. Experts also established and ranked specific homeless sub-populations in need of additional research.

Results:

The Delphi survey was answered by a total of 160 participants. We reached a 73% response rate among experts in the field and health professionals (114 invited and 84 completed the first round of the survey). We received input from 76 people with lived homelessness experience, recruited by volunteers from community partner organizations. Participants came from six provinces and ten urban centres across Canada. Overall, participants identified a series of priority needs: mental health and addiction care; facilitating access to housing; access to income support; and case management/care coordination. Experts also established specific homeless sub-populations in need of additional research: Indigenous Peoples (First Nations, Métis, and Inuit); youth; women and families; people with acquired brain injury, intellectual or physical disabilities; and refugees and migrants.

Conclusion:

We anticipate that the inclusion of the perspectives of people with lived homelessness experience will improve the applicability and uptake of the evidence. The identified needs and populations represent the best information for policy making and planning and for the development of evidence based clinical guidelines.

C1.4

Theme: Access & Equity (includes Indigenous peoples, immigrant and other priority populations)

ROOM 505

Measuring health inequalities to inform action: demonstration of a web-based toolkit developed by the Canadian Institute for Health Information

Presented by: **Erin Pichora**, Program Lead, Canadian Institute for Health Information

Background and Objectives

Measuring inequalities across population subgroups is a critical step towards informing action on health equity. As health systems and organizations work toward achieving health equity, reliable and relevant measurement of health inequalities is essential. CIHI released 'Measuring Health Inequalities: A Toolkit' in October 2018 to support analysts and researchers with planning, analyzing and reporting on health inequalities. We also developed a series of online courses to complement and facilitate the use of the web-based toolkit.

Approach

Building on an environmental scan of international and national best practices for measuring health inequalities, we conducted stakeholder engagement activities to tailor the contents and format of the toolkit to user needs. These included: a needs assessment, subject matter experts consultations and a pilot test. For the online courses, we created an introductory video, followed by 3 courses that use case-based knowledge checks related to each of the 3 toolkit phases - planning, analyzing and reporting. Moving forward, we will evaluate the use of the toolkit through a variety of data collection methods (e.g., web metrics, stakeholder survey, case studies).

Results

Key toolkit resources include: standard equity stratifier definitions, an inventory of equity stratifiers available in CIHI and Statistics Canada databases, a guide for area-level health inequalities measurement using postal code conversion, SAS macros for calculating rates and summary measures, and a whiteboard video explaining how to interpret health inequalities to identify areas of action. By March 2019, the first three of four online courses were released on CIHI's Learning Centre: 'Measuring Health Inequalities: An Introduction', 'Planning Your Analysis', and 'Analyzing Your Data'. A course on reporting your findings will follow in mid-2019. This presentation will provide a demonstration of the toolkit and online learning content using practical examples drawing from commonly used health system performance indicators.

Conclusion

Health equity is a growing priority for healthcare systems in Canada; however, there is limited routine measurement and reporting of inequalities in health care access, quality and outcomes. 'Measuring Health Inequalities: A Toolkit' supports these needs and interests, in pursuit of improved health and equitable health care for all Canadians.

C2.1

Theme: Cancer, Chronic Disease Management

ROOM 505

Exploring the Relationship between Multimorbidity and Acute Care Service Use Adjusted for a Comprehensive Range of Socio-demographic Factors

Presented by: **Kathryn A. Fisher**, Assistant Professor, Lead - Health Sciences, School of Nursing

Objectives: A number of studies have shown that an increasing level of multimorbidity is associated with a consistent increase in healthcare service use, including our previous work on three older adult (65+ years) disease cohorts (diabetes, dementia, stroke). This study builds on our prior research by examining the association between the level of multimorbidity and healthcare service use in the general older adult population and determining how selected socio-demographic factors impact the association.

Approach: This retrospective cohort study used administrative data for 28,381 Ontario older adults linked to data from four cycles of the Canadian Community Health Survey (CCHS). Multimorbidity, measured by condition count, was estimated from administrative data on 12 chronic conditions. Socio-demographic variables (SDVs) from CCHS included sex, age, immigrant status, education, income, rurality, living status, functional limitations, and perceived physical and mental health. Acute care service use was obtained from administrative databases. Stratified analyses explored SDVs as potential modifiers and/or confounders and regression models examined unadjusted (multimorbidity only) and adjusted odds of emergency department (ED) and hospital use (any use, count).

Results: The odds of ED and hospital use increased with increasing multimorbidity. The odds of any ED use were higher for those that had more multimorbidity (OR=1.75, $p < 0.0001$, 4+ vs 0-1 conditions), low income (OR=1.29, $p=0.0071$, $< \$30k$ vs $\geq \$30k$), low perceived physical health (OR=1.91, $p < 0.0001$, fair/poor vs very good/excellent), were older (OR=1.43, $p < 0.0001$, 75-84 vs 65-74), male (OR=1.16, $p=0.004$), non-immigrant (OR=1.35, $p < 0.0001$), less educated (OR=1.12, $p=0.04$, no diploma vs secondary or higher), or rural (OR=1.26, $p < 0.0001$). ED use measured as a count showed similar results, as did the findings for any hospitalization except living status was now predictive of use (OR=1.15, $p=0.0009$, living alone vs with someone) and education and rurality were not. Adding SDVs to regression models attenuated the multimorbidity/service use relationship.

Conclusion: Acute care service use is shaped by level of multimorbidity and various socio-demographic factors. These results suggest that interventions aimed at reducing use of expensive healthcare services should target health status as well as a wide range of social determinants of health.

C2.2

Theme: Cancer, Chronic Disease Management

ROOM 505

Early initiation of palliative care is associated with reduced late-life acute-hospital use: A population-based retrospective cohort study

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

Background & Objectives: Early palliative care can reduce end-of-life acute-care use, but findings are mainly limited to cancer populations receiving hospital interventions. Few studies describe how early versus late palliative care affects end-of-life service utilization. The aim of this study was to investigate the association between early versus late palliative care (hospital/community-based) and acute-care use and other publicly funded services in the 2 weeks before death.

Approach: We conducted a retrospective population-based cohort study using linked administrative healthcare data, observing decedents (cancer, frailty, and organ failure) between 1 April 2010 and 31 December 2012 in Ontario, Canada. Patients were categorized by palliative care initiation time before death (days): early (≥ 60) and late (≥ 15 and 1 week in acute-care settings (odds ratio=1.84, 95% confidence interval: 1.83–1.85), frailty decedents were three times more likely (odds ratio=3.04, 95% confidence interval: 3.01–3.07), and organ failure decedents were four times more likely (odds ratio=4.04, 95% confidence interval: 4.02–4.06).

Conclusion : Early palliative care was associated with improved end-of-life outcomes. Late initiations were associated with greater acute-care use, with the largest influence on organ failure and frailty decedents, suggesting potential opportunities for improvement.

C2.3

Theme: Cancer, Chronic Disease Management

ROOM 505

The creation of the Chronic Disease Population Risk Tool (CDPoRT): a population health tool for predicting chronic disease incidence

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

Background and objectives: Public health officials and health policy makers require evidence to make informed decisions regarding chronic disease prevention and chronic disease management strategies. One important piece of information is the projected incidence of chronic disease in their jurisdiction. To meet this need, we created the Chronic Disease Population Risk Tool (CDPoRT), a population-based tool that predicts the incidence of major chronic diseases – cardiovascular disease, chronic obstructive pulmonary disease, diabetes and lung cancer – simultaneously.

Approach: Six cycles of the Canadian Community Health Survey were linked to Ontario health administrative data to predict the incidence of four major chronic diseases over ten years. Sixteen potential predictors consisting of modifiable lifestyle risk factors, sociodemographic factors and other health-related factors were identified. Weibull regression models were used to develop sex-specific prediction models. Various models were developed and evaluated based on considerations for overall predictive accuracy (Brier score), discrimination (c-statistic) and calibration (calibration-in-the-large, calibration slope). For each sex, the best-performing model was selected as the basis for CDPoRT using several validation techniques including split-set validation.

Results: Split-set validation was used to divide the cohort randomly into a development cohort of 83,167 individuals (46,627 females; 36,540 males) and validation cohort of 25,580 individuals (19,729 females; 15,851 males). The best-performing female and male models had alcohol, smoking, fruit and vegetable consumption, age, ethnicity, asthma, BMI, high blood pressure and self-rated health as their predictors. In terms of predictive performance, the female model performed well during development and validation in terms of the Brier score (development: 0.087; validation: 0.119), c-statistic (0.779; 0.778), calibration-in-the-large (0; -0.005) and calibration slope (1; 0.994). The male model also performed well during development and validation in terms of the Brier score (0.091; 0.091), c-statistic (0.783; 0.769), calibration-in-the-large (0; -0.003) and calibration slope (1; 0.866).

Conclusion: We were able to successfully develop and validate CDPoRT for use in Ontario. The next step is to understand the generalizability of CDPoRT by performing external validation using CCHS data linked to health administrative data from Manitoba.

C2.4

Theme: Cancer, Chronic Disease Management

ROOM 505

The New Brunswick COPD Health Information Platform (NB-CHIP)

Presented by: **Ted McDonald**, Director, NB-IRDT, University of New Brunswick

Background and Objectives:

The NB Institute for Research, Data and Training (NB-IRDT), New Brunswick's provincial administrative data centre, has undertaken a project to develop an integrated health information platform (NB-CHIP) for Chronic Obstructive Pulmonary Disease (COPD). Key objectives of the CHIP initiative are to 1) facilitate the identification and tracking of population level diagnoses of COPD in NB, and 2) support advancement in the management of COPD at the system planning, research, clinical practice and patient levels.

Approach:

NB-CHIP combines linkable clinical and administrative data from multiple sources including NB pulmonary function test laboratories (PFT) and provincial government departments. Clinics collect data on everyone tested at a PFT: lung function test results, demographic and socioeconomic information, information on smoking and cessation, height, weight and other fields. Data transfer required data sharing agreements, privacy impact assessments and information disclosure schedules to be negotiated among Provincial Health Authorities, the Department of Health and University of New Brunswick. Since PFT data are not part of the NB electronic health record, lung function data had to be assembled at each clinic.

Results:

Clinical data from 2007-2017 have been prepared and transferred to NB-IRDT from all 10 PFT clinics in NB. Validated data on more than 150,000 tests is being linked to data on hospitalizations, physician visits, vital statistics, pharmaceutical data, data from the Canadian Chronic Disease Surveillance System algorithms, data on long term care services and (soon) income support data. A research working group made up of researchers, clinicians, health service administrators and patients is being established to determine and help answer key questions of interest that can now be addressed using the linked NB-CHIP datasets. Of particular interest is the extent to which individuals with COPD have not been diagnosed as such. Results will help inform policy and practice for many aspects of COPD management.

Conclusion:

NB-CHIP is a unique and powerful tool to support research on COPD, the second most common reason for hospitalization in NB. Through identification of predictors and outcomes of COPD using validated clinical data, NB-CHIP will contribute to improved disease management in NB and valuable insights on COPD more widely.

C3.1

Theme: Patient Engagement

ROOM 501

Fairness Dialogues: Engaging the public in “easy to understand but difficult to answer” health equity questions

Presented by: **Grace Warner**, Associate Professor, Dalhousie University

Objectives: The question “What do people think?” drives many health policy public engagement efforts. Posing this question is particularly meaningful for value-related issues. We explored how the public engages in a reflective process to examine health equity by focusing on the issue of citizens’ responsibility for health.

Approach: This study consisted of two 1.5-2-hour group dialogues and post-dialogue individual telephone interviews in Nova Scotia. We used the Fairness Dialogues, an approach to deliberating health equity through a facilitated group dialogue using a scenario in a fictional town called Troutville. The scenario described four hypothetical health inequality cases in Troutville: between criminals and non-criminals; extreme sport lovers and non-extreme sport lovers; firefighters and non-firefighters; and veterans and non-veterans. The facilitated discussions were centred around fairness judgments of these inequalities, personal and societal responsibility, and health care allocation. We conducted a thematic analysis of the group dialogue and interview data.

Results: Fifteen participants were diverse in terms of age and socio-demographics. The participants in the two focus groups voiced various arguments regarding unfairness of the four inequalities, including personal responsibility (the person made a choice and is responsible for the consequence); societal responsibility (society failed to help the person); and fulfillment (the person had his/her own aspiration and pursued it). They held diverse and nuanced views on the concept of personal choice, and even those who believed individuals have a personal responsibility for health strongly supported the principle of equal health care for equal health care need. They viewed the Troutville scenario and questions as “easy to understand but difficult to answer” and the facilitator-guided group dialogue as engaging.

Conclusion: The public is eager to discuss complex health equity issues if clearly presented in a relatable manner. Fairness Dialogues is a promising approach to engaging lay persons in complex health equity discussion and developing their capacity for it.

C3.2

Theme: Patient Engagement

ROOM 501

Comparing the characteristics of patient partners with Canadian patients: starting the conversation on diversity in patient engagement

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

With growing emphasis on patient partnership to help reshape and improve health care, questions of representativeness and diversity of patient perspectives have been raised, with concerns that certain sociodemographic groups may be less frequently engaged. This issue is particularly important from a health equity perspective, given the risk that marginalized and vulnerable people may be less frequently engaged thus exacerbating existing inequities in health. In this context, it is important to ask in what ways patient engaged as partners within the health care system are any different from the general profile of Canadian patients, and why. This study aims to compare the characteristics of patient partners with the statistical profile of Canadian patients. Characteristics of patient partners engaged in medical education were extracted from the University of Montreal faculty of medicine patient partner database. General Canadian patient data were extracted from the 2014 Canadian Community Health Survey (CCHS). Age, sex, occupation, usual source of care and health conditions were compared between patient partners and Canadian patients. Among 118 patient partners who reported information on sex, birth years, postal codes and occupation, the mean age was 50.5 years (from 16 to 74), 70.3% were female, and 27.1% were retired from work. The mean numbers of health conditions reported were 2.11 (ranging from 0 to 10). The most common conditions were cancer (28.8%), trauma (13.6%) and mood disorder (10.2%). Compared to the University of Montreal patient partners, Canadian patients were significantly younger (mean = 43) and the proportions of females and retirees were lower (51.2% and 5.3%). The prevalence of cancer, trauma and mood disorder among Canadian patients was less frequent (12.1%, 4.2% and 11.3%). The distributions of other chronic conditions were similar between the patient partners and Canadian patients. The characteristics of patient partners are different from those of Canadian patients. These differences can be due to the patient partners’ recruitment process, their competency profile, and their expected roles in medical education. Proactive strategies to recruit under-represented groups should be implemented to increasingly reach these groups. Patient partners’ characteristics not currently monitored should also be further explored from an equity perspective.

C3.3

Theme: Patient Engagement

ROOM 501

The PREFeR (PRioritiEs For Research) Project: How do patient and primary care provider perspectives on research priorities align?

Presented by: **Ruth Lavergne**, Assistant Professor, Simon Fraser University

Objectives: Patient-oriented research focuses on patient-identified priorities, supports research that engages patients as partners, and improves patient outcomes. The PREFeR (PRioritiEs For Research) project aimed to identify patient priorities for primary care research in British Columbia and to compare patient and primary care provider perspectives. We also compare patient-identified priorities to existing research priorities developed by researchers and policymakers.

Approach: Employing Nominal Groups Technique, the 10 patient members of the BC Primary Health Care Research Network Patient Advisory group brainstormed experiences of 'what stood out' in BC primary care. Researchers and patients worked together to group these thematically into topics. We then developed and administered province-wide surveys to capture patient and primary care provider ratings of the importance of the top 10 topics, as well as patient and provider characteristics. An in-person dialogue event brought together patients and primary care providers to identify and interpret areas of agreement and disagreement. This approach was informed by the Dialogue Model.

Results: There was strong alignment between patient and provider importance ratings. The top-rated topic for both patients and providers was being unable to find a regular family doctor/other primary health care provider. The next three topics for both groups were support for living with chronic conditions, mental health resources, and information sharing, including EMR. Though ratings were similar, the dialogue event revealed that patients and providers may have interpreted some topics differently. There was considerable overlap between patient-generated topics and topics previously identified by researchers and policymakers, but patients identified two additional topics (mental health resources, improve and strengthen patient-provider communication) and added richness and context where topics aligned.

Conclusion: More similarities than differences in topic importance between patients and providers emerged in the online surveys. Patients added depth and context to topics previously identified in similar exercises among policymakers or researchers. Including patients in priority setting exercises a broad area like primary health care is feasible and fruitful.

C4.1

Theme: Health Economics/Financing/Funding (including cost and economic analysis)

ROOM 612

Costs of a diabetes diagnosis: a method to estimate marginal individual costs of the disease trajectory

Presented by: **Maude Laberge**, Assistant Professor, Université Laval

Background and objectives

Diabetes affects 3 million people in Canada, yet the cost of the disease to provincial health care systems is largely unknown. Approaches to estimating marginal individual disease costs vary but generally consist of comparing the costs of a population with a diabetes diagnosis with those of a population not affected by the condition. The objective of the present study is to develop a methodology to estimate the marginal individual costs of a diabetes diagnosis.

Approach

Adults who received a diagnosis of diabetes during the fiscal year 2011-2012 were identified in the Quebec health insurance database (RAMQ) at the Institut national d'excellence en santé et services sociaux (INESSS). Health services utilization data were extracted for the study period, i.e. from 2006-2007 to 2017-2018, which was determined so as to cover five years before and five years after the diagnosis year. Difference-in-differences (DiD) with matching and lagged-dependent variable (LDV) approaches were tested. Analyses were conducted separately depending on the setting (clinic or hospital) where the diagnosis was made. Costs were estimated for family physicians' and specialists' services.

Results

After excluding people who died during the study period, a total of 41,378 adults were included as the diabetes cohort, i.e. with a diagnosis in 2011-2012. The control group consisted of 6,833,049 people.

The trends in costs for family physician and for specialist services in the diabetes cohort in the five-year period prior to the diagnosis were not parallel to the trends of the control group. The LDV performed better in all analyses. Higher proportions of cost variations were explained when using data from the year 2008 for specialists' costs, while using data from 2010 results in better fit for the costs in family physician services. These results suggest that the increase in costs begin before the diagnosis.

Conclusion

People who receive a diabetes diagnosis have a surge in their health care costs in the year of the diagnosis. However, the increase in costs in the years precedes their diagnosis, which could reflect a deteriorating health status. Our results suggest that early detection could potentially reduce the marginal costs of diabetes.

C4.2

Theme: Health Economics/Financing/Funding (including cost and economic analysis)

ROOM 612

Costs of nurse-sensitive adverse events in Quebec

Presented by: **Eric Tchouaket**, Associate professor, Université du Québec en Outaouais

AIMS: The aim of this study was to assess the economic burden of nurse-sensitive adverse events in 22 acute-care units in Quebec by estimating excess hospital-related costs and calculating resulting additional hospital days.

BACKGROUND: Recent changes in the worldwide economic and financial contexts have made the cost of patient safety a topical issue. Yet, our knowledge about the economic burden of safety of nursing care is quite limited in Canada in general and Quebec in particular.

DESIGN: Retrospective analysis of charts of 2699 patients hospitalized between July 2008 - August 2009 for at least 2 days of 30-day periods in 22 medical-surgical units in 11 hospitals in Quebec.

METHODS: Data were collected from September 2009 to August 2010. Nurse-sensitive adverse events analysed were pressure ulcers, falls, medication administration errors, pneumonia and urinary tract infections. Descriptive statistics identified numbers of cases for each nurse-sensitive adverse event. A literature analysis was used to estimate excess median hospital-related costs of treatments with these nurse-sensitive adverse events. Costs were calculated in 2014 Canadian dollars. Additional hospital days were estimated by comparing lengths of stay of patients with nurse-sensitive adverse events with those of similar patients without nurse-sensitive adverse events.

RESULTS: This study found that five adverse events considered nurse-sensitive caused nearly 1300 additional hospital days for 166 patients and generated more than Canadian dollars 600,000 in excess treatment costs.

CONCLUSION: The results present the financial consequences of the nurse-sensitive adverse events. Government should invest in prevention and in improvements to care quality and patient safety. Managers need to strengthen safety processes in their facilities and nurses should take greater precautions.

C4.3

Theme: Health Economics/Financing/Funding (including cost and economic analysis)

ROOM 612

Cost Utility Analysis of an Iron Deficiency Screening Program for Infants at 18 months

Presented by: **Sarah Carsley**, Applied Public Health Science Specialist, Public Health Ontario

Background and objectives: Iron deficiency (ID) is the world's single most prevalent micronutrient disorder, particularly in children aged six months to three years, a critical neurodevelopmental period. Previous studies have shown untreated ID may result in cognitive impairment. The objective of this study was to examine the lifetime cost-utility of a hypothetical ID screening program for 18-month old infants during the enhanced 18-month primary care well-baby visit in the general population and a targeted high-risk population in Ontario.

Approach: A decision tree model was used to estimate the costs and quality-adjusted life years (QALYs) associated with three ID screening strategies, including (1) no screening; (2) a universal screening program; and (3) a targeted screening program for a high-risk population (defined as having ≥ 2 ID risk factors). A societal perspective was used and lifetime QALY gains were assessed. Healthcare and patient-borne costs were estimated using the Ontario Health Insurance Plan (OHIP) Laboratory Services Schedule and experts' opinions. Effectiveness estimates were based on clinical trial data and published studies. One-way and probabilistic sensitivity analyses were performed to assess parameter uncertainty.

Results: Compared with no screening, the cost to society of a universal and a targeted screening program for ID is \$2356/QALY and \$2450/QALY, respectively. Using a willingness-to-pay threshold of \$50,000/QALY, both programs are cost-effective. Compared with a targeted screening program, a universal screening program costs an additional \$2251 to gain one QALY, rendering it a cost-effective option. The study findings were robust to extensive sensitivity analyses.

Conclusion: A universal screening program for ID was cost-effective over the lifespan compared to no screening (standard of care) and a targeted screening program for high-risk infants only. Ontario policy makers, pediatricians, and family physicians should consider expanding the current enhanced well-baby visit at 18 months to include iron deficiency screening.

C4.4

Theme: Health Economics/Financing/Funding (including cost and economic analysis)

ROOM 612

Cost-Utility Analysis of Electroconvulsive Therapy and Repetitive Transcranial Magnetic Stimulation for Treatment of Treatment-Resistant Depression in Ontario

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

Background and Objectives

Electroconvulsive therapy (ECT) has long been an industry standard for the treatment of treatment-resistant depression (TRD). Repetitive transcranial magnetic stimulation (rTMS) is a relatively new treatment option. Results from previous studies to investigate the cost-effectiveness of rTMS and ECT in the management of TRD are unclear and conflicting. This study evaluated the cost-effectiveness of rTMS vs. ECT for treating TRD from a societal perspective using a lifetime horizon in Ontario.

Approach

We used a cost-utility analysis and decision analytic model to evaluate the lifetime costs and benefits of rTMS and ECT for TRD using Markov models and Monte Carlo micro-simulation. Treatment efficacy and health utility data used to populate this model were extracted and synthesized from a literature review of randomized controlled trials and meta-analyses that compared these techniques in the target population. Costing data was obtained from national and provincial costing databases and informal costs were derived from government website records. Scenario, threshold and probabilistic sensitivity analyses were performed to test the robustness of the results.

Results

rTMS dominated ECT, as it was less costly and produced better health outcomes in the base case scenario. The lifetime costs and effectiveness of rTMS were \$859,692 producing 19.9 QALYs compared to \$907,651 producing 17.7 QALYs for ECT. In most scenarios, rTMS remained the dominant treatment. However, when the maximum number of lifetime acute phase treatments of rTMS was made equal to that of ECT in the model, ECT was not dominated and the incremental cost-effectiveness ratio (ICER) was \$83,878. Threshold analyses were run and determined that the model was primarily sensitive to costs and health utilities of the final, unremitting 'severe depression' health state.

Conclusion

From a societal perspective utilizing a lifetime horizon, rTMS is less costly and produces better health outcomes relative to ECT and should therefore be considered the dominant treatment. This suggests that clinicians should consider rTMS for their patients suffering from TRD first, before moving onto more invasive treatments like ECT.

C5.1

Theme: Healthcare Reform, and Health Accord (includes priority setting, politics)

ROOM 503

Strengthening Local Public Health Unit and Local Integrated Health Network Collaborations for Integrated Health System Planning Informed by a Population Health Approach

Presented by: **Ruta Valaitis**, Professor; Dorothy C. Hall Chair in Primary Health Care Nursing, McMaster University

Background and Objectives

Ontario's Patients First Act requires public health units and Local Health Integration Networks (LHINs) to collaborate towards integrated health services planning informed by a population health approach. Drawing from our study, we present strategies and tools to support successful collaboration between public health units and LHINs to address this aim.

Approach

This mixed methods study (QUAL-quant) involved interviews and focus groups conducted with board members, senior and middle management, and staff employed in Public Health Units, LHINs, government, relevant agencies, as well as key informants from other Canadian provinces (n=68). Focus groups and interviews were recorded, transcribed, and analyzed supported by NVivo 11. Building on qualitative results, an online survey was developed, pretested and revised to obtain broader input from ON stakeholders. Over 300 Ontario participants from LHINs, public health units, government and relevant ON organizations responded. Data were analyzed using descriptive statistics and content analysis (open-ended questions).

Results

Public Health Units and LHINs recognize the importance of health system planning through a population health lens. Both already are working together in partnerships through leadership councils, working groups, and local program planning to monitor, analyze, report, and share data to determine priority community needs. Results provide insight into intrapersonal, interpersonal, organizational, and systemic factors that promote successful Public Health Unit-LHIN collaboration. Clarifying expectations, shared accountability, and funding supports are critical for successful Public Health Unit-LHIN collaborations. Survey results build on qualitative data to identify key strategies and tools that can help overcome barriers and foster collaborations. Findings prioritize categories of population health and health system data, indicators, and information that could potentially strengthen collaborations and offer solutions to overcome Public Health Unit-LHIN collaboration challenges.

Conclusion

Given the increasing responsibilities of regional health authorities and public health units to address population health needs, this research informs strategies to conduct integrated health system planning to best meet the unique needs of local populations. Results can inform other similar collaborations to improve integrated population health system planning.

C5.2

Theme: Healthcare Reform, and Health Accord (includes priority setting, politics)

ROOM 503

Contributing to positive impact for the health of Nova Scotians: Nova Scotia Health Authority's Population Health Policy Framework

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

Background. The fundamental goal of contemporary health systems is to improve health outcomes within the population. Evidence supports that health system performance and sustainability are optimized when systems are oriented in support of population health. Nova Scotia is facing significant health challenges coupled with observable health inequities. Therefore, the provincial health service and delivery system (Nova Scotia Health Authority) has a critical opportunity to make a positive impact for the populations served by this organization. **Approach.** We will present the population health policy framework for NSHA that serves as a practical roadmap to align the people, practices and policies of the organization with actions that can realize population health focus and improvement. Leading and emerging evidence and the NSHA context were all considered in its development. We will outline the system-level direction that NSHA is taking and activities underway to operationalize the framework and study its implementation. This is a core impact project of the Canadian Institutes of Health Research's Health System Impact Fellowship jointly located between NSHA and Dalhousie University (2017-20). **Intended impacts.** Through explicitly articulating how population health will be stewarded within NSHA, the policy framework aims to augment the profile of population health across the organization and support its infiltration into clinical, administrative and governance components of the NSHA. The study of the implementation of this framework will contribute new learning to a growing body of evidence that will be of interest to health system stakeholders across the country and beyond and will also inform the final population health plan for NSHA. Full implementation of the framework will support NSHA in achieving its vision of "healthy people, healthy communities – for generations." **Conclusion.** The development, implementation and study of NSHA's population health policy framework provides an exemplar case for how early-stage embedded researchers are supporting modern-day health system innovation and transformation in support of population health, health system performance and sustainability and directly links to CAHSPR 2019's theme of "when research meets policy."

C5.3

Theme: Healthcare Reform, and Health Accord (includes priority setting, politics)

ROOM 503

The Real-World: Opportunities and Challenges of the Structured, Stepwise Development of Two Provincial Research and Evaluation Imbedded HCV Elimination Strategies in Atlantic Canada

Presented by: **Lisa Barrett**, Clinician Scientist, Nova Scotia Health Authority

Objective: In many provinces, HCV care is fragmented with little province-wide coordination, and limited real-time evaluation. With the advent of curative HCV medications, it is critical to develop and implement a comprehensive HCV model of care with innovative cost containment solutions and improved access to patient care. The goal of this study was to compare the development of HCV elimination strategies in two Atlantic provinces and identify common processes, successes, challenges, and implementation strategies.

Approach: The process of concept development and implementation was described for each province through discussion with governmental, community, private, and academic partners, as well as review of relevant policy, public and contracted documents. A hybrid effectiveness-implementation type I mixed methods study design will be used to evaluate program implementation. As well, a prospective evaluation and health outcomes research plan has been integrated into Nova Scotia's HCV elimination strategy where two previously described tools will be implemented and evaluated in Phase 1 of the strategy using a pragmatic embedded study design: training providers in motivational interviewing and point of care testing.

Results: PEI is in Phase 2 while Nova Scotia is just beginning Phase 1. Key opinion leaders identify a single Health Authority, involved community members, political will, and provision for structured research and program evaluation as key to successful strategy development in both provinces. Public Health leadership occurred earlier in Nova Scotia than PEI, and was seen as an important part of the early Nova Scotia plan. Early integration of the correctional system and harm reduction providers, as well as a significantly novel model for drug payment, are important to the PEI success. Phase 2 implementation was delayed in PEI through a lack of formal structure within the Health Authority. Both strategies have deferred a formal HCV screening plan or enhanced public media awareness campaign.

Conclusions: There are commonalities between the development of provincial HCV strategies that highlight the need for inter-departmental, and public private collaboration and investment for successful programming. Public health involvement, a developed clear organizational structure, and embedded research are critical towards the development of an elimination strategy where best practices remain unclear.

C5.4

Theme: Healthcare Reform, and Health Accord (includes priority setting, politics)

ROOM 503

Accountable Care Organizations and the Canadian Context

Presented by: **Allie Peckham**, Senior Research Officer, North American Observatory on Health Systems and Policies

Improving care integration across sectors is a policy priority in Canada. Since the establishment of Accountable Care Organizations (ACO) in the United States (US), there has been interest in the potential of ACOs to be implemented in Canada to improve integration. Despite this, there is limited understanding of the core attributes of ACOs, the potential for them to be applied in Canada, and the extent to which ACO-like models are being adopted in Canadian jurisdictions.

We conducted an open search to identify current literature reviews on ACOs. In addition, we searched Medline (Ovid) using the exploded Medical Subject Heading (MeSH) term "Accountable Care Organizations" using the "reviews only" filter and combining search terms using the "AND" Boolean operator. We also searched the Data & Reports section of the Centers for Medicare and Medicaid Services (CMS) website (cms.gov) using the term "accountable care organization(s)". Finally, we scanned government websites of Canadian jurisdictions for current initiatives that aim to increase provider accountability and improve integration.

ACO models in the US vary considerably. Yet, all engage in a shared saving program, have at minimum 5,000 beneficiaries assigned to them for a span of three years, and are responsible for the total cost of care. They are intended to embed care coordination, electronic medical records, and information systems and achieve Triple Aim outcomes.

In Canada there are recent system reforms that share some features of ACOs. We identified nine models including regional coordination of care (Quebec), physician remuneration reforms (Alberta and BC), and financial incentives for provision of chronic disease management services (BC). Only initiatives in Ontario (Health Links, Integrated Comprehensive Care Project) and Alberta (primary care networks) shared two or more of ACO features. None adopt a shared savings program.

A major hurdle for implementing ACO models in Canada is around shared savings. The question remains are they necessary, and if so, what would it take to move to similar models in Canada. Additionally, Canadian jurisdictions continue to face challenges around electronic health records and care coordination that bridges sectors.

C6.1

Theme: Health System Performance (includes quality, safety, efficiency, leadership)

ROOM 613

An Analysis of High Emergency Department Use in the Hamilton Niagara Haldimand Brant Local Health Integration Network, 2013-2017

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

High users of the health care system account for two-thirds of health care costs in the country. Previous research has shown that a third of these individuals remain high users from year to year. However, there is limited information on high users of the emergency department (ED). The objective is to examine five years of data on high ED users presenting to hospitals within the Hamilton Niagara Haldimand Brant Local Health Integration Network (HNHB LHIN).

A descriptive analysis of a five-year (2013-2017) cohort of high ED users attending HNHB LHIN EDs in southern Ontario was undertaken (catchment population: 1.45 million). High ED use was defined as having more than four (4) ED visits per year. Information on ED visits (number, discharge diagnoses), hospitalizations (number, length of stay, discharge diagnoses), patient characteristics (sex, age, sub-region of residence, rurality, chronic disease history), and mortality was abstracted. Data were obtained from Integrated Decision Support (IDS) hosted by Hamilton Health Sciences using the National Ambulatory Care Reporting System (NACRS) and the Discharge Abstract Database (DAD).

Between 2013 and 2017, 64,950 individuals were high ED users with 22% being high ED users in two or more years. In 2017, 17,720 ED patients were high ED users, representing 5% of the total ED patient population. 63% were first-time high ED users. High ED users accounted for 19% of total ED visits, representing 128,324 visits in 2017. The mean number of ED visits was 7.2 (median: 6, range: 5-471) annually. High ED users were 46 years old on average (median: 46, range: 0-105) and more often female (54%). 13% came from rural areas. 44% of high ED users had one or more hospital admissions in 2017, averaging 2 hospitalizations (median: 2, range: 1-37) of 13 days in duration (median: 7, range 1-552).

High ED users account for a disproportionate amount of ED visits in the HNHB LHIN. This study identifies the characteristics of high ED use patients and the patterns of ED use among this cohort, which may inform upstream community interventions that would divert future high-frequency ED use.

C6.2

Theme: Health System Performance (includes quality, safety, efficiency, leadership)

ROOM 613

Emergency Departments Performance and Length of Stays Stagnation: A 24/7 Public Service Working from Nine-to-Five?

Presented by: **Jean-Sebastien Marchand**, Post-doc researcher and HSI Fellow, Université de Sherbrooke

Emergency departments (EDs) crowding is a common issue in Canada. EDs' performance in Quebec is a governmental priority getting steady media attention. Despite significant investments, length of stays (LOS) for stretcher patients in EDs stagnates, and a perceived "crisis" persist. The objective is to shed light on the medical and administrative determinants behind LOS stagnation. We focus on delays for consultation in ED, according to the type of consultation and the time of the day.

Methodological design consist of comparative case study of 4 EDs in 2 administrative regions in Quebec. We accessed all admitted patients (kept on a stretcher for observation) data from EDs' information management systems ("SiUrge" and "MedUrge") over a two-year period (2017-2018). Selected EDs range from 19 to 45 stretchers on census and from 43 000 to 88 000 emergency visits per year. Data extracted from EDs include patient arrival time, the time of specialty consultation request by the emergency physician, the time of completion of the consultation and the consultant specialty.

The results show that average consultation delays are less than 3 hours for stretcher patients between 7AM and 3PM, but are significantly higher between 4PM and 6AM, reaching up to more than 12 hours for patient between 4PM and 1AM. We found that on average 90,5% of consultations are performed between 8AM and 6:30PM, 75,5% of which take place between 9AM and 5PM. The top 5 consulted specialties are: cardiology; internal medicine, social work, gastroenterology and psychiatry. Significant variation are also found for number of consultation requests, average delays, and percentage of missing data as function of consultants specialty. One explanation of ED overcrowding might be related to the delay between patient's arrival and consultation completion time.

As most of consultations are realized in a nine-to-five schedule, we observed that longer delays on evenings and nights significantly impact EDs' performance. Strategies to expand consulting hours and better organization of the consultation flow might improve LOS by expediting admission or discharge decision times.

C6.3

Theme: Health System Performance (includes quality, safety, efficiency, leadership)

ROOM 613

A Machine Learning Approach to Predict Risk of 30-Day Readmission: Insights from Patient Experience Surveys completed by Albertans Living with Chronic Conditions

Presented by: **Kyle Kemp**, PhD Candidate, University of Calgary

Background: Following hospital discharge, approximately one in five Canadians living with chronic conditions are readmitted within 30 days. This places a tremendous burden upon patients, families/caregivers, and the healthcare system. Patient-reported experience, and its potential link with unplanned readmissions has not been explored in a comprehensive fashion. Our objective was to predict the risk of 30-day readmission from responses to all questions from a patient experience survey using a machine learning approach.

Approach: Telephone surveys were conducted using a validated instrument (Canadian Inpatient Experiences Survey – Inpatient Care) within 6 weeks of hospital discharge. Surveys contained 56 questions examining multiple facets of care. These included communication with nurses/doctors, pain control, care coordination, medications, discharge planning, and the physical hospital environment. Surveys were linked with inpatient records to include cases where the most responsible diagnosis was one of seven chronic conditions (chronic obstructive pulmonary disease, congestive heart failure, ischemic heart disease/angina, diabetes, hypertension, asthma, chronic renal failure). Machine learning algorithms examined the relationships between all-cause 30-day unplanned readmission, demographics, clinical factors, and all survey questions.

Results: From April 2014 to March 2018, 7,589 surveys were completed by patients with a most responsible diagnosis (index hospitalization) among the conditions studied. Respondents had an average age of 67.3 ± 13.7 years, and length of stay of 7.7 ± 10.4 days. 839 Patients (11.1%) were readmitted at least once within 30 days (924 readmissions). A random forest model revealed that four of the top five predictors of readmission were patient experience questions (timely call button response, organized admission to hospital, receiving enough information about admission, receiving timely help getting to the bathroom/using a bedpan). Alone, patient experience data performed better than demographic/clinical variables alone at predicting readmission (area under the curve [AUC] 0.634 vs. 0.574). The combination of patient experience and demographic/clinical data had an AUC 0.654.

Conclusion: This project suggests that elements of patient-reported hospital experience should be considered when assessing risk of unplanned readmission. Improvements in these areas may prove fruitful in reducing unplanned readmissions among Canadians living with chronic conditions. The study provides a novel example of secondary use of surveys linked with administrative records.

C7.1

Theme: Home Care & Long Term Care and Aging

ROOM 502

Are they really a different population? A retrospective cohort of linked population data comparing fracture incidence and risk factors between home care recipients and long-term care residents in Ontario, Canada

Presented by: **Caitlin McArthur**, Postdoctoral fellow, registered physiotherapist, GERAS Centre for Aging Research, McMaster University

Background and objectives: Fractures pose a significant threat to health and quality of life. Typically, older adults in long-term care (LTC) are frailer than those in the community. With a shift to maintaining independence at home it is unclear if the burden of fractures is different for people receiving home care (HC). Our objectives are to describe one-year incident fracture rates (hip, wrist, spine, humerus, pelvis), and characterize the differences in fracture risk factors between HC and LTC.

Approach: This is a retrospective cohort study of linked population data of long-stay HC recipients and LTC residents. We excluded those with multiple admissions, end-stage disease, comatose, no one-year reassessment, or received hospice/respite care. Data were obtained through the Resident Assessment Instrument-HC and Minimum Data Set 2.0, and one-year incident fractures in the Discharge Abstract Database and National Ambulatory Care Reporting System. Crude fracture incidence rates stratified by sector, age, and sex were calculated per 10,000 persons. Odds ratios (OR) with 95% confidence intervals (CI) were calculated to determine the difference in fractures and risk factors between HC and LTC.

Results: HC recipients (n=112,652) were 18% [OR (95% CI): 1.18 (1.11 to 1.24)] more likely to experience a fracture within one year than LTC residents (n=29,848), particularly of the spine [OR (95% CI): 2.74 (2.29 to 3.28)] and pelvis [OR (95% CI): 2.11 (1.72 to 2.58)]. HC recipients were younger [mean age (standard deviation): HC 78.8 (12.5); LTC 82.1 (9.8)], more independently mobile [OR (95% CI): 2.74 (2.67 to 2.81)], and had no [OR (95% CI): 1.39 (1.35 to 1.44)] or mild [OR (95% CI): 2.62 (2.55 to 2.69)] cognitive impairment, and were more likely to have fallen [OR (95% CI): 2.26 (2.15 to 2.38)], had health instability [OR (95% CI): 6.03 (5.71 to 6.37)], or taken psychotropic medications [OR (95% CI): 32.02 (30.08 to 34.07)].

Conclusion: Older adults receiving HC are a high-risk population that need targeted fracture risk assessment and prevention strategies given that they have different characteristics fracture patterns (e.g., more non-hip than hip fractures) and risk factors.

C7.2

Theme: Home Care & Long Term Care and Aging

ROOM 502

Trends in physician specialist care delivery to long-term care home residents over 10 years: A population-based retrospective cohort study

Presented by: **Julie Lapenskie**, Research Coordinator, Bruyère Research Institute

Background and Objectives: Long-Term Care (LTC) home residents are often frail and multimorbid, sometimes requiring specialist physician care. However, the increased burden of arranging visits outside the LTC home given residents' functional and cognitive impairments may impede resident access to specialists.

In this study we described visit patterns to medical specialists among LTC home residents, evaluated how resident and facility-level characteristics influenced access to specialist care, and examined trends in specialist visits in the last year of life.

Approach: A population-based retrospective cohort study using linked health administrative data to determine the rate of specialist physician visits in a prevalent cohort of residents (n=255,266) from Ontario LTC homes between January 1st, 2007 and December 31st, 2016. Visit rates were measured per resident-year based on physician billings and stratified by location (on-site vs. outside LTC as outpatient). Facility and resident demographic and health characteristics were assessed as determinants of receiving specialist care. Visit rates in the last year of life were calculated for a subset of residents (n=13,652) who died in LTC between January 1st, 2013 and December 31st, 2016.

Results: Over 10 years, the rate of specialist visits outside LTC was 3.58 visits/resident-year, compared to 1.85 visits/resident-year on-site. Outside LTC, visit rates to cardiology were most common (0.41 visits/resident-year). Psychiatry had the highest rate of on-site visits (0.26 visits/resident-year).

Residents received more specialist visits if they were younger, male, married, severely functionally impaired, or in a 400+ bed home. Residents with five or more chronic conditions had the highest visit rate (7.73 visits/resident-year); 69% of these visits occurred outside LTC. Residents with dementia had 5.80 visits/resident-year, while residents without dementia had 8.20 visits/resident-year.

Specialist visits in the last year of life increased by 246% on-site and 56% outside the home; rates were highest in the final week of life (2.02 vs. 3.64 visits/resident-year, respectively).

Conclusion: Frail residents with dementia and multi-morbidity received less specialist care in their home, despite their need and physical and cognitive impairments. Residents receive more visits at the end-of-life, most often outside the LTC home. Targeted on-site access to commonly-used specialties (i.e. cardiology) could minimize burdensome transitions to improve resident care.

C7.3

Theme: Home Care & Long Term Care and Aging

ROOM 502

Characterizing the intensity and timing of inpatient palliative care: A population-based retrospective cohort study of Ontario decedents admitted to hospital in the last year of life

Presented by: **Colleen Webber**, Clinical Research Associate, Ottawa Hospital Research Institute

Background: Seventy-four percent of Ontarians are admitted to an acute care hospital in the last year of life. These hospitalizations offer an opportunity to initiate palliative care or provide continuity with palliative care delivered prior to hospitalization. However, little information exists on the delivery of palliative care in hospitals. This study describes the intensity and timing of inpatient physician palliative care at the end of life.

Approach: We conducted a population-based retrospective cohort study of Ontario decedents who died between April 1, 2012 and March 31, 2017 with ≥ 1 acute care hospitalization in their last year of life. We captured inpatient physician palliative care using hospital discharge records and physician billing claims. We developed a hierarchy of the intensity of inpatient palliative care based on admission to an inpatient palliative care unit (PCU) and exposure to different levels and types of palliative physician services. Patient characteristics and the timing of inpatient palliative care prior to death were described according to the intensity of inpatient palliative care.

Results: We identified 331,251 decedents with 662,654 hospitalizations in the year before death. The inpatient palliative care hierarchy defined three levels of involvement: high intensity (4.7% of hospitalizations) if patients were admitted to inpatient PCUs; medium intensity (11.3%), if patients were admitted primarily for palliative care or had palliative care specialist involvement; and low intensity (17.8%), if patients received palliative care as a component, but not the focus, of care or had palliative care generalist involvement. Two-thirds (66.2%) of hospitalizations had no palliative care involvement. Over half (55.2%) of all inpatient palliative care and 94.0% of high intensity inpatient palliative care was delivered two months before death. Being female, age 55-74, living in urban areas, and having cancer were associated with high intensity palliative care.

Conclusion: Many Ontarians did not receive palliative care when hospitalized in the year before death, particularly early or high intensity palliative care. The hierarchy of inpatient palliative care intensity developed in this study will be used in subsequent work to evaluate the impact of inpatient palliative care on transitional outcomes.

C7.4

Theme: Home Care & Long Term Care and Aging

ROOM 502

How Approaches to Care Shape the Pathways of Older Adult Home Care Clients

Presented by: **Susan Stevens**, Senior Director Continuing Care, Nova Scotia Health Authority

Home care services are a priority in Nova Scotia. Recent policy and practice changes to long term admission aim to exhaust community options first before seeking facility based care. These changes are attempting to transform the continuing care landscape and client/family experience in Nova Scotia. The objective of this presentation is to highlight the embedded research activities we have undertaken to assess the transformative nature of these policy shifts. The Nova Scotia Health Authority (NSHA) and Winnipeg Regional Health Authority, have partnered with researchers and home care agencies, to understand how approaches to care shape client pathways of older adult home care clients with chronic and long term conditions through the home care system. Multiple methods are used including analysis of interRAI-HC client data and longitudinal qualitative care constellations involving clients and caregivers (informal and formal). In addition, a comprehensive policy analysis is being conducted. Changes in service providers, caregiver breakdown, levels of service, timing of assessments, and/or acute health episodes are being examined to understand client pathways. By understanding both the clinical profile of home care clients using the interRAI-HC data and analyzing the experiential data from clients, caregivers and care providers we will gain new understanding about what is truly individualized and family focused care and the sentinel events that impact decision making about remaining at home or seeking long term care placement. We also will be able to contextualize these findings based in policy uniqueness of home care organization and administration, different models of service delivery as well as cost and amount of service entitlement. Our results will inform the continued transformation of Nova Scotia's continuing care system. Findings will play a critical role in the redevelopment of our case management approach to improve the quality of client/family experience both in the NSHA and through the 25 contracted agencies providing services to 30,000 individuals annually.

C8.1

Theme: Maternal and Child Health

ROOM 504

Does a faster service attract more patients? - Impact of wait time on likelihood of return emergency room visit.

Presented by: **Olivier Drouin**, Clinical Assistant Professor, Université de Montréal/CHU Sainte-Justine

Background and objectives: Longer wait time in pediatric emergency department (ED) is linked to poorer health outcomes. Yet, successfully lowering wait times may incite more patients to come back, and increase patient volume. We aimed to determine if wait time to see a physician in a pediatric ED in a first visit influences the likelihood that a family will return to the same setting.

Design/methods: We performed a retrospective cohort study of children who had a first visit to a single pediatric ED between 01/11/2016, and 31/10/2017, defined as a visit occurring without another ED visit in the previous 12 months. The primary outcome was the occurrence of a return visit in the following 12 months. Our main predictor was the wait time between the patient arrival in the ED and the first evaluation by a physician. We used logistic regression to evaluate the effect of wait time on the likelihood of return visit, adjusted for covariates (age, triage level, day of visit and disposition).

Results: Among the 85 844 ED visits during the study period, 36 844 were first visits and fulfilled inclusion/exclusion criteria. Half of the participants were aged less than five and the most common chief complaints were fever, respiratory problems and trauma. The median value for wait time was 101 minutes (Interquartile range: 56-177 min). Among those with a first visit, 11,351 (30.8%) had a repeat visit in the following 12 months. After adjusting for other risk factors, each one hour increase in wait time was associated with a lower probability of return (OR: 0.92; 95%CI:0.91-0.94). While younger children were more likely to return, there was no significant effect of triage level on the likelihood of having a return visit.

Conclusions: Families with shorter wait times in a first visit were more likely to consult the same pediatric ED in the following 12 months. Strategies to reduce wait times should take into consideration the possible unexpected consequences of a concomitant increase in patient volume, which may limit their efficacy.

C8.2

Theme: Maternal and Child Health

ROOM 504

Impact of Provider Payment Structure on Obstetrical Interventions and Outcomes: A Difference-in-Differences Analysis

Presented by: **Amy Metcalfe**, Assistant Professor, University of Calgary

BACKGROUND & OBJECTIVES: Traditionally, Canadian physicians provide care on a fee-for-service (FFS) basis; however, this model has been criticized as it incentivizes quantity of care over quality of care. As such, all Canadian provinces/territories have implemented some form of alternative payment plans; however, evaluation of the impact of these policy changes have typically focused on family physicians as opposed to specialists. This study examined the impact of changes in obstetrician payment structure on the use of obstetrical interventions.

APPROACH: On January 1, 2004, obstetricians working at the Medicine Hat Regional Hospital (MHRH) transitioned from FFS to salary. Alberta Perinatal Health Program data were used to identify deliveries occurring at the MHRH (intervention group) and the Chinook Regional Hospital (CRH; comparison group) from 2002-2005. A difference-in-differences analysis was used to examine the impact of changes in obstetrician payment structure on the use of obstetric interventions. Outcomes before and after the change in obstetrician payment structure were compared, permitting us to calculate the proportion of the changes in outcomes attributable to changes in provider payment mechanisms after controlling for temporal changes.

RESULTS: Between the pre- (2002-2003) and post-intervention period (2004-2005), the cesarean section rate increased significantly from 23.0% (95% CI:21.6-24.6) to 25.2% (95% CI:23.9-26.7) ($p=0.037$) at CRH and from 13.8% (95% CI:12.0-15.9) to 18.6% (95% CI:16.6-20.7) ($p=0.001$) at MHRH. The crude difference in difference estimator was not statistically significant; however, when stratified by provider type, the difference-in-difference estimator demonstrated a 6.0% (95% CI:0.4-11.7) increase in cesarean sections performed by obstetricians at MHRH compared to CRH. Following adjustment for time of day, day of week, and antepartum risk score, the difference-in-difference estimator remained significant (6.0%, 95% CI:0.5-11.5). No significant differences were observed for family physicians. No significant differences were observed in the rates of assisted vaginal delivery, labour induction, or labour augmentation.

CONCLUSION: Under a FFS model, obstetricians are incentivized to cesarean delivery due to the increased reimbursement rate; however, the increase in cesareans at MHRH following the transition to a salary model is unexpected. This suggests that, in Canada, financial incentives are not a factor that explains the increasing cesarean section rate.

C8.3

Theme: Maternal and Child Health

ROOM 504

Variation in the Care of Children with Inflammatory Bowel Disease: A Population-Based Cohort Study

Presented by: **Ellen Kuenzig**, Postdoctoral Fellow, CHEO Research Institute

Background and Objectives: The incidence and prevalence of inflammatory bowel disease (IBD) among Canadian children is rising rapidly. Children with IBD, including subtypes Crohn's disease (CD) and ulcerative colitis (UC), experience diarrhea, abdominal pain, fatigue, and psychosocial stress. These children may require hospitalization and surgery, risks which may be reduced by specialist gastroenterology care. We evaluated variation in health services utilization and surgery rates across pediatric IBD centres in Ontario.

Approach: Cases of IBD < 16y (FY 1999-2010), identified from health administrative data using a validated algorithm, were assigned to pediatric IBD centres based on location of IBD hospitalization, endoscopy and IBD outpatient care. Cases with no IBD care at a pediatric centre were grouped. Frailty models, median hazard ratio (MHR), and Kendall's τ described variation in IBD-related ED visits, hospitalizations, and surgery 6-60 months after diagnosis, adjusting for age, sex, rural/urban, and income. Mean diagnostic lag (time between first visit for IBD-related sign/symptom and IBD diagnosis) and proportion of children with IBD care by gastroenterologists were evaluated as centre-level predictors.

Results: Of 2584 IBD cases, 44.7% visited the ED and 35.9% were hospitalized; 0.18% (MHR 1.06) and 0.41% (MHR 1.09) of variation, respectively, resulted from between-centre differences. Hospitalization, but not ED visits, was more common at centres with more children cared for by gastroenterologists (HR 2.09, 95%CI 1.26-3.45) and longer diagnostic lag (HR 1.011, 95%CI 1.003-1.019). Among 1529 CD cases, 14.1% required intestinal resection; 1.79% of variation resulted from between-centre differences (MHR 1.20), with decreased risk at centres with more gastroenterologist care (HR 0.24, 95%CI 0.07-0.84) and longer diagnostic lag (HR 0.98, 95%CI 0.97-0.99); including centre-level variables decreased variation (τ 0.005%; MHR 1.01). Minimal variation was observed among the 11.0% of 872 UC cases requiring colectomy (τ 0.37%; MOR 1.09); colectomy was not associated with centre-level predictors.

Conclusion: There is little variation across groups in ED visits, hospitalizations, or surgery; however, centre-level access to specialist care and time to diagnosis decreased variation between centres. It is essential to understand between-centre differences to ensure all children have equal access to high-quality IBD care.

C8.4

Theme: Maternal and Child Health

ROOM 504

Maternal-child primary care provider concordance: a population-based cohort study exploring health outcomes.

Presented by: **Natasha Saunders**, Pediatrician, The Hospital for Sick Children

Background:

Family physicians who care for both a mother and infant potentially allow for integrated and coordinated primary care delivery. This may be associated with good health outcomes for the mother-baby dyad. We sought to examine whether health outcomes and access to care differ when a mother and infant receive primary care by the same (concordant) vs. by a different (discordant) primary care provider.

Methods:

Population-based cohort study using linked health administrative databases. Primiparous women discharged from hospital with their singleton, term infants were identified between 2005 and 2014 (n=481,721). Providers who delivered the majority primary care to the infant and mother at one year following birth were identified using physician billings. Primary care was assigned as 1) concordant (same family physician), 2) discordant (2 different family physicians), and 3) discordant (pediatrician and family physician). Health outcomes and system utilization were described in the two years following birth. Regression models estimated odds ratios and relative risks of maternal and child health and health system utilization.

Results:

Concordant primary care occurred in 49.6% of mother-infant dyads. 23.7% of dyads had discordant family physicians and 26.7% had pediatricians and family physicians. Mothers in pediatrician-family physician dyads were older, had more comorbidities and infants with congenital anomalies. The odds of non-maternity hospitalization (n=23,176) was lower in those discordant vs. concordant care (OR 0.90, 95% CI 0.87, 0.93, 2 family physicians; OR 0.93, 95% CI 0.90, 0.96, pediatrician-family physician). Odds of maternal death (n=144) was lowest in pediatrician-family physician dyads (OR 0.63; 95% CI 0.40, 0.99) compared to concordant care dyads. Maternal primary care visit rates were lowest in discordant vs. concordant dyads (RR 0.30, 95% CI 0.30, 0.30, 2 family physicians; RR 0.49, 95% CI 0.49, 0.50, pediatrician-family physician) with lower rates of low acuity emergency department visits among discordant-pediatric care (RR 0.69, 95% CI 0.67, 0.71).

Conclusions:

We found no evidence that concordant care improved health outcomes or access to care. Primary care provided by a pediatrician was associated with improved maternal health outcomes and lower system utilization even after accounting for comorbidities and sociodemographic differences in the first two years after birth.

C9.1

Theme: Mental Health

ROOM 506

Predicting The Onset of Mental Health Conditions In Children – Evidence from New Zealand

Presented by: **Richard Audas**, Associate Professor, Memorial University of Newfoundland

Predicting The Onset of Mental Health Conditions In Children – Evidence from New Zealand

Richard Audas (Memorial University of Newfoundland and University of Otago)

Background and objectives

Evidence suggests that young children with mental health conditions, such as ADHD, have better outcomes if they are diagnosed early and interventions are put in place. In New Zealand children participate the B4 School Check (B4SC) prior to entering school. We are interested in determining if data captured in the B4SC, including the Strengths and Difficulties Questionnaire (SDQ) and the Parental Evaluation of Developmental Status (PEDS) offer sufficient predictive power to be an effective screen.

Approach

Using the Statistics New Zealand Integrated Data Infrastructure (IDI) – a whole of population, whole of government database – we identify youth with mental health conditions using a variety of data sources, including hospital discharge data, pharmaceutical data and community mental health data. We subsequently link this to B4SC and demographic data captured in the IDI. We then use these data to model the onset of any mental health condition as well as any disruptive behavior disorder (e.g. ADHD, conduct disorders, and oppositional defiance disorders) using time-to-event analysis.

Results

Time-to-event analysis revealed that all considered demographic variables (gender, ethnicity, socio-economic status, and urban/rural) as well as several health-related measures (SDQ, PEDS, and weight) were significantly related to the onset of mental health problems. The full models demonstrated 'strong' predictive power for population screening purposes (Harrell's C-statistic > 0.8).

Conclusion

Our results suggest that mental health conditions can be identified using B4SC data with a high degree of sensitivity and specificity. We would advocate that referrals to appropriate child development specialists be arranged based on a child's PEDS and SDQ results. We encourage other jurisdictions to utilize these widely validated tools

C9.2

Theme: Mental Health

ROOM 506

Evaluation of a family-centred navigation program in youth mental health and addictions

Presented by: **Nadine Reid**, Project Scientist, Centre for Addiction and Mental Health

Background and objectives: Many Canadian families of youth with mental health and/or addiction (MHA) concerns are still struggling to access the care they need. The Family Navigation Project (FNP) is a community-based service in Toronto, Ontario offering family-centred system navigation to families of youth aged 13 to 26 with MHA concerns. This study aimed to describe clients served; and to evaluate perceived experiences of accessibility, continuity of care and family involvement, and its collective impact on service satisfaction.

Approach: Within a Realist Evaluation framework, a co-designed, mixed-methods, cross-sectional electronic survey with closed- and open-ended items was administered using a modified Dillman's Tailored Design Method over a four-week period to all families who had registered to receive navigation services for a youth with a MHA concern between June 2014 and September 2016. Survey data was complemented by a chart review. Descriptive and inferential statistical analyses of chart and closed-ended survey data were performed. A descriptive analysis of open-ended qualitative survey data was also used to further contextualize and improve understanding of the quantitative survey data.

Results: From a resulting eligible and valid convenience sample of 688, 134 clients completed the survey for an overall response rate of 19.5%. The majority of the sample identified as parents (93.3%) seeking help for a transitional-aged youth (61.9%) with a wide range of mental health concerns (median=2.0); 45.5% reported concurrent addiction concerns. Accessibility was rated highly across the sample (median=23.0 out of 25), as was continuity of care (median=13.0 out of 15), and family involvement (median=5.0 out of 5). Total service satisfaction score was similarly high (median=18.0 out of 19). A Bartlett Factor Score representing the collective impact of accessibility, continuity of care and family involvement was significantly and positively associated with service satisfaction (Wald chi2 = 103.18, p=.000). Qualitative data supported the quantitative findings.

Conclusions: Families with diverse MHA needs are seeking navigation. FNP clients in this study sample perceived navigation to be highly accessible, continuous, and family-inclusive; and as a direct result, were highly satisfied with the service overall. Navigation may be an effective intervention for improving the MHA help-seeking experience for Canadian families.

Integrated Youth Service Hubs - Co-developing Hubs with Youth for Youth

Presented by: **Debbie Chiodo**, CAMH

Youth Wellness Hubs Ontario (YWHO) is an initiative that aims to bring the right services to youth (and their families) at the right time and in the right place. YWHO is a critical step toward improving Ontario's mental health and addiction services for youth and young adults by:

Providing rapid access to easily identifiable mental health and substance use services with walk-in, low-barrier services and clear service pathways

Providing evidence-based interventions matched to individuals' level of need, and supported transitions to specialized care services when the severity of need is evident

Integrating mental health, substance use, primary care, vocational, housing and other support services into a one-stop-shop model of care offered in a youth-friendly space

Reducing transitions between services through co-location and shared services in a single place

Establishing common evaluation across sites

Co-creating services with youth & families

YWHO is working closely with diverse stakeholders, including youth and family members across the province, to inform every aspect of the initiative at the both provincial and hub-specific levels. This includes engaging with groups of youth who have historically experienced barriers to access, such as:

First Nations, Inuit, and Métis youth

LGBTQ+ youth

Francophone youth

Immigrant, refugee, ethnic/cultural minority youth

Racialized youth

Youth with disabilities

Through exploration of this innovative project, participants will be able to better understand how equity and co-development can be put into practice in the work they support. Furthermore, participants will have an augmented capacity in planning how to embed standardization balanced with contextualization implementation and co-design in their future work.

Stay Connected Mental Health Project (SCMHP): Improving transitions-of-care from pediatric to adult mental health services in Halifax, NS

Presented by: **Kavya Anchuri**, Research Associate, Nova Scotia Health Authority

Background & objectives

Stay Connected (SCMHP) is a Halifax-based mental health transitions improvement program established in 2013. It addresses systemic barriers in transitions-of-care from pediatric to adult mental health and addictions (MHA) services—barriers causing loss to follow-up and incomplete treatment when patients reach age 19 and conclude pediatric care. SCMHP is entering its evaluative phase where embedded research will be conducted to inform best-practices for improved collaboration between pediatric and adult MHA services.

Approach

SCMHP seeks to improve collaboration between pediatric and adult MHA services by:

- Promoting shared management of care among clinicians through joint clinical sessions ('transition meetings')
- Driving a 'culture shift' whereby transitioning patients/ families are provided adequate resources to remain in care
- Fostering patient self-management/ literacy around transition.

An innovative mixed-methods approach to evaluate SCMHP impact is guided by the following logic model:

- Deconstruct SCMHP into its twelve programmatic components
- Delineate philosophical vs. intended measurable outcomes of each component
- Develop questions addressing the intended measurable outcomes
- Determine evaluation design by identifying requisite data, methods for acquiring data, and relevant analytical frameworks

Results

Embedded Research (ER) is useful in illuminating systemic barriers that influence everyday decision-making processes. Pediatric-to-adult transitions in mental health care are carried out by negotiating systemic processes in service delivery, thus conducive to evaluation by ER. Through qualitative interviewing of MHA stakeholders and analyzing Halifax MHA service-use data from 2007 to present-day, we anticipate our results will describe changes in, for example:

- The proportion of 'transition meetings' held each year for patients aging out of pediatric care,
- Temporal gaps in service-use between pediatric and adult mental health services, and
- Self-reported patient/ family satisfaction with available support during transition process.

These results, completed by May 2019, will articulate both qualitative and quantitative impacts on successful patient transitions and program reach of SCMHP.

Conclusion

Embedded research will be conducted for the evaluative phase of this program to support the long-term integration of SCMHP into Halifax MHA services, allowing SCMHP to serve as a Canadian best-practice example in dismantling system-level barriers to effective transitions-of-care and the appropriate evaluation of such efforts.

Screening While You Wait: A technology-based pilot step wedge trial to facilitate actionable exercise prescriptions in primary care

Presented by: **Natasha Kithulegoda**, Research Coordinator, Women's College Hospital

Title: Screening While You Wait: A technology-based pilot step wedge trial to facilitate actionable exercise prescriptions in primary care

Authors: Agarwal, P., MD, Kithulegoda, N., MPH, Bouck, Z., MPH, Ivers, N. MD, PhD

Affiliation: Women's College Hospital Institute for Health System Solutions and Virtual Care (WIHV)

Background & Objectives

Only 18% of Canadians meet physical activity (PA) guidelines despite known impact on mortality and well-being. Guidelines recommend that clinicians encourage PA during routine visits, but this is rarely implemented. Reported barriers include lack of time, knowledge and training, and lack of success in changing patient behaviour. This pilot study evaluated the feasibility and preliminary effectiveness of a technology-based PA counselling tool in primary care.

Approach

A step wedge trial was conducted at an urban academic family practice. The intervention was sequentially administered in a randomized order, with one of four groups of clinicians switching to the intervention every 6-weeks, until all were exposed. Eligible patients received an e-survey prior to their appointment to assess PA levels. Survey results were used to automatically populate the chart with a tailored prescription and educational resources. PA was reassessed after four months; secondary outcomes include changes in intention and self-efficacy. Process measures included patient satisfaction with PA advice, receiving the toolkit and prescription, and time spent on PA counselling.

Results

Of the 530 total patients, 82.5% provided baseline and follow-up data. PA (Metabolic Equivalent of Task minutes (MET-minutes) per week) in the intervention group was 10% greater than controls (count ratio, 1.10, 95% CI 0.86-1.41, $p=0.44$). After adjusting for baseline covariates, the effect of the intervention remained non-significant (count ratio, 1.18, 95% CI 0.90-1.53). 61.8% of patients exposed to the intervention completed a process evaluation; of these patients, 49.4% reported receiving at least a prescription, 48.9% reported spending 2-5 minutes discussing PA with their provider, and 86.8% reported being satisfied with their PA discussion.

Conclusion

The introduction of the e-health tool for PA was feasible to implement in a large practice and resulted in a non-statistically significant increase in PA. Process evaluations indicated a need for better training to ensure fidelity of implementation. Future studies require significantly more clusters to achieve significant power.

Alignment of Primary Care Deprescribing Strategies to the Nova Scotia Context Using Components of the Behaviour Change Wheel

Presented by: **Isaac Bai**, Pharmacy Student/Research Assistant, Dalhousie University

Background and Objectives

Polypharmacy and inappropriate medication use are an increasing concern with the aging population. Deprescribing may reduce medication-related harm and improve quality of life. The Behaviour Change Wheel (BCW) is a framework for practice change that may assist in informing the development and implementation of deprescribing strategies. The objective was to identify components of published primary care deprescribing strategies that link to local qualitative data to inform development of deprescribing initiatives in Nova Scotia.

Approach

Two background studies were completed. A scoping review identified studies that evaluated primary care deprescribing strategies. Strategies were mapped to the BCW Intervention Functions (intervention purpose) and the Behaviour Change Techniques (BCTs) (intervention delivery method). A qualitative study of interviews and focus groups evaluated knowledge, attitudes, beliefs and behaviours toward deprescribing of local primary care physicians, nurse practitioners and pharmacists. Transcripts were coded using the Theoretical Domains Framework (TDF) and matched to the BCW. BCW Intervention Functions, BCTs and deprescribing strategies from the scoping review that linked to the TDF domains in the qualitative study were identified and described.

Results

The scoping review included 44 studies with a variety of study designs. All intervention functions of the BCW were utilized except Restriction. When mapped to the BCW, the two most predominate BCTs identified were Prompts/Cues and Social Support (practical), which are categorized under Environmental Context and Resources and Social influences, respectively, when mapped to the TDF. The qualitative study identified six main TDF themes by frequency of codes and content of responses: 1) Social Influences; 2) Environmental Context and Resources; 3) Memory, Attention and Decision Processes; 4) Social/Professional Role and Identity; 5) Intentions and 6) Beliefs about Consequences. Environmental Context and Resources and Social Influences were the most commonly identified domains in the scoping review (through BCT mapping) and in the qualitative study.

Conclusion

By aligning the views of local healthcare providers with the published literature, results of this study indicate that key deprescribing initiatives for future research in primary care in Nova Scotia should involve components that address Environmental Context and Resources and Social Influences.

Pay for Performance Scheme in Primary Care: Lessons from the quality and outcomes framework in the UK

Presented by: **Nagina Khan**, Independent Researcher, Independent Researcher

Title: Pay for Performance Scheme in Primary Care: Lessons from the Quality and Outcomes Framework in the UK

Background and objectives

The Conference Board of Canada report, Family Doctor Incentives: Getting Closer to the Sweet Spot recommends that policy makers aim for the right blend of incentives, guided by principles that consider health care goals, global experience and human motivation. Therefore it is important to understand the impact of funding and contractual mechanisms on the provision of primary care and how different payment models drive different types of behaviour.

Results

The QOF was introduced in the UK as a mechanism to motivate GPs to achieve a change in aspects of general practice delivery and performance. Few studies have focused on the broader impacts of the QOF on the organisation and provision of care. The impact of QOF is considerably broader than the clinical domains.

We identified 6 broad themes:

- Loss of autonomy & uncertainty;
- Incentivised conformity
- Holism and continuity
- Structural & Organizational changes
- Control and ownership
- 'Grey' ambiguous nature of work in primary care

While these are associated with the ongoing impact of QOF, they may have more long lasting significance for the future workings of general practice.

Approach

Meta-synthesis assists knowledge synthesis through a process of re-conceptualisation of themes across a number of published qualitative studies (Noblit & Hare 1988). A meta-synthesis draws on the subjective and interpretive nature of existing qualitative research to construct more complete and plausible understandings of reality than what is currently available from the existing literature (Allen et al. 2016). Although multiple studies are used, the sample is purposive and therefore not entirely exhaustive.

Our search aimed to identify published peer-reviewed empirical research relating to pay-for-performance schemes in primary care in the UK, focusing particularly on QOF.

Conclusion

Quality improvement initiatives should integrate the personal and professional values that clinicians find vital into their processes, as clinicians are driven by their views, beliefs, and experiences, and not just by hierarchy and the externally imposed constructs

L'expérience des fréquents utilisateurs des services de santé de première ligne : une revue systématique avec synthèse thématique

Presented by: **Magaly Brodeur**, Resident Doctor / Médecin résident, Université de Sherbrooke

Contexte

Au cours de la dernière décennie, les fréquents utilisateurs des services de santé ont capté l'attention des chercheurs, politiciens et décideurs du secteur de la santé. Alors que la littérature sur le sujet prend de l'ampleur, il est possible de constater que l'on en connaît peu sur leur expérience. Cela est étonnant surtout dans le présent contexte où la recherche s'axe de plus en plus sur le patient.

Objectif

L'objectif de cette étude est de faire une synthèse des études qualitatives ayant évalué l'expérience des fréquents utilisateurs des services de santé.

Approche

Une revue systématique a été réalisée dans les bases de données MEDLINE, CINALH and PsycINFO en utilisant une stratégie de recherche basée sur des groupes de mots clés reliés à l'expérience du patient, les soins de première ligne et les fréquents utilisateurs des services de santé. Par la suite, une synthèse thématique a été menée selon l'approche de Thomas & Harden (2008), avec codage et analyse dans le logiciel d'analyse qualitative NVivo selon les principes de l'analyse thématique (Miles, Huberman & Saldana, 2014).

Résultats

Cette revue systématique a permis d'identifier 1122 études. Une fois les doublons ainsi que les articles ne répondant pas aux critères d'inclusions ont été éliminés, 12 articles ont été retenus pour l'analyse. Au final, deux principales catégories de thèmes (incluant des sous-thèmes) ont été identifiées : 1) L'expérience de la maladie (i.e. le vécu avec la maladie : limitations physiques, souffrance mentale, impact sur les proches et « self-management » des symptômes) ; 2) L'expérience avec les services de santé (i.e. l'expérience globale au sein du système de santé : accessibilité aux soins de santé et l'expérience de soin).

Conclusion

Cette revue systématique représente, à notre connaissance, la première revue systématique sur le sujet. Cette étude permet de mieux comprendre l'expérience patient des fréquents utilisateurs du système de santé et ultimement, fournit des avenues pour l'amélioration des soins et services offerts à cette clientèle.

CONCURRENT SESSIONS D: THURSDAY, MAY 30, 2019 - 10:15AM – 11:30AM

D1 – Knowledge Translation & Exchange

ROOM BALLROOM 2

Insights into the lifecycle of complex interventions – 10+ years of learning about learning health systems from a longitudinal program of integrated knowledge translation

Presented by: **Carole Estabrooks**, **Matthias Hoben**, University of Alberta, **Whitney Berta**, University of Toronto, **Malcolm Doupe**, University of Manitoba, **Carmen Grabusic**, Alberta Health

Objectives:

1. To describe our 12 years of experience with intervention development, implementation, testing, sustainment, and next steps toward spread and scale-up – reflecting upon various stages of the lifecycle of complex healthcare interventions. 2. To present key learnings related to the opportunities and challenges encountered in objective 1 and where relevant to discuss prevention/mitigation strategies when undertaking an integrated program leading to pragmatic intervention and large scale implementation studies. 3. To discuss the implications of our findings for the science of learning health systems.

Invited Experts:

Dr. Estabrooks, TREC's scientific lead, has created and maintained the partnerships required for over a decade of high impact iKT research in LTC. Dr. Doupe is a regional lead investigator (Winnipeg). He has been involved in SCOPE, as well as, partnership development. Dr. Berta leads the sustainability, spread and scale-up study (focused on SCOPE). Dr. Hoben has led the INFORM trial. Ms Grabusic is the Director of Program Policy and Quality Improvement in the continuing care branch of the Government of Alberta and a long-time TREC partner. These five experts will draw from the TREC program of research to provide an in-depth, multi-faceted analysis of key learnings, challenges, and future directions related to the life cycle of complex healthcare interventions where iKT has been fundamental to their implementation, sustainability, scale-up and spread. They will also offer their perspectives on how TREC has contributed to building a learning health system.

Approach:

We will briefly introduce two intervention trials being conducted using an iKT approach, and in different stages of the implementation life cycle: 1. Safer Care for Older Persons (in residential) Environments (SCOPE) is a controlled trial examining the effect of empowering and supporting unregulated frontline workers to lead improvement strategies within their facility. This intervention has undergone feasibility and pilot testing and is currently being evaluated in 32 sites in Alberta and British Columbia. We are also assessing sustainability, spread and scale-up potential of SCOPE. 2. Improving Nursing Home Care through Feedback on Performance Data (INFORM) feeds back performance data to care managers and engages them in goal setting and ongoing learning to implement positive changes on their care units. INFORM has been tested in a randomized trial and the research intervention has been transformed into a change/implementation technology for operational use that is going to be field tested.

D2 – Health systems Performance

ROOM 501

Putting Patients at the Centre of Health Care: The use of patient-reported outcome measures (PROMs) in the Healthcare System

Presented by: **Shannon Weir-Seeley**, CIHI

Objectives:

Our objectives are to: 1) provide an overview about PROMs (e.g., types, development and measurement properties, selection, use and interpretation); 2) discuss the importance of a patient-centered approach in evaluating the performance of healthcare systems and measuring value in healthcare; 3) provide examples on the process of incorporating PROMs into ROM in healthcare systems; and 4) discuss the value of using PROMs in the healthcare system. The panelists will also address the challenges and lessons learned with respect to the process of incorporating PROMs into ROM, and in using PROMs data for various purposes.

Invited Experts:

The panel session will be moderated by Fatima Al Sayah, PhD (Manager of PROMs research unit at the School of Public Health, University of Alberta, Canada), and will include the following four experts: • Jeffrey A. Johnson, PhD, is a professor and the co-director of a PROMs research unit at School of Public Health, University of Alberta, Canada. • Nancy Devlin, PhD, is the Director of Research at the Office of Health Economics, UK, and an honorary professor at the University of Sheffield and City University of London. She has lead several PROMs initiatives in the UK. • Linda Watson, PhD, RN, in the Lead of Person Centred Care Integration at CancerControl Alberta (CCA), Canada, and has lead the implementation of PROMs at CCA within the province. • Emelie Heintz, PhD, is the Project Manager of the Swedish PROMs research program at QRC Stockholm Research Unit, Karolinska Institutet

Approach:

Canada, UK, and Sweden are among a few leading countries that have incorporated PROMs into routine outcome measurement (ROM) in various clinical areas and healthcare service delivery settings. After providing a brief overview on PROMs, we will draw on examples from these countries to demonstrate how PROMs are incorporated into ROM systems (including patient portals, electronic health records, and patient registries), and how PROMs data can be used to evaluate the quality of health services, the performance of the health system, and to measure value in healthcare. Further, we will highlight the use of PROMs in specific clinical areas such as cancer care in Alberta and hip/knee replacements in the UK. The presentations will be followed by an open discussion facilitated by questions from the audience. The audience will also be engaged throughout the session via online polling techniques to answer simple questions or provide input.

Ensuring a clinically useful classification to improve mental health detection and monitoring in Canada: Insights from ICD-11 Clinical Descriptions and Diagnostic Guidelines Development and Testing

Presented by: **Cary Kogan**, Professor, Université d'Ottawa/University of Ottawa, **Keith Denny**, Canadian Institute for Health Information, **Jared Keeley**, Virginia Commonwealth University

Objectives:

To review the historical adoption of classifications for mental health in Canada. To provide an overview of the ICD-11, with particular focus on the improvement of clinical utility and implications for mental health data collection. To describe the science of measuring clinical utility of classifications developed as part of the ICD-11 revision process. To present current evidence from ICD-11 developmental field trials conducted in Canada supporting the reliability, validity and clinical utility of ICD-11 for implementation and its expected impact on better data for improving mental health care in Canada.

Invited Experts:

Cary Kogan is Professor of Clinical Psychology at the University of Ottawa and a consultant to the World Health Organization's Department of Mental Health and Substance Abuse. He contributed to the development, field testing and implementation of the MBND chapter of the ICD-11. Prof. Kogan lead the Canadian clinic-based field trial for MBND at the Royal's Institute of Mental Health Research, affiliated with the University of Ottawa. Keith Denny, is Director of Clinical Data Standards and Quality at the Canadian Institute for Health Information, providing vision and leadership for the development and application of clinical classifications and terminology standards. Dr. Denny is an adjunct research professor at Carleton University. Jared Keeley is an Associate Professor at Virginia Commonwealth University and a consultant to the World Health Organization's Department of Mental Health and Substance Abuse. He contributed to the design and implementation of field testing for the MBND chapter of ICD-11

Approach:

In view of the likely approval of ICD-11 by the World Health Assembly in 2019, this panel presentation will discuss the potential advantages of implementing a single classification system in Canada for all clinical and administrative activities in the health system, including mental health. It will review the use of classification systems for mental health in the wider Canadian health system context, illustrating the historical relationship between the ICD and DSM. The development of a science for measuring clinical utility of ICD-11 will be described within the broader endeavour of systematic development and evaluation of ICD-11 MBND. We will illustrate the evaluation of ICD-11 clinical utility with results of the Canadian clinic-based field trial that evaluated high service utilization and high disease burden disorders at a tertiary care hospital.

D4.1

Theme: Access & Equity (includes Indigenous peoples, immigrant and other priority populations)

RPPM 613

How do voluntary primary care enrolment programs in two Canadian provinces compare with respect to equity?

Presented by: **Ruth Lavergne**, Assistant Professor, Simon Fraser University

Background: Enrolment of patients with primary care providers' practices is an important aspect of strong primary care systems. In British Columbia (BC) and Quebec, patient enrolment has been encouraged through voluntary programs that offer additional payments to physicians who agree to enroll new patients. Physicians may make decisions about whether or not to participate in programs, and whether or not to enroll individual patients. We explore the equity implications of such programs.

Approach: We examine multiple enrollment programs implemented in BC and Quebec over the period from 2003 to 2015. These programs differ with respect to the populations eligible, payment amount, and other requirements of enrolment. We use physician payment records to compare enrolled patients to patients who were eligible for each program but not enrolled with respect to level of comorbidity and socioeconomic status. We also explore whether patterns of comorbidity and socioeconomic status between enrolled and unenrolled patients differ based on target population, payment amount, and other requirements of the enrolment programs

Results: As expected, patients eligible for enrolment programs on average had a higher number of chronic conditions and slightly lower socioeconomic status. However, patterns of comorbidity between enrolled and eligible but unenrolled patients differed by program. In BC programs targeting individual chronic conditions, the enrolled patients had fewer chronic conditions and on average slightly higher neighbourhood income. The reverse was true for payments for programs targeting patients with complex illness, which also included much higher payments. Enrolment programs in Quebec that targeted the general population enrolled patients with lower morbidity and material deprivation on average.

Conclusions: Sicker and socioeconomically disadvantaged patients have greater need for primary care. Sicker and socioeconomically disadvantaged patients may be less likely to benefit from voluntary enrolment programs if there is no deliberate consideration of patient complexity or socioeconomic status in program design.

D4.2

Theme: Access & Equity (includes Indigenous peoples, immigrant and other priority populations)

ROOM 613

Patients and primary care physicians experiences of patient enrolment programs in British Columbia and Quebec: a qualitative descriptive study

Presented by: **Christine Loignon**, Professor, Université de Sherbrooke

Background: Patient enrolment programs have been implemented in many provincial health care systems in Canada for improving patient's access and continuity of primary care services. We lack data on how this innovation modulates the experience of care among vulnerable patients (e.g., low-income patients, multi-morbid patients). This presentation examines the perceptions and experiences of patients and primary care physicians of patient enrolment programs in British Columbia and Quebec, two provinces with different approaches to patient enrolment. Methods: This qualitative work is part of a larger mixed methods study set in BC and QC and funded by the CIHR SPOR PIHCI Network. This qualitative descriptive study was based on in-depth, face-to-face, semi-structured interviews with purposively selected primary care physicians (PCP) and enrolled patients in Vancouver and Montreal. Interview guides relied on literature review and active involvement of patients and decision-makers in both provinces. Interviews (n=30) lasted 60-90 minutes and were conducted by experienced qualitative researchers in French or English. Data analysis consisted of thematic analysis of interview transcripts and debriefing sessions amongst multiple members of the research team, including patients and decision-makers. Results: In QC, where patient enrolment attaches orphan patients to PCP, both patients and PCP described patient enrolment as facilitating access to primary care for unattached patients. All QC patients were satisfied and reassured with the attachment to PCP resulting from the program. Some QC physicians deplore the "cherry picking effect" leading PCP avoiding vulnerable patients such as drug user or low-income patients. The BC data analysis is still underway. Program strengths and weaknesses are expected to vary from the QC results, as the BC patient enrolment program primarily focuses on improving physician-patient relationships for patients who are already attached to a PCP. Anticipated full results will describe the positive and negative aspects of the enrolment program from both patient and provider perspectives and paths for improvement for enrolment programs. Conclusion: This study provides original data that can be used to ameliorate programs devoted to the improvement of access and continuity of care for unattached and vulnerable patients. Our study supports the significance of involving patients in the evaluation

D4.3

Theme: Access & Equity (includes Indigenous peoples, immigrant and other priority populations)

ROOM 613

The impact of rural hospital closures and health service reforms on community-level patterns of hospital admissions in New Brunswick

Presented by: **Kyle Rogers**, Data Analyst, New Brunswick Institute for Research, Data, and Training

Background and objectives

Throughout the 2000s, New Brunswick implemented health system reforms aimed at containing rising expenditures by centralizing acute care services, closing or repurposing rural hospitals, and removing 300 hospital beds from the system. The effects of this rationalization on access to care have not been evaluated or explored previously. Our objective was to describe how the reforms affected health service use across New Brunswick overall, and within individual communities.

Approach

We investigated patterns of hospitalizations for ambulatory care sensitive conditions (ACSC) given that a key goal of the reforms was to transition inappropriate acute and emergency care use to primary care. ACSCs are manageable by primary care providers, as such, hospitalizations for ACSCs may represent an inappropriate level of care. We used ten years (2004-2013) of inpatient care data from the Discharge Abstract Database and ICD-9/10 codes to identify ACSC hospitalizations. We described spatial and temporal patterns in age-standardized: hospitalization rates, incidence of hospitalizations, and rates of admissions via ambulance— overall, and across communities.

Results

At the provincial level, all three rates decreased over the study period. The greatest decrease was among all hospitalizations (i.e., decrease of approximately 4/1,000); the rate of individuals hospitalized decreased moderately (approximately 3/1,000), and ambulance arrival rates decreased only negligibly. These differing rates of change resulted in a convergence of the three rates in later years. We observed some notable community-level exceptions to the provincial trends. For example, although the provincial ambulance arrival rate decreased over the study period, several communities experienced an increase in ambulance arrival rates. Additionally, some rural areas experienced ambulance arrival rates three times higher than urban areas. Urban-rural differences were not as notable for all hospitalizations and incidence.

Conclusion

Major health care restructuring, and the repurposing of several rural hospitals in New Brunswick in the 2000s, resulted in decreased rates of hospitalization for ACSCs. Most hospitals were replaced with community health centres to improve access to primary care; our findings suggest these tactics were successful.

D4.4

Theme: Access & Equity (includes Indigenous peoples, immigrant and other priority populations)

ROOM 613

Alcohol Hospitalizations across Canada's Large Urban Centres: Examining variations in Income-related Inequalities

Presented by: **Junior Chuang**, Senior Analyst, Canadian Institute for Health Information

Introduction/Background: Alcohol harm is a leading cause of injury and death in Canada. In 2015–2016, there were about 77,000 hospitalizations entirely caused by alcohol compared with about 75,000 for heart attacks. This collaborative project with the Urban Public Health Network, uses CIHI's Hospitalizations Entirely Caused by Alcohol indicator to examine how income inequalities vary across and within Canada's large urban centres. Since 1982, Calgary, Vancouver and Toronto have seen the greatest increase in income inequality.

Approach: CIHI's Hospitalizations Entirely Caused by Alcohol indicator results were pooled across two years (FY2013–2014 to FY2014–2015) and linked with neighbourhood income quintile and geography data based on patient postal codes using Statistics Canada's Postal Code Conversion File Plus. Age-standardized rates were calculated, and income-related health inequalities summarized, using rate ratios (RR) and rate differences (RD), to examine the relationship between alcohol harm and neighbourhood income quintile (IQ). Results were reported at the Census Metropolitan Area (CMA) (e.g. Greater Toronto Area) and Census Subdivision (CSD) (e.g. Richmond Hill) levels to enable comparisons across and within Canada's large urban centres.

Results: CMA alcohol harm rates ranged from 103 (Toronto) to 310 hospitalizations (Regina) per 100,000 people. Across CMAs, an income gradient was observed, with highest rates for people from the lowest neighbourhood IQ. Toronto had the lowest relative inequality for with a RR of 2.2 (RD:106 per 100,000 people) and Edmonton the highest at 7.4 (RD: 614 per 100,000 people). There was great variation in rates and inequality within the Toronto CMA. Rates ranged from 36 (Richmond Hill) to 240 hospitalizations (Orangeville) per 100,000 people. The rate for people from the lowest neighbourhood IQ was 14 times higher in Oakville (RD: 662 per 100,000 people) and 9 times higher in Richmond Hill (RD:159 per 100,000 people) than for people from the highest neighbourhood IQ.

Conclusions: Large income-related inequalities exist in the rates of Hospitalizations Entirely Caused by Alcohol across Canada's large urban centres. Integrating these local level results with other local data (e.g. alcohol outlet density) may provide further insight for the prevention of alcohol harm and support evidence-informed policy planning and decision-making.

D5.1

Theme: Cancer, Chronic Disease Management

ROOM 507

Community Paramedics Program Evaluation Study

Presented by: **Monica Cepoiu-Martin**, Postdoctoral Scholar, University of Calgary

Background and objectives

In Canada's learning health systems, improving system integration by balancing acute and specialty care with community-based health services is a priority. Community Paramedicine is an innovative concept in care based on expanding the role of paramedics to provide safe, timely, mobile medical care in the community setting. The objective of this study is to evaluate the impact on health services utilization of the Community Paramedics Program (CPP) in a population of cancer patients.

Approach

We are using an interrupted time series (ITS) approach to analyze the effect of the CPP on the outcome measures (ED visits, hospitalizations, EMS calls and mortality). This study targets patients aged 18+, residing in Calgary and diagnosed with head and neck, lung, gastrointestinal, breast or hematological cancer between January 1, 2013 and December 31, 2017. The study population is defined in the Alberta Cancer Registry (ACR) and the records are matched using the Patient Health Number (PHN) and other identifying characteristics to records in other administrative databases (ARIA Medical Oncology, DAD, NACRS and the EMS).

Results

While the results are not yet available, we expect a significant reduction in the number of ED visits in this population, with a moderate decrease of hospitalizations. Within six months of the program initiation, 353 patients with cancer benefited from care in their homes. This number doubled in the following six months. In 2016, this service has saved over 1534 visits to the cancer center, increased capacity in the treatment area and prevented patients from accessing emergency departments.

Conclusion

CPP is an innovative concept in care based on expanding the role of paramedics to provide safe, timely, mobile medical care in the community setting. Our study uses advanced statistical methods to assess the safety and effectiveness of this new concept in community care.

D5.2

Theme: Cancer, Chronic Disease Management

ROOM 507

Healthcare service utilization and costs associated with amyotrophic lateral sclerosis in the last year of life: a population-based study of Ontario decedents

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

Background & Objectives: Amyotrophic lateral sclerosis (ALS) is a neurodegenerative condition characterized by progressive degeneration of motor neurons, usually leading to death within 3-5 years from symptom onset. As ALS progresses, end-of-life healthcare needs become increasingly demanding and costlier. The aim of this study was to compare healthcare service utilization and costs between ALS and non-ALS decedents in the last year of life.

Approach: Using linked health administrative data from ICES, we conducted a retrospective population-based cohort study of Ontario decedents capturing all deaths from January 1st, 2013 to December 31st, 2015. ALS (N=1,212) and non-ALS (N=281,884) decedents were compared on the following measures in the last year of life: (i) places of care, which include the intensive care unit (ICU), non-ICU inpatient care, emergency department (ED), long-term care, complex continuing care, homecare, and rehabilitation; (ii) receipt of palliative homecare and palliative-physician home-visits; (iii) place of death; (iv) total and sector-specific direct healthcare costs which include acute, continuing and inpatient care sectors.

Results: We identified 283,096 decedents in Ontario, of whom 1,212 had ALS. ALS decedents were younger (mean age: 70y vs. 76y) than non-ALS. ALS patients spent three times as many days in an ICU (mean: 6.3 vs. 2.1), and roughly twice as many days using complex-continuing care (mean: 12.7 vs. 6.0) and homecare (mean: 99.1 vs. 41.3). A greater percentage of ALS patients received palliative homecare (44% vs. 20%) and palliative-physician home-visits (40% vs. 18%) than non-ALS. Among ALS patients, a palliative-physician home-visit in the last year of life was associated with reduced odds of dying in hospital (OR: 0.65, 95%CI: 0.48-0.89) and less days spent in ICU and ED near death. Mean cost of care in the last year of life was considerably greater for those with ALS (\$68,311.98 vs. \$55,773.48).

Conclusion: ALS patients spent more days in ICU, received more community-based services and incurred greater costs before death than non-ALS patients. Among those with ALS, a palliative-physician home-visit was associated with improved end-of-life outcomes; however, majority of ALS patients lack access to such services, highlighting potential areas for improvement in care.

D5.3

Theme: Cancer, Chronic Disease Management

ROOM 507

Streamlining Transition From Rehabilitation Hospital Back to the Community (for Stroke Patients)

Presented by: **Rezvan Boostani**, Design Researcher, OCAD University

Objective:

The problem we are addressing is the complexity in transition from rehabilitation to community. Factors that can lead to a poor transition include but are not limited to push for discharge, lack of arranged follow-ups, lack of home assessments. Streamlined transition services can support individuals to better manage their recovery. Follow-up services can increase understanding of stroke and its impact for stroke patients and their caregivers.

Approach:

To address the complexities within transition we focused on design thinking approach using the principle of human-centered design. A multidisciplinary group of stakeholders have been involved in various stage of the research to better understand the transition issues. Participants engaged in the study include stroke patients and their care partners, care providers, administrators and volunteers. We conducted mix-methods study to explore the area. Methods are as follows:

- Literature Scan
- Observation of Clinical Rounds &
- Observation of Stroke Unit
- Informal Chats & Interviews
- Co-design sessions & Feedback session

Findings:

The stroke patients, their caregiver, and care provider, experience frustrations and challenges in coordinating, defining and delivering the most optimal support and care for the patient after being discharged from rehabilitation. Our designed intervention introduces a system that works to alleviate these frustrations and fosters a smoother, more supportive care system in the process of transitioning from rehabilitation back to the community. This study was focused to streamline the transition of the stroke patients at the Bridgepoint Hospital, from rehab back to their home communities. It prepares the patient and caregiver for their new lifestyle by addressing needs in advance through supports and education, it lessens readmission into the healthcare system by acting as a resource in the community.

Conclusion:

There are stressors on the overall healthcare system, care providers, patient-caregiver dyad in the complex process of transitional care. The designed intervention alleviates the strains on patients, caregivers and care-providers by setting up a system to introduce transition from the moment a patient is admitted to rehabilitation.

D5.4

Theme: Cancer, Chronic Disease Management

ROOM 507

Results from a systematic review patient-oriented strategies that community-based self-management programs use to help older adults manage chronic conditions

Presented by: **Grace Warner**, Associate Professor, Dalhousie University

Background and Objectives: Self-Management Programs (SMP) can teach strategies to help older adults improve their ability to deal with the medical, role, and emotional management of their chronic conditions. Our team developed a framework of self-management strategies patients find important when managing a chronic condition. The objective of this systematic review was to identify which patient-oriented strategies were taught to older adults in community SMPs and whether including them in programs led to significant outcome differences.

Approach: The review included randomized controlled trials (RCTs) and cluster RCTs reporting on community-based SMPs for older adults with chronic conditions that included a group component. All study outcomes were reported. Nine electronic databases were searched with the help of a librarian, and results were screened using relevancy assessment worksheets at the title/abstract and full text screening stages using Covidence review software. A coding protocol and code definitions based on the patient-oriented framework were developed in order to guide data extraction. Outcome measures were also coded and results tabulated. Risk of bias was assessed. Decisions were made by consensus.

Results: Of 17,530 studies identified, 31 met the inclusion criteria. Most SMPs included older adults with specific conditions. Only three were not condition-specific; none addressed multimorbidity. The most common strategies included improving awareness or problem solving, physical exercise, medication management, and controlling disease complications. Less common strategies included helping participants seek and manage health/social care needs and improving social interaction. Seventy-nine percent reported significant differences; variations in sample sizes and outcomes assessed made it difficult to conclude whether incorporating patient-oriented strategies led to significant differences. While studies assessed a range of outcomes, the most common were improvements in health behavior, controlling disease, and quality of life. The number of strategies included was not associated with statistically significant outcomes. Studies rarely assessed participants' use of strategies.

Conclusion: SMPs are not addressing multimorbidity, incorporating strategies to improve the impact of chronic conditions on everyday lives, nor assessing outcomes that align with strategies taught. SMP programs should be tailored to the needs of older adults and assess whether participants are using strategies being offered.

D6.1

Theme: Health Human Resources

ROOM 506

A Profile of Older Adults Cared for by Nurse Practitioners and Family Physicians in Ontario, 2000-2015: A Retrospective Cohort Study

Presented by: **Joan Tranmer**, Professor, Queen's University

Background and Objectives: Nurse practitioners (NPs) are now an integral component of healthcare delivery in Ontario. Evidence supports NP safety, effectiveness and role development; yet, minimal information exists regarding the patients cared for by Ontario NPs. To address this knowledge gap, we used Ontario health administrative databases to identify the sociodemographic characteristics and co-morbidities of patients 65 years and older cared for by NPs and family physicians (FPs) between 2000 and 2015.

Approach: This descriptive retrospective cohort study included patients ≥ 65 years with Ontario Health Insurance Plan (OHIP) eligibility and at least one prescription encounter with a NP or FP during the study period. Prescription identification permitted patient characterization by age, sex, geographical location, neighbourhood income, and comorbidities. Each prescription dispensation date with the same provider was counted as one encounter. Total number of encounters with NPs and FPs were calculated for each patient in each study year. Patients within each study year were assigned to a provider group (NP, FP, and shared care) based on the percentage of encounters.

Results: Across the study period, the mean number of prescription encounters rose across all provider groups, with the largest rise in the shared provider group. By 2015, older patients cared for by NPs were typically between 65-69 years of age (40%), female (59%), and residents of low-income neighbourhoods (44%) living outside of central Ontario. Among patients cared for by NPs, 37% lived in rural Ontario. Elixhauser comorbidity scores were consistently lower among patients cared for by NPs than those predominantly seen by FPs or in shared care models. Most prevalent conditions were hypertension and diabetes, regardless of provider. There was variation across provincial regional networks in the distribution of patients cared for by the different provider groups.

Conclusion: NPs are an integral component of care. They provide care to patients with similar clinical characteristics; however, there is substantial geographical variation in the utilization of NPs. Ascertaining the right mix of providers and models of care that fully utilize all team members to provide comprehensive services, without duplication, has yet to be determined.

D6.2

Theme: Health Human Resources

ROOM 506

How successful are newly certified medical specialists at finding employment?

Presented by: **Myuri Manogaran**, Data and Research Analyst, Royal College of Physicians and Surgeons of Canada

Objectives Despite troubling patient wait lists, a number of newly minted medical specialists in Canada face employment challenges at time of certification. Since 2011, the Royal College of Physicians and Surgeons of Canada (RC) has been examining the breadth of this new phenomenon and underlying causes.

Methods: Quantitative data has been collected through two online surveys:

A survey (full cohort) issued between 4-12 weeks following the final RC certification examination to all successful certificants (specialists and subspecialists). The survey was sent out to almost 17,000 new certificants and has received over 6500 responses from 2011-2017. Yearly response rates vary from 32%-40%.

A follow-up survey sent only to certificants who had reported employment challenges when completing the initial survey. This shorter survey was initiated in 2014 and issued to 591 certificants to date (2017). Of those, 300 responded with an average response rate of 51%.

Key findings:

In 2017, 19% of new specialists said they did not have work as a specialist after certification. Greater employment challenges continue to persist for specialists in surgery and other resource-intensive disciplines. Approximately half of newly certified specialists are pursuing additional training stating a belief that this will make them more employable in the long-run. The follow-up survey to the cohort reporting employment challenges, reveal that from 2013-2016, an average of 61% of those reporting employment challenges at the time of certification had secured a clinical position. Certificants in both surveys point to a lack of available positions, poor access to job listings and personal factors as barriers to employment post-certification. Whereas willingness to relocate, additional training, recruiters and contacts were often cited as employment enablers.

Conclusion:

Data collection has consistently found that a number of RC certificants in Canada continue to face employment challenges at time of certification. Ongoing data collection will help monitor the impacted disciplines and identify new trends as part of our efforts to help inform medical workforce and career planning in Canada.

D6.3

Theme: Health Human Resources

ROOM 506

Clarifying Specialized and Advanced Nursing Roles: Results of a National Study to Inform Health Workforce Optimization in Canada

Presented by: **Denise Bryant-Lukosius**, Associate Professor, McMaster University

Background and Objectives:

Effective use of health human resources is a policy priority of federal/provincial/territorial governments. Yet, healthcare managers lack understanding about how to utilize nurses in advanced and non-advanced roles and underuse of nursing expertise and scope of practice is common. This study examined specialty nursing in Canada to: i) discern specialized nurse (SN), clinical nurse specialist (CNS), and nurse practitioner (NP) roles related to deployment, practice patterns, and competencies; and ii) provide recommendations for role optimization.

Approach:

A descriptive cross-sectional survey employed an online questionnaire involving a validated tool to assess domains of advanced practice. Participants had to be working in a clinical role and be: a) registered nurse (RN) with a diploma/baccalaureate degree in nursing and specialty certification, or a CNS or NP with a master's/doctorate degree, and b) able to complete the questionnaire in English or French. Recruitment occurred through national specialty and advanced practice nursing organizations. Variance and linear regression methods were used to compare practice activities across groups and identify predictive factors for consistent involvement in advanced practice domains.

Results:

Nurses (n=1454) representing all provinces/territories participated, including SNs (n=576), CNSs (n=345), and NPs (n=526). More NPs (85%) had a masters/doctoral degree, compared to CNSs (73%) and SNs (19%). Most of nurses (82%) worked in urban communities with more SNs (59%) and CNSs (64%) working in hospitals compared to NPs (37%) (p=0.000). Nurses in all three groups were most frequently involved in providing direct comprehensive care. CNSs spent more time in each of the non-clinical domains (i.e., support of systems, education, research, professional leadership) compared to SNs and NPs. Differences and overlap in clinical activities were observed among the nursing roles. Role type, years of experience as an advanced practice nurse, and certification were modest predictors of involvement in each domain of advanced practice.

Conclusions:

SNs, CNSs, and NPs contribute to healthcare in unique and complementary ways. Nurse characteristics and type of role were modest predictors of activity suggesting that other factors (e.g., team, organization) influence deployment and role enactment. Policy recommendations to enhance the education, regulation, and implementation of specialized nursing roles are provided.

D7.1

Theme: Home Care & Long Term Care and Aging

ROOM 505

Need for palliative home care and barriers to access among Francophones in Ontario

Presented by: **Sarah Spruin**, Methodologist I, ICES UOttawa

Background and objectives: While legislation (The French Language Services Act, 1986) stipulates equitable access to health services regardless of one's primary language, existing research has shown that Francophones are more likely to have unmet health care needs and die in acute care settings compared to Anglophones in Ontario. This research investigates the equity of access to home care services between Francophones living in a minority context (i.e., in a province that is predominantly English-speaking) and Anglophones in Ontario.

Approach: We used a retrospective cohort of decedents in Ontario (January 1, 2012 – December 31, 2016) who had a Residential Assessment Instrument (RAI) Contact or Home Care assessment 6-18 months before death. To examine equity of access to home care services, we compared the proportion of Francophones and Anglophones with any home care, as well as palliative home care services, in the last 6 months of life. Subsequently, we calculated the time from each RAI assessment (i.e., when home or palliative care needs were identified) to their first receipt of home care and palliative care services from the home care database.

Results: Out of 129,722 decedents, 2% were identified with a primary language of French and 86% with a primary language of English. Despite the higher proportion of informal caregivers who reported being distressed/overwhelmed in the Francophone population (18% vs 13%), a lower proportion of Francophones were identified as needing home care (63% vs 72%). Approximately 5% of both Francophones and Anglophones were identified as needing palliative services. Of those needing home care services, Francophones had a shorter mean time to first home care service compared to Anglophones (0.55 ± 7.96 days vs 0.88 ± 12.25 days). However, Francophones had a longer mean time to first palliative care service of 61.99 days (SD 127.16 days) compared to 46.43 days (SD 104.46 days) in Anglophones.

Conclusion: Results from this study suggest that Francophones living in a minority context may face additional barriers to accessing palliative home care, which did not appear to be present in access to general home care. Ongoing analysis aims to examine whether these differences are exacerbated in decedents who require translation services.

D7.2

Theme: Home Care & Long Term Care and Aging

ROOM 505

Development and Evaluation of an Innovative Model for Augmenting Home Care Services for Palliative Clients in Rural Communities

Presented by: **Aynharan Sinnarajah**, Medical Director, Palliative & End of Life Care, Calgary Zone, Alberta Health Services

Background and objectives: Significant inequities exist between the availability of home care services in urban and rural sectors in Alberta. Access to services to support palliative care clients to remain at home is challenging in rural communities. Barriers include limited access to private healthcare vendors, geography, and fluctuating palliative needs that make it difficult to ensure adequate home care staffing. The objective was to increase supports for rural palliative clients to remain at home near end of life.

Approach: The Rural Palliative Care In-Home Funding Program was launched in October 2017. It enables rural clients with palliative conditions to stay at home when they require additional care beyond existing services. In collaboration with clients and families, rural home care and palliative consult teams authorize the amount and level of additional care required. Clients/families contract care providers and are supported in navigating the streamlined contracting and payment processes. The program model empowers clients and families to recruit and self-direct their care providers, who can include local trusted individuals, which is an important consideration in many rural communities.

Results: From Oct 2017 to Dec 2018, 85 rural clients have been authorized to access this funding. 56 clients have accessed funding with a total of 350 days supported at an average of 6 days per client. 77% of clients have had cancer. Of the 53 patients who have died, median survival from date of initial funding access was 19 days. 49 patients have died in the community (home or hospice). The majority of the funds (70%) was spent on home care aides with 13% spent on nursing support.

Conclusion: The Rural Palliative Care In-Home Funding program has demonstrated success in providing a client/family centered approach to allowing patients to stay at home near end of life. The results of this program are now being used to advocate for spread to rest of Alberta.

D7.3

Theme: Home Care & Long Term Care and Aging

ROOM 505

Functional Outcomes Following Rehabilitation in Ontario Complex Continuing Care Hospitals

Presented by: **Luke Turcotte**, Health System Impact Fellow, School of Public Health and Health Systems, University of Waterloo

Background and objectives: The MDS 2.0 comprehensive health assessment is used in Ontario Complex Continuing Care (CCC) hospitals to support clinical decision-making and measure quality of care. Given that a discharge assessment is not required, little is known about the amount of functional gain that patients achieve in this care setting. The objective of this study was to characterize patterns of recovery and to identify factors that are associated with functional gain following rehabilitation in CCC.

Approach: A retrospective study of 30,924 patients admitted to Ontario CCC hospitals between January 1st, 2010 and March 31st, 2015 was performed. In the absence of a discharge assessment, the MDS 2.0 assessment completed at admission to CCC hospitals was linked with the next available MDS 2.0 or RAI-HC assessment completed in hospital, residential long-term care, or community care. Change in functional status was measured by calculating the difference between admission and follow-up for summary measures of physical function. A series of multivariate linear regression models were fit to characterize the association of patient and process factors on functional gain.

Results: Significant functional gain between CCC hospital admission and follow-up was observed for most activities of daily living; however, patients that were discharged to community care achieved greater functional gain than patients that were receiving care in hospital or residential long-term care at follow-up. Patient-level factors that explained variance in functional outcomes included age, diagnosis group, cognitive status, and rehabilitation potential. Receipt of physical therapy was associated with functional gain; except, evidence of an attenuation of the mean effect of physical therapy beyond 135 minutes per week was detected when comparing pairwise differences of least squares means. Among only the least impaired patients, provision of occupational therapy was associated with functional gain in the adjusted models; however, more intensive therapy did not provide additional benefit.

Conclusion: Using comprehensive health assessments linked across adjacent health service settings, this was the first large study of functional outcomes following rehabilitation in Ontario CCC hospitals. Findings from this study suggest that there are opportunities to establish therapy intensity eligibility

D7.4

Theme: Home Care & Long Term Care and Aging

ROOM 505

Case Management Models and Continuing Care: A Literature Review

Presented by: **Marilyn Macdonald**, Professor, Dalhousie University

Background: Seniors accessing continuing care often have multiple chronic conditions. Research suggests that case management is a promising approach to reduce health care expenditure and improve patient outcomes. To optimize health delivery and patient outcomes an examination of existing models and their effectiveness is essential. This review explored case management models and their effectiveness for seniors accessing continuing care and is being used by Nova Scotia Health Authority to transform its case management approach.

Approach: A literature review for the Nova Scotia Health Authority was conducted using Joanna Briggs Institute (JBI) methods to identify studies that described case management models, standards and approaches used in continuing care. Searches were conducted by a library scientist in two databases, PubMed and CINAHL from 2010-2018. Two reviewers screened 670 titles and abstracts independently, followed by a full text review based on pre-defined inclusion criteria. The relevant content from included studies was extracted with the assistance of JBI data extraction tools. Results were organized under the following headings: case management approaches; qualitative findings; and quantitative findings.

Results: A total of 37 articles were included in this review. Approaches to case management are diverse with respect to composition of care providers, method of care provision, and location of care. Among 10 qualitative studies, four themes were identified; communication, the dose balance of healthcare providers, conditions for quality case management and barriers to case management. Findings from 27 quantitative studies demonstrated that nurse-led and interdisciplinary team case management models that include home visits can effectively reduce hospital admission/readmission while lowering costs. Mixed results were found in the impact of case management on patient satisfaction, ED visits, quality of life, length of stay, self-efficacy, social integration and caregiver burden.

Conclusion: Nurse-led and interdisciplinary team case management can effectively reduce hospital admission of frail seniors while lowering costs, particularly in home care settings. Based on these findings the Nova Scotia Health Authority is translating this evidence into the redevelopment of its person-centered case management approach to continuing care.

D8.1

Theme: Patient Engagement

ROOM 612

Patient engagement and access to digital health services, health service utilization, and self-reported health status.

Presented by: **Chad Leaver**, Director, Applied Research, Canada Health Infoway

Background and objectives

Patient engagement is a crucial component of patient-centred healthcare. Engaged patients make informed decisions about their care options in partnership with care providers and align resources to treatment plans and wellness priorities. Despite its primacy, patient engagement in Canada is not well understood. This study explores the continuum of patient engagement in Canada on access and utilization of healthcare services and the role of digitally enabled health services as a catalyst to improved outcomes.

Approach

We completed an online population survey of Canadians over the age of 16 (N=2,406) in French and English - representative by age, sex, province; and rural and remote communities in 2018. Patient engagement was determined by a combination of patient's self-reported involvement with their health care providers and confidence to participate in partnership for health care management and decision-making. Comparing patients who self-reported as engaged to those who are not, we compared the two groups on access, utilization, and interest in various digital health services; utilization of primary care and specialist services, and self-reported health and mental health status.

Results

According to our definition of engagement, 42% of Canadians report being engaged: highly involved and confident to participate in partnership with their health care providers. Engaged patients are more likely to be older adults with a regular health care provider, take more prescription medications, and have a chronic health condition. Engaged patients are significantly more likely to: have access to one or more digitally enabled health service; report their self-rated health and mental health status as 'Very good' or 'Excellent'; and are less likely to visit walk-in clinics and emergency room services. Preliminary analysis demonstrates a positive relationship between access and use of digital health services and high levels of patient engagement.

Conclusion

Results suggest that even though engaged patients are more likely to be older adults with a chronic health condition, they are also more likely to access digitally enabled health services; and less likely to use walk-in clinics or emergency services; and have better self-reported health and mental health status.

D8.2

Theme: Patient Engagement

ROOM 612

What roles do primary care patients wish to play in treatment decisions?: Thematic Analysis of Semi-Structured Interviews with Patients

Presented by: **Raisa Deber**, Professor, University of Toronto

Background and Objectives What role do patients wish to play in making healthcare decisions? Does the increased availability of on-line health information mean patients wish to make their own decisions? How is this related to the doctor-patient relationship? Building on a survey of primary care patients to determine relationships between their preferred roles in treatment decisions, e-health literacy and trust in their physician which was presented at the CAHSR 2018 meeting, we explored patients views on these questions.

Approach

We conducted semi-structured qualitative interviews with a sub-set of the patients surveyed in a primary care clinic at a tertiary care hospital in Toronto, ON who had consented to participate in follow-up interviews. Thematic saturation was reached with 11 patients. All interviews were conducted by phone, audio recorded, and transcribed. Thematic analysis was conducted using a common codebook; two researchers independently coded a sub-set of surveys to validate the themes. Responses were linked to survey results, but the participants were de-identified for the purpose of thematic analysis.

Results : Although this sample had high levels of e-health literacy and trust in their physician, most preferred a shared role in decision-making; none wanted an autonomous role. Key themes included the importance of communication and trust in the patient-physician relationship; factors that influenced trust included clear communication, and belief they had received an accurate diagnosis and appropriate treatment and follow-up. Although patients sought information on-line, they then asked their physician to help evaluate the credibility of this health information. Patients said they trusted physicians who took the time to listen to them during the appointment, communicated openly about treatment options, explained medication side effects, referred to specialists when needed, and followed-up by phone or email when laboratory results become available.

Conclusions : Seeking on-line information did not replace with relying on physician expertise; these patients wanted a shared role but relied heavily on their physicians to help evaluate the credibility of online information, and to recommend treatments. Even in this era with increased online information, trust and communication were key.

D8.3

Theme: Patient Engagement

ROOM 612

A formalized shared decision making process with individualized decision aids improves comprehension and decisional quality among frail, elderly cardiac surgery patients.

Presented by: **Ryan Gainer**, Research Associate, Nova Scotia Health Authority

BACKGROUND: Comprehension of risks, benefits, and alternative treatment options is poor among patients referred for cardiac surgery interventions. The objective of the current study is to explore the impact of a formalized shared decision making (SDM) on patient comprehension and decisional quality among elderly patients referred for cardiac surgery.

METHODS: A formalized SDM process was established including a paper-based decision aid and evaluated within the context of a pre-post study design. Surgeons were trained in SDM through a web based programme. Patients undergoing isolated valve, CABG or CABG+Valve surgery were eligible. Participants in the pre-intervention phase (n=100) underwent usual consent discussions. Participants in the interventional group (n=100) were presented with a decision aid following the decision to refer for surgery, populated with individualized risk assessment, personal profile, and co-morbidity status. Both groups were assessed following consent but prior to surgery. Primary outcomes were comprehension and decisional quality scores.

RESULTS: Patients in the interventional group scored higher in comprehension (median: 15.0; IQR: 12.0-18.0) compared to those who did not (median: 9.0; IQR: 7.0-12.0) ($p < 0.001$). Decisional quality was greater in the interventional group (median: 82.2; IQR: 73.0-91.0) compared to those in the pre-intervention group (median: 75.6; IQR: 62.0-82.0) ($p < 0.05$). Decisional conflict scores were lower in the post-intervention group (mean: 1.76, SD 1.14) compared to those in the pre-interventional group (mean: 5.26, SD: 1.02) ($p < 0.05$). Anxiety and depression scores showed no significant difference between pre-intervention (median: 9.0; IQR: 4.0-12.0) and post-intervention groups (median: 7.0; IQR: 5.0-11.0) ($p < 0.28$).

CONCLUSION: Institution of a formalized SDM process including individualized decision aids improve comprehension of risks, benefits and alternatives to cardiac surgery, decisional quality, and did not result in increased levels of anxiety.

D8.4

Theme: Patient Engagement

ROOM 612

What is known about the use of artificially-intelligent self-diagnosing digital platforms? A scoping review

Presented by: **Stephanie Aboueid**, PhD Candidate, University of Waterloo

Background and objectives: Direct-to-consumer (DTC) self-diagnosing digital platforms are often promoted as a way to “empower” or “engage” patients in their own health and improve health outcomes. These computerized algorithms provide the user with a list of potential diagnoses based on the symptoms they input. There is, however, a suboptimal understanding on the literature surrounding the use of artificially-intelligent self-diagnosing digital platforms by patients and the lay public. This is worrisome given the DTC nature of this technology.

Approach: In this scoping review, we searched PubMed, Scopus, ACM, IEEE, Google Scholar, Open Grey, ProQuest Dissertations and Theses. The search strategy was developed and refined with the assistance of a librarian and consisted of three main concepts: 1) self-diagnosis, 2) digital platforms, 3) patients or public. Our search generated 2,536 articles from which 217 were duplicates. Following the Tricco et al. checklist, two researchers screened the titles and abstracts (n=2,316) and full texts (n=104) separately. A total of 20 articles were included for review and data were retrieved following a data charting form that was pre-tested by the research team.

Results: Included studies were mainly conducted in the US (n=9) or the UK (n=3). Among the articles, the themes were: accuracy or correspondence with a doctor’s diagnosis (n=7), commentaries (n=2), legal (n=3), sociological (n=2), user experience (n=2), theoretical (n=1), privacy and security (n=1), ethical (n=1), design (n=1). Individuals who do not have access to health care and perceive to have a stigmatizing condition are more likely to use this technology. The accuracy of this technology to provide a correct first diagnosis ranged between 30% and 70%. Factors influencing accuracy include the design of the online platform and demographics of the user. Regulation of this technology is lacking in most parts of the world; however, they are currently under development.

Conclusion: Self-diagnosing digital platforms may have the potential to improve accessibility in underserved areas and timely diagnosis; however, there remains a serious lack of knowledge surrounding its accuracy in diagnosing various illnesses and not all platforms are of equal quality. Extensive research is needed to inform policies and ensure clinical safety.

D9.1

Theme: Pharmaceutical Policy

ROOM 504

One-stream or Two-Stream? Legal and Policy Considerations for Maintaining a Separate Medical Cannabis Regulatory Framework in Canada

Presented by: **Chelsea Cox**, Student, Schulich School of Law, Dalhousie University

The regulatory framework for access to medical cannabis has been established in Canada since 2001, with the number of patients seeking access growing substantially over the years. With the novel enactment of the Cannabis Act in October, 2018, Canada now maintains two distinct regulatory frameworks for accessing cannabis in Canada – one for medical cannabis and the other for recreational cannabis. With two regulatory frameworks in place, questions have arisen in the country as to the necessity of maintaining regulatory separation and the integrity of the medical access framework. A single framework would remove the gate-keeping function that the medical profession currently holds, streamlining processes and simplifying the current regulatory landscape. This approach has been advocated for by the Canadian Medical Association, despite objections by their peers, college members, patients, and other professional programs. Critical ethical and legal questions arise should the medical access framework be dissolved into a single, recreationally-based regulatory framework. Insurance coverage, control mechanisms, market incentives, and patient obligations represent some examples of the issues that could arise if a single market is maintained in the future. This presentation will identify and expand upon these considerations and highlight why maintaining two separate regulatory frameworks best serves the Canadian public. As medicinal cannabis continues to be liberated in international jurisdictions, this presentation can help to illuminate the current status of medical cannabis in Canada, and provide guidance to those from other countries of our current approach and inherent challenges.

D9.2

Theme: Pharmaceutical Policy

ROOM 504

Polypharmacy in older adults with multimorbidity: a systematic review of the economic impact of interventions to reduce potentially inappropriate prescriptions.

Presented by: **Maude Laberge**, Assistant Professor, Université Laval

Background and objectives

Population aging comes with an increase in older individuals living with multiple chronic conditions leading to a rise in the number of prescription drugs. Polypharmacy, defined as the consumption of multiple drugs simultaneously, is associated with the risk of receiving potentially inappropriate prescriptions (PIPs). The purpose of our study was to conduct a systematic review of the economic impact of interventions intended at reducing PIP in older multimorbid adults with polypharmacy.

Approach

A systematic review was conducted following the PRISMA methodology. The search for articles was conducted in March 2018 using the following databases: Ovid-Medline, Embase, CINAHL, Ageline, Cochrane, and Web of Science. We included articles published between 2004 and 2018 that studied multimorbid older adults aged at least 60 years with polypharmacy. The intervention studied had to be aimed at reducing PIP and present results on costs.

Results

A total of 3,506 articles were identified. The review process resulted in 16 studies included in the systematic review. The interventions involved different provider types, with a majority described as a multidisciplinary team involving a pharmacist and a general practitioner, and sometimes involving patients in the decision-making process. Interventions appeared to be generally cost-effective. However, the quality of the studies was generally low: few stated the perspective, conducted sensitivity analyses, or explained potential sources of bias.

Conclusion

Although the evidence remains limited, some interventions to reduce PIP may provide higher benefits than their implementation costs. There is a need to identify and address barriers to the scaling-up of such interventions, starting with the current incentive structures for pharmacists, physicians, and patients.

D9.3

Theme: Pharmaceutical Policy

ROOM 504

Multidisciplinary care and opioid dose reduction: a systematic realist review

Presented by: **Abhimanyu Sud**, Student, Institute of Health Policy, Management and Evaluation

Background: As Canada's opioid crisis accelerates, there is growing emphasis on restricting prescribing. Lowering dosages in people with chronic non-cancer pain can be challenging and may inadvertently increase harms through higher street opioid use. Recent guidelines suggest multidisciplinary care (MDC) can help with tapering; however, MDC for this purpose is not well characterized. We therefore conducted a systematic realist review to understand what constitutes MDC for opioid tapering and by what mechanisms these programs operate.

Approach: A recent systematic review examining opioid dose reduction strategies demonstrated significant heterogeneity across program settings, program approaches, and program goals. Therefore, we elected to take a realist review approach which is designed to distill common context, mechanism, and outcome configurations in complex interventions. We searched 5 academic databases (Ovid MEDLINE, PsycINFO, AMED, CINAHL Plus, and Cochrane Library) to identify studies that evaluated MDC and reported on changes in opioid doses. We also searched the grey literature, conducted iterative hand searches, and consulted experts to identify the broadest possible literature.

Results: 12,872 records were identified and appraised; 96 studies were included in the final review. The studies spanned five decades and included 97 evaluations of 77 distinct programs from 12 countries. The majority of programs were located in tertiary care and were at least three weeks in duration. Pain relief and behaviour change approaches were integral but insufficient in reducing opioid doses. Only programs that required opioid tapering were effective in reducing doses, but there were significant relapse rates at one year follow-up (20-40%). In primary care settings, dose reductions occurred only when there was a change in the prescriber. Irrespective of setting, peer and family involvement were important facilitators of change.

Discussion: Most chronic opioid prescribing in Canada happens in primary care, thus most policies focus on this sector. Yet, much of the evidence informing these policies is generated in other sectors. More diverse generation and effective translation of this evidence across sectors is vital in avoiding unintended negative consequences of well-intentioned policy.

D9.4

Theme: Pharmaceutical Policy

ROOM 504

Pharmacare in the age of the opioid crisis

Presented by: **Abhimanyu Sud**, Student, Institute of Health Policy, Management and Evaluation

Background: Over the last several years, there has been a rapid acceleration of policy movements towards a national pharmacare program. A central policy project of national pharmacare is to determine a formulary of which drugs do and don't qualify for universal coverage. This policy analysis aims to discern the central ideas informing formulary construction and then develop a conceptual framework to better anticipate and mitigate possible negative unintended consequences of pharmacare implementation.

Approach: For the purposes of this analysis, I conceptualize the pharmacare formulary as an institution that encodes expectations relating to pharmaceutical utilization. By examining the content of proposed criteria for formulary construction, then, I can discern the major ideas informing pharmacare. I will do this by refracting questions through the current opioid crisis. Both the genesis and propagation of the crisis are intimately connected to the policies and practices relating to medicines that sit on every public formulary in Canada. Opioids are a challenging case that help clarify relationships and uncover hidden assumptions underpinning pharmacare.

Results: This analysis uncovers four distinct ideas informing national formulary construction that fall into economic, equity, administrative, and health concerns. Included drugs are expected to decrease costs, improve equity in terms of access, ease administrative challenges, and improve overall health. Most discussions of pharmacare assume a concordance between these major ideas; however, opioids are a clear outlier in that, while there are clear economic, equity, and administrative justifications for their inclusion, there may be negative health consequences. Most other analyses have missed this consideration by focusing primarily on examples of "drug-responsive" conditions, such as heart failure and stroke. These four ideas can be applied to other challenging cases such as high-cost drugs, where equity, administrative, and health benefits do not accord with economic consequences.

Conclusion: Considering the counterfactual case of opioids is a useful method for discerning the difficult to distinguish, and thus often conflated, ideas informing pharmacare. Mapping drug classes against this matrix of four ideas will help to identify areas of ideational conflict which are potential hotspots of unintended consequences from pharmacare implementation.

D10.1

Theme: Primary Health Care

ROOM BALLROOM 2

Improving medication management in team-based primary care: a comparative policy analysis of Ontario and Quebec

Presented by: **Sara Allin**, Assistant Professor, University of Toronto

The health and economic impacts of polypharmacy and inappropriate prescribing have been recognized internationally. Provincial governments have undertaken significant, and varied, reform efforts to strengthen medication management, including by expanding the role of pharmacists in the community and in some cases integrating pharmacists into physician-led primary care teams. This policy analysis compares the ways in which governments have pursued primary care reform, focusing on medication management, from 2004-2018 in Ontario and Quebec.

We undertook an environmental scan of policies, regulations, legislation, strategies and frameworks relevant to medication management and multidisciplinary primary care in Ontario and Quebec. We conducted an online search using keywords related to primary care, medications, seniors, and team-based care. We searched provincial government and legislature websites, provincial archives, provincial ministries of health, and professional associations. We created a synoptic table describing the policies' objectives, components (e.g., regulations, strategies, guidelines) and situated them within a temporal framework. These results were validated through expert consultation, including physician, pharmacist, and representatives of both a professional association and provincial government.

The policies used to strengthen medication management in primary care and to facilitate collaboration between pharmacists and family doctors in both provinces shared some common features. These included contractual agreements and financial incentives for physicians to work in a team and regulatory changes to expand nurses' and pharmacists' scope of practice. Both provinces also invested in new and expanded information technology systems, which aimed to strengthen communication across health professionals, to monitor and manage medications, and to report medication errors. There were also some notable differences. In Ontario pharmacists were included in primary care teams much earlier than in Quebec, and primary care quality improvement programs supporting medication management were used more extensively in Ontario than in Quebec.

In the context of major primary care reform to introduce and expand team-based care in the two provinces, there has been some attention paid to improving the management of medications for seniors. The impact of these reforms on health system and patient outcomes are the subject of research currently underway.

D10.2

Theme: Primary Health Care

ROOM BALLROOM 2

Advancing Access to Team-Based Care in Ontario

Presented by: **Jennifer Rayner**, Director, Research and Evaluation, Association of Ontario Health Centres

Expansion of team-based models of care has been a key focus of primary care reform underway in multiple jurisdictions in Canada. In Ontario, there have been significant investments in new interprofessional team models of primary care including Community Health Centres (CHCs) and Family Health Teams (FHTs). However, by the end of this reform, only one quarter of Ontarians now have access to team-based care. As a result, many individuals living with complex health and social care needs, whose primary care providers are not part of teams, remain unable to access health and social care services.

There are many examples of programs and services that have been implemented in team-based primary healthcare practices in Ontario, across Canada, and internationally with recognized benefits for people with complex care needs. However a typical solo primary care provider does not have the capacity to be able to stay abreast of community services that are available to support patients nor are they typically aware of how to easily direct patients to local community services. Group-based chronic disease management programs are often lead by non-physician clinical staff that a solo physician cannot afford to provide within their own practice. Access to these services is therefore limited to patients lucky enough to be enrolled in team-based practices. Having access to interprofessional teams is an important resource to physicians who struggle to care for their patients with complex health needs.

The Advancing Access to Team-based Care (AA-TBC) project is an integrated, collaboration model that facilitates equitable access to interprofessional teams for physicians who currently do not have access to team based care. This initiative involves deliberate outreach to share and integrate care between solo physicians and team-based care for people with complex health needs. Examples of available services include counselling, dietetic services, diabetes and other chronic disease education programs, foot care, physiotherapy, addiction services, harm reduction, settlement services, employment services, exercise, self-management and goal setting. This initiative started with a group of CHCs responding to a community need and through the partnership with the University of Toronto the project is being expanded across Ontario and evaluated extensively.

D10.3

Theme: Primary Health Care

ROOM BALLROOM 2

Analysis of change of the nurses' role within the advanced access model in primary health care.

Presented by: **Sabina Abou Malham**, Postdoctoral researcher, Universite de Sherbrooke

Background: Ensuring timely access through implementing the advanced access (AA) model of care has become of major interest worldwide and across Canada. While nurses' role for improving access in primary healthcare setting has been demonstrated, their role change within such innovative primary care model remains unexplored.

The objective of the study was to analyze nurses' roles change and deployment throughout the implementation of AA and to identify the factors facilitating or limiting this change.

Approach: We used a longitudinal qualitative approach nested within a multiple case study conducted in four early adopters of advanced access family medicine units (FMUs) in Quebec. We conducted semi-structured interviews with two types of nurses who were purposively selected; nurse practitioners (NPs) (n=6) and nurse clinicians (NCs) (n=6). They were interviewed twice in a 14-month period. Data were coded and analyzed using thematic analysis based on the scope of nursing practice of D'Amour et al. (2012), and the Niezen & Mathijssen Network Model (2014) to analyze the influence of the context on nursing roles changes and deployment.

Results: The NCs roles' change varied among practice settings. Only, in one FMU, their role was first expanded (e.g., pregnancy follow-up visits), but subsequently restricted following the introduction of the NPs.

In all FMUs, NPs were able to enact all competencies of their role, and to practice in open-access scheduling to improve timely access to primary care. Within a team-based approach, they assumed leadership in managing patients with acute and chronic diseases.

Barriers to NCs' practice in AA were: lack of understanding about how the NCs role interfaced with the NPs role; inadequate managerial support and insufficient human resources.

For the NPs role, major facilitators were: appreciation of the NP's capabilities to manage patients, and support of family physicians of the NPs expertise within the team.

Conclusion: Our findings suggest that health care organizations need to reexamine critically nurses' role boundaries within the AA model, and to provide the optimal professional and organizational contexts to support their role transformation. They show the need to align all team members in the change process to reduce waiting times.

D10.4

Theme: Primary Health Care

ROOM BALLROOM 2

Roles of health care providers in supporting medication therapy management for individuals with spinal cord injury

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

Background and Objective: Individuals with spinal cord injuries (SCI) often take multiple medications to treat their secondary complications and chronic conditions (multimorbidity). They generally see multiple clinicians to manage their multimorbidity, which can result in increased risk of fragmented care. As such, optimal medication management (MM) is essential to ensure therapeutic benefit from medication regimens. However, little is known about the experiences and perceptions of clinicians regarding their roles in supporting this population with MM.

Approach: Telephone interviews were conducted to explore clinicians' experiences with MM for individuals with SCI. Participants were recruited through clinical organizations and researchers' personal contacts. Participants were purposefully selected for diversity in profession and were required to be English speaking and to have provided care to at least one individual with a SCI. The interviews involved quantitative (confidence level scales for different medication therapy management tasks) and qualitative (open-ended, semi-structured) questions. Descriptive statistics summarized the quantitative data. Qualitative data were transcribed and coded using NVivo 11. Data display matrices were used in a constant comparative process for descriptive and interpretive analysis.

Results: Thirty-two interviews were conducted from April to December 2018. The median confidence of participants in supporting this population with MM was 8 on a 10-point scale. Family physicians viewed themselves as information keepers and coordinators/liasons with other clinicians. Specialist physicians viewed themselves as advocates and collaborators for patient care. Similarly, care coordinators and health educators adopted advocacy roles, in addition to educating patients on navigating the health care system. Pharmacists were medication dispensers and educators. Rehabilitation professionals played a supportive role ensuring medications could be physically accessed. Clinical tasks were shared among the different health care providers, including: tailoring medications, exploring medication alternatives, assessing medication risks/benefits and providing education. Enabling factors for improving MM included clinician knowledge/confidence, information sharing, clinician-patient relationships and patients' medication knowledge.

Conclusion: Each profession had distinct views on their roles in facilitating MM for individuals with SCI. Generally, these roles were within the respective scopes of practice. Through sharing these clinical roles and educating clinicians on MM, individuals with SCI may benefit from more comprehensive support for their MM related concerns.

CONCURRENT SESSIONS E: THURSDAY, MAY 30, 2019 -12:30PM – 1:45PM

E1 – Access & Equity

ROOM 613

Policy Approach to Advance Improved Access to Rural Care Delivery in Rural Canada

Presented by: **Ivy Oandasan**, Professor, Department of Family and Community Medicine, University of Toronto, **James Rourke**, Professor of Family Medicine, Director, Centre for Rural Health Studies

Objectives:

1. Recognize the value for how the RRM can be used across organizations & jurisdictions to support policy initiatives enhancing rural healthcare close to home; 2. Be inspired with ideas from the experiences shared by leaders in education, practice, research and government on how the RRM can be used to improve recruitment and retention, build networks of care and improve rural health outcomes; and 3. Provide examples of how effective collaborative leadership at national, provincial and regional levels can stimulate health system change enabling improved access to care in rural and remote Canada.

Approach:

The panel will share examples of how the RRM has catalyzed rural healthcare improvements within and across organizations and jurisdictions. Policy-makers will reflect upon the role of medical education as a health services intervention, when meaningfully situated and supported in rural and remote communities. It can support a long-term sustainable rural health workforce. Panelists will identify policies that have acted as barriers and share initiatives that are showing signs of success. Specific attention will be placed discussing how the Rural Road Map Implementation Committee, consisting of multiple national organizations has catalyzed action by engaging strategically, capitalizing on opportunities, participating in advocacy efforts and disseminating the use and intent of the RRM. The RRM's use by provincial government, policy-makers, national medical organizations and universities will also be highlighted. Participants will have an opportunity to dialog about best practices and brainstorm on how to build further collaborations collaboratively to catalyze further

E2 – Capacity Building

ROOM BALLROOM 2

Integrating professional and academic development: Perspectives from the Health System Impact Fellowship's inaugural PhD cohort

Presented by: **Natasha Gallant**, Health System Impact Fellow, Saskatchewan Health Authority--Regina and Area, **Logan Lawrence**, Dalhousie University, **Kaitlyn Tate**, University of Alberta, **Danielle Rice**, McGill University; Ottawa Hospital Research Institute, **Stephanie Aboueid**, University of Waterloo, **Elena Lopatina**, University of Calgary, **Daman Kandola**, University of Northern BC and Northern Health, **Chantelle Recsky**, University of British Columbia, **Sophie Roher**, University of Toronto, **Ting Yu**, Concordia University, **Melita Avdagovska**, University of Alberta, **Joslyn Trowbridge**, Dalla Lana School of Public Health

Objectives:

1) Describe the HSIF program and characteristics of the inaugural PhD cohort; 2) Illustrate the extent to which fellowship projects align with, complement, or diverge from trainees' doctoral research; 3) Outline advantages and disadvantages of combining academic and professional training, including how responsibilities are navigated and balanced in this novel dual role; 4) Share how host organizations and universities understand this role, and the successes and challenges encountered when applying academic skills in new environments 5) Highlight considerations for those with academic training who desire to contribute to health system activities, and for trainees interested in applying to the HSIF

Approach:

Prior to the session, HSIF PhD fellows will participate in semi-structured interviews and focus groups to build a shared understanding of panel objectives and trainee experiences (both shared and distinct). The panel will commence by introducing the Health System Impact Fellowship program and the diversity of the 2018 PhD Cohort (e.g., areas of study, host organizations, fellowship project foci). Fellows will take turns presenting aspects of their fellowship experiences according to the above objectives. Experiences will be contrasted and explored by the moderator, who will also introduce excerpts from interviews with other trainees to showcase the overall HSIF PhD experience. Fellows will then discuss considerations for integrating academically-trained individuals into health system and policy settings. A question and answer session will conclude the panel discussion. This panel aligns with the CASHPR conference theme "When Research Meets Policy" and will be of interest to trainees, academics, and health system stakeholders.

E3 – Collaborative Healthcare Improvement Partnerships

ROOM 501

Networks Matter: Building Innovation Communities to drive Health System Change

Presented by: **Dorina Simeonov**, Policy & Knowledge Mobilization Manager, AGE-WELL NCE Inc., **Jim Mann**, Diagnosed with Alzheimer's, Dementia Advocate, **Michael Wilson**, McMaster Health Forum, **Josephine McMurray**, Wilfrid Laurier University, **Alex Mihailidis**, AGE-WELL NCE Inc., **Candice Redman**, Nova Scotia Department of Health and Wellness

Objectives:

Although national networks bring together different perspectives and foster new collaborations, providing a critical consolidator role, research indicates that innovation happens at a regional level. The goal of this panel will be to discuss the following questions at both regional and national levels: 1. What makes a good network partner? 2. How can end users, organizations, and healthcare providers form network partnerships and innovation communities to strengthen health systems in Canada? 3. What makes research-policy partnerships work in the technology and aging sector and beyond? 4. How can technology promote rapid learning health systems?

Approach:

AGE-WELL's approach aligns technology, policy and practice, and the service delivery models required to implement solutions in the real-world. From investigating regional innovation ecosystems to engaging healthcare partners and policy makers, AGE-WELL's network approach is focused on building transdisciplinary teams and supporting knowledge translation and commercialization. AGE-WELL has launched three national innovation hubs, one of which is based in New Brunswick and focuses on Advancing Policies and Practices in Technology and Aging (APPTA). Innovation hubs are partners in ecosystems where end users, healthcare providers, government, researchers, industry, community, and others can interact and generate novel solutions together. The APPTA hub is putting innovative research in aging into the hands of policy makers across Canada. AGE-WELL is also focusing its research agenda on eight challenge areas which include supportive homes and communities as well as health care and health service delivery – areas where technology can contribute to learning health systems.

E4 – Data Science

ROOM 502

A data science tool kit has emerged to support Open Science

Presented by: **Doug Manuel**, Senior Scientist, Ottawa Hospital Research Institute. **Therese Stukel**, ICES, **Yulric Sequeira**, Ottawa Hospital Research Institute, **Stacey Fisher**, Ottawa Hospital Research Institute

Objectives:

To discuss data science approaches to research that has the potential to improve research transparency, reproducibility, quality, efficiency and implementation. To gain knowledge of the specific components of the toolkit. To share what parts of the toolkit are used in different Canadian health service research/policy settings and jurisdictions. To discuss the opportunities and barriers to implement the toolkit.

Approach:

The panel will include the perspectives of institutions (Stukel), research teams (Manuel), trainees (Fisher) and other disciplines (Sequeira). Audience members will be encouraged to discuss their knowledge and experience using the toolkit, include barriers and facilitators. Specific components and use cases of the toolkit will be introduced and discussed, including version-control software (git) and repositories (e.g. GitHub), improved handling of metadata (DDI, RDF), use of open software and notebooks, creation and use of reusable and semi-automated code, analyses validation and reproducibility checks, development of interactive data visualizations, publication of machine-readable/actionable documentation, stronger collaborations with computer science and software engineering.

Health policy learning across Canada's provinces with in-depth health system studies

Presented by: **Gregory Marchildon**, Professor and Ontario Research Chair in Health Policy and System Design, University of Toronto, **Sara Allin**, University of Toronto, **Amélie Quesnel-Vallée**, McGill University, **Allie Peckham**, North American Observatory on Health Systems and Policies **Katherine Fierlbeck**

Objectives:

The panel includes a selection of experts responsible for producing detailed health system profiles for selected provinces. Drawing on an adapted template developed by the European Observatory on Health Systems and Profiles, these studies facilitate subnational comparative health policy and systems analysis. In-depth provincial studies systematically describe health system governance, regulation, financing, and delivery, and provide a review of recent reforms and overall assessment of the health system. These studies facilitate comparative research; gain insight into the often subtle but significant ways in which P/T systems are similar and different; and inform policy learning.

Approach:

This panel, moderated by Greg Marchildon and Sara Allin with the North American Observatory on Health Systems and Policies, brings together researcher and decision maker perspectives on subnational comparative health system research. Each expert will discuss their approach to comparative analysis drawing on their experiences with writing the health system profiles. Professor Fierlbeck will draw attention to the key messages from the Nova Scotia book which offers in-depth political analysis of recent reforms (e.g., the consolidation of regions into a single agency). Dr. Quesnel-Vallée will review recent reforms and describe the increasing role of the private sector in health care finance and delivery in Quebec. Dr. Peckham will speak to recent reforms and current policy directions in Ontario's health system. Drawing on his experience in senior leadership positions, Dr. Tom Noseworthy will speak to the role of health system profiles and comparative research in informing policy decisions.

Pragmatic strategies supporting multi-site community-based research: responding to local context while ensuring methodological coherence across contexts

Presented by: **Cathie Scott**, Chief Information Officer, Alberta Centre for Research with Children, Families & Communities, **Simone Dahrouge**, Bruyère Research Institute, **Jeannie Haggerty**, McGill University

Objectives:

Through this panel we aim to:

- Familiarize participants with the approaches and tools that supported cross-case coherence and integration of intervention design, implementation and evaluation
- Share concrete examples of tools and approaches for continuous improvement interventions throughout implementation
- Share tips for developing partnerships among researchers, decision-makers and patients to facilitate community-based design and implementation of interventions
- Stimulate discussion regarding balancing the need for contextual relevant interventions with the desire to achieve common outcomes across contexts

Approach:

Following a brief overview of the approaches and tools used throughout the IMPACT program of research, each panelist will describe the innovation implemented in their region and the strategies for designing interventions with communities so that they are responsive to context while measuring common outcomes and adhering to the overarching research design. The presentation will wrap up with a summary of the elements the panel proposes are essential to effective, acceptable, and potentially scalable interventions. The presentation will be followed by a facilitated discussion with audience members seeking input about the panelists' experiences.

E7.1

Theme: Health System Performance (includes quality, safety, efficiency, leadership)

ROOM 504

Barriers to and supports for conducting clinical trials in Canada – a qualitative analysis of key informant interviews with clinicians and clinical research professionals

Presented by: **Colene Bentley**, Health Services Researcher, Canadian Centre for Applied Research in Cancer Control - BC Cancer

Background and Objectives:

Conducting high-quality clinical trials (CTs) is becoming more complex and resource intensive. The international literature shows that the long-term viability of CT programs is challenged on several fronts, including: low rates of patient participation and trial completion, inefficient trials bureaucracies, shrinking budgets, regulatory burden, and the globalization of trials. We sought to clarify the challenges relevant to CT professionals responsible for running cancer CT programs and units in Canada, and identify strategies for improvement.

Approach:

In telephone interviews conducted in 2017-2018, we asked clinicians and clinical research professionals for their perspectives on the barriers to and supports for conducting CTs at their institutions, in their provinces, and nation-wide. The interview script was informed by a literature review on the costs and benefits of CTs and CT networks conducted by the research team. Interviews were digitally recorded, transcribed verbatim, and coded in NVivo. The literature review informed the initial coding framework, with new concepts drawn out and coded during analysis. A constant comparative approach was used to determine the range of meanings within each concept and code.

Results:

25 one-on-one telephone interviews were conducted, with an average length of 40 minutes. Key barriers identified by participants were: i) insufficient stable funding to support CT infrastructure; ii) fewer grant competitions, lack of infrastructure support, and reliance on foundations to fund clinical research have led CT units to adopt strict cost-recovery policies; iii) industry provides access to funds and new drugs for patients, but plays a disproportionately large role in clinical research in Canada; iv) regulatory compliance and managing interdepartmental activities were administrative burdens. Key supports were: i) core funding for CT infrastructure helped CT units retain staff, share knowledge, and manage trials portfolios; and ii) a centralized “back office” helped streamline institutional approvals so CTs open quicker and thus have longer accrual periods.

Conclusions:

The long-term viability of CT programs in Canada is in jeopardy. Funding uncertainties have led CT units to rely on industry sponsorship and feasibility thresholds to remain solvent. Participants endorsed entities like CT networks to help realize efficiencies through shared expertise, access to trials for patients, and streamlined infrastructure.

E7.2

Theme: Health System Performance (includes quality, safety, efficiency, leadership)

ROOM 504

Development of Quality Indicators to Enhance Person-Centred Care for System-Level Application

Presented by: **María José Santana**, Assistant Professor, Cumming School of Medicine, university of Calgary

Background and objectives

In Canada, healthcare systems across the country have implemented policies and programs to enhance the delivery of Person-Centred Care (PCC). Despite this, currently there are no standardized mechanisms in place to measure and monitor PCC at the system level. To address this gap, we developed a set of person-centred quality indicators (PC-QIs) that can be used to improve PCC across sectors of care. The newly developed PC-QIs will ultimately drive person-centred healthcare improvement in Canada.

Approach

The PC-QIs have been developed in collaboration with patients, community members, policy-makers, healthcare providers, and quality improvement experts through two phases of research. Phase 1 involved: identification of PC-QIs through a scoping review of the literature; an environmental scan of the existing PC-QIs previously implemented and evaluated in Canada and internationally; and focus groups with patients and interviews with healthcare providers to obtain their perspectives on PCC. The findings were synthesized, resulting in the development of PC-QIs. Through Phase 2, we conducted a Pan-Canadian initiative to refine the PC-QIs identified, using a deliberative consensus-building process using the RAND/UCLA Appropriateness Method.

Results

Of the 39 PC-QIs that were identified or newly developed through Phase 1, a total of 23 final PC-QIs were refined through the consensus process. Using the Donabedian framework for quality improvement in healthcare, 5 PC-QIs related to “structure” were developed, related to policy on PCC, PCC education, culturally competent care, and presence of structures to report PCC performance. 15 “process” PC-QIs were developed to measure equitable care, relationship and communication with healthcare providers and the healthcare system, coordination of care, and patient and caregiver involvement in care and decisions. For “outcome” indicators, 3 PC-QIs were developed to measure overall patient experience, patient-reported outcomes and whether friends and family would recommend a healthcare facility to others.

Conclusion

To guide healthcare policy and practice change, Canada needs to develop and implement efficient ongoing mechanisms to measure and evaluate quality that incorporates the patient perspective. This study is a Pan-Canadian initiative that includes a multifaceted process to develop evidence-based and patient informed PC-QIs which will improve PCC in Canada.

E7.3

Theme: Health System Performance (includes quality, safety, efficiency, leadership)

ROOM 504

ON THE EFFICACY OF PHYSICIAN COMPENSATION MODELS: THE CASE FOR AN APPROACH GROUNDED IN BEHAVIORAL ECONOMICS

Presented by: **Wendy Kubasik**, Dean, School of Community and Health Studies, Centennial College

BACKGROUND

Canadian governments, policymakers and academic/health leaders are faced with a series of complex decisions around methods to assess, compensate and incentivize academic physicians. Despite the introduction of AFPs in several provinces, disagreements around physician compensation models, concerns about the reliance on clinical revenues to fund components of the medical school's academic mission, and calls to demonstrate accountability, have all endured. While anecdotal evidence on the types of compensation and academic productivity frameworks exists, research on the prevalence and efficacy of these models are limited.

APPROACH

This study uses a mixed-methods research design, combined with a theoretical approach grounded in behavioral economics, to explore the compensation and assessment models used by four Canadian clinical academic departments (Anesthesia, Medicine, Pediatrics and Surgery) over a five-year period. The study includes 150 academic physicians and two universities. Four research phases were employed as follows: document analysis; bibliometric analyses (citations, h-Index); advanced People Analytics (a new approach, the K-MAAP®); and, qualitative interviews of academic leaders using a semi-structured interview questionnaire. All participants received some form of university-derived compensation.

RESULTS

Each department implemented a novel compensation and assessment model. However, Pediatrics demonstrated consistently higher levels of productivity than the other departments during the study period, plus an average increase in academic outputs of 11.8% between 2006 to 2011, and 22.1% in 2010/11 alone. Pediatrics is on an academic comprehensive Alternative Funding Plan; their compensation system includes triennial review, a base salary and annual review, an annual performance bonus (ranging from 1-11% of gross income), career progression through the ranks, mentorship, and recognition. In contrast, Surgery uses a performance bonus alone to stimulate performance (value of 1-4% of gross income), and their productivity remained stable during the study period.

CONCLUSIONS

New methods to compensate academic physicians should be considered. This study provides evidence that an academic comprehensive AFP - with clear measures for both clinical and academic deliverables - may be optimal. The potential role of incentives in academic medicine and physician compensation should not be discounted. The challenge is that there is currently very little performance-related data to support integrated planning exercises or accountability.

E8.1

Theme: Home Care & Long Term Care and Aging

ROOM 507

Emergency department visits and mortality on weekends and holidays: A population-based retrospective cohort study of Ontario's long-term care home residents

Presented by: **Julie Lapenskie**, Research Coordinator, Bruyère Research Institute

Background and Objectives: Long-Term Care (LTC) homes typically have fewer direct care staff and decreased access to primary care physicians on weekends and holidays. Resident-provider relational continuity of care may also be disrupted on weekends and holidays, when care is provided by part-time staff who are less familiar with residents' treatment plan and goals of care.

The objective of this study was to evaluate LTC home residents' outcomes on weekends and holidays compared to weekdays.

Approach: We conducted a population-based, retrospective cohort study of adults aged 65 or older (n=201, 080) residing in publicly-funded LTC homes in Ontario, Canada, between January 1st, 2013 and December 31st, 2016. We used linked health administrative databases to calculate the rates of emergency department (ED) visits and all-cause mortality per 10,000 LTC days. ED visits were stratified as avoidable (using a previously developed algorithm) and non-avoidable (i.e. avoidable ED visits subtracted from all ED visits). We present results across weekdays ED (stratified by day of the week), weekends, and holidays.

Results: The rate of ED visits across the study period was 24.62 visits/10,000 LTC-days. The rate of non-avoidable ED visits was highest on weekdays (18.94 visits/10,000 LTC-days), with the highest rate on Fridays (19.95 visits/10,000 LTC-days). Holidays had the lowest rate of non-avoidable ED visits (17.40 visits/10,000 LTC-days).

Conversely, the rate of avoidable ED visits was highest on holidays (6.33 visits/10,000 LTC-days), followed by weekends and Fridays (both 6.14 visits/10,000 LTC-days). Comparatively, the average rate of avoidable ED visits on Mondays to Thursdays was 5.95 visits/10,000 LTC-days, with the lowest rate on Tuesdays (5.87 visits/10,000 LTC-days).

The rate of death was highest on holidays (8.78 deaths/10,000 LTC-days) followed by weekends (8.31 deaths/10,000 LTC-days) and weekdays (8.11 deaths/10,000 LTC-days), with the lowest rate on Fridays (7.94 deaths/10,000 LTC-days).

Conclusion: Preliminary observations suggests LTC home residents may experience poorer outcomes in the form of more avoidable ED visits and death at times when staffing resources and resident-provider continuity of care is lower. Further research will investigate variations in outcomes across resident and facility characteristics to better understand observed trends.

E8.2

Theme: Home Care & Long Term Care and Aging

ROOM 507

Work Context and Missed and Rushed Care by Care Aides in Long-term Care Homes

Presented by: **Yuting Song**, Postdoctoral Fellow, University of Alberta

Background and objectives

The increasingly complex care needs of long-term care (LTC) residents have challenged the LTC system. Evidence reveals that LTC staff commonly rush care tasks or even leave them undone. Emerging LTC research suggests that in work contexts with more favorable features (e.g., leadership and culture), care staff are less likely to rush or miss care tasks. Our objective was to rigorously examine the association between work context and missed or rushed care in LTC homes.

Approach

This was a secondary analysis of survey data (n=3,769 care aides) collected in a representative sample of 86 urban LTC facilities in Western Canada. Our dependent variables, were the number of care tasks care aides missed (0–8) or rushed (0–7) in the last shift. Our independent variable was the quality of care-unit work contexts. Using the Alberta Context Tool, we determined whether a unit had a more or less favorable work context. Controlling for care aide, unit and facility characteristics, we ran 2-level random-intercept Hurdle Regressions to assess the association between work contexts and tasks rushed or missed.

Results

52% of the care aides reported having missed at least one care task and 65% reported having rushed at least one care task in the last shift. Taking residents for a walk was missed most often (48%), talking with residents was rushed most often (47%). Care aides on units with more favorable work environment were more likely not to miss any care task (OR=1.51, 95% CI: 1.23-1.84) and not to rush any care task (OR=1.45, 95% CI: 1.20-1.76). Of care aides who reported missing or rushing at least one task, those who work on units with more favorable work contexts missed (OR=0.86, 95% CI: 0.82-0.91) or rushed (OR=0.83, 95% CI: 0.74-0.92) fewer care tasks than care aides on units with less favorable contexts.

Conclusion

Care aides frequently rush and miss care tasks, but are less likely to do so on care units with better work contexts. Further research is needed to understand which factors of work contexts most effectively prevent missed or rushed care, to inform powerful improvement interventions.

E8.3

Theme: Home Care & Long Term Care and Aging

ROOM 507

Access to Long-Term Care for Minority Populations: A Systematic Review

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

Background and Objectives: Canada is a diverse nation of people from various ethnic origins and religions, who speak different languages and hold different sexual preferences. While this diversity is a celebrated hallmark of our population, there have been limited investigations into inequities in health care access for minority groups living in Canada, particularly as they age. The objectives of this review were to assess access to long-term care (LTC) for minority populations and to identify barriers or facilitators that influence their admission to LTC facilities.

Approach: A systematic review registered in Prospero (CRD42018038662). We included studies that evaluated the prevalence of minority populations in LTC homes, predictors of their admission to LTC homes, and residents' perceptions of future admission and their likelihood to enter LTC homes. We considered racial, ethnic, religious, language, and sexual preference (Two-spirit-LGBTQ+) minority populations. We piloted and developed search strategies in ten databases.

Results: A total of 11,051 articles were captured in the initial search. An additional 175 were found from manual searching. We removed 3,520 duplicates, leaving 7,705 studies for screening. In total, 90 articles were screened in full text and 55 selected for inclusion. We found that minority groups are less represented in LTC than the general population and that minority status appears to be a determinant of admission and residence. No studies looked at access for religious or Indigenous minorities. Barriers to LTC access for older adults from minority populations included language barriers to accessing appropriate information on LTC, familial pressure to care for patients in their private home, and fear of discrimination. Facilitators reported included provider education to gain cultural insight and support.

Conclusions: Minority populations were consistently found to have lower access to LTC and experience unmet needs, including cultural and language issues, while receiving care in this setting. Findings from this review highlight the need for more research on the LTC needs of older people from minority groups and culturally-sensitive LTC facilities to potentially improve LTC for minority populations.

E8.4

Theme: Home Care & Long Term Care and Aging

ROOM 507

Differential health outcomes of recent immigrants in long-term care homes: A population-based retrospective cohort study

Presented by: **Julie Lapenskie**, Research Coordinator, Bruyère Research Institute

Background and Objectives: Over 20% of Canadian older adults aged 65 years or older are immigrants, many of whom have long-term care (LTC) needs. However, immigrants often face challenges to accessing health services, including language barriers and cultural-specific needs, that may lead to differential health outcomes.

This study describes the characteristics of immigrant older adults residing in Ontario LTC homes and compares the hospitalization and mortality rates of recent immigrants to long-term Canadian residents in this setting.

Approach: We conducted a population-based, retrospective cohort study of incident admissions to publicly-funded LTC homes in Ontario between April 1st, 2013 and March 31st, 2016. Using linked health administrative databases, we identified recent immigrants who arrived in Canada after 1984 and developed multivariable regression models to assess the effect of immigrant status on all-cause hospitalization and mortality within 1 year of LTC home admission. We used nested models to explore the relative contribution of (1) facility characteristics as well as resident demographic and clinical variables, (2) chronic diseases, and (3) primary language of the resident to our outcomes of interest.

Results: Recent immigrants comprised 4.4% of residents in Ontario LTC homes; the majority were from East and South-East Asia (52.2%), and half (53.9%) had no competency in either official Canadian languages upon arrival. At LTC home entry, immigrants were younger with greater functional and cognitive impairments.

Adjusting for health and demographic covariates, immigrants had a lower rate of mortality (HR 0.68, 95% CI 0.57-0.80) but were more likely to be hospitalized (HR 1.11, 95% CI 1.02-1.22). Adjusting for language ability, the effect of immigrant status on mortality remained but differences in hospitalization became non-significant. Mortality rates were lower among more recent (< 15 years since arrival) immigrants (HR 0.77, 95% CI 0.64-0.93) than immigrants who arrived 15-31 years prior to LTC admission (HR 0.84, 95% CI 0.62-1.14).

Conclusion: Despite greater functional and cognitive impairments, recent immigrants in LTC had lower mortality than long-term Canadian residents, which may be reflective of the 'healthy immigrant effect'. Language barriers were associated with increased risk of hospitalization, highlighting the need for strategies to overcome communication barriers to improve resident outcomes in LTC homes.

E9.1

Theme: Mental Health

ROOM 505

Harm reduction as a bridge between mental health and addiction recovery

Presented by: **Mary Bartram**, Postdoctoral Researcher, McGill University

Background and Objective: Recovery is a key concept driving system transformation in both the addiction and mental health sectors, with shared roots in advocacy a shared focus on hope in the face of stigma, self-determination, and meaningful lives. Nevertheless, while cure is not thought to be necessary for mental health recovery, addiction recovery generally starts with abstinence. This study explores the potential for harm reduction to act as a bridge between the mental health and addiction sectors.

Approach: This qualitative study first draws on concept analysis to compare the use and defining attributes of key concepts in mental health and addictions policy documents, such as harm reduction, recovery, and well-being. An integrated conceptual model for mental health and addiction recovery is then developed and refined through interviews and focus groups with policy-makers, stakeholders and researchers in both the addiction and mental health sectors.

Results: While there is considerable common ground between how recovery is conceptualized in the mental health and addictions sectors, the emphasis on abstinence as the starting point for addictions recovery is at odds with the de-emphasis on cure as necessary for mental health recovery. Harm reduction, with its focus on reducing harms even with on-going substance use and addiction, has the potential to act as a bridge to mental recovery. A two-continuum model of mental health and addiction recovery is proposed. This model acknowledges that people can reduce harms associated with on-going substance use in much the same way that people with serious mental illnesses can also be flourishing.

Conclusions: The proposed model is an opportunity to clear up conceptual confusion between the mental health and addictions sectors on recovery. This coherence can in turn influence the development of more integrated policies and ultimately improve the quality of services for people living with mental health and substance use problems.

E9.2

Theme: Mental Health

ROOM 505

Patient experiences participating in an inpatient needle and syringe program at the Royal Alexandra Hospital

Presented by: **Hannah L. Brooks**, Research Assistant, University of Alberta, School of Public Health

Background and objectives: Needle and syringe programs (NSPs) are considered a vital approach to reducing the risks associated with injection drug use (3, 5). However, people who inject drugs (PWID) typically lack access to sterile injection supplies in hospital. This is problematic because PWID experience high rates of hospitalization and often continue to inject while hospitalized (4). In 2014, the Royal Alexandra Hospital in Edmonton, Alberta implemented one of Canada's first inpatient NSPs. We evaluated its implementation to assist with quality improvement.

Approach: We adopted a focused ethnographic research design and conducted 25 semi-structured qualitative interviews with hospitalized PWID. Interviews prioritized participants' perspectives of and experiences participating in the NSP and their recommendations for improvements, as well as their hospitalization experiences and interactions with hospital staff.

Results: Half of the patients interviewed identified as female and 80% identified as Indigenous. Many patients reported that access to the NSP helped reduce the use of non-sterile injection supplies and provided a means to access safer drug use information. Patients also felt the NSP made their hospital stay more comfortable and facilitated their treatment completion. However, several participants described barriers to accessing supplies. Barriers included anticipation that hospital staff would judge or prematurely discharge them, apprehend their injection supplies or drugs, or modify their medication regimes if they accepted supplies.

Conclusions: This study suggests that an inpatient NSP may reduce certain risks associated with injecting drugs while hospitalized. However, barriers to inpatient participation remain and certain modifications to the NSP and further interventions are required to reduce the fears some patients described. Further work is needed to facilitate the implementation of harm-reduction in acute care and ensure and non-judgmental and patient-centered care for PWID.

E10.1

Theme: Primary Health Care

ROOM 506

CAN PRIMARY CARE AND CONTINUITY OF CARE PREVENT ASTHMA-RELATED ED USE AND HOSPITALIZATIONS IN CHILDREN?

Presented by: **Sarah Cooper**, Graduate Student, McGill University

Background and Objective: Continuity of care, the frequency of patient healthcare provider interactions, may improve asthma outcomes. In Quebec, children are followed in family medicine groups (FMGs), family physicians not part of FMGs or by pediatricians. We sought to determine among Quebec children with asthma: 1) association between asthma acute outcomes (ED visits and hospitalizations) and having an assigned primary care provider; and 2) association between continuity of care with a primary care provider and asthma acute outcomes.

Approach:

Design/Setting/Patients or other participants: Population-based retrospective cohort study using provincial health administrative data from 2010-2013 of children with administratively defined asthma aged 2-16 years old (N=39341)

Main exposure: Primary care model (FMGs, non- FMGs, pediatricians, no primary care)

Secondary exposure: Usual Provider of Care Index (high, medium, low)

Confounders: Age, gender, rurality, socioeconomic status (SES) quintiles, previous health utilization (asthma-specialist visits, ED visits, hospital admissions).

Outcomes: Asthma-related ED visits (main outcome), asthma-related hospital admissions (secondary outcome). We used multivariate logistic regression analyses to test associations between exposures and outcomes.

Results: Overall, 17.4% of children with asthma were not followed by a primary care provider. The majority were followed by a pediatrician (34.9%). Children who had high continuity of care were more likely to be followed by a pediatrician. Compared to no primary care, having primary care was associated with decreased asthma-related ED visits (Pediatrician OR: 0.80 [0.73, 0.89], FMGs OR: 0.84 [0.75, 0.93], non-FMGs OR: 0.92 [0.83, 1.02]) and hospital admissions (Pediatrician OR:0.67 [0.59, 0.76], FMGs OR: 0.83 [0.73, 0.94], non FMGs OR: 0.77 [0.67, 0.87]). Continuity of care was not significantly associated with asthma-related ED visits but compared to low continuity, medium or high continuity was associated with decreased asthma-related hospital admissions (Medium OR:0.81 [0.73, 0.90], High OR:0.72 [0.63, 0.82]).

Conclusion: Having a primary care provider is associated with reduced ED visits. For those who have primary care, low continuity may be associated with increased odds of asthma-related hospital admission. Our findings support the development of interventions and policies aimed at building and maintaining relationships between children with asthma and primary care.

E10.2

Theme: Primary Health Care

ROOM 506

Measuring within-specialty continuity of care: introducing a scaled bice-boxerman index

Presented by: **Aaron Jones**, PhD Candidate, McMaster University

The bice-boxerman index is frequently used to measure continuity of care. While specialist visits are often included in the bice-boxerman calculation along with family medicine, this conflates within and between-specialty fragmentation and results in maximum values less than 1 and a significant negative correlation with specialist utilization. The objective of this study is to define and examine a modified bice-boxerman index that can aggregate within-specialty continuity of care across multiple specialties without a ceiling effect or correlation with the number of specialist visits.

We used a retrospective cohort of home care patients in Ontario from 2014-2016 linked to administrative health utilization records. To demonstrate the relevance of within-specialty continuity, we examined the influence of continuity of internal medicine alongside continuity of family medicine on emergency department (ED) utilization. A scaled bice-boxerman index was defined by dividing the standard bice-boxerman by a patient's theoretical maximum value based on the distribution of visits within specialties in the past year. We compared the performance of the scaled, unscaled, and family medicine only continuity measures using restricted cubic splines in a cox model predicting ED utilization while controlling for overall physician utilization.

Our cohort contained 179,888 home care patients with at least three family medicine visits in the previous year. Among patients with at least as many internal medicine visits as family medicine visits, high continuity ($> = 0.75$) of internal medicine (HR 0.62, $p < 0.001$) had a more meaningful association with ED utilization than high continuity of family medicine (HR 0.95, $p=0.33$). With all specialties included, the scaled bice-boxerman index was uncorrelated ($r=-0.07$) with number of specialist visits and had an achievable value of 1 for each patient. The scaled version had better values on model information criteria and global and individual significance tests in the cox model predicting ED visits than either the unscaled version or continuity of family medicine alone.

A bice-boxerman index that is scaled by a patient's theoretical maximum index avoids ceilings less than 1 and negative correlations with specialist utilization and is mathematically equivalent to a weighted average of within-specialty continuities. In populations with heterogeneous specialist utilization, a scaled bice-boxerman index may provide more meaningful results.

E10.3

Theme: Primary Health Care

ROOM 506

The secondary use of primary care Electronic Medical Record (EMR) data to compare the risk of developing diabetes amongst new statin users

Presented by: **Liisa Jaakkimainen**, Scientist, ICES

Background and Objectives: Secondary use of family physician (FP) electronic medical (EMR) data can provide information which enhances existing health administrative data for use in health services research. Complementary FP EMR data includes clinical measures of blood pressure and body mass index (BMI), and risk factors for disease such as smoking and alcohol use. This study used FP EMR data to replicate administrative-based studies which compare the risk of newly diagnosed diabetes amongst adults newly prescribed statins. Approach: We conducted a matched cohort study of adults in Ontario, Canada, ≥ 40 years of age without a history of diabetes or statin prescription prior to study enrollment. New statin users, defined as FP patients with a first ever statin prescription between January 1, 1998 and March 31, 2014, were matched on sex and age to one to five controls, also with no statin prescription during study follow-up. The endpoint of follow-up was the earliest date of: diabetes diagnosis, death, emigration from Ontario, loss of health enrollment, 36 months after index date/start of statin treatment and March 31, 2016. Results: The FP EMR study cohort consisted of 8823 new statin users and 33,732 controls. Compared with non-statin users, statin users were older (mean years \pm SD: 62.1 ± 11.1 versus 59.8 ± 11.5 for users and non-users, respectively), and had a higher proportion of males (53.4% versus 48.8%), patients with body mass index (BMI) ≥ 30 kg/m² (18.1% versus 10.8%) and patients with co-morbidities. Overall, 6.5% of statin users developed diabetes compared with 2.7% of non-users (unadjusted hazard ratio [95% CI]: 2.44 [2.20-2.71]). After adjusting for index year, systolic and diastolic blood pressure, smoking, BMI, history of coronary artery disease, atrial fibrillation and chronic kidney disease, statin users remained at greater risk of newly diagnosed diabetes compared to non-statin users (hazard ratio [95%CI]: 1.74 [1.46-2.07]). Conclusions: The effect size of new statin use in the development of diabetes was higher when controlling for clinical measures compared to administrative-based studies. The secondary use of FP EMR data for research provides data which can further adjust for confounding and effect modification.

CONCURRENT SESSIONS F: THURSDAY, MAY 30, 2019 - 2:15PM – 3:30PM

F1.1

Theme: Access & Equity (includes Indigenous peoples, immigrant and other priority populations)

ROOM 507

The Essential Place of First Nations Traditional Health in the Health System: Issues, Opportunities and Recommendations of First Nations in Manitoba

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

Background & Objectives:

The aim of this inquiry was to explore positioning traditional medicine in primary healthcare, elaborate on areas of opportunity for collaboration, and highlight possible impact on both traditional and western medicine, the "two great healing traditions"¹.

Approach:

This qualitative study is one five research projects within a larger program of research entitled Innovation Transforming Community-based Primary Healthcare (CBPHC) in First Nation and rural/remote communities of Manitoba, a partnership between the University of Manitoba, the First Nation Health and Social Secretariat of Manitoba and 8 Manitoba FN's. In-depth interviews were conducted including participants from eight First Nations communities. Grounded theory informed data analysis using Nvivo software.

Results:

We found that traditional healing is widely used in FN communities as a parallel system of health care and prevention, yet this practice is not commonly recognized by the mainstream health system. First Nations in Manitoba call for increased recognition and respect, adequate funding, and inclusion of traditional healing and healers in a newly envisioned PHC system. They contend that Elders/healers need to be meaningfully involved in the delivery of primary healthcare and that traditional health science and healing practices are key to transforming community wellness.

Conclusion

Centering traditional healing and healers in the healthcare system is critical for addressing the intergenerational impact of assimilative policies, as asserted in The Truth and Reconciliation Commission of Canada's Calls to Action. While some support is currently available for individuals seeking traditional healing, transformation is required on a system level.

1. Canada. Royal Commission on Aboriginal Peoples. Report of the Royal Commission on Aboriginal Peoples. Vol. 3: Gathering Strength, Chapter 3, Royal Commission on Aboriginal People, 1996.

F1.2

Theme: Access & Equity (includes Indigenous peoples, immigrant and other priority populations)

ROOM 507

First Nation Perspectives to Transform Community-based Primary Healthcare (CBPHC) in First Nation communities in Manitoba.

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

Models of CBPHC and health care policies currently operating in Manitoba First Nations (FN) are rooted in oppressive colonial policies and developed without appropriate or prior engagement with FN's. Our objective is to understand the impact of current governance structures on primary care and learn what alternative models are possible.

Approach:

This qualitative study is one five within a larger program of research entitled Innovation Transforming Community-based Primary Healthcare (CBPHC) in First Nation and rural/remote communities of Manitoba, a partnership between the University of Manitoba, the First Nation Health and Social Secretariat of Manitoba and 8 Manitoba FN's. Local research assistants were employed by their respective communities to conduct interviews/listen to stories with community members. These interviews were transcribed and NVivo software was used to organize into themes. All summary data was presented back to community who had an opportunity to validate and participate in the interpretation of results.

Results:

Key challenges to CBPHC included: funding models, jurisdictional complexities, imposed policies with limited funding, lack of cooperation among healthcare services and an acute approach to healthcare. FNs want a seamless way of providing CBPHC with improved funding at the discretion of FN communities that fosters continued primary healthcare innovation. A new concept introduced by respondents that resonated throughout the study was the implementation of "borderless healthcare" where the current governance silos are broken down. Ultimately, FN communities in Manitoba are advocating for an integrated model of care, with flexible and supportive funding negotiated by the parties according to the FNs inherent right to self-determination and need to address inherent discrimination that prescribes different healthcare models for FN north and south, and further, with non-FN communities.

Conclusion:

Primary healthcare approaches that promote FN inherent rights to self-determination and implementing a “borderless healthcare system” is called for by the First Nations participating in this project, in alignment with the Truth and Reconciliation in Canada Calls to Action to recognize and implement the health-care rights of FN people.

F1.3

Theme: Access & Equity (includes Indigenous peoples, immigrant and other priority populations)

ROOM 507

A framework and research initiative to study inflammatory bowel disease among Indigenous peoples in Saskatchewan

Presented by: **Juan-Nicolás Peña-Sánchez**, Assistant Professor, Department of Community Health & Epidemiology, College of Medicine, University of Saskatchewan

Background and objectives

Inflammatory Bowel Disease (IBD) is a chronic condition with significant life-threatening disease-related complications and reductions in quality of life if left untreated. Despite available research about IBD in the general population, there is limited-to-no evidence about IBD among Indigenous peoples in Canada. Based on the patient-oriented research principles and partnerships with Indigenous patients with IBD, we aimed to define a collaborative framework, estimate the epidemiology, and explore perceptions of IBD among Indigenous people in Saskatchewan.

Approach

This study began when Indigenous patients with IBD shared their experiences with research team members. A mixed methodology was defined to explore the epidemiology and perception of IBD among indigenous people. We will use administrative health data for the province of Saskatchewan to estimate the prevalence of Indigenous peoples diagnosed with IBD, as well as the incidence rate of IBD among indigenous individuals in Saskatchewan. The second part of the study will use a photovoice methodology to obtain “the voices” of Indigenous peoples with IBD, encouraging self-interpretation of pictures, engaging their communities, and empowering them with the study findings.

Results

An interdisciplinary research team was formed including Indigenous patient and family advisors (IPFAs, Indigenous patients living with IBD and parents of an Indigenous person with IBD), a gastroenterologist, decision makers, and Indigenous and non-Indigenous researchers. This research team defined as its goal to raise awareness of IBD among Indigenous peoples and advocate for better healthcare and well-being by providing evidence of IBD among Indigenous peoples living with IBD in Saskatchewan. The IPFAs in the team play a critical role in the project sharing their experiences and defining the directions of the project. The research questions, methodology, and study outcomes were collaboratively defined with IPFAs. Estimates of the prevalence and incidence of IBD among Indigenous people will be available in spring 2019.

Conclusion

This ground-breaking patient-initiated and -driven project is the first stage to improve health among Indigenous peoples living with IBD in Saskatchewan. This project will generate community-engaged knowledge and experiences to inform the development of an Indigenous IBD framework which could promote better and knowledge-based healthcare for Indigenous people with IBD.

F1.4

Theme: Access & Equity (includes Indigenous peoples, immigrant and other priority populations)

ROOM 507

Indigenous Community to Care Provider Dialogues: Participatory Action Research to inform Culturally Safe Health Services

Presented by: **Megan Muller**, Fellow, Saint Elizabeth Research Centre

Discrimination and culturally inappropriate practices within healthcare delivery are demonstrated to be a key factor leading to the health equity gap faced by Indigenous Peoples in Canada (Browne et. al, 2000; Reading and Wien, 2013). In partnership with the Nuu-chah-nulth Tribal Council (NTC) and Saint Elizabeth Research Centre, we have developed a participatory-research-to-action project to enhance culturally safe care at the interface between transferred Indigenous health services and provincial/regional health care providers (HPC) on Vancouver Island. This project results from extensive planning with participating First Nations and the NTC. Between February to April 2019, the research team will utilize an Indigenous storywork and brokered dialogue methodology to facilitate conversations between community members and HPCs about the impact of culturally unsafe care delivery on health outcomes. This methodology has been proven effective for addressing controversial health issues (Parsons & Lavery 2012). Patient health care narratives will be recorded and shared with local HCPs; the HCP's responses are then recorded and shared with patients and community members. This will be repeated until common themes and opportunities emerge. We anticipate an increase in mutual understanding, in terms of awareness among HPCs of systemic practices that almost invisibly perpetuate oppression and racism, as well as greater knowledge and understanding among community members about determining their health care. This dialogue is expected to reveal how discrimination manifests within the health system, how this is experienced by patients, and how it impacts health outcomes and ability to pursue a recommended course of treatment. The process of dialogue and co-learning will inform the collaborative development of resources and/or interventions to enhance culturally safe practice and collaboration across health systems. This presentation will share preliminary findings and reflections on the participatory-research-to-action process. These findings will provide insight useful for healthcare practitioners and policymakers, revealing the necessity of culturally safe practice from the experiences of First Nations patients and opportunities for co-developing processes to increase cultural safety within health care delivery.

F2.1

Theme: Health Economics/Financing/Funding (including cost and economic analysis)

ROOM 506

Cost of a Standard Resident Day

Presented by: **Thushara Sivanandan**, Senior Analyst, Canadian Institute for Health Information

Background and objectives (75-word limit)

With Canada's aging population, the long-term sector represents a critical component in ensuring a sustainable health care system. However, no comparable pan-Canadian financial reporting is available for this sector, despite growing stakeholder interest in health spending costs across the continuum of care. This work aimed to develop an indicator that measures the average full cost of caring for a standard resident per day, for residential care facilities and hospitals in which long-term care is provided.

Approach (100-word limit)

The Cost of a Standard Resident Day (CSRD) indicator was calculated by linking financial data to clinical interRAI data from the Canadian MIS Database (CMDB) and Continuing Care Report System (CCRS) respectively, for a subset of facilities in Alberta, British Columbia, Manitoba, Newfoundland and Labrador, Ontario and Saskatchewan. It includes health and non-health component expenses, with the former adjusted for resident complexity using the facility's Case Mix Index (CMI) value derived from CIHI's most recent case mix grouping methodology.

Results (125-word limit)

Indicator results are reported for fiscal year 2016-2017 at the facility level with regional, provincial and national aggregations. In 2016-2017, the average full cost per day of caring for a standard resident in Canada was \$227. The study highlighted geographic variations in the average full cost of caring for a standard resident per day. Provincial indicator values ranged from \$200 to \$304 per day for Alberta and Newfoundland and Labrador respectively, with regional values varying from \$154 to \$432.

Conclusion (50-word limit)

As one of the first attempts to measure the cost of providing care to residents at the pan-Canadian level, this indicator can help health system managers and decision-makers assess changes in cost-efficiency over time and compare across peer facilities, regions, and jurisdictions.

F2.2

Theme: Health Economics/Financing/Funding (including cost and economic analysis)

ROOM 506

How Much Investment in Palliative Home Care Is Required for One Community Death? the Cost-Effectiveness of Palliative Home Care Using a Population-Based Cohort in Ontario, Canada

Presented by: **Amy Hsu**, Investigator, Bruyère Research Institute

There has been increasing interest in home-based palliative care and its potential as a mechanism to align patients' preferences for care at home with health system outcomes, such as decreased burdensome transitions, healthcare costs, and supporting deaths outside of acute care settings. However, current evidence is inconclusive regarding the cost-effectiveness of home-based palliative care. We designed a cost-effectiveness analysis to estimate the incremental cost of palliative home care to enable additional deaths in the community (non-institutional) setting from the perspective of the healthcare system. We calculated the incremental cost-effectiveness ratio per community death for decedents who received end-of-life home care relative to propensity score-matched individuals who did not receive home care, as well as those who received non-end-of-life home care.

Using a population-based cohort of adults over 65 who died between April 1, 2011 and March 31, 2015 in Ontario, cases and controls were hard matched on the health administration regions (i.e., Local Health Integration Networks) they resided in and a history of cancer, then propensity score matched without replacement on age, sex, an interaction term of age with sex, rurality, neighbourhood income quintile, and chronic health conditions at index (i.e., 90 days before death).

Among those who received end-of-life home care, 66.8% died in the community setting. In contrast, among those that did not receive home care or received non-end-of-life home care, 25.2% and 21.3% died in the community, respectively. Decedents who received end-of-life home care had a higher average cost of \$25,532 (95% CI \$25,285–\$25,779) in the last 90 days of life, compared to \$25,118 (95% CI \$24,595–\$25,640) among those who did not receive home care. However, the cost incurred by decedents who received end-of-life home care was lower than those in the non-end-of-life home care cohort (\$31,495, 95% CI \$30,550–\$32,440).

Combining cost and effect, the estimated incremental cost-effectiveness ratio was \$995 per community-based death, suggesting that increased investment in end-of-life home care has the potential to improve end-of-life care for community-dwelling older adults. Furthermore, end-of-life home care was cost-saving compared to non-end-of-life home care by \$6,737, on average.

F2.3

Theme: Health Economics/Financing/Funding (including cost and economic analysis)

ROOM 506

The top 1% of end-of-life healthcare spenders: Does the dying process always lead to high costs to the system?

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

Previous studies have shown that a small percentage of the population consumes a large proportion of the healthcare budget. One subpopulation that is a known high cost driver is the end of life population; however, previous work has not examined the distribution of costs among those who are dying. We sought to identify if gradients of healthcare costs exist, even among a group of individuals known to have high costs. To do so, we conducted a retrospective cohort study investigating healthcare use and expenditures of decedents in their last 180 days of life. We captured deaths in a 3-year period, from January 1, 2012 to December 31, 2015 in Ontario, Canada. Records of health care usage and associated costs were linked across various administrative databases using encrypted health card numbers as unique identifiers. We retrieved all records of health care use paid for by the provincial Ministry of Health and Long Term Care (MOHLTC) in the last 6 months of life. All statistical tests were two-tailed and $p = 0.05$ was used to determine statistical significance. We observed 369,585 deaths. Decedents in the Top 1% spent on average \$301,237 (7.6% of all costs), while the mean cost of the Bottom 50% was only \$15,000 (18.9% of all costs) in the last 180 days of life. Admissions to ICU contributed to 77.8% of costs incurred by the Top 1%, while long term care was the highest cost contributor (26.7%) to the Bottom 50%. Of those who were nearing death, younger age groups, males, urban residents, and people living in rich neighbourhoods were overrepresented in the Top 1%. This study suggests that the proportion of healthcare users that are driving up healthcare expenditures at the end of life is very small, while the 50% of users are costing the economy quite little. We can look at characteristic of the bottom 50% to identify prevention methods.

F2.4

Theme: Health Economics/Financing/Funding (including cost and economic analysis)

ROOM 506

Effectiveness of Population Targeted Strategies to Prevent High Resource Users: A Modelling Study

Presented by: **Meghan O'Neill**, MPH Student, Dalla Lana School of Public Health, University of Toronto

Background and Objectives: A majority of health care spending is concentrated among a small proportion of the population. In the interest of health system sustainability, greater attention has been placed on managing high-risk groups, however little research has focused on how interventions targeted at preventing high resource users (HRUs) impacts spending at the population level. Our objective was to model the effectiveness of targeted prevention strategies for HRUs using a validated High Resource User Population Risk Tool (HRUPoRT).

Approach: We applied a validated population-based risk tool (HRUPoRT) for predicting HRU of the health system in Ontario, Canada, among adults in the 2013/2014 Canadian Community Health Survey (N = 39,140) and estimated the 5-year HRU risk to 2018/2019. Direct health care spending was calculated using a person-centered costing methodology developed at ICES that encompasses spending covered by the Ontario Health Insurance Plan. We estimated how many HRUs could be prevented and the associated health care savings from targeting high risk groups for prevention (i.e. 10% risk reduction). HRUPoRT was validated in Ontario with good discrimination (c-statistic=0.82) and calibration (Hosmer-Lemeshow $X^2 = 18.71$).

Results: HRUPoRT estimated 758,184 new HRU cases in Ontario between 2013/2014 to 2018/2019, resulting in \$16.22 billion in health care costs. We modelled the potential effectiveness of three different HRU prevention strategies over a 5-year period. The approach that had the largest reduction in HRUs was targeting individuals with any one health risk behaviour (heavy alcohol consumption, overweight/obesity, tobacco use, physical inactivity), resulting in 414,000 HRU averted and \$8.86 billion in health care savings. This approach was followed by targeting individuals with any two health risk behaviours (179,000 HRU averted and \$3.84 billion in health care savings), and targeting individuals 65+ with multimorbidity (77,000 HRU averted and \$2.50 billion in health care savings).

Conclusion: This study demonstrates an innovative policy tool that provides a mechanism to estimate population benefit using routinely collected, self-reported risk factor surveillance data. This research highlights the population impact of risk factors associated with becoming a HRU and provides empirical evidence to support HRU prevention strategies at the community level.

F3.1

Theme: Health Policy

ROOM 505

A province wide strategy to enhance community based care in Alberta

Presented by: **Monica Cepoiu-Martin**, Postdoctoral Scholar, University of Calgary

Acute and specialty care, provided by highly skilled and dedicated professionals, have a prominent role in the Alberta's healthcare landscape. In recent years, improvements have been made in increasing the capacity and reducing costs related to specialty care in acute care facilities. Nevertheless, there is a need for improved system integration by balancing acute and specialty care with community-based health services. In response, a multi-phase provincial strategy was initiated in 2017 by Alberta Health Services (AHS).

Enhancing Care in the Community (ECC) strategy was developed with the overarching goal of achieving the right balance between community care and acute and specialty care by 2020. In 2017, provincial funds were made available to support the expansion and integration in the Alberta health system of community-based programs aligned with the ECC's overarching goal. From 120 proposed initiatives, a working group consisting of clinical operational leaders from across AHS selected 29 programs to be funded in the first phase. As the strategy is unfolding in the province, more initiatives will be integrated in the system.

AHS is committed to creating a "learning organization", where ongoing evaluations allow decision makers to improve or eliminate initiatives that are not reaching their goals, and learn from those that perform well. The AHS 2017-2020 Health and Business plan balances health outcomes, costs, patient, and provider satisfaction. These four aims are being applied in developing the ECC System Measures Dashboard. The measures included in this dashboard, such as hospitalization rates, patient satisfaction scores, access of community services, client outcomes, and investment ratios, aim to assess the collective impact of the ECC program provincially. Further, the four aim quality improvement framework is being applied to developing program-specific measurement and evaluation plans to monitor the success of individual initiatives.

The ECC strategy is shaping the future of the healthcare system in Alberta by implementing well planned cultural, system and policy initiatives that will enhance the care available in the community. This vision promotes the appropriate balance of acute and specialty care with community health and social supports.

F3.2

Theme: Health Policy

ROOM 505

Unintended effects of the "Barrette" reform on the disclosure of lobbying activities in the health and social services sector in Quebec: an interrupted time series study

Presented by: **Mathieu Ouimet**, Professor, Université Laval

Background and objectives: In Quebec, since the enactment of Bill-10 in 2015 that replaced RHAs by large health and social service centres, lobbyists are now forced by law to disclose their activities in the provincial lobbying registry when they target local health care and social services institutions. Interestingly, this change is an unintended effect of Bill-10 and was unwanted by the government. This study examines the effect of this natural intervention on the volume of reported lobbying activities.

Approach:

Design: interrupted time series

Setting: Quebec

Population: all disclosed lobbying mandates targeting institutions in health and social services sector.

Data: Quebec Lobbying Registry. Period covered: December 1, 2002 to May 16, 2017. Observation unit: a two-week period beginning on the first or the 16th day of the month. The database contains 348 observations (i.e., two-week periods).

Outcomes: (1) number of active mandates and (2) number of registered lobbyists

Analyses: linear regressions (EPOC approach) (2 years before and after) and exponential regressions (full period). All regressions control for autocorrelation. Subgroup analyses were performed for types of lobbyists and types of mandates.

Results: Since 2002, the number of lobbying mandates disclosed on the registry targeting institutions in the health and social services sector has grown exponentially. Considering both the full period and two years before and after, the reform has had a positive effect on the growth in the number of mandates disclosed by lobbying consultants, but had no effect on the growth rate of the number of mandates disclosed by corporate lobbyists. After the reform, an increase of 22.7 lobbyists per two-week period pushed the annual growth in the number of lobbyists to 950. The reform had a strong positive effect on the growth of mandates aimed at influencing the granting of a permit, license, certificate or other authorization.

Conclusion: The Barrette reform was not intended to increase the transparency of lobbying activities in the health sector. Our findings suggest that a mistake made by the government in a core component of its reform (i.e., increased nomination powers) had a positive externality by making public lobbying activities that target the local level of the health system.

F3.3

Theme: Health Policy

ROOM 505

Availability and current utilization of virtual care and e-services in Canada: Foundations for a visionary future

Presented by: **Chad Leaver**, Director, Applied Research, Canada Health Infoway

Approach:

We completed the Canadian physician survey via a multi-method approach with distribution to 45,000 primary care and specialist physicians in Canada listed in the Canadian Medical Directory. Physicians completed the survey manually or online. A population survey of Canadians - representative by age, sex, province; and rural and remote communities was completed online in French and English. Descriptive and cross-tabular analyses determined the current provision of virtual care services by physicians and the availability and use of virtual care services by Canadians. Self-reported health system utilization estimates the proportion care in Canada that is currently virtual.

Results:

2,406 Canadians and 1,393 physicians: primary care (n=799); and specialists (n=594) completed surveys. In the past year, 6% of Canadians report they can currently visit with their health care provider virtually online by video. Men were more likely than women (5% vs. 2%); and younger Canadians (<35yrs) were more likely to have had a virtual visit in the past year. Virtual visits were either patient initiated or coordinated by a regular care provider/specialist clinic. Most (53%) were conducted at a health care facility, with the remaining 47% in the patient's home. Of the self-reported healthcare interactions reported by Canadians 1.6% were virtual in 2018. Physicians use/provision of virtual care services and highlight and key facilitators to support practice integration.

Conclusion:

Modern healthcare systems are demonstrating evidence- and value-based outcomes through virtual care interactions. Canadians are increasingly interested in accessing virtual care services, yet only a small percentage can do so. Remuneration is important, however, improved technology, privacy/security guidelines and leadership by clinician associations are warranted to support increased practice integration.

F4.1

Theme: Mental Health

ROOM 504

Hospitalizations from alcohol increased in Canada over 3 years

Presented by: **Mary-Ellen Hogan**, Project Lead, Canadian Institute for Health Information

Background and Objectives:

Alcohol consumption is ingrained in Canadian culture and as a result, harm is not fully appreciated. In fact, approximately 1 in 5 Canadians are problem drinkers. Consumption of alcohol can lead to hospitalizations from mental and behavioural as well as physical conditions. We aimed to measure hospitalizations due to alcohol over time and examine provincial and territorial differences as well as gender and age-specific patterns to inform policy and programming decisions.

Approach:

Hospitalizations and day surgeries caused by alcohol were selected from administrative databases in general, psychiatric and day surgery facilities. Data was gathered from all provinces and territories in Canada for 3 years, from 2015 to 2018. Reasons for hospitalizations included short-term (e.g. acute intoxication), intermediate term (e.g. alcohol withdrawal) and long-term (e.g. alcoholic cirrhosis of the liver) causes. The rates were age-standardized using 2011 census data and expressed per 100,000 population.

Results:

There were approximately 78,000 hospitalizations from alcohol in 2015-2016, translating to an annual rate of 241 per 100,000 population. This rate has increased by more than 3% over 3 reporting years. A 7-fold variation among jurisdictions was observed in 2015-2016 and grew larger each year. Hospitalization rates for men in 2015-2016 outpaced women (335 vs 151 per 100,000) and that pattern continued. However, the rate for women under twenty-five was higher than for men in 2016-2017 and 2017-2018 (88 vs 87 per 100,000 in 2016-2017 with a wider gap in 2017-2018). Women under forty experienced a large increase in rate of hospitalizations compared to women above forty (15% vs -1%) over 3 years.

Conclusions:

Hospitalization rates from alcohol are on the increase and affect both men and women across the age spectrum. These results should be considered in relation to alcohol policies and programs across the provinces and territories to target responses to address harm from alcohol. High rates in young women deserve attention.

F4.2

Theme: Mental Health

ROOM 504

Intra-provincial variation in mental health services use among Canadian Armed Forces (CAF) spouses posted across Ontario

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

Background and Objectives:

Each year, 12,500 CAF members relocate to a new posting; military families relocate four times as often as non-military families. International data suggest relocations put unique pressures on CAF spouses that affect their mental health and create challenges, including finding mental healthcare providers, navigating unfamiliar healthcare systems, intra-provincial variation in available services, and long wait times for psychiatric care. This study examined intra-provincial differences in mental healthcare use in CAF spouses relocated to Ontario.

Approach:

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

Results:

This study included 3,358 female spouses in CAF families. Across the five geographic regions, the proportion of spouses with at least one outpatient mental health visit did not vary significantly ($p > 0.05$); however, a difference in use of 10% or greater was found between the North East region and the rest of Ontario. Similarly, the percentage of psychiatric hospitalizations didn't vary. The time to first psychiatrist visit did not vary significantly ($p > 0.05$) across the province, although it ranged from 12 months in areas outside the four key regions to 15 months in the South East and North Simcoe regions.

Conclusion:

This is the first study of mental health services use in CAF spouses. We did not identify intra-provincial variation in mental healthcare use following relocation. These findings suggest CAF spouses might be accessing services as needed. However, more research is needed to confirm these results in the military career context.

F4.3

Theme: Mental Health

ROOM 504

You are what you sleep: A path analysis of mediating effects of health behaviours, functional limitations and morbidity on the association between sleep quality and self-perceived health

Presented by: **Stacey Fisher**, PhD Student, Ottawa Hospital Research Institute

Objectives: To delineate the mediating effects of health behaviours (e.g., smoking, drinking, and physical activity), functional limitations and morbidity (e.g., obesity and the presence of chronic conditions) on the association between sleep quality and self-perceived health.

Design: Cross-sectional study of the Canadian Community Health Survey (CCHS).

Setting: Residents in two Canadian provinces of Manitoba and Prince Edward Island captured by the 2013/2014 cycle of the CCHS.

Participants: Adults aged 50 years and older ($n=333,965$).

Main outcome measures: Self-perceived health measured on a 5-point Likert scale with values ranging from '1', for excellent self-perceived health, to '5' (for poor self-perceived health).

Results: The majority of the population rated themselves as having high self-perceived health (87.5%). Of that group 56.1% reported having good quality sleep. In contrast, 39.9% of individuals with low self-perceived health reported good quality sleep. Initial probit regression showed a significant, positive association between high self-perceived and good quality sleep ($\beta=0.393$, 95% CI 0.202 to 0.585, $P < 0.001$). Factors that were associated with poor self-rated health include being a current smoker ($\beta=-0.356$, 95% CI -0.564 to -0.148, $P < 0.001$), physical inactivity ($\beta=-0.291$, 95% confidence interval -0.494 to -0.091, $P=0.005$), having functional limitations ($\beta=-0.880$, 95% confidence interval -1.138 to -0.623, $P < 0.001$), being obese ($\beta=-0.272$, 95% confidence interval -0.483 to -0.059, $P=0.011$), and having at least one chronic condition ($\beta=-0.888$, 95% CI -1.209 to -0.595, $P < 0.001$). Subsequent path modelling showed the effects of sleep quality on self-perceived health was partially mediated by physical activity and smoking. Alcohol consumption was not found to have any significant mediating effects on sleep quality and self-perceived health. The relationship between physical inactivity and self-received health is partially mediated by obesity and the presence of chronic conditions. Physical inactivity mediates the relationship between smoking and self-perceived health. ADL limitations partially mediates the association between the presence of chronic conditions on self-perceived health.

Conclusions: Sleep quality and health behaviours have a greater impact on self-perceived health when viewed independently and interdependently. A better understanding of the complex relationship between these health variables could lead to better engagement to improve health and wellbeing in an aging population.

F4.4

Theme: Mental Health

ROOM 504

Concordance between diagnosed and self-reported mood and anxiety disorders among migrant populations and ethnic minority groups in Ontario

Presented by: **Jordan Edwards**, PhD Candidate, Western University

Objectives: The proposed project will examine the concordance between self-report measures and clinical diagnoses of mood and anxiety disorders in migrant and ethnic minority groups in Ontario, using the linked health administrative data. This linkage will allow us to assess (1) whether estimates of self-reported mood and anxiety disorders are concordant with clinical diagnoses of these disorders; and (2) the socio-demographic characteristics that are associated with concordance between the measures.

Approach: Data on self-reported mood and anxiety disorders will be obtained from the Canadian Community Health Survey, which collects information on health status, health care utilization, and health determinants. This survey has been linked to health administrative databases in Ontario, which we will obtain to assess diagnosed mood and anxiety disorders using a standardized algorithm. We will use standardized differences to compare the distribution of baseline covariates between our concordance groups and will use modified Poisson regression analyses to assess if migrant status, compared to non-migrant status, results in an increase or a decrease in the risk of discordance.

Results: Data analysis and results will be completed prior to CAHSPR.

Conclusion: Estimates from administrative data are essential for informing health service planning. Where contact is made, and how often it's made are important pieces used to inform and improve mental health services among migrant groups in Canada. Understanding the limitations of these databases is a crucial first in this discussion.

F5.1

Theme: Health System Performance (includes quality, safety, efficiency, leadership)

ROOM 503

Hospital care: what are the differences for older adults with dementia?

Presented by: **Alexey Dudevich**, Senior Analyst, Canadian Institute for Health Information

Background

The number of older adults living with dementia in Canada is increasing because of aging population and population growth. Hospital care for the population 65 and over has to adjust to their specific needs. The objective of this study was to identify and describe differences in utilization of hospital care in older adults with and without dementia. The study covers emergency department (ED) use, hospitalization rates, reasons for admission, length of hospital stay, etc.

Approach

We used hospital administrative data housed at the Canadian Institute for Health Information to conduct the study. Patients 65 years of age and over who visited the ED or were admitted to an acute care bed were identified as having dementia if respective ICD-10-CA codes appeared on their hospital record at least once over a four-year period. Analysis of ED visits is limited to Ontario and Alberta while inpatient care analysis includes all Canadian provinces and territories. Jurisdiction-specific prevalence of dementia was obtained from the Canadian Chronic Disease Surveillance system maintained by the Public Health Agency of Canada.

Results

Key differences observed in patterns of hospital use by older adults with dementia:

- Older adults with dementia spend 2.5 hours longer in the ED than those without;

- They are twice as likely to be admitted following an ED visit;

- Hospitalization rates are 65% higher for older adults with dementia than those without, with jurisdictional variation in hospitalization rates ranging from 29 per 100 in Ontario to 41 per 100 in New Brunswick and Quebec;

- Older adults with dementia stay in hospital longer – this difference is greatest in younger age groups;

- Longer stays are associated with Alternate Level of Care (ALC) stays – one out of 5 admissions with dementia includes ALC;

- Older adults with dementia are responsible for about half of all ALC days accumulated by seniors.

Conclusion

This study quantifies the differences in hospital use between older adults with and without dementia. Results of the study may be used by health systems to better plan, coordinate, and organize care for older adults with dementia when they reach the inevitable stage of needing more intense healthcare resources.

F5.2

Theme: Health System Performance (includes quality, safety, efficiency, leadership)

ROOM 503

Time trends in opioid prescribing among Ontario long-term care residents: a repeated cross-sectional study

Presented by: **Michael Campitelli**, Staff Scientist, ICES

Background and Objectives: Opioids are important in pain management, but their use may be associated with adverse events in vulnerable long-term care (LTC) residents. Recent initiatives have focused on improving the appropriateness and safety of opioid prescribing; whether these changes have had an impact on opioid prescribing in LTC is unknown. The objective of this study was to investigate patterns of opioid prescribing over time for non-cancer pain in Ontario LTC residents.

Approach: We used linked clinical and health administrative databases to conduct a population-based, repeated cross-sectional study of Ontario LTC residents aged ≥ 66 years between April 1, 2009 - March 31, 2017. For each resident, we selected their first full clinical assessment per fiscal year. Residents with cancer or who received recent palliative care were excluded. Drug claims overlapping assessment date were used to capture the proportion of LTC residents receiving: any opioid, specific agents, >90 milligrams of morphine equivalents (MME), and opioids co-prescribed with benzodiazepines. Log-binomial regression was used to quantify the percentage change between the 2009 and 2016 fiscal years.

Results: Across an eight year study period, our study population comprised an average of 76,147 LTC residents per year. The prevalence of opioid use among LTC residents increased from 16% in 2009 to 20% in 2016 (percentage change=24%; $p < .001$ MME and the co-prescription of opioids with benzodiazepines decreased by 25% and 30%, respectively).

Conclusion: Trends in opioid prescribing in LTC demonstrate increasing alignment with guideline recommendations, including a large shift towards using hydromorphone, a better tolerated agent in older adults, and prescribing at lower doses. Future work should examine if these changes are associated with better safety and pain management outcomes for LTC residents.

F5.3

Theme: Health System Performance (includes quality, safety, efficiency, leadership)

ROOM 503

Understanding transitions of care in older adults with hip fractures: A qualitative multiple-case study in Ontario

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

Background and Objectives

Transitions in care are a time of vulnerability for both patients and their families. Hip fractures are a leading causes of hospitalizations among older adults and result in an average of 3.5 care setting transitions. System performance for hip fracture care varies between health regions and requires further understanding of the contextual factors influencing care transitions, patient/caregiver experiences, and health and well-being outcomes.

Approach

A multiple-case study design was chosen to compare transitions in care for hip fractures in two contrasting health jurisdictions in Ontario. This study has an integrated knowledge translation learning health systems' approach with ongoing partnerships with system leaders in both health jurisdictions. Regions were selected based on recommendations by our system leader partners for variation in patient populations, system performance and geography. Qualitative interviews are being conducted with patients, their caregivers, clinicians and decision-makers in both jurisdictions. When possible, patients and caregivers are followed through their care journey by sequential interviews. Data collection will stop when theoretical saturation is achieved.

Results

Data collection started August 2018 and is anticipated to be complete by August 2019. To date, 31 interviews have been conducted: 20 with patients and caregivers and 11 with decision-makers and clinicians. Preliminary results suggest three main themes: 1) patient, caregiver and healthcare provider uncertainty; 2) disruptive nature of injury and sudden instability; and 3) caregiver involvement is critical but overlooked by the system. Guided by a learning health systems approach, knowledge translation activities are ongoing through all stages of this study. The intention is to develop a holistic understanding of care transitions for patients with complex health and social needs and system-level factors contributing to these care journeys for health system improvement.

Conclusion

Participants in both jurisdictions experienced similar challenges; however, the barriers and enabling factors influencing optimal care transitions were unique to the local health system. This suggests that solutions and strategies to optimize transitions for these patients should be jurisdiction-specific at the individual, community and system levels.

F6.1

Theme: Home Care & Long Term Care and Aging

ROOM 612

The burden of caregiver distress: a population-based observational study of older adults with additional care needs in Ontario.

Presented by: **Wenshan Li**, student, University of Ottawa

Background and Objectives: Canadians rely heavily on informal caregivers to care for its aging population. Caregiving responsibilities often lead to caregiver distress which, in turn, jeopardizes the quality of care provided and the health of both caregivers and care-recipients. We examined the prevalence and one-year change in caregiver distress in Ontario, described the health profiles and resource utilization of care-recipients based on their caregivers' distress status, and identified factors associated with caregiver distress.

Approach: The cohort consists of Ontario residents, aged over 50 years, with additional care needs and hence given at least one Residential Assessment Instrument-Home Care (RAI-HC) [PT1] [WL2] assessment between January 1, 2007 and June 30, 2015. Using two RAI-HC items to determine if the primary caregiver was distressed at time of assessment [WL3], the proportion of caregivers distressed at baseline and one-year changes in their distress status were determined. We examined how care-recipient demographics, health, resource utilization, and caregiver/caregiving variables differed according to caregivers' distress status. Logistic regression was performed to identify which care-recipient and caregiving variables are associated with baseline caregiver distress.

Results: Caregivers of 24% of 526644 older adults were distressed at initial assessment. Of those with subsequent assessments within one year, caregivers of 12% became distressed, 7% became non-distressed, 19% remained distressed, and 62% remained non-distressed. Higher proportions of care-recipients with distressed caregivers are female, have poorer health, greater functional dependence and behavioural problems, and more ER visits. Higher proportions of distressed caregivers are spouses and living with care-recipients, unable to increase care, and dissatisfied with family support. Care-recipients' mental/cognitive status had the strongest associations with caregiver distress (ORs: 1.48-2.19), followed by their socio-demographics and functional status (ORs: 1.10-1.84). Most disease diagnoses, except for Alzheimer's/dementia, showed weak/no associations. Caregiver-recipient relationship/cohabitation and receipt of family support are strongly associated (ORs: 1.41-4.22), while caregiving load is not.

Conclusion: These results provide an overview of the burden and progression of caregiver distress, and highlight how different care-recipient profiles are associated with caregivers' distress status and progression. Ongoing analyses will examine older adults cared by distressed versus non-distressed caregivers longitudinally to determine if their health outcomes and care transitions differ.

F6.2

Theme: Home Care & Long Term Care and Aging

ROOM 612

Financial risk protection for informal caregivers of community-dwelling dependent seniors: a comparative analysis of three welfare states (Ontario, France and England)

Presented by: **Husayn Marani**, Doctoral Student, University of Toronto, Institute of Health Policy, Management and Evaluation

In Canada, dependent seniors are increasingly choosing to age at home instead of in a long-term care facility. Ontario evidence suggests this has shifted the responsibility of care and its associated monetary costs to unpaid, informal caregivers (family members). This study explores how Ontario compares to France and England in terms of financial risk protection for informal caregivers of community-dwelling dependent seniors, and what policy lessons Ontario can learn from, or share with, these jurisdictions.

This study utilizes descriptive comparative methodology using publicly available policy documents to understand the similarities and differences in the financial risk protection policies for informal caregivers in the three jurisdictions. I draw on Esping-Andersen's welfare regime (or state) typology to select three cases that provide variation in welfare state types, and to examine the connection between broader notions of social protection for citizens and the system of financial protection of informal caregivers. I applied an institutional approach to comparing these states to further understand how design features of financial risk protection mechanisms may contribute to inequities in coverage.

Results reveal two broad mechanisms to financially protect informal caregivers in the three jurisdictions: cash allowances and tax credits. Inequities in coverage can be linked to certain design features of these mechanisms, for example, eligibility and means-testing criteria for cash allowances (France), and restrictions on receiving additional financial protections for those who qualify for cash allowances (France) and tax credits (Ontario and England). Overall, France's system of financial protection is congruent with its historically conservative notions of social welfare; however, less congruency exists in England and Ontario, which are classically liberal welfare states. A liberal state accepts an active role in the universal social welfare of its citizens, yet, in Ontario, provincial and federal tax credits appear insufficient at protecting informal caregivers from financial risk.

This analysis demonstrates how similar and differing welfare states acknowledge their role in protecting informal caregivers from financial risk, and highlights areas for improvement. Findings suggest that Ontario may want to consider a non-means-tested cash allowance alongside existing tax credits to facilitate choice among caregivers and improve equity in coverage.

F6.3

Theme: Home Care & Long Term Care and Aging

ROOM 612

Measuring What Matters: Capturing Client and Caregiver Home Care Experiences to Inform Survey Re-Design

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

Background and Objectives- Improving care and experiences for people and their caregivers is a key priority among policy makers across Canada. The objective of this research was to understand the homecare experiences of clients and family caregivers across Ontario to inform the development of client and caregiver homecare experience surveys. Too often, measurement tools are developed without the input of the user, and thus, runs the risk of failing to capture the things that matter most to people.

Approach- We conducted a combination of interviews and focus groups with 28 home care clients and caregivers across Ontario between May and October, 2018. Our guiding research questions were: “What matters most to home care clients and caregivers?” and “How can we best measure their home care experiences?” We purposively sampled a range of clients and caregivers including those from northern and southern Ontario, short and long stay homecare clients, caregivers of pediatric and elderly clients as well as those who were French Speaking. Interviews and focus groups were audio-recorded, transcribed verbatim and analyzed using qualitative descriptive methods.

Results- Core categories identified by clients and caregivers as being pertinent to experience that should be measured were: organization of care (e.g., coordination, continuity and scheduling; knowing what’s available; and access); quality of care (e.g., variability of quality between homecare providers, programs and regions); relevancy of care (alignment of services with personal needs); and personal impacts of care (e.g., personal costs; willingness to advocate; and experiences of stigma). Measurement considerations suggested by clients and caregivers included developing survey questions that were specific enough to be actionable; including open ended questions to capture context/detail; being mindful of the variability in homecare experiences; diversifying survey collection methods; and being accountable to survey findings.

Conclusion- As we endeavor to develop home care experience surveys for clients and caregivers, it is important that we not only consider what is meaningful (addressing the core components of home care) but what is actionable (detailed enough to allow a funder or provider to respond).

F6.4

Theme: Home Care & Long Term Care and Aging

ROOM 612

Extra activities reported by home care personal support workers and implications for additional service needs

Presented by: **Susan Jaglal**, Professor, University of Toronto

Background and Objectives

Personal Support Workers (PSWs) are often the closest link between home care clients and the health and social care system. PSWs’ frequent visits provide a unique opportunity to identify clients’ unmet needs, before gaps lead to crises that trigger hospitalization or institutionalization. However, arranging additional formal supports can be difficult, so many PSWs fill these gaps themselves. This study sought to identify types of care that PSWs provided which fell outside clients’ formal care plans.

Approach

This analysis uses data from a year-long prospective cohort study of PSWs employed by a large home care service provider organization in Ontario. Workers from two regions were invited to participate in a series of web-based surveys, which collected information about any care delivered to clients that went beyond the formal care plan.

An emergent coding scheme was developed and applied by two coders to classify the nature of each care activity. Care activities were categorized as social care, health care, added skills, or high-risk activities by two nurses with expertise in PSW care assignment.

Results

Of the 222 PSWs who completed at least one weekly survey, over half reported performing additional care activities. The nature of the additional care activities included medical care, personal care, mobility, nutrition, cleaning, finding/moving objects, home maintenance, instrumental activities outside the home, and providing emotional support. Most activities reported fell within PSWs’ accepted scope of practice, even if they were not listed on clients’ formal care plans. The majority of activities were social in nature, rather than health care related.

Of concern were participants who reported providing care that requires additional teaching or formal delegation for PSWs to perform. Further, a number of participants reported performing activities outside their scope of practice that may place them in positions of high physical, social and/or legal risk.

Conclusion

Our findings show many PSW working informally to address clients' unmet needs, sometimes in ways that may place themselves and clients at risk. There is an opportunity to leverage PSW observations to update care plans and/or trigger referrals to appropriate services to improve quality and safety in community-based care.

F7.1

Theme: Maternal and Child Health

ROOM 613

The Overlap Between the Child Welfare and Youth Justice Systems in Manitoba, Canada

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

Background and Objectives: The province of Manitoba has one of the highest rates of children taken into care of child welfare services (Child and Family Services (CFS)) in the world, and also one of the highest youth incarceration rates in Canada. Our objective was to quantify the extent of the overlap between these two systems: having a history of CFS during childhood (0-17 years) and being charged with a crime as a youth (12-17 years).

Approach: We linked CFS, Justice, and Population Registry data from the Manitoba Population Research Data Repository at the Manitoba Centre for Health Policy. Using a cohort approach, we selected all individuals born in 1994 (N=25,699); those not in the province at any time from 12-17 years were excluded (final cohort=18,754). The cohort was divided into 3 groups according to CFS involvement: any CFS out-of-home care (1,483); any CFS in-home services but never in care (3,367); never any CFS (13,904). Criminal charges between 12-17 years were identified. Population registries were used to identify First Nations children/youth and Metis children/youth within the cohort.

Results: 7.9% of our cohort had CFS out-of-home care, 18.0% received CFS in-home services, and 74.1% had no CFS involvement. 8.4% of the cohort were charged of a crime between 12-17 years. Over one-third (36.4%) of youth who had CFS out-of-home care had criminal charges, compared to 14.9% of youth who had CFS in-home services, and 4.4% of youth with no CFS. Despite accounting for only 7.9% of the cohort, youth who had out-of-home care accounted for 34.2% of youth with criminal charges. First Nations (FN) and Metis children/youth were over-represented in both systems; for example, 30.4% of FN youth had been in care compared to 3.4% of non-Indigenous children/youth; and 28.5% of FN youth were charged with a crime compared to 4.4% of non-Indigenous youth.

Conclusions/Implications: There is substantial overlap between the child welfare and youth justice systems, with overrepresentation of Indigenous youth in both systems. Culturally appropriate programs and policies aimed at supporting parents and families to care for their own children will likely have long-term impacts on the youth justice system.

F7.2

Theme: Maternal and Child Health

ROOM 613

How Universal Are Universal Pre-School Screens? Evidence from New Zealand

Presented by: **Richard Audas**, Associate Professor, Memorial University of Newfoundland

Background and objectives

Early identification of children who are falling short of key developmental milestones is an important public health initiative. Pre-school health checks are used throughout the developed world to identify children that are at-risk and offer interventions to remediate these, which should narrow the gap. However, despite these screens being universally available, uptake is generally less than 100%. We examine whether non-participation can be predicted using a range of demographic and socio-economic variables.

Approach

In New Zealand, children are requested to participate in the B4 School Check (B4SC) – a wide ranging pre-school health and developmental screen after their fourth birthday. Using the Statistics New Zealand Integrated Data Infrastructure – a whole of population, whole of government database - we construct a population denominator that allows us to determine who the resident population is at any given point in time. By linking participants to the appropriate population denominator, we can determine who did, and did not participate in the B4SC. This can be further linked to a wide range of other data sources.

Results

We found that participation rates varied for each component of the B4 School Check (in 2014/15 91.8% for Vision and Hearing tests (VHT), 87.2% for nurse checks (including height, weight, oral health, SDQ, PEDS) and 62.1% for Teacher SDQ (SDQT)), but participation rates for all components increased over time.

While overall participation in the B4SC is over 90%, there are significant predictors of non-participation. We find that children who identify as Māori or Pasifika, children from socioeconomically deprived areas, with younger mothers, from rented homes, residing in larger households, with worse health status, and with higher rates of residential mobility were less likely to participate in the B4 School Check than other children.

Conclusion

The patterns of non-participation suggest a reinforcing of existing disparities, whereby the children most in need are not getting the services they require. There needs to be an increased effort by public health organizations, community and family to ensure that all children are tested and screened.

F7.3

Theme: Maternal and Child Health

ROOM 613

The Cost-effectiveness of Screening Tools Used in the Diagnosis of Fetal Alcohol Spectrum Disorder: A Modelled Analysis

Presented by: **Patrick Berrigan**, research associate, University of Calgary - School of Public Policy

Focus: Maternal and Child Health

Methods: Economic Analysis

Background and objectives: Fetal Alcohol Spectrum Disorder (FASD) refers to a range of disorders characterized by physical and neurological abnormalities resulting from prenatal alcohol exposure. Though diagnosis can help patients receive appropriate treatment and improve outcomes, the diagnostic process can cost as much as \$5,000/child. Due to cost, screening children suspected of FASD prior to diagnostic testing is recommended, to avoid administering testing to children who are unlikely to receive a diagnosis. This study assesses the cost-effectiveness of existing FASD screening tools.

Approach: The screenings tools included in this study were chosen from Children's Healthcare Canada's National Screening Toolkit for Children and Youth Identified and Potentially Affected by FASD. Tools were chosen from the toolkit based on two criteria: i) the cost of administering the screening tool was available and ii) the diagnostic accuracy (sensitivity and specificity) of the screening tool to FASD was available. A review of literature revealed sufficient information to assess the cost-effectiveness of two tools from the toolkit, meconium testing and the neurobehavioral screening tool (NST). An economic model was constructed, to estimate the cost-effectiveness of these tools.

Results: Both of the screening tools evaluated resulted in cost savings and fewer diagnoses than a no screening strategy in which all children suspected of FASD receive diagnostic testing. Screening newborns with meconium testing resulted in a cost savings of \$69,676 per 100 individuals screened and approximately five fewer diagnoses, corresponding to an incremental cost-effectiveness ratio (ICER) of \$13,891. Screening children over four with the NST resulted in a cost savings of \$131,136 per 100 individuals screened and approximately nine fewer diagnoses, corresponding to an ICER of \$14,092. Probabilistic analysis indicated a greater than 90% probability of cost-effectiveness at a willingness-to-pay for an FASD diagnosis of up to \$10,600 for meconium testing and \$11,800 for the NST.

Conclusion: To our knowledge this is the first study to assess the cost-effectiveness of FASD screening tools. Findings can provide guidance to physicians and decision-makers evaluating which screening tools to use and the extent to which screening in general should be used in their jurisdictions.

F7.4

Theme: Maternal and Child Health

ROOM 613

Recherche collaborative pour l'équité et l'optimisation de services d'éducation prénatale

Presented by: **Geneviève Roch**, Full professor, Université Laval

En réponse aux enjeux d'harmonisation conséquents aux dernières restructurations du système de santé québécois et à l'évolution des besoins des futurs parents, l'adéquation et l'équité des services d'éducation prénatale de groupe (ÉPG) sont questionnés. Objectifs : Caractériser les zones de dessertes des services d'ÉPG dispensés par des établissements intégrés de santé et de services sociaux (ÉISS). Dégager avec les décideurs les iniquités potentielles servant d'assise à l'optimisation des services destinés aux futurs parents. Méthode : En s'appuyant sur le cadre de référence PROGRESS et une approche de recherche collaborative, un «environmental scan» et des analyses de zones de desserte ont permis de caractériser l'organisation, le format et le contenu des services d'ÉPG dispensés par deux ÉISS et d'en dégager les facteurs d'iniquité. Pour ce faire, les constats issus de l'analyse de sources documentaires (N=104), d'entrevues auprès d'infirmières (N=26) et d'une analyse géographique des 25 sites d'ÉPG de deux territoires ont été intégrés. Sur la base de ces constats intégrés, des pistes d'optimisation ont été identifiées en partenariat avec des décideurs politiques, des gestionnaires et cliniciens. Résultats : Des 25 sites d'ÉPG documentés, cinq ont misé sur un regroupement de leurs ressources, une majorité offrait 4 séances et couvrait 10 thématiques. Des variations quant à l'organisation (ex. : coûts, accès), au format (ex. : 2 à 6 séances) et au contenu (ex. : nombre de thématiques abordées, temps alloué) ont été identifiées comme principaux lieux d'harmonisation. En matière d'iniquité liée au lieu de résidence, 16 sites sont inaccessibles en transport en commun et la distance maximum entre deux lieux physiques de prestation étant de 100km, certains participants doivent parcourir jusqu'à 50km en voiture, pour s'y rendre. L'offre est uniquement en français (iniquité linguistique), 8 sont payantes (iniquité socioéconomique), mais une majorité font appel à des organismes communautaires (mesure favorisant le développement du capital social). Conclusion: Ces résultats ont permis aux décideurs d'engager des changements visant l'optimisation et l'harmonisation des services d'éducation prénatale. Ils pourront contribuer à alimenter d'autres prises de décision visant la réduction des inégalités et la consolidation des services au bénéfice de la santé de toutes les familles.

F8.1

Theme: Patient Engagement

ROOM 502

Patient Engagement in Developing Core Outcome Sets for Rare Disease

Presented by: **Maureen Smith**, Patient, Canadian Organization for Rare Disorders

Background and objectives: As patient partner investigators, we led the patient engagement activities for a research study to develop Core Outcome Sets for two rare pediatric diseases, phenylketonuria (PKU) and medium-chain acyl-CoA dehydrogenase deficiency (MCADD). To ensure that future PKU/MCADD research is geared towards outcomes that are meaningful to patients and families, integrating their perspectives in this study was critical. We identified and designed strategies to address barriers to engaging with patients and families throughout.

Approach : This study involved an evidence review; a Delphi consensus survey to ascertain the views of patients/families, health care providers, and policy decision-makers; and a final multi-stakeholder workshop. We assembled a 6-member Family Advisory Forum (FAF) who received in-person training and regular on-going communication. Given that scientific terminology surrounding outcomes was identified as a barrier, FAF members reviewed survey materials to ensure they were relatable and understandable to the target audience. Following a pre-workshop preparation session, FAF members also participated in the final workshop, contributing to the discussion and voting on the final outcomes for each Core Outcome Set.

Results : Engagement with patient/family partners and advisors led to meaningful changes to the study methods, including clarifying survey materials and simplifying the presentation of Delphi findings. Thirty-seven parents and 16 clinicians or policy decision-makers completed all three rounds of the Delphi survey. At the final workshop we presented survey results for parent participants separately to ensure their full consideration. Four FAF members and both patient partner investigators participated in the workshop together with researchers and clinicians. We used an adapted nominal group technique to provide an equal opportunity for all workshop attendees to contribute to the discussion. On a post-workshop survey, all FAF members who participated agreed or strongly agreed that they were able to express their views freely and felt their input was considered.

Conclusions : A patient engagement approach guided by patient partners is valuable and acknowledges that patients/caregivers are experts in the disorders they live with. This design can be reproduced to develop Core Outcome Sets for other rare diseases, allowing the patient perspective to influence the direction of future research projects.

F8.2

Theme: Patient Engagement

ROOM 502

Working Together: Co-designing Priorities for Patient-Oriented Cardiovascular Research by Patients, Clinicians, and Researchers

Presented by: **María José Santana**, Assistant Professor, Cumming School of Medicine, university of Calgary

Background

As users of the healthcare system, patients hold vital information for the improvement of delivery of care. Patient-oriented research (POR) provides a collaborative model that involves working with patients in research programs to improve health and healthcare. The aim of this study was to identify barriers to CV POR activities and priorities for cardiovascular (CV) health research through a collaboration of patients, family members, clinicians, and researchers.

Approach

This is a qualitative descriptive POR study. Participants included patients with CV disease, their family caregivers, clinicians, and researchers. Recruitment flyers were shared with healthcare providers, clinic managers of outpatient clinics and tertiary healthcare centers in Alberta, and also posted on social media. Clinicians-researchers from the Person to Population Cardiovascular Research Collaborative at the Libin Cardiovascular Institute were invited to participate. During a two-day "Working Together" workshop, participants were introduced to POR, discussed barriers and associated solutions to conducting CV POR, and identified CV research priorities. Data collection included video-recordings, flip-charts and notes documenting discussions. Data were thematically analyzed in an iterative process by the group.

Results

A total of 23 participants attended the workshop including patients and family caregivers (n=12), as well as clinicians and researchers (n=11). The CV health research priorities co-developed by participants included: (1) CV disease prediction and prevention; (2) Access to CV care; (3) Communication with providers; (4) Use of eHealth technology; (5) Patient experiences in healthcare; (6) Patient engagement; (7) Transitions and continuity of CV care; (8) Integrated CV Care; (9) Development of structures for patient-to-patient support; and (10) Research on rare heart diseases. Participants also identified four barriers to CV POR, including lack of awareness of the existence of POR and poor understanding of the role of patients.

Conclusion

This workshop generated high priority areas for future CV research that is relevant patients, their family members, clinicians, and researchers. Future CV research projects and programs of work building off these POR generated priorities may result in research outcomes that are more relevant to both patients and clinicians.

F8.3

Theme: Patient Engagement

ROOM 502

Engaging Patients and their Caregivers to Develop a Patient-informed eHealth Solution for Pediatric Population: Novelty of KidsPRO

Presented by: **Sumedh Bele**, PhD Student, University of Calgary

Background:

KidsPRO, an innovative eHealth solution is currently being developed to support and facilitate the integration of Patient-reported Outcomes (PROs) into routine care of chronically ill patients at the Alberta Children's Hospital (ACH) outpatient clinics. KidsPRO will be piloted at the ACH asthma clinic and will be available to pediatric patients and their family caregivers on mobile devices, tablets, and desktop applications. This study showcases a novel approach of engaging patients to develop an eHealth solution.

Methods and analysis:

Based on the International Association for Public Participation's Public Participation Spectrum, a group of patient/family-partners (a diverse group of current patients and their family-caregivers) has been established. This group will be consulted to seek their input throughout the project including selection of the PROMs, design of the KidsPRO system and development of KidsPRO training modules for patients and their family caregivers. Priority-setting activities such as consultation sessions will be organised to active and meaningful collaboration between researchers and patients. This study also incorporates innovative recruitment strategy such as videos introducing KidsPRO and recruiting study participants and patient/family-partners.

Results:

This project is in progress, and results will be available to present in May 2019, at the time of the Annual Meeting in Halifax. Novelty of this project lies in the way patients and their family caregivers are engaged throughout the process of developing KidsPRO as a patient-centered healthcare solution. Our project will demonstrate the process of engaging patients which could serve as a standard guide for patient engagement for designing patient-centered healthcare solutions around the world.

Conclusion:

Many eHealth solutions are developed and implemented without engaging patients in their development process but in KidsPRO project, patient/family-partners will play crucial role in developing KidsPRO system. This study will enhance the understanding of engaging pediatric patients and their family caregivers as the partners in health services research.

F8.4

Theme: Patient Engagement

ROOM 502

Engaging Family Caregivers and Health-System Partners to Identify how Primary Health Care Can Engage with Critical Community Supports to Provide Community-Based Palliative Care: A Realist Review

Presented by: **Grace Warner**, Associate Professor, Dalhousie University

Background and Objectives

Primary Health Care (PHC) plays a key role in the delivery of community-based palliative care including connecting patients and family to critical community supports and services early in their trajectory toward end-of-life. The objective of this realist review was to partner with family caregivers and health-system partners to synthesize the literature on how case management mechanisms facilitate connections to critical informal/formal community services and supports to improve the delivery of community-based palliative care.

Approach

A realist review guided by the RAMESES protocol was used. Iterative phases of the realist review process included identifying and screening the research literature, reflecting on realist review methodology, consultation processes and semi-structured interviews with family caregivers and health-system partners. Using a realist review approach allowed the research team to circumvent a positivist approach to literature synthesis through meaningful and sustained engagement of family and health-system partners. This engagement stimulated the research team to critically reflect on how health system issues are viewed by family caregivers and how they can be addressed at multiple levels.

Results

The team is extracting data from 50 of 2959 screened articles to explore program theories. Articles rarely identified critical community supports that help patients remain in the community, or how to involve patients/families in care planning. Two key directions surfaced during our study: the importance of health care provider training and communication in the delivery of palliative care, and the value of intersectoral information sharing and monitoring of family-centred plans to improve care coordination for patients and family caregivers across health care settings and throughout the palliative trajectory. The engagement of family caregivers and health-system partners played an essential role in identifying critical community supports and desired outcomes. It kept the team grounded in what patients and family caregivers value and what is feasible.

Conclusion

Findings support the implementation of case management mechanisms to better integrate community-based palliative care and to address the complex needs of patients facing end-of-life and their caregivers. Family caregivers play a foundational role in identifying critical supports that reflect their values and needs in end-of-life care.

F9.1

Theme: Knowledge Translation & Exchange (includes KTE methods)

ROOM 501

Understanding Public Policy Priorities for Childhood Disabilities in Canada Through Computational Text Mining of Public Consultation Data

Presented by: **Keiko Shikako-Thomas**, Assistant Professor, McGill University

In 2017 the government of Canada conducted the largest stakeholder consultation of history, inquiring Canadians to provide their input on what were the pressing issues related to making Canada "Accessible to all". This consultation aimed at informing the development of the "Accessibility Legislation" now in development as the Bill- 81 "The Accessible Canada Act". The stakeholder consultation followed an extensive and highly inclusive approach to consultations, including open public consultations across all major Canadian cities, youth forums, an online survey, in addition to opportunities for free submission by experts, advocacy groups, and persons with disabilities themselves. The consultation materials opened a historic opportunity to access the opinions of stakeholders across Canada about a diversity of factors related to disability in general, under the broad umbrella of Accessibility. While some of this material is being considered in the development and iterations of the Act, a wealth of additional information that may not apply to the federal legislation development may be revealed in the over 10,000 sources submitted during the consultation period. In an agreement with the Office for Disability Studies, we requested access to this information with a specific interest in identifying the priorities and aspects related to human rights for the population of children with disabilities in Canada. Over 500,000 Canadian children have some type of disability, and several health and education, civil society, and other organizations, as well as youth and families and experts in the field, may have contributed to raising important topics related to the needs of children with disabilities and their families in the context of creating a fully accessible country for all. In partnership with the Institute on Disability Policy based at American University, we are conducting computational text mining on these documents, to identify specifically child-related factors that can inform research, services, and policy for children with disabilities in Canada. Categorization models will capture articles in the UN Convention on the Rights of Persons with Disabilities and UN Convention on the Rights of the Child to assess the relationship between Canadian public policy preferences and existing UN conventions.

F9.2

Theme: Knowledge Translation & Exchange (includes KTE methods)

ROOM 501

Knowledge Translation & Policy Innovation: How Policy Education Programming Can Foster Innovation in Healthcare for the Aging

Presented by: **Candice Pollack**, Manager, AGE-WELL National Innovation Hub APPTA

Both researchers and government policy-makers value the importance of scientific evidence informing policy, yet the knowledge translation gap in the Canadian healthcare system remains between 14-17 years. Somewhere, there is a disconnect between the innovative research being conducted across the country, and the policy development process happening at the provincial, territorial, and federal levels.

AGE-WELL, Canada's aging and technology network, and the AGE-WELL National Innovation Hub: Advancing Policies and Practices in Technology and Aging (APPTA) are working to bridge the gap between health services research and implementation by delivering policy education programming to research trainees and providing structured opportunities for the formation of research-policy partnerships.

This presentation will set out the underlying challenges of knowledge translation (KT) in policy decision-making, as well as cover three policy education programs (PEP) launched by AGE-WELL & APPTA. The programs covered include the Visions for Change National Policy Challenge, where trainees are invited to answer policy questions submitted by government stakeholders, the Mobilizing Research in Aging Policy Internship Program, where undergraduate students are mentored through the process of developing a policy option, and the PEP Talks Program, an e-learning series that builds researchers' capacity to develop a policy brief on their research findings and prepare a presentation to government stakeholders. Each program will be covered in detail, identifying their methodology, core components, and expected outcomes in order to illustrate the role of KT education in health policy decision-making.

F9.3

Theme: Knowledge Translation & Exchange (includes KTE methods)

ROOM 501

Experience of health leadership in partnering with university based researchers in Canada – challenge to assumptions, barriers to effective collaboration, and call to action.

Presented by: **Ingrid Botting**, Assistant Professor, University of Manitoba

Background and Objectives: Emerging evidence that meaningful relationships with knowledge users are a key predictor of research use has led to promotion of partnership approaches to health research. However, little is known about health care leaders' experiences and perspectives of collaborations with university-based researchers focused on health system design and services organization, what makes them effective, and how to improve effectiveness.

Approach: In-depth, semi-structured interviews (n=25) were conducted with senior health personnel across Canada to explore their perspectives on health system research; experiences with health organization-university research partnerships; challenges to partnership research; and suggested actions for improving engagement with knowledge users and promoting research utilization. Participants were recruited from organizations with regional responsibilities, as opposed to specific institutions. An Advisory group of Senior Health Leaders (CEO level) from across Canada provided guidance in the development of this study and the interpretation of findings.

Results: Research is often experienced as unhelpful or irrelevant to decision-making, quality improvement or evaluation by many leaders within the system. Barriers to partnership differ from those identified in the literature. Instead, major barriers are organizational stress and restructuring, along with limitations in readiness of researchers to work in the fast-paced health care environment. Although the need for strong executive leadership was emphasized, "multi-system action" is needed for effective partnerships. This action requires fundamental changes, including how researchers work with the health system, health research funding and practice, and leadership by provincial governments.

Conclusion: Lack of responsiveness to health system needs may contribute to research collaborations with university researchers and resulting 'evidence-informed' practice being further marginalized from and underutilized in health care operations. Interventions to address barriers must respond to the perspectives and experience of health leaders, and require radical rethinking of what is meant by "research" and inter-system action.

F9.4

Theme: Knowledge Translation & Exchange (includes KTE methods)

ROOM 501

Evolution of an Approach to Rapidly Synthesizing Evidence About Pressing Health-System Issues

Presented by: **Michael Wilson**, Associate Professor, McMaster Health Forum

Background and Objectives:

Rapidly synthesizing evidence is critical for supporting evidence-informed policymaking about health systems. Since 2013 we have developed, implemented and iteratively refined a rapid-response program at the McMaster Health Forum that has (in days or weeks) identified and synthesized evidence for Canadian policymakers and stakeholders about more than 50 pressing health-system issues. Our objective was to document the evolution of this program to provide insights for others interested in rapidly synthesizing evidence.

Approach

We used a multi-method approach to document how and why our rapid-response program has evolved and to identify current and future challenges faced in efforts to provide robust yet rapidly synthesized evidence to inform pressing health-system issues. This included a detailed internal program review that was based on internal documentation and interviews with staff, a documentary analysis of products produced through the program and a focus group with those involved in the administration and scientific aspects of running the rapid-response program.

Results

Our experience with conducting rapid syntheses has evolved to: 1) incorporate longer timelines (e.g., 60- or 90-day requests); 2) address both health- and social-system issues; 3) better accommodate the types of complex questions often asked by policymakers (e.g., that synthesize evidence about policy problems, options, implementation considerations, and monitoring and evaluation plans); 4) expand the types of evidence and insights synthesized (e.g., by drawing on systematic reviews and primary studies, as well as from policy documents and key informant interviews); and 5) conduct and integrate multiple types of analyses such as policy, systems and political analysis.

Conclusion

While our approach to conducting rapid syntheses remains underpinned by a commitment to being systematic and transparent in identifying and synthesizing evidence and insights for health- and social-system leaders it has evolved in a way that allows us to go farther, faster in responding to urgent requests.

F10.1

Theme: Primary Health Care

ROOM BALLROOM 2

The Case Management Challenge: A systematic review and thematic synthesis of barriers and facilitators to case management in primary care

Presented by: **Matthew Hacker Teper**, MSc Student, McGill University

Background: In response to an aging global population with increased chronic illness, case management (CM) has emerged as a powerful innovation to address the health challenges of patients with complex needs. Despite growing evidence on the benefits of CM for the care of these patients, implementation of CM in primary care has been challenging worldwide. There remains a dearth of synthesis of evidence surrounding the barriers and facilitators to conducting CM, especially in primary care settings.

Approach: A systematic review and thematic synthesis of qualitative findings was conducted. In collaboration with an academic medical librarian, three electronic databases (OVID Medline, CINAHL, Embase) were searched for qualitative and mixed-methods studies related to factors (barriers and/or facilitators) affecting CM in primary care. Titles, abstracts and full texts were screened and selected. Included studies were assessed for quality. Every step was conducted by two researchers. Results from included studies were synthesized according to the method of Thomas and Harden (2008).

Results: Of the 1572 unique records initially located, 19 studies, originating from six countries, met the inclusion criteria. Nine factors affecting the ability of primary care teams to conduct CM were identified: "Family Context", "Policy and Available Resources", "Physician Buy-In and Understanding of the Case Manager Role", "Team Communication Practices", "Training in Technology", "Relationships with Physicians", "Relationships with Patients", "Time Pressure and Workload", and "Autonomy of Case Manager". These factors are described, then presented in a schematic representation designed to demonstrate the relationships between factors. Policymakers should devote special attention to developing infrastructure that encourages colocation of clinicians; providing training in efficient technologies for patient assessment and care coordination; and working with clinicians to determine the resources required to meet patient and staff needs.

Conclusion: Understanding these barriers and facilitators may allow for the development of policy- or clinic-level interventions to improve CM function and, by extension, to provide better care for patients with complex needs. Such findings may be relevant to researchers, clinicians or managers doing CM, and to policymakers designing CM programs.

F10.2

Theme: Primary Health Care

ROOM BALLROOM 2

Moving towards meaningful health care performance reporting in primary care: using population segments

Presented by: **Kimberlyn McGrail**, Associate Professor, Centre for Health Services and Policy Research, UBC

Background and objectives

As interest and investment in performance measurement and reporting continues to increase, organizations are aiming to enhance the usefulness and actionability of performance information. One emerging approach is to compare health system performance by "segments" of the population with similar characteristics and expected health services needs. The objective of this work was to implement a framework for population segmentation for the purposes of performance measurement in primary care.

Approach

Information from encounters with the health system were used to classify the population of British Columbia, Canada into one of four population segments based on expected health services needs: low need, multiple morbidities, medically complex, and frail. Each segment was further classified using socioeconomic status (SES) as a proxy for patient vulnerability. We examined primary care use, health care costs, and selected quality measures (access, continuity, coordination) by segment and used logistic regression analyses to examine predictors of costs in each segment.

Results

Of the 3.4 million people meeting eligibility criteria, the majority (82%) were in the low need segment; frail was the smallest segment (2%). Average costs increased steadily from the low need (\$1,386) to frail segment (\$10,637). Differences in primary care quality by segment were minimal when presented as raw data but when quality measures were included in regression models some important differences emerged. For example, accessing primary care outside business hours and discontinuous primary care (defined as 5 or more different GP's in a given year) were associated with higher health care costs across all segments; higher continuity of care was associated with lower costs in the frail segment only (RR=0.61).

Conclusion

Segments created distinct groups of patients with different health care use and cost profiles suggesting they may have some utility for primary care performance measurement and reporting. Our findings demonstrate that variables such as SES and use of regression analyses may be important enhancements to population segments.

Can a Web Tool Help Primary Care Providers Meet Canadian Guidelines for Atrial Fibrillation Management?

Presented by: **Joanna Nemis-White**, Principal, Strive Health Management

Background and Objectives:

Atrial Fibrillation (AF), a common chronic disease, is associated with increased mortality, morbidity and impaired quality of life. Primary care providers (PCPs) face challenges with AF prevention, diagnosis and treatment. Integrated Management Program Advancing Community Treatment of AF (IMPACT-AF) was a cluster randomised trial that tested the efficacy of a web-based decision tool for the management of AF in Nova Scotia primary care. This presentation examines practice patterns at baseline and 12-months versus Canadian guidelines.

Approach:

IMPACT-AF was conducted between September 2014 – January 2018. A broad stakeholder committee (Nova Scotia (NS) Health Authority and Department of Health and Wellness representatives, researchers, academics, front-line providers and patient advocates) provided study guidance. Canadian guidelines and AF management best practices were computerized into a web-based clinical decision support system (CDSS). Recruited PCP clinics were randomized 1:1 (usual care (UC) : intervention (CDSS)). PCPs assigned to the CDSS were trained and requested to use the intervention for 12-months. Post-consent, study personnel abstracted patient charts for AF-related measures at baseline, and 12 months, with baseline data populated into the CDSS.

Results:

203 PCPs and 1145 of their patients participated in the study, approximately 25% of eligible PCPs and 12% of the estimated number of AF patients. (PCPs: 104, CDSS; 99, UC; Patients: 597, CDSS; 548, UC).

At baseline, for those aged > 65 years or at increased stroke risk (according to CHA2DS2-VASc), no antithrombotic treatment was observed in 20% UC and 12% CDSS patients respectively. Overall, 61% UC and 65% CDSS patients received appropriate treatment as per the Canadian Cardiovascular Society AF algorithm for stroke risk management (odds ratio (OR)=1.17 (0.92, 1.49), p=0.198). At 12 months, appropriate treatment improved in both arms: 68% UC, 71% CDSS (OR=1.18 (0.92, 1.52), p=0.195). No significant difference in clinical outcomes was observed at 12 months between study groups.

Conclusion:

IMPACT-AF revealed some care gaps in AF management in NS, however, overall, appropriate care was higher than anticipated. User feedback suggests the CDSS, external to PCP EMRs, was not user-friendly and some prematurely stopped using the tool before study end. Health-related decision support tools should be evaluated before widespread implementation.

CONCURRENT SESSIONS G: FRIDAY, MAY 31, 2019 - 8:30AM – 9:45AM

G1.1

Theme: Access & Equity (includes Indigenous peoples, immigrant and other priority populations)

ROOM 505

Blood Donation Deferral Policy for Men Who Have Sex With Men: A National Community-Based Survey of Awareness and Attitudes

Presented by: **Nathan Lachowsky**, Assistant Professor, University of Victoria

The current policy of restricting men who have had any kind of sex with another man (MSM) in the past year from donating blood in Canada is contested on the basis of discrimination and scientific evidence. Using a community-based research approach working with gay, bisexual and queer men, we sought to determine the level of awareness of key facts informing the current blood donor screening policy and acceptability of policy alternatives currently being debated. We conducted an in-person cross-sectional survey in fifteen cities across Canada from June-September 2018. To be eligible, participants had to live in Canada, be at least 15 years old, and either identify as a non-heterosexual man or report sex with another man in the past five years. Participants were recruited from lesbian, gay, bisexual, queer and transgender (LGBTQ) Pride festival events. self-completed an anonymous paper questionnaire including a set of awareness and attitudinal questions related to blood donor screening and policy alternatives. Data were manually entered, verified, and analyzed in StataSE 13.1 to produce descriptive statistics. Of 3318 participants, 72.2% were aware of the current 1-year deferral policy. Proportions of participants aware of key facts around this policy were lower: all blood donations are tested for HIV (64.1%), donor screening aims to reduce 'window period' infections (43.9%), and MSM have 70 times greater risk for HIV than other men (44.2%). The majority of participants felt the current policy was discriminatory (86.6%). Acceptability of policy alternatives for donor screening were generally high: shorter deferral period for MSM (80.4%), screen by number of sexual partners regardless of gender (78.8%), screen by recency of new sexual partners (77.7%), screen by specific sexual practices with higher HIV transmission risk (76.1%). 92.4% of participants said they would donate in the future if they were allowed. Participants were largely aware of the current 1-year MSM deferral policy, felt it was discriminatory, and agreed that several policy alternatives were acceptable. Using screening questions that more accurately predict HIV risk would enable MSM who have only had negligible-risk sex with another man to contribute to the blood supply.

G1.2

Theme: Access & Equity (includes Indigenous peoples, immigrant and other priority populations)

ROOM 505

Rendering Visible: Is Medical Education Inclusive of LGBTQ+ Health?

Presented by: **Fiona Warde**, Medical Student, Dalhousie University Faculty of Medicine

Authors: Fiona Warde, Jacqueline Gahagan, Robin Parker

Background and objectives (75-word limit)

To achieve health equity for LGBTQ+ communities, medical professionals must be equipped with the knowledge and skills to work effectively with these populations. To achieve this, LGBTQ+ health topics must be included in undergraduate medical training. This scoping review investigates the training and education pertaining to LGBTQ+ health that is provided to undergraduate medical students to explore the extent to which Canada's next generation of doctors is equipped to provide care to these diverse communities.

Approach (100-word limit)

Using the scoping review methodology proposed by Arksey & O'Malley (2005), we searched five databases: ERIC, Web of Science, MEDLINE, PsycINFO, and EMBASE. The search strategies were developed with, and approved by, a health reference librarian, who also assisted with the development of the inclusion and exclusion criteria. Search results were imported into Covidence for assessment, inter-rater reliability of both title and abstract review, as well as at full text review. There was greater than 80% agreement on the papers that met the inclusion criteria.

Results (125-word limit)

A total of 5,143 papers were identified across five databases, after removing duplications. Of those 51 met inclusion criteria following Title and Abstract screening, within which only four related directly to the Canadian context. Following Full text screening, 21 papers met inclusion criteria of which 1 related directly to the Canadian context.

Conclusion (50-word limit)

LGBTQ+ health is underrepresented in undergraduate medical curricula, leaving physicians unprepared to work effectively with LGBTQ+ populations; particularly in specialties where sexual orientation and/or gender identity do not contribute to patient's presenting medical complaints. We therefore propose establishing LGBTQ+ health education as an accreditation standard for undergraduate medical programs.

G1.3

Theme: Access & Equity (includes Indigenous peoples, immigrant and other priority populations)

ROOM 505

Applying a sex/gender-based analysis in support of psychologically healthy workplace policy

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

Background and objectives

Women, men and gender-diverse people have diverse experiences and outcomes in relation to mental health and psychological well-being. However, the complex nature and role of sex/gender on health, and lack of analytic guidance has meant that sex/gender based analysis (SGBA) of mental health and psychological well-being in the workplace has rarely been undertaken. This presentation describes a Canadian Institutes of Health Research (CIHR)/Health Canada (HC) Policy-Research Partnership project designed to address this gap.

Approach

CIHR and HC established Policy-Research Partnerships to respond to SGBA knowledge gaps for policy development and positive health outcomes. Our partnership of academics and employees blended academic, professional and expert knowledge of SGBA, psychological health and the workplace. One research stream, focusing on developing training and education for SGBA and psychological health and safety in the workplace, utilized joint meetings, consultation, reviews of the academic and grey literatures, stakeholder interviews, and knowledge dissemination through a national webinar. The second stream studied a national employee assistance program's (EAP) processes systematically to identify opportunities for the application of a sex/gender lens.

Results

While there are useful tools, guidelines and standards in the literatures on workplace psychological health, discerning who benefits or is excluded is unclear: SGBA assists in improving policy and health equity by reviewing the notion of 'gender-neutral', replacing it with sensitivity to sex, gender and intersecting identities (e.g. age, ethnicity and sexual orientation). The EAP study showed key process points for identifying and addressing SG-related gaps and possible health inequities, including underutilization of EAP services by groups that are high-risk or less likely to seek help. Targeted population outreach, staff training, and alternative methods of delivery may enhance EAP performance and service quality. Dissemination and uptake of evidence on SGBA of psychological health in the workplace looks promising for policy development and positive health outcomes.

Conclusions

Partnership approaches are well-suited to combining different types of knowledge, and assuring policy applicability in different contexts. SGBA of mental and psychological health in the workplace suggests that rethinking 'gender-neutral' approaches is required to enhance policy for positive health outcomes and improved health equity.

G1.4

Theme: Access & Equity (includes Indigenous peoples, immigrant and other priority populations)

ROOM 505

The effect of gender inequity on HIV incidence in sub-Saharan Africa

Presented by: **Drissa Sia**, Professeur Agrégé, Université du Québec en Outaouais (UQO)

Background and objectives: In many Sub-Saharan Africa (SSA) countries, women are at higher risk of HIV infection compared to men. Although gender inequalities in the burden of HIV/AIDS are well documented in SSA, the contribution of gender inequity has not been quantitatively examined. We aimed to quantify the extent to which country-level trends in HIV incidence in SSA were influenced by gender inequities, measured by gender gaps in educational attainment, income and gender inequality index.

Approach: Our analysis is based on country-level panel data of 24 SSA countries constructed for the period between 2000 and 2016. Using bootstrapping procedure with 1 000 iterations and threshold of 0.05, we applied panel analysis model (OLS pooled, Fixed-effect and Random-effect) to examine the effect of gender inequities on changes in HIV infection incidence. Hausman test was used to choose the appropriate model between Fixed-effect model and Random-effect model.

Results: HIV incidence decreased by nearly one-half over the period from 2000 to 2016. An increase of one unit of gender inequality index increases the number of new cases of HIV by 1.61 adjusting by country-level socioeconomic and governance variables.

Conclusions: Our study suggests that mitigating gender inequities is a potential strategy to reduce HIV incidence in SSA region. Fight against HIV infection needs supporting relevance interventions for promoting gender equity.

G2.1

Theme: Health Human Resources

ROOM 503

Predictive Acuity Based Staffing for Acute Care in Canada

Presented by: **Tracey DasGupta**, Director, Interprofessional Practice, Sunnybrook Health Sciences Centre

Background and Objective

The Canadian Healthcare System is under pressure to create new, efficient, safe staffing models to provide quality care. To enable this transformation, healthcare organizations must be able to anticipate patients' needs while optimizing the scope of practice of health care providers. A large academic acute care centre aimed to develop a comprehensive nursing model assessment method sensitive to changing patient needs with the capacity to consider current workforce and local program/unit requirements.

Approach

In 2016, an evidence-informed Acuity Based Staffing assessment was implemented to ensure the appropriate number and skillmix of nurses on acute care units. Assessments were based on patient needs and triangulated against workload, workforce and quality data with consideration given to the unit environment. Daily patient acuity assessments across acute care units are now underway, in conjunction with the development of a dashboard to inform daily nurse staffing and skillmix. The collection of daily data supports predictive staff modeling and workforce planning. Furthermore, the acuity and dependency patient score supported the creation of an intensity based equitable nursing assignment strategy.

Results

Benefits from this transformative endeavor reverberate in all levels of the organization. A deeper understanding of patient acuity and need has led to unit model transformations, including integration of intraprofessional nursing teams where appropriate. Transformation support was provided to maximize the utilization of staff, aid change and collaboration, and enable safe, exceptional practice at full scope. Nursing assignments are customized to specific skillsets with consideration of necessary work modification, which ultimately leads to improved staff and patient satisfaction. Standardized language has been implemented to describe patient acuity and dependency, providing tangible grounds for team leaders to create and explain equitable assignments. Regular comprehensive patient acuity data has allowed leadership to make timely, evidence-informed decisions and create savings for a more efficient and effective workforce.

Conclusion

The aim remains to have the right person, with the right skills, providing the right care, at the right time, in the right way to patients. Staffing models should be evaluated on a routine basis via standardized, evidenced-informed processes; this enables efficient, effective workforce planning and optimal patient care.

G2.2

Theme: Health Human Resources

ROOM 503

The Missing Link in Integrated Care Models? A Qualitative Study of the Role of Community Pharmacists

Presented by: **Jennifer Lake**, PhD student/ Lecturer, University of Toronto

Approach:

A qualitative study using semi-structured telephone-based interviews was conducted. Interviewees were working in Ontario as either community pharmacists, clinicians in Health Links or team-based care models, and decision-makers in Health Links or Local Health Integrated Networks. Recruitment was done through the researchers' networks, Ontario Pharmacists Association newsletter, social media, and snowball sampling. Interviews continued until thematic saturation was achieved. We used content analysis following the Qualitative Analysis Guide of Leuven approach to identify themes. The codebook was generated by three members of the research team. The Consolidated Framework for Implementation Research (CFIR) was used as a conceptual framework.

Results:

Interviews (n=22) were completed in Summer 2018. Participants had favorable perceptions of potential pharmacist involvement but were split whether linking with community pharmacists or embedding a pharmacist was a better choice. There were differing views of the community pharmacists' capabilities for providing care to patients with complex needs. A majority of participants denied concerns regarding a community pharmacist's business conflict of interest but indirectly referred to it throughout the interviews. This incongruence may represent an unspoken opinion that cannot be overcome if left unaddressed. Most decision-makers admitted struggling to meaningfully engage with community pharmacists. Using CFIR, barriers were categorized within the inner settings (e.g. culture and implementation climate), and process constructs. Potential enablers suggested were: increased accessibility of pharmacists, remuneration, and information-sharing processes (e.g. technology).

Conclusion:

This study demonstrated that although involvement of pharmacists in integrated care models was positive, there were perceptions about community pharmacists that represented key challenges in optimally involving them. Barriers represented cultural, implementation climate, or process issues that will not easily be improved with the suggested enablers of technology or remuneration.

G2.3

Theme: Health Human Resources

ROOM 503

Exploring Early Professional Socialization within the Health Professions

Presented by: **Sheri Price**, Associate Professor, Dalhousie University

Effective teamwork and collaboration among health professionals is a well-recognized strategy toward enhancing care delivery and patient outcomes. However, there are myriad challenges in creating collaborative teams, including overlapping scopes of practice and health professionals' lack of understanding of each other's roles. Interprofessional education (IPE), where health professionals learn about, from, and with each other, is a key strategy towards ensuring collaborative teams. Professional socialization, the process of forming a professional identity and knowing the essence of a professional role, occurs both pre-entry and during formal training. Emerging evidence suggests that the socialization of health professionals can impact their future as collaborative practitioners. Yet, there is a gap in our understanding of best practices in relation to IPE, including how professional socialization impacts perceptions, expectations and practices of collaboration across health professions. This research undertakes a longitudinal, qualitative exploration of professional socialization among students within dentistry, medicine, nursing, pharmacy, and physiotherapy programs to examine how professional socialization and IPE occurs from pre-entry to university until post-licensure practice. Findings are being used to inform the design and piloting of recruitment, admission, curriculum and other IPE strategies designed to enhance collaborative practice within the future health workforce. Knowledge from this research is being used to enhance interprofessional socialization and prepare future health professionals to identify as strong team players and ultimately improve health care delivery and patient outcomes.

G3.1

Theme: Collaborative Healthcare Improvement Partnerships

ROOM 504

Case management for frequent users of health care services: a logic model presenting links between resources, activities and outcomes

Presented by: **Catherine Hudon**, Professor, Université de Sherbrooke

Background and objectives: Case management (CM) appears to be an effective intervention to improve health care integration for frequent users of healthcare services and to reduce healthcare costs. Links between resources, activities and outcomes are crucial for successfully implementing this complex intervention. The aim of this presentation is to outline the links between components, resources, activities and outcomes of a CM program for frequent users of healthcare services.

Approach: The logic model was developed as part of a program evaluation of a case management program in a health and social services center in the province of Québec, using a qualitative case study, including the following methods: 1) analysis of documents of the organization (about the conceptual approach, goals and objectives of the program, and administrative documents); 2) in-depth interviews (n=56) and focus groups (n=11) with decision-makers, case managers, coordinators, patients, family physicians, pharmacists, nurses and community organizations representatives, and; 3) participant observation (n=39) of meetings between stakeholders. Collected data were analyzed using a mixed thematic analysis.

Results. As an empirical illustration of how the CM program operates, the logic model shows how the mobilized resources (financial, material, organizational and human) allow for the realization of the activities (case finding, assessment, care planning, coordination and self-management support), and the benefits for the patients (improved self-management, monitoring, care experiences and satisfaction, adherence, quality of life and health status) and for the organization (overall better integration of services and reduced emergency department visits, hospitalization rates, and health care costs). To obtain optimal outcomes, the intensity of the activities has to be adapted to the complexity of patient needs.

Conclusions: This logic model will help researchers and decision makers involved or interested in CM implementation for frequent users of healthcare services to adequately plan and implement the resources and activities of the CM intervention to achieve desired outcomes.

G3.2

Theme: Collaborative Healthcare Improvement Partnerships

ROOM 504

Using the Participatory Research to Action Framework to integrate perspectives of seldom heard groups

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

Approach:

Evolved through our work in the SE Research Centre collaborating with multiple diverse stakeholders, the Participatory Research to Action (PR2A) Framework (SE Research Centre, 2018) combines the creativity of human-centred design and the rigour of scientific research. We use this 6 phase framework working in partnership with stakeholders throughout. This presentation will highlight learnings from traditionally underrepresented groups in health services research: i) linguistic and culturally diverse populations, ii) persons living with dementia and their caregivers, iii) Indigenous people, and iv) homeless and marginalized peoples

Results:

We present learnings on how our engagement with diverse stakeholders sheds learnings on our methodology, impacting the PR2A frameworks which continues to evolve as we learn through co-design with groups in a wide variety of projects. Our work has revealed important considerations when co-designing with these seldom heard perspectives including: openness and flexibility of researchers, timing and research planning; establishing relationships with advocates for the community; and the development of researcher skills such as self-reflection, transparency, and respect. We also share examples of how research outcomes have benefitted from the voices of those who are not typically engaged.

Conclusion:

Our goal is to meaningfully engage with stakeholders representing all of the voices of Canada to continue to co-develop the PR2A framework in order to achieve a seamless cycle of problem finding to research to innovation and action that prioritizes lived experience and creates measurable, replicable impact for all Canadians

G3.3

Theme: Collaborative Healthcare Improvement Partnerships

ROOM 504

The Development and Impact of Clinical and Research Partnerships at a Pediatric Tertiary Care Facility

Presented by: **Shauna Best**, Manager, Medical Surgical & Neurosciences Unit, IWK Health Centre

Background (75 words): In the role of a manager for multiple teams within a pediatric tertiary care centre, quality improvement is essential. Areas for quality improvement within the health care system are continually being identified by a range of individuals, including families, health care practitioners, administrators and policy makers. Most often, these practice and policy gaps are ongoing complex clinical issues requiring the involvement of multiple stakeholders. Recognizing this challenge, we developed a partnership with an established research unit to support practice and policy changes.

Approach (100 words): In response to a variety of practice and policy gaps, a partnership was formed between the manager of Inpatient Surgical Care and Child Life Services and the Strengthening Transitions in Care Lab at the IWK Health Centre. We worked together to identify relevant and priority practice and policy gaps. To develop strategic quality improvement initiatives, appropriate internal and external linkages were formed across the health service organization, academic university, and government.

Results (125 words): We have used this collaborative clinical research approach to address a number of complex clinical issues, including early warning systems, high-dependency care, new models of service delivery, and respite care. We leveraged entities such the Joanna Briggs Institute to facilitate knowledge synthesis surrounding each of the practice gaps. This multi-disciplinary partnership helped us to identify relevant evidence-based solutions that fit within our unique health system environment. This partnership also facilitated new multi- jurisdictional and national networking collaborations that are helping to inform care delivery within our health system.

Conclusions (50 words): Through the active engagement of researchers, clinicians, and administrators, best practice changes have occurred in multiple areas of our health care system. Building this partnership has helped to ensure the development of sustainable quality improvement initiatives with an infrastructure for ongoing evaluation.

G3.4

Theme: Collaborative Healthcare Improvement Partnerships

ROOM 504

Development of a Provincial Person- and Family-Centred Health Care Policy for British Columbia

Presented by: **Sirisha Asuri**, Research Officer, BC Public Service

Background and Objective

In fall 2017, the British Columbia Ministry of Health, released a suite of strategic policies outlining its vision for a well-designed, integrated health care system that is person- and family-centred. These policies placed patients at the centre of health care however a specific policy on person- and family-centred health care was still needed. We set out to develop a provincial policy on the attributes, values and demonstrated behaviors of person- and family-centred health care.

Approach

Led by the Ministry's Patients as Partners Initiative, a cross health sector working group comprising patients, caregivers and health sector partners, conducted this project using a qualitative study design. We conducted: 1) literature review on best practices for person- and family-centred care and commissioned a McMaster Review on "What features of person-centred models of care do patients, families and caregivers value?"; 2) facilitated in-person focus group with patients and caregivers to identify the most valued features, created personas and patient journey maps for points of intersection with the health-care system; and 3) consultations with provincial health authorities and physician organizations.

Results

The literature review and rapid review identified key values and attributes, best practices, methods of implementation, and measurement of person- and family-centred health care. Fifteen patients and caregivers participated in two focus group sessions. They identified six themes: "access to care", "informed", "self-management", "be understood and included", "team care", and "emotional support". These themes aligned with those found in the literature. These six themes informed the content of the policy through a collaborative process within the working group. The opportunities and challenges of implementing the policy were identified through regular consultations with the working group. The resulting policy provides a definition, four core values, and demonstrated behaviours of person- and family-centredness at the direct clinical care, community and the health system levels.

Conclusion

An innovative, evidence-informed policy development process was used to create the Person- and Family- Centred Health Care Policy. It provides direction to the planning, design and delivery of all health services in BC in order to meet the needs, values, and preferences of health services users and providers.

G4.1

Theme: Knowledge Translation & Exchange (includes KTE methods)

ROOM 502

How scientific evidence is used to adopt complex innovations in cancer care: a multiple-case study from Nova Scotia, Canada

Presented by: **Robin Urquhart**, Assistant Professor, Dalhousie University

Objectives: Health care delivery and outcomes can be improved by using innovations (i.e., new technologies and practices) supported by scientific evidence. However, scientific evidence may not be the foremost factor in adoption decisions. We sought to examine the role of scientific evidence in decisions to adopt complex innovations in cancer care.

Approach: Using an explanatory, multiple case study design, we examined the adoption of complex innovations in five purposively-sampled cases in Nova Scotia, Canada. Cases were sampled to obtain variation on three criteria: (1) type of innovation, (2) evidentiary base, and (3) contextual factors (e.g., setting, timing, individuals involved). Data were collected via documents and key informant interviews. Data analysis involved an in-depth analysis of each case, followed by a cross-case analysis to develop theoretically informed, transferable knowledge on the role of scientific evidence in innovation adoption that may be applied to similar settings and contexts.

Results: Across the five cases, data were collected from 32 key informants and >100 documents. The analyses identified key concepts alongside important caveats and considerations. Key concepts were: 1. scientific evidence underpinned the adoption process; 2. evidence from multiple sources informed decision-making (scientific evidence, clinical experience, local data, patient experience, and information from other jurisdictions); 3. decision-makers considered three key issues when making decisions (expected budgetary and operational implications, expected impact on patients, and equitable access to care); and 4. champions were essential to eventual adoption. Caveats and considerations were: 5. urgent problems may compel innovative solutions; 6. short-term financial pressures may expedite decisions; and 7. adopting later in time (relative to peer organizations) minimizes risk.

Conclusion: The findings revealed the different types of issues decision-makers consider while making these decisions and why different sources of evidence are needed in these processes. Future research should examine how different types of evidence are legitimized and why some types are prioritized over others.

Developing recommendations for evidence generation, evidence synthesis, and knowledge translation in the context of rare diseases

Presented by: **Kylie Tingley**, PhD Candidate / Clinical Research Associate, School of Epidemiology and Public Health, University of Ottawa

Background and Objectives:

Due to small and heterogeneous patient populations and uncertain natural history, evidence on the effectiveness of treatments for rare diseases is difficult to generate. The scarcity of evidence creates challenges for stakeholders (patients/families, clinicians, policy advisors) who make decisions about the use, prescription, or funding of such treatments. We aimed to incorporate stakeholders' needs and views into recommendations to guide future evidence generation, evidence synthesis, and knowledge translation for rare disease interventions.

Approach:

We used a meta-narrative literature review to better understand the perceived challenges in generating robust treatment effectiveness evidence, and to describe various research methods for mitigating these identified challenges. In addition, we conducted focus group interviews with key rare disease stakeholders (patients/family members, physicians, and policy advisors) to elicit different perspectives on how evidence is generated, evaluated, and synthesized in the context of health care decision-making, both at a personal and health system level. These data were used to inform the development of recommendations to improve evidence generation, evidence synthesis, and knowledge translation for rare diseases.

Results:

Our data revealed three fundamental challenges in generating robust treatment effectiveness evidence for rare diseases: limitations in recruiting a sufficient sample; inability to account for clinical heterogeneity; and reliance on outcomes with unclear clinical relevance. Focus group participants identified several considerations for evaluation and synthesis of evidence, including: evidence standards for incremental versus transformative interventions, understanding natural history, and addressing patient-oriented outcomes. Participants also identified approaches for managing uncertainty when generating, evaluating and using evidence for decision-making at individual and population levels. For example, some participants suggested that approval with continued evidence development would help reduce uncertainty around natural history and longer term treatment effects. Recommendations aim to tailor the approach to evidence generation and synthesis to meet the specific decision-making needs of relevant stakeholders.

Conclusion:

Tailoring evidence generation, synthesis and knowledge translation for treatments for rare diseases to meet the specific decisional needs of relevant stakeholders may reduce the most important aspects of uncertainty. This in turn may improve the quality of decision-making regarding the development, use, and reimbursement of rare disease treatments.

G5.1

Theme: Mental Health

ROOM 507

The prevalence of mental health conditions among persons who died from opioid toxicity

Presented by: **Roger Cheng**, Project Lead, Canadian Institute for Health Information

Background and objectives

Canada continues to experience a worsening opioid crisis. To inform prevention efforts, there is a need to better understand the characteristics of persons who have died from opioids including the impact of co-occurring mental health conditions.

An analysis of opioid-related deaths was conducted in collaboration with the Nova Scotia Medical Examiner Service and the Canadian Institute for Health Information. The objective was to describe the mental health of persons who died from acute opioid toxicities.

Approach

A chart abstraction was completed for acute opioid toxicity deaths occurring between January 1st, 2011 and June 30th, 2016 in Nova Scotia (n=321). Reported mental health conditions and prescribed medications were obtained from a variety of sources including medical records, family physicians, police reports, family members and friends. The abstracted data was examined for reliability and consistency. Descriptive statistics were calculated and compared to results for the general Canadian population from the 2012 Canadian Community Health Survey – Mental Health (CCHS) from Statistics Canada.

Results

Mental health information was not available for some decedents, with fields ranging from 20% to 24% unknown. Depression was reported to affect 46% of cases; 4 times greater than the self-reported lifetime prevalence of depression in the general Canadian population (11%). Anxiety (31%), ADHD (9%), bipolar disorder (6%), and schizophrenia (2%) were reported to affect greater proportions of cases than expected compared to national prevalence estimates (9%, 3%, 3%, and 1%, respectively). Overall, 70% of decedents were reported to have been recently prescribed at least one drug for mental health. More than half of decedents (51%) had recently been prescribed benzodiazepines. One or more benzodiazepine(s) contributed to half of all deaths due to opioid toxicity.

Conclusion

Most people who died due to opioid toxicity were reported to have experienced mental health conditions. Focused interventions may play a role in reducing opioid-related harms. As mental health information was unavailable for some decedents, the prevalence of the conditions considered may be underestimated here.

G5.2

Theme: Mental Health

ROOM 507

Evaluating Comparative Effectiveness of Psychosocial Interventions for Persons Receiving Opioid Agonist Therapy for Opioid Use Disorder: A Systematic Review and Network Meta-Analysis

Presented by: **Danielle Rice**, PhD Candidate, McGill University; Ottawa Hospital Research Institute

Background and Objectives: The opioid crisis is significantly impacting the Canadian health system as a growing number of individuals are experiencing harms due to opioid use. Clinical guidelines recommend that individuals with opioid use disorder (OUD) receive pharmacological and psychosocial (e.g., contingency management) therapy; however, the most appropriate psychosocial therapy is not known. The objective of our systematic review was to assess the effectiveness of psychosocial interventions as an adjunct to opioid agonist therapy among persons with OUD.

Approach: A comprehensive search for randomised controlled trials published in English or French was conducted from database inception to March 2018. The search was conducted in MEDLINE and translated for Embase, PsycINFO and the Cochrane Central Register of Controlled Trials. Reference lists were also reviewed for eligible studies. Two independent reviewers screened, extracted and assessed risk of bias of eligible articles. Primary outcomes of interest were treatment retention and opioid use (based on urinalysis results). Random and fixed effects network meta-analyses were planned for outcomes with adequate homogeneity. Narrative synthesis will be used for outcomes with few studies or extensive heterogeneity.

Results: A total of 12,224 unique citations were reviewed, of which 66 met our inclusion criteria and were included in the review. Due to inconsistent measures and methods of assessment (e.g., self-report opioid use versus urinalysis), only 29 studies for one outcome can be included in a network meta-analysis. A traditional meta-analysis will be conducted to measure abstinence from any illicit drugs. Complete results will be available at the time of presentation.

Conclusion: Understanding the relative benefits and harms of psychosocial interventions provided as an adjunct to opioid agonist therapy can influence clinical guidelines and future health service delivery among individuals with OUD. We are in the process of identifying core domains to

measure will help to enhance homogeneity in trials of interventions in the OUD population. This will better represent the interest of patients, clinicians, policy makers, and researchers and will result in more clinically meaningful research that can be appropriately synthesized.

G5.3

Theme: Mental Health

ROOM 507

Improving prescribing policies in Canadian primary care: issues with prescribing medications for depression to obese patients

Presented by: **Svetlana Puzhko**, PhD candidate, McGill University

Background. Obese patients often experience more severe depression than normal weight patients and may have poorer response to antidepressants (AD) treatment. Certain AD increase weight (are obesogenic) contributing to the prevalence of obesity in patients with depression. Greater understanding of obesogenic AD prescribing patterns is needed to identify problems and improve prescribing policies. Objective: using a national primary care practice database, to estimate the association between obesity status and AD prescribing, focusing on obesogenic AD.

Approach. Study design: Cross-sectional analysis of a large primary care practice-based cohort data. Settings/participants: Electronic Medical Records from the national Canadian Primary Care Sentinel Surveillance Network (CPCSSN) for 2011-2016; adult patients (18 years of age or older) diagnosed with depression. Outcome measures: AD prescribing (prescription for at least one AD, prescription for AD known for its obesogenic affect). Exposure measure: body mass index to categorize patients into obese and non-obese. Analysis: Multivariable logistic regression adjusting for age, sex, and comorbidities.

Results: Among 61699 patients with depression, 41389 (67.1%) were prescribed at least one AD in 2011-2016. Compared with normal weight patients, obese patients were more likely to be prescribed AD (adjusted Odds Ratio (aOR)=1.21; 95% Confidence Interval (CI): 1.16-1.26). Obese patients were less likely to receive obesogenic AD mirtazapine (aOR=0.64; 95% CI: 0.58-0.70) than normal weight patients; however, compared with normal weight patients, obese patients were more likely to receive other medications for depression known for their obesogenic effect: amitriptyline (aOR=1.26; 95% CI: 1.15-1.38), paroxetine (aOR=1.19; 95% CI: 1.06-1.34), and quetiapine (aOR=1.09; 95% CI: 1.00-1.18).

Conclusions: Obese patients appear to be more likely to be prescribed pharmacological treatment with AD and to receive obesogenic AD. While causality cannot be inferred, these prescribing patterns may be implicated in the increased risk for severe depression and poorer response to treatment among obese patients.

G5.4

Theme: Mental Health

ROOM 507

Optimizing support and service delivery for problem gambling among people living with complex needs: A concept mapping study

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

Background and Objectives: Problem gambling is a major public health concern, especially among persons who are homeless, living in poverty or who have other complex health and social needs. Problem gambling has been connected to a variety of negative health and social outcomes; however, current healthcare services rarely address problem gambling. With support from community partners, the purpose of this study is to understand how to improve screening for problem gambling among those with complex needs.

Approach: Concept mapping, a mixed-method participatory approach, was conducted with healthcare and social service providers from Ontario. Three phases of activities were conducted with either in-person or online participation: 1) Brainstorming, 2) Sorting/Rating and 3) Mapping. Brainstorming sessions were conducted to generate statements, guided by the focal prompt: "what would help you screen for problem gambling in your daily practice?" Participants were then invited to sort statements into categories and rate them based on their importance and feasibility. A mapping session provides an opportunity for participants to co-create visual representations of the data.

Results: To date, 29 participants have taken part in the in-person or online concept mapping sessions. Participants generated a total of 213 statements, which the research team condensed into a final list of 45 statements. The qualitative responses were analyzed using multidimensional scaling and Hierarchical Cluster Analysis and displayed visually, using the concept mapping software. In the mapping session, participants assisted with the collaborative interpretation of the data to develop a final concept map that reflects the data collected during the brainstorming and sorting and rating activities. Participants highlighted the importance of a screening tool, buy-in, professional development, client-centered care and organization policies as factors that would help improve screening for PG.

Conclusions: By addressing the needs of social service and healthcare providers, this study will co-develop actionable recommendations that will assist them in routinely screening for problem gambling in their daily practice. This process improvement will advance the delivery of services for persons experiencing problem gambling and complex health and social needs.

G6.1

Theme: Healthcare Reform, and Health Accord (includes priority setting, politics)

ROOM 506

Evaluation of the Fentanyl Patch-for-Patch Program in Ontario, Canada

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

Background and Objectives:

The impact of opioid use is a major public health concern, particularly for fentanyl given its high potency and potential for overdose. To curb the misuse and diversion of fentanyl patches, an early Patch-for-Patch (P4P) program was implemented in Ontario between 2012 and 2015. The program requires that patients return their used fentanyl patches to a pharmacy before receiving a refill. We evaluated the impact of this program on opioid dispensing and opioid toxicity events.

Approach:

We conducted a cross-sectional time-series analysis among counties that implemented the P4P program using Ontario administrative claims data. We zeroed all intervention months and looked at outcome rates in the 5 years prior and 12 months following the launch of the P4P program. Outcomes included monthly rates of prescriptions dispensed for fentanyl and non-fentanyl opioids, and opioid toxicity-related hospital emergency department visits and hospital admissions. We modeled each outcome using an interventional autoregressive integrated moving average (ARIMA) model and tested the impact of the P4P program using a ramp function.

Results:

We analyzed 16 counties that implemented the early P4P program. Introduction of the P4P program resulted in a significant decline in the number of fentanyl patches dispensed (from 1,277 to 888 patches per 10,000 population; $p=0.04$). There was no significant change in the rate of non-fentanyl opioids dispensed ($p=0.32$) or opioid toxicity related hospitalizations and emergency department visits ($p=0.4$) following the implementation of the program.

Conclusion:

The implementation of a P4P program in select counties in Ontario reduced the number of fentanyl patches dispensed, but did not have any measurable impact on rates of opioid toxicity-related hospitalizations and emergency department visits. These findings support the use of P4P programs as part of larger opioid-abuse reduction strategies.

G6.2

Theme: Healthcare Reform, and Health Accord (includes priority setting, politics)

ROOM 506

Considerations for the establishment of a community advisory to guide healthcare funding decisions in Canada

Presented by: **Colene Bentley**, Health Services Researcher, Canadian Centre for Applied Research in Cancer Control - BC Cancer

Background and objectives (/75 words): All sectors of healthcare face resource constraints. Decision-makers make fair but difficult decisions about how best to allocate limited health-care resources. Deliberative public engagement in the form of community advisories can help decision-makers develop publicly acceptable solutions to these challenging policy topics; however, instituting a community advisory can be challenging and costly. We have identified a number of key considerations to guide health system leaders in implementing an advisory in their province or institution.

Approach (/100 words): We conducted document analysis of the grey literature on the topic of community advisories, as well as key informant interviews ($n=12$) with experts who have experience implementing community advisories in health care. A number of community advisories were identified as relevant to the research question, including those addressing issues at the local-level as well as national-level policies; having singular and ongoing formats; and those with regional- or national-level membership. Key insights and experiences with these advisories formed the development of a report intended for health system leaders in Canada for guidance on establishing a community advisory to address policy concerns.

Results (/125 words): Ten key considerations were identified as important to establishing a successful community advisory, including: identifying the scope of the policy issue, including geographic scope; instituting a steering committee to help advise on topic selection for advisory meetings; early engagement of key stakeholders and decision-makers, including their openness to implementing the advisory's recommendations; a quality assurance process to avoid regulatory capture of the advisory; active management of the advisory to assist with coordination and to keep participant engagement levels high; and dedicated commitment of resources, including financial and staff, to ensure smooth operation of the advisory.

Conclusion (/50 words): Deliberative forms of public engagement are increasingly becoming an acceptable and sought-after way of informing policy on complex social issues. This work provides health system planners and decision-makers with practical guidance and key insights to support the establishment of a community advisory for healthcare funding decision-making policies.

G6.3

Theme: Healthcare Reform, and Health Accord (includes priority setting, politics)

ROOM 506

Services for Preschoolers with Autism Spectrum Disorder: Provincial Differences and Policy Implications for Canada

Presented by: **Isabel Smith**, Professor; Joan & Jack Craig Chair in Autism Research, Dalhousie University

Diagnostic and early intensive behavioural intervention (EIBI) services for children with autism spectrum disorder (ASD) vary greatly across Canada. Several provinces/territories are reforming programs to meet growing demands and improve outcomes. However, comparative data to guide these efforts are lacking. Services in New Brunswick (NB) and Nova Scotia (NS) differ in type, intensity and funding models. The Preschool Autism Treatment Impact (PATI) study compared NB and NS service models, child and family outcomes, and public/private resource use.

In partnership with policy makers, the research team gathered data on EIBI program organization and intervention methods, and on related services and their costs from service providers and government partners. We measured children's adaptive behaviour (competencies), ASD symptoms, and behaviour problems using standardized questionnaires before EIBI and after one year. Parents reported on their parenting self-efficacy and stress pre- and post-EIBI, and satisfaction with EIBI services. Parents' financial costs, use of public and private health and community services, and productivity losses were gathered via interviews. Costs were examined from public, societal, and family payer perspectives.

We found that in NB, private EIBI agencies subsidized by Education delivered 20 hours/week of intervention. In NS, fewer hours were delivered by public-sector professionals through Health & Wellness, using another treatment model. In NB, EIBI commenced 4 months after diagnosis compared to 12 months for NS. Prior to EIBI, 64% of NS families sought some form of early intervention compared to 29% of NB families. Prior to EIBI, NB children were younger, with milder symptoms, fewer behaviour problems, and greater adaptive behaviour. Despite these differences, adaptive behaviour gains during intervention did not differ. In both provinces, behaviour problems decreased during EIBI but ASD symptoms did not. Public costs were substantially higher in NS (e.g., higher provider salaries); costs were higher for NB families (e.g., travel to specialized intervention centres).

These results highlight contrasts in provincial policy choices regarding type, intensity and timing of diagnostic and intervention services for children with ASD, as well as variation in public and private sector costs. More pan-Canadian research is needed to evaluate such trade-offs, which have substantial consequences for children and their families.

G6.4

Theme: Healthcare Reform, and Health Accord (includes priority setting, politics)

ROOM 506

The Centre for Health Informatics: A Revolutionary Hub for Health Informatics in Alberta

Presented by: **Cathy Eastwood**, Operations Manager, Centre for Health Informatics, University of Calgary

Background: Precision Medicine and Precision Public Health could improve health care system performance and population health. Achieving these goals requires innovation in health informatics. The Centre for Health Informatics (CHI) within the Cumming School of Medicine at the University of Calgary was created to respond to this need by fostering multidisciplinary collaborations, building capacity by recruiting and training outstanding faculty and students, and harnessing Alberta's rich health data to advance health informatics.

Methods: To establish CHI as a health informatics leader, we have struck partnerships with stakeholders including Alberta Health Services (AHS), Alberta Health, and the Strategy for Patient-Oriented Research. CHI will develop demonstration projects ranging from data science methods to analytics and applications. For example, CHI is developing novel machine learning tools to exploit Connect Care, Alberta's nascent population-level electronic health record system. Additionally, as part of a World Health Organization Collaborating Centre, CHI coordinates field trials for the 11th revision of the International Classification of Disease. Capacity building initiatives include developing a new health data science diploma program, and conducting workshops.

Results: CHI has established access to Alberta's rich health data sources, including databases owned by AHS. Our partnership with the Clinical Research Unit in Calgary has provided advanced research computing infrastructure and expertise. Competitive funding has been secured from major sources, including the Canadian Institutes of Health Research. These resources are enabling development of methods to turn raw data into health information, to improve health data collection, linkage, analysis, and quality, as well as applied studies creating clinical decision-support tools, prognostic tools, improved health surveillance methods, and health system performance indicators. Key personnel are using state-of-the-art technology to build data visualization capabilities that have the potential to revolutionize communication between clinicians and patients, policy-makers and the public.

Conclusions: CHI's ecosystem of diverse research expertise, cutting-edge technology, and fluid data access via a wide-ranging network of partnerships allows our researchers, and our national and international collaborators, tremendous opportunities for empirical research, and paves the way to implementation of precision medicine in the real world.

G7.1

Theme: Health System Performance (includes quality, safety, efficiency, leadership)

ROOM 612

Health Quality Councils in Canada: A Pan-Canadian Analytical Perspective of Healthcare Quality Improvement

Presented by: **Crystal Milligan**, PhD Student, University of Toronto, Institute of Health Policy, Management & Evaluation

Background and objectives

Countries with high quality healthcare tend to have clear quality improvement (QI) strategies. In the absence of a national QI strategy, there are diverse approaches to implementing QI across Canada. There are five provincial healthcare quality councils, whereas the remaining jurisdictions use other means to initiate QI. This study presents the QI landscape across Canada and highlights the implications that come from the diverse approaches to QI.

Approach

Through a rapid review, we examined the state of play with respect to healthcare quality councils and other QI initiatives in Canada. We reviewed academic and grey literature and conducted interviews with 12 key informants representing 8 jurisdictions. Due to scheduling conflicts, a ninth jurisdiction provided a written response with input from several members of its team. All quality councils contributed during this phase of data collection. Data were analyzed using two primary domains: governance of QI; and core functions (monitoring and evaluation; public reporting; capacity building; setting quality standards; QI initiative implementation; spread and scale-up; policy analyses).

Results

Canadian jurisdictions vary greatly in terms of the governance and organization of QI initiatives. We also found considerable variability when the seven core functions were compared. Differences were partly attributed to inconsistency in definitions and language used to describe QI activities. Our findings highlight an uneven distribution of knowledge, skills and resources in QI across the country. Informant interviews suggested that this variability hinders provincial and territorial ability to translate QI initiatives into improved healthcare for all citizens, as well as to report on QI system performance. Our results suggest that there would be value in leveraging pan-Canadian efforts to facilitate learning and collaboration, and to complement the QI responsibilities of provinces and territories.

Conclusion

Canadian jurisdictions face challenges in integrating QI at all levels of healthcare. A pan-Canadian QI framework with leadership from a pan-Canadian organization could help to align jurisdictions under a common QI vision. This could also facilitate transparent collaboration and alignment, as well as more meaningful performance measurement and management.

G7.2

Theme: Health System Performance (includes quality, safety, efficiency, leadership)

ROOM 612

Getting to consensus on pan-Canadian indicators of access to mental health and addictions services and home and community care programs

Presented by: **Chantal Couris**, Manager, Indicator Research and Development, Canadian Institute for Health Information

Background and objectives: As part of the Common Statement of Principles on Shared Health Priorities, all governments in Canada agreed that reporting on a common set of indicators is important to assess improvements in access to mental health and addictions services and home and community care programs. The objective of this work was to develop a decision-making approach to enable consensus among stakeholders with diverse perspectives on priority indicators for public reporting. **Approach:** A multi-step mixed methods approach was used to guide consensus. It started with environmental scans of existing measurement and expert discussions to set guiding principles for indicator selection. It was followed by a modified Delphi approach and public consultation. Jurisdictional, sector stakeholders and measurement experts were engaged in the modified Delphi process to evaluate indicators based on agreed criteria. To complement results of the Delphi survey, a public consultation was undertaken through key informant interviews, online surveys and focus groups to understand priorities for the public. The final decision-making work group consisted of leaders in federal, provincial and territorial governments.

Results: The results of the environmental scan were validated with governments. Drawing on this information and the guiding principles, approximately 100 indicators per sector were organized into 6 to 7 measurement themes. Indicators were evaluated for relevance, impact, actionability, interpretability and readiness to provide an overall priority rating in the modified Delphi survey. Canadians shared their views through 10 focus groups held in 5 cities, with a total of 80 participants, and over 650 participants shared their views through an online survey. Results from the survey and public engagement were used to facilitate discussion with the decision-making group and to reach consensus on a recommended set of indicators. Six indicators for mental health and addictions, and home and community care were included in the final recommended list.

Conclusions: We were able to use an evidence-based and unbiased process to bring in diverse perspectives and help decision-makers reach consensus on a common set of indicators. The indicators selected were endorsed by Health Ministers across the country and public reporting will start in May 2019.

G7.3

Theme: Health System Performance (includes quality, safety, efficiency, leadership)

ROOM 612

Changing trends over time: the Canadian Medical Liability Litigation Experience for Physicians

Presented by: **Qian Yang**, Manager, Medical Care Analytics, CMPA

Background and Objectives:

When litigation alleging medical malpractice occurs, it has a profound impact on patients, individual health care providers, and health systems. The Canadian Medical Protective Association (CMPA) is the main provider of liability protection for more than 99,000 Canadian physicians. This study investigates the characteristics and temporal trends of medical liability litigation for Canadian physicians to identify their implications for health policy, patient safety and risk management.

Approach:

The CMPA's medico-legal database is a large national database that includes information on litigation cases involving its member physicians. Using this database, we produced trends of litigation risk, average disbursements and average damage payments over the past 25 years (1993-2017). Litigation risk was calculated as frequency per 1,000 physicians. We also examined litigation trends by physician specialty. For a more current medico-legal landscape, we analyzed closed civil legal actions from the recent 5 years (2013-2017) to show, by physician specialty or by province, the risk of a physician being involved in a civil legal case.

Results:

Over the last 25 years, the rate of members being involved in legal actions decreased significantly ($p < 0.0001$) by an average of 2.1%/year. Mean disbursements and damage payments increased significantly ($p < 0.0001$). Mean disbursements increased at an average rate of 9.9%/year while mean damage payments increased an average of 6.6%/year. This was driven by significant ($p < 0.0001$) increases of cases with damage payments over \$1M (average annual increase of 13.0%). Large variations existed in litigation risks by physician specialty, ranging from 61.4 civil legal actions per 1,000 physicians in obstetrics and gynecology to 5.2 cases per 1,000 in family medicine. These risks also varied by province, with 15.6 cases per 1,000 Ontario physicians and 7.4 cases per 1,000 Saskatchewan physicians.

Conclusion:

Our analysis shed light on a unique aspect of the Canadian healthcare system. With an aging population and increasingly complex medicine, our findings point to the need for an efficient and effective medico-legal system and safe medical care improvements to enhance the long term sustainability of the healthcare system.

G7.4

Theme: Health System Performance (includes quality, safety, efficiency, leadership)

ROOM 612

Patient harm across linguistic groups: A retrospective cohort study of home care recipients in Ontario

Presented by: **Ricardo Batista**, Postdoctoral Fellow, OHRI-ICES Ottawa

Background and objectives: One out of 18 patients admitted to a Canadian hospital experiences harm. Harmful events jeopardize patient's safety can prolong a patient's hospital stay. Studies have shown that effective communication is an integral part of patient safety. However, there is limited research regarding the impact of language barriers on risk of harmful events. The objective of this study was to compare the rate of in-hospital harmful events among home care recipients in Ontario, by linguistic group.

Approach: We conducted a population-based retrospective cohort study in Ontario using administrative databases held at Institute for Clinical Evaluation Sciences. We included Ontario residents who completed a Resident Assessment Instrument for Home Care (RAI-HC) from April 1, 2010 to March 31, 2015 and who were hospitalized within 1 year of their first assessment. Primary language was obtained from the RAI-HC Database, which records each home care recipients' primary language. Hospitals designated by law to provide services in French were defined as Francophone-Designated hospitals. In-hospital harmful events were identified using the Hospital Harm Indicator developed by the Canadian Institute for Health Information.

Results: Compared to anglophones and francophones, allophone home care recipients were more likely to experience a harmful event while in hospital (8.8% for allophones compared to 7.7% and 7.6% for anglophones and francophones, respectively; $p < 0.01$). Compared to anglophones, allophones had an increased rate of harm in the context of healthcare-associated infection (RR = 1.18; $p < 0.01$) and procedure associated conditions (RR = 1.09; $p=0.034$) after adjusting for potentially confounding variables. Overall, allophone and francophone home care recipients had similar rates of harmful events, before and after adjusting for potentially confounding variables. However, the rate of harmful events for anglophones was lower in Non-Designated hospitals (RR = 1.17; $p < 0.01$), while the rate of harmful events for francophones was lower in Francophone-Designated hospitals (RR = 1.14; $p=0.048$).

Conclusion: Language barriers may be a risk factor for in-hospital harmful events among frail Ontarians. Future research should attempt to identify factors associated with harmful events within each linguistic group so that appropriate measures can be taken to reduce the risk of harm events to a minimum.

G8.1

Theme: Patient Engagement

ROOM 501

Partnering with Patients and Families in Program Planning and Service Delivery in Primary Health Care: An implementation science approach to evaluating integration of policy to practice

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

Background: A system-level strategy to partnering with patients and families in decision-making, policy setting and program planning processes is being implemented provincially in Primary Health Care as triple aim strategy and Accreditation standard. An implementation science approach is being applied to understanding key influencers, barriers and facilitators to implementing this strategy. **Approach:** The Consolidated Framework for Implementation Research (CFIR), CIHR Strategy for Patient-Oriented Research Patient Engagement Framework (CIHR SPOR PEF) and a descriptive qualitative approach are guiding the evaluation of the implementation strategy in Primary Health Care. Patients and Families are being recruited to Quality and Safety Councils / Teams to work alongside of decision makers and providers to influence planning of PHC service delivery. A thematic data analysis plan that includes both inductive (reading transcripts and discussing key concepts) and deductive (CFIR and CIHR PEF constructs mapped) coding is being applied to understand key ingredients for successful implementation and scaling up. **Results:** Preliminary analysis through the CFIR approach have helped us understand evolving components and structure of this implementation strategy including facilitators and barriers. The number, timing of introduction of patients and families and composition of team members, and recruitment and retention strategies vary in each of the management zones. Recruitment and retention strategies are also varied driven by contextual factors and drivers. There are over 30 patient and family advisors currently recruited through this strategy. Emerging themes for facilitators includes striving to develop a productive partnerships, common focussed goals & expectations, and accreditation requirements. Examples of barriers identified include lack of clarity in roles and level of influence, lack of integration between broader components of care delivery limits influence of councils to one sector (i.e. PHC). **Conclusion:** The strategy for partnering with patients and families in PHC although in early days of implementation is already positively impacting and influencing several planning and service delivery decisions.. The application of a CFIR methodology to understanding and evaluating this priority implementation strategy in PHC has been insightful and effective.

G8.2

Theme: Patient Engagement

ROOM 501

Best approaches for identifying, incorporating and reporting patient preferences in clinical guidelines

Presented by: **Claire Kim**, Graduate Student, University Health Network

BACKGROUND

Guidelines, which provide treatment recommendations based on the most current research evidence, are globally underused, leading to suboptimal patient outcomes. Research shows that guidelines that address patient preferences are more likely to be used. However, we do not know which methods most efficiently and fully capture patient preferences in guidelines to support patient-clinician discussions about preferences, treatment decision-making and guideline use. Improving the development of patient-relevant guidelines is widely advocated for.

METHODS

Using a basic descriptive qualitative approach, we are in the process of interviewing 45 developers (organizational representatives, patients/clinicians involved in development) about the merits (infrastructure, costs, challenges, benefits, impacts) of different approaches on their processes and products. Additionally, a scoping review is also in progress. The accumulated knowledge on the most feasible and impactful ways to address patient preferences in guidelines will be shared. Findings will be used to update the G-I-N PUBLIC Toolkit, the most comprehensive guide for addressing patient preferences in guidelines, and shared at a national meeting of Canadian developers, and internationally through relevant conferences and manuscripts.

RESULTS

To date, 44 developers have been interviewed. Transcripts are being analyzed and annotated prospectively to extract data into tables of themes and quotes. For the scoping review, an updated search of the literature was conducted on January 3rd, 2019 and screening is currently being completed. This research will identify the best approaches for generating preference-oriented guidelines in a way that is cost-efficient for guideline developers and health systems. Findings will help national and international developers to optimize processes and infrastructure for addressing preferences in guidelines. This may lead to increased use of guidelines by patients and clinicians and, ultimately, improve person-centred health care delivery and health nationally and internationally.

CONCLUSION

Improving the development of patient-relevant guidelines is widely advocated; yet, little guidance exists on approaches. This research will synthesize published evidence on approaches for identifying, incorporating and reporting patient preferences in guidelines (scoping review) and explore best practices for doing so among national and international guideline developers (qualitative interviews).

G8.3

Theme: Patient Engagement

ROOM 501

How do pediatric patients and their parents perceive patient involvement in the assessment of nursing students' during their pediatric clinical practicum?

Presented by: **Julie Chartrand**, Assistant Professor, University of Ottawa

Background and Objectives:

Since pediatric nursing is moving towards a patient partner approach, patient involvement in Nursing education is being increasingly discussed among health professionals, educators and administrators. Studies related to patient involvement in pediatric nursing education are scarce and do not explore patient involvement in nursing student assessment. Hence, this study explored older children's and their parents' experiences and perceptions of patient and parent involvement in the assessment of nursing students during their pediatric clinical practicum.

Approach:

A two-phase, sequential mixed-methods design, which includes the collection of quantitative and qualitative data to understand patients' and parents' potential involvement in the assessment of nursing students' pediatric clinical practice. Phase I involved surveys of patients admitted to the Children's Hospital of Eastern Ontario (CHEO) (>13 years old), parents; and of University of Ottawa nursing students and clinical instructors. In phase 2, semi-structured phone or in-person interviews were conducted with a subgroup of Phase I participants to gain a deeper understanding of their perception of patient involvement in assessing nursing students' pediatric clinical practice.

Results:

This presentation will solely report on Phases I and II patient and parent. In phase I, 74 paper surveys (patient n=22 and parents n=52) were completed. Responses revealed that although the majority of patients and parents have not yet been involved in the assessment of nursing students during their pediatric clinical rotation, they are inclined in taking part in it. They also consider their view of nursing students as important to a moderate to great extent. Phase 2 findings show that patients and students generally view their involvement in the nursing students' clinical assessment as beneficial especially to nursing students' learning and performance and to patients' and parents' empowerment. Reported factors facilitating patient and parent involvement include setting clear expectations and providing resources and guidance.

Conclusion:

This study provides insight into how patients and parents perceive their current and potential involvement in nursing student clinical assessment. It also sheds light on potential benefits, challenges, facilitating factors and potential strategies related to the integration of patient and parent involvement in nursing student assessment in pediatric clinical settings.

G8.4

Theme: Patient Engagement

ROOM 501

Patients' and Parents' Perceptions of their Role in the Assessment of Nursing Students' Pediatric Clinical Practice

Presented by: **Rebecca Balasa**, Researcher, University of Ottawa

Background and objectives: Patients and parents at the Children's Hospital of Eastern Ontario (CHEO) are not currently involved in the formal assessment of nursing students' clinical practice. Positive contributions of involving patients and parents in the assessment of nursing students' clinical practice include learning opportunities, improvements in care standards, and patient empowerment. The objective of this study was to explore patients' and parents' perceptions of their role in the formative assessment of nursing students' pediatric clinical practice at CHEO.

Approach: This presentation will report on the qualitative portion of a larger study, conducted using a mixed methods methodology to address the research questions while also considering the results of the quantitative portion of the study.

Semi-structured interviews were conducted among patients (>13 years of age), and parents of patients (0-13 years of age) who were admitted to a medical or surgical unit at CHEO and who received care from a nursing student during their admission. The interviews were transcribed verbatim and manually analyzed using a content analysis methodological approach. Lincoln and Guba's criteria of trustworthiness were upheld to ensure the rigor of this study.

Results: The preliminary results of this study have been grouped into four categories: 1) Aspects of nursing care that patients/parents want to assess when working with nursing students at CHEO (i.e. communication, empathy, bedside manner); 2) The benefits of having patients/parents assess nursing students' at CHEO (contributing to nursing students' future practice via their current learning process, patient/parent involvement and empowerment, and safer care); 3) The perceived challenges of having patients/parents assess nursing students' at CHEO (discomfort, lack of confidence, and fear of negatively impacting the nursing students' academic status or potential for future employment); and 4) The perceived facilitators to involve patients/parents in the assessment of nursing students' at CHEO (establishing expectations, providing resources and guidance, and facilitating the method of delivery of the assessment).

Conclusion: Patients and parents want to be involved in the assessment of nursing students' non-technical skills in a pediatric care context, however, a structured and guided facilitation is necessary for their successful involvement. Future research should focus on the development, implementation, and assessment of such resources.

G9.1

Theme: Primary Health Care

ROOM 613

A Novel Normative Approach to Counting GPs – Are We Really THAT Off?

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

Background: Provincial physician resource planning relies on head counts, physician-population ratios, and full-time equivalents (FTE) using the Canadian Institute for Health Information (CIHI). CIHI FTEs are based on income thresholds. This method assumes all FTEs provide equal levels of service, and does not capture the full breadth of health service activities.

Objectives: To compare the number of FT and part-time (PT) GPs using the CIHI method to a novel approach using service days, and describe their demographics.

Approach: Anonymized Alberta Health billing data for all FFS GPs from 2011-16 was linked with GP demographic data from the College and Physicians and Surgeons of Alberta. The novel approach defined a FT GP as one who billed 10 visits or more on 90 calendar days within six months. FT vs. PT counts by the two classification methods were compared using Fisher's Exact test. Univariate comparisons were by chi-squared or t-test as appropriate. The relationships between FT status and demographic variables were examined in a logistic regression controlling for zone, rurality, and patient clinical risk group level.

Results: The CIHI method estimates more FT and fewer PT compared to the novel method. CIHI reported 418 (p 1.7 but < 3.5 days/week) had similar demographics.

Conclusions: CIHI methods underestimate the proportion of PT GPs. PT GPs average nearly 100 fewer service days per year than FT. Demographic and distribution differences exist between PT and FT GPs. 20% of GPs work < 1.7 days per week, PT GPs have similar demographics understanding scope of practice is next.

G9.2

Theme: Primary Health Care

ROOM 613

Learning to improve the design of centralized waiting list for unattached patients : results from a cross comparative study conducted in seven provinces

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

Background and objectives

Seven Canadian provinces (Quebec, Ontario, British Columbia, Manitoba, Nova Scotia, Prince Edward Island, New Brunswick) have centralized waiting lists (CWLs) to help patients find a primary care provider. Little is known about how best to design and implement this type of CWL and most of the literature has focused on CWLs in other fields of healthcare (e.g. elective surgery). Our aim was to compare these CWLs for unattached patients to available scientific evidence to make recommendations on ways to improve their design.

- Approach

We conducted a logic analysis in three steps: 1) we built logic models describing the CWLs for unattached patients in the seven provinces (42 key stakeholder interviews); 2) we conducted a realist review to develop a middle-range theory of CWLs in design and implementation in healthcare (21 articles); 3) we analyzed the interview data (step 1) using a realist approach and compared this empirical data to our middle range theory (step 2).

- Results

Similarly to CWLs described in the literature (mostly for elective surgery), we observed that: 1) when CWLs are not mandatory, providers' lack trust in CWLs for unattached patients or perception of CWLs as additional work may lead to low uptake of the CWL; 2) incomplete or vague guidelines may lead to inconsistent prioritization of patients and inequities in access to a primary care provider; 3) rewards or punishments to encourage provider participation in CWLs may lead to instrumental use of the CWL and to cherry-picking of patients. However, CWLs for unattached patients have three particular challenges which warrant additional design consideration: 1) population-wide (vs. referral based); 2) broad prioritization criteria (vs. disease specific); 3) long-term relationship between providers and patients (vs. than one-off).

- Conclusion

Using data from stakeholders from seven Canadian provinces with evidence from scientific literature, this logic analysis identified specific challenges of a CWL for unattached patients. Policy-makers and decision-makers should consider element identified in this study in the design and implementation of such processes in order to improve access to providers and avoid unintended outcomes.

Health and healthcare outcomes among unattached patients in Nova Scotia

Presented by: **Emily Gard Marshall**, Associate Professor, Dalhousie Family Medicine

Background and objectives: Patients who cannot access a regular primary healthcare provider (family physician or nurse practitioner), known as 'unattached patients', are an emerging and growing phenomenon in Canada. The rate of unattachment in Nova Scotia grew from 6.4% in 2010 to 13.1% in 2017. The objective of this study was to understand the experiences of unattached patients in Nova Scotia and to identify the outcomes of unattachment related to health and healthcare needs.

Approach: As the first phase of a sequential exploratory mixed-methods approach using an instrument design model, in-depth semi-structured qualitative interviews were used to explore the experiences of unattached patients. We recruited participants using invitational letters to people on the provincial unattached patients' registry, stratifying on gender, location and age. To maintain registry confidentiality, letters were sent by the Nova Scotia Health Authority registry custodians. We also recruited using social media. We conducted 9 interviews that were digitally recorded and transcribed verbatim. Data were coded in NVivo and analyzed using the Framework Method. Patient co-investigators participated in the study design and data analysis.

Results: In the framework focused on outcomes of unattachment, we identified four main categories, each with several sub-themes. First, unattachment produced stress and negative feelings among participants related to the loss of the patient-provider relationship, concerns about the future, and lack of choice for a provider. Participants experienced care burden related to finding and managing information, managing their medical history, navigating the healthcare system, cost, travel, and time (including wait-times for alternate healthcare, such as walk-in clinics). Participants experienced lost care related to the (dis)continuity of care, medical follow-up, and access to prescriptions and referrals. Finally, participants noted health outcomes related to their unattachment including condition-specific negative health outcomes, the need to self-diagnose and medicate, missed diagnoses, and positive lifestyle changes to prevent healthcare need.

Conclusion: Participants experienced a variety of negative health and healthcare outcomes related to not having a regular primary healthcare provider. Outcomes identified will complement existing literature as we develop an unattached patient survey to capture the magnitude of their challenges; and provide recommendations for waitlist triaging and interim service options.

CONCURRENT SESSIONS H: FRIDAY, MAY 31, 2019 - 10:15AM – 11:30AM

H1.1

Theme: Knowledge Translation & Exchange (includes KTE methods)

ROOM 501

Leveraging research to impact patient care and local clinical practice guidance: a knowledge translation initiative from Ireland

Presented by: **Aislinn Conway**, Postdoctoral Fellow (HSIF), BORN Ontario and CHEO Research Institute

Background and objectives Delays and gaps in the translation of research into practice and policy can have a negative impact on patient care. Our objectives were to plan, design and implement a knowledge translation initiative for healthcare professionals, to report data relating to user engagement, to gather follow up information regarding impact on clinical practice and guidance and to gain an understanding of the perceptions of the target audience about the initiative and their preferences for future programs.

Approach Our program called Evidence Rounds centered around interprofessional educational sessions to disseminate evidence and promote evidence-informed practice and was delivered in collaboration with an implementation team of healthcare professionals. Lavis's organizing framework for knowledge transfer was used to describe our implementation strategy. We used the TIDieR checklist to describe the initiative. We gathered attendance figures and web analytics from our dedicated website to assess user engagement. Follow up with the implementation team 3, 16 and 21 months post-initiative allowed us to gather information on impact. Focus groups and interviews were conducted to explore the perceptions of attendees and presenters.

Results Six educational sessions presented by 18 health care professionals took place over a nine month period with 148 attendances of which 85 were unique (individuals who attended at least one session). During the period spanning from one month before, during and one month after the running of the group sessions, 188 unique visitors, 331 visits and 862 page views were recorded on our website. Follow up with the implementation team demonstrated impact on clinical practice and local guidance. Our focus groups and interviews revealed the importance of involving individuals who create guidance documents in these types of initiatives.

Conclusion Tailored KT strategies have the potential to lead to changes in the delivery of patient care and improvements to clinical guidance. Achieving sustainable programs can be challenging without dedicated resources such as staffing and funding.

H1.2

Theme: Knowledge Translation & Exchange (includes KTE methods)

ROOM 501

Barriers and facilitators to implementing an early rehabilitation bundle in a pediatric intensive care unit: a qualitative analysis

Presented by: **Kate Kerkvliet**, Project Coordinator, McMaster University

Background and Objectives:

A reduction in the mortality rate for critically ill children has been offset by an increase in incidence of pediatric intensive care unit (PICU)-acquired complications, leading to delays in patient recovery. A care bundle was designed and implemented in a PICU to enhance early rehabilitation. The objective of this project was to evaluate the clinical staff's perception of the bundle and identify implementation barriers and facilitators to inform sustainability and future implementation activities.

Approach:

Three semi-structured focus group sessions were conducted with pediatric residents and fellows, physicians, nurses, and other staff at the McMaster Children's Hospital (MCH) PICU. Focus group questions were based on selected domains of the Consolidated Framework for Implementation Research (CFIR) and were tailored to specific components and resources associated with the intervention bundle. Focus groups were led by one of two facilitators and audio recordings were created with participant consent. A thematic qualitative analysis of the audio transcripts was conducted using NVivo software, with transcript content coded and organized based on CFIR domains.

Results:

Forty-five people participated in the focus groups. Overall, participants were positive about the intervention bundle and felt that it improved the rehabilitation of critically ill children; however, results indicated that implementation was inconsistent across individuals and across disciplines. Key barriers to implementation included lack of knowledge and skills related to the intervention bundle among pediatric residents, incompatibility of intervention processes with workflow, lack of perceived importance of completing an intervention daily goals checklist, and varied levels of comfort among PICU staff with applying clinical aspects of the program. Recommendations to address these barriers included creating a sustainable training program for residents and staff, incorporating the program goals checklist into patients' charts, and improving resources made available to staff about applying components of the intervention bundle.

Conclusion:

Qualitative analysis of the focus group results identified key modifiable barriers and facilitators to implementation of an intervention bundle

recommending best practices at a tertiary care PICU. These results will be used to inform ongoing and future implementation of the intervention at PICUs to improve outcomes for critically ill children.

H1.3

Theme: Knowledge Translation & Exchange (includes KTE methods)

ROOM 501

When research-industry partnerships don't work out: Lessons learned

Presented by: **Emily Read**, Assistant Professor, Faculty of Nursing, University of New Brunswick

Background and Objectives: Obstacles in providing the best care for seniors through care facilities include the high turnover rate of staff, high rates of burnout and compassion fatigue, and a lack of accountability and compliance with best practices. Technological solutions are rapidly being developed to address these and other issues, but are not necessarily improving the quality of care. We sought to validate a digital platform meant to lower workload, increase accountability, and automate repetitive tasks.

Approach: The purpose of the study was to validate a digital platform for daily charting and examine its impact on work and health outcomes of formal caregivers for older adults living in long-term care homes in Atlantic Canada. To accomplish this, we designed a mixed-methods study comprised of (1) a longitudinal employee survey at 3 time points (baseline, 3 months, and 6 months), and (2) open-ended one-on-one interviews with a sub-sample of employees and facility operators. The study was designed to capture longitudinal data about burnout, workplace stresses, and inefficiencies.

Results: We were unable to complete the study as planned due to challenges working with the start-up company. These included gaps in understanding or motivation between the company and the researchers in terms of what the validation study was meant to accomplish. The researchers frequently were challenged to maintain an ethical level of privacy for the study participants and develop an adequate sample size in light of the company's customer service and sales focus. It is possible that there was a perceived dichotomy between the recruitment of research participants and converting customers to a revenue stream. As a result, the company had difficulties recruiting to meet our initial targets.

Conclusions: We make three recommendations for working with startups. 1) Communication between partners needs to be more in-depth than usual. 2) Any information about the client base a company has should be shared with researchers. 3) Both partners should discuss and demonstrate up front how their respective commitments will be fulfilled.

H1.4

Theme: Knowledge Translation & Exchange (includes KTE methods)

ROOM 501

The Case for a Knowledge Translation Framework as a Comprehensive Strategy for Health Research Impact Assessment

Presented by: **Kelly J. Mrklas**, PhD Trainee, University of Calgary

Background

Health research impact assessment has developed rapidly over the last 20 years. Despite its evolution, challenges and gaps, very few attempts to connect health research impact assessment (HRIA) with knowledge translation (KT) approaches to lever their similarities and strengths, exist. The Knowledge to Action Framework (K2A) (Graham et al) is a well-validated, flexible KT framework that can accommodate (HRIA) needs, and help remedy some of its most serious flaws. This study contributes to health research impact assessment through the identification of key challenges and opportunities, using a KT lens.

Objectives

To review key reviews (systematic, realist, narrative, focused literature, among others) undertaken between 1990 and 2018 and identify KT approaches. To document the historical and developmental underpinnings, purpose and approach, strengths and limitations of a K2A impact assessment approach, and to explore how these features may help address current challenges and opportunities in HRIA.

Methods

A focused search for reviews was undertaken to identify studies published from 1990-2018 that describe research impact assessment frameworks/models. Reviews were assessed to identify and describe current challenges and opportunities, and to document the inclusion of KT/implementation frameworks/methods as HRIA approaches. Findings related to the historical development, underpinnings, purpose, approach, key strengths and weaknesses were extracted for any relevant approaches. A detailed examination of K2A was undertaken to explore how to best fill gaps, address challenges and lever opportunities.

Results

Twelve published reviews and a very few KT/implementation frameworks were identified. A review of the history, underpinnings, purpose, approach, key strengths and weaknesses demonstrated alignments to help overcome linearity, attribution, double counting, knowledge user participation, resource and time costs, evaluative burden, and other challenges. Review of the K2A revealed opportunities for integration, process efficiency, potential reductions in cost/resource burden, contribution and attribution, and potential opportunities to identify and understand the "how and why" of impact.

Conclusions

A focused review of KT framework use in health research impact assessment can help identify and resolve challenges, and can inform the development of novel strategies. Deliberate linkage of health research impact assessment and KT/implementation frameworks/models has potential for quickly advancing this field.

H2.1

Theme: Pharmaceutical Policy

ROOM 502

Association between commercial funding of Canadian patient groups and views about funding of medicines

Presented by: **Joel Lexchin**, Professor Emeritus, York University

Background

Patient groups represent the interest of their members when it comes to drug funding. Many patient groups receive grants from pharmaceutical companies that make products being considered for funding. This research examines whether there is an association between the positions that Canadian groups take about the products and conflicts of interest with the companies.

Methods

The Common Drug Review (CDR) and panCanadian Oncology Drug Review (pCODR) make recommendations to Canadian provincial and federal drug plans about funding particular drug-indications. Both utilize input from patient groups in making their recommendations. Patient group submissions are available from both organizations and these submissions contain statements about conflicts of interest. Views of the patient groups, with and without a conflict with the company making the drug under consideration and without any conflicts at all, were assessed and then compared with the recommendations from CDR and pCODR.

Results

There was a total of 222 reports for drug-indications. There were 372 submissions from 93 different patient groups. Groups declared a total of 1896 conflicts with drug companies in 324 (87.1%) individual submissions. There were 269 submissions where groups declared a conflict with the company making the product or said they had no conflict. Irrespective of whether there was a conflict, the views of patient groups about the drug-indications under consideration were the same. Kappa values comparing patient group views with recommendations were either below the level expected by chance or poor.

Conclusions

The large majority of patient groups making submissions about funding of particular drug-indications had conflicts with the companies making the products and their views about the products were almost always positive. This association between funding and views needs to be further investigated to determine if a true cause and effect exists.

H2.2

Theme: Pharmaceutical Policy

ROOM 502

Formulary listing of a novel long-acting injectable antipsychotic: interrupted time series analysis of long-acting injectable antipsychotics 1996-2015

Presented by: **Donica Janzen**, PhD student, University of Manitoba

Formulary listing of a novel long-acting injectable antipsychotic: interrupted time series analysis of long-acting injectable antipsychotics 1996-2015

Background Publicly funded drug programs use formularies to promote judicious use of cost-effective medications. A novel long-acting injectable (LAI) formulation of risperidone was marketed in 2004 and listed on Manitoba's Provincial Drug Program formulary in 2009. This study aims to 1) assess the impact of risperidone-LAI listing on the use of previously listed, lower cost LAI antipsychotics and 2) determine whether prescribing was consistent with criteria for use outlined in the formulary.

Approach We used the administrative databases of the Manitoba Centre for Health Policy (MCHP) to identify LAI antipsychotic prescriptions dispensed in community pharmacies in Manitoba between 1996 and 2015. Interrupted time series analysis was used to model the number of LAI antipsychotic users 1) at baseline, before risperidone LAI market entry, 2) after market entry but before formulary listing, and 3) after formulary listing. We assessed antipsychotic adherence prior to initiation of risperidone-LAI using medication possession ratios (MPR) and determined the proportion of users hospitalized for schizophrenia in the 2 years preceding incident risperidone-LAI dispensation.

Results Use of LAI antipsychotics declined an estimated 24.0 users per fiscal year in the baseline period before risperidone-LAI market entry ($p < 0.01$). After risperidone-LAI market entry, risperidone-LAI use grew an estimated 23.4 users per fiscal year ($p < 0.01$) and the number of first-generation LAI antipsychotic users stabilized at an estimated 474 users per fiscal year. After formulary listing, the estimated increase in risperidone-LAI use nearly doubled to 41.6 users per fiscal year ($p < 0.01$), while first-generation LAI antipsychotic use declined an estimated 7.8 users per fiscal year ($p < 0.01$). Of new risperidone-LAI users, 52.9% were non-adherent to their previous oral antipsychotic regimen, defined as having an MPR < 0.8 . Only 39.8% of new risperidone-LAI users were hospitalized for schizophrenia in the preceding 2 years.

Conclusion Formulary listing led to significant growth in risperidone-LAI use and concomitant decline in first-generation LAI antipsychotic use. More than half of new risperidone-LAI users had a recent history of non-adherence, but a minority had a schizophrenia-related hospitalization in the preceding 2 years.

H2.3

Theme: Pharmaceutical Policy

ROOM 502

Pressures Behind the Rising Costs in Canadian Private Drug Plans

Presented by: **Nevzeta Bosnic**, Senior Economist, PMPRB

After years of low rates of growth due to generic entry and price reductions, drug costs in private plans have grown at a solid rate over the last five years. This presentation sheds light onto the key cost pressures, differentiating between short-term effects and those contributing to a longer lasting impact. The presentation will also touch on the differences and similarities in cost pressures between the public and private payer markets.

Recent trends in private plans point toward a marked increase in drug costs driven largely by the increased use of newer and more expensive drugs. Meanwhile, cost savings from generic and biosimilar substitution, as well as price reductions, have stabilized in recent years and are no longer offsetting the increasing cost pressures from demographic and drug-mix change. The varying effect of DAA drugs for hepatitis C may reflect the overall market adjustments of these relatively new drugs as well as evolving reimbursement policies and prescribing practices.

Using IQVIA Private Drug Plan data, the analysis isolates five main factors contributing to the growth in drug expenditures: demographic, volume, price, substitution (generic and biosimilars) and drug-mix effects. It focuses on 2018, with a retrospective look at trends over the last decade.

A greater understanding of the forces driving expenditures in private drug plans in Canada will inform policy discussions on system sustainability and aid private plans in anticipating and responding to evolving cost pressures.

H2.4

Theme: Pharmaceutical Policy

ROOM 502

Biosimilars in Canada: Current Environment and Future Opportunity

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

Potential savings from biosimilars is a subject of keen interest to Canadians, especially in light of the patent life extensions for biologics negotiated in the recent USMCA. Biosimilars offer an opportunity for significant cost reductions, as our annual national sales for biologics tops \$7 billion, or over 40% of all patented medicine sales.

While the international experience has many success stories, marked by early biosimilar entry, healthy competition amongst the manufacturers, and sizable discounts and uptake, domestically the market dynamics have been less encouraging. In Canada, biosimilar uptake and approval rates, as well as competition among biosimilars, lags well behind Europe. For example, in the last quarter of 2017, the uptake for infliximab biosimilars in Canada was only 4%, compared to a median of 34.5% for the OECD.

Capturing data from various sources, including the IQVIA MIDAS™ Database, the FDA, EMA, and Health Canada, and GlobalData, this presentation compares the overall emerging Canadian market for biosimilars with our international counterparts. The analysis delves more deeply into the uptake, pricing, and the cost implications, for specific biosimilars, with a focus on the public drug plans. It also provides a glimpse into emerging biosimilar medicines in the pipeline.

As the historic savings from generic price reductions and substitutions begin to wane, the potential savings from biosimilars could play an increasing role in offsetting rising drug costs. This overview will uncover the current gaps as well as the potential savings from aligning the Canadian uptake and pricing of biosimilars with other industrialized countries.

H3.1

Theme: Primary Health Care

ROOM 612

Achieving Primary Healthcare Excellence in Canada through Family Practice Nursing Competencies

Presented by: **Julia Lukewich**, Assistant Professor, Memorial University of Newfoundland

Background and Objectives: Family practice (FP) nurses provide feasible and affordable solutions to issues facing Canada's primary healthcare systems. FP nurses are Registered Nurses (RNs) who practice in primary care (commonly known as "family practice nurses" and "primary care nurses"). FP nurses improve access to primary care and continuity of care, reduce healthcare costs, and promote high quality care. A clear set of defined competencies will support the integration and optimization of FP nurses into primary care settings.

Approach: A panel of key nursing stakeholders, a review of international literature, and members of the Canadian Family Practice Nurses Association (CFPNA) informed a draft of national FP nursing competencies. A Delphi process will be used to obtain national agreement regarding competency statements. Delphi participants will be nurses who have expertise/experience in FP nursing (clinical, research, education, policy, administration). Subsequently, two national surveys will be completed to: (1) assess the degree to which these competencies are integrated into undergraduate nursing/post-graduate FP nursing curriculums; and (2) determine the current practice and learning needs of practicing FP nurses with respect to these competencies.

Results: The draft of FP nursing competencies is comprised of approximately 50 individual competency statements organized within 6 domains: (1) Professionalism, (2) Clinical practice, (3) Communication, (4) Collaboration and partnership, (5) Quality assurance, evaluation, and research, and (6) Leadership. These competency statements reflect entry-to-practice competencies for RNs within the primary care setting. National consensus on these statements will be sought from a panel of nursing experts/stakeholders that represent various areas of FP nursing (in-progress).

Conclusions: National FP nursing competencies will enhance the integration of FP nurses into primary care, facilitate improved team functioning, and guide professional practice. Clarity of FP nursing competencies will benefit patients, providers, and healthcare systems, and aid provincial/territorial governments and nursing organizations in the continued integration/optimization of RNs within primary care.

H3.2

Theme: Primary Health Care

ROOM 612

Understanding Collaborative Primary Care Practice that Involves Family Practice Nurses in Newfoundland & Labrador

Presented by: **Julia Lukewich**, Assistant Professor, Memorial University of Newfoundland

Background and Objectives

Family practice (FP) nurses are Registered Nurses who work within primary healthcare. Although integration of this role has progressed slowly in Newfoundland and Labrador (NL), it may offer a vital solution towards addressing health system challenges. This study explores experiences of FP nurses in NL by examining their current roles and activities, establishing past processes for implementing the role, and describes the benefits of this for providers and patients.

Approach

This study uses a descriptive qualitative design. An email invitation was distributed to all family physicians and Registered Nurses in NL who worked in a primary care setting and had previously agreed to share their contact information. Snowball sampling was also employed to identify additional eligible participants. Using a semi-structured interview guide, participants were asked about their experiences, roles, and scope of practice within primary care settings. Interviews were recorded and transcribed verbatim, and later analyzed using NVIVO software. A constant comparative method was employed amongst the research team to identify reoccurring codes and themes throughout the interviews.

Results

A total of 3 family physicians and 5 Registered Nurses participated in the interviews. Findings indicate that FP nurses in NL engage in a wide range of roles and activities within primary healthcare, with a focus on health education, screening and prevention, assessment, chronic disease management, and follow-up. Strategies to support communication and advanced preparation were some of the processes described to support effective integration of the nurse into the role. Continuing education opportunities and collaborative relationships with family physicians serve as facilitators to the role, whereas financial factors, such as the cost of employing FP nurses in the current fee-for-service environment, act as barriers. Participants reported many benefits for all stakeholders involved in the practice, including improved access to and greater quality of care.

Conclusion

FP nurses can serve as a valuable resource and contribute towards the delivery of high-quality care within primary care settings. As this role is currently poorly understood within NL, results can help to inform future planning and integration of nurses within collaborative primary care practices.

H3.3

Theme: Primary Health Care

ROOM 612

Pharmacist and Patient Perspectives on Recruitment Strategies for Randomized Controlled Trials: A Qualitative Analysis

Presented by: **Jane Fletcher**, Research Assistant, University of Calgary Cumming School of Medicine

Although recruitment is a major challenge for most randomized controlled trials, few trials report on the effectiveness of their recruitment procedures, or how they might be enhanced. The objective of our study was to better understand the challenges and successes of recruitment strategies in the context of a large RCT.

The ACCESS trial is an RCT of patient education and copayment elimination for preventive medications among low-income seniors with chronic disease. We focused on the two most successful recruitment strategies: patient-facing materials and the use of community pharmacists. Using qualitative descriptive methods, we collected data from purposively sampled pharmacists (20 individual interviews) and participants (n=12 in 2 focus groups). Pharmacists were asked about their impressions of the study, the challenges they faced, and the methods they employed to recruit. Focus groups centered on the patient-facing recruitment materials. Interviews and focus groups were recorded, transcribed and analyzed using thematic analysis technique.

Pharmacists were introduced to the study in multiple ways: patients, ACCESS staff, colleagues and the media. Their first impressions of the study were positive as they described being enticed by the potential benefit of copayment elimination to their patients. Given time constraints in community pharmacies, pharmacists cited the ease and low commitment as factors in their willingness to recruit. Pharmacists were also more likely to recruit if they were well informed on all aspects of the study. Participants noted that their primary motivations for participating in the study were mainly the tangible benefits of free preventive medications and the intrinsic value of participating in research. They were more likely to agree to be enrolled if they had encouragement from healthcare providers, family and ACCESS staff.

Recruitment through pharmacies is an effective method since patients have trusting relationships with their pharmacist. Pharmacists need to have a good knowledge of the study and facile procedures. Messaging to potential participants should focus on the tangible benefits of participation.

H4.1

Theme: Patient Engagement

ROOM 507

A Canadian research agenda to improve South Asian patients' experience of knee replacement surgery: Results from a modified Delphi study

Presented by: **Stirling Bryan**, Professor, University of British Columbia

Background and Objectives:

Whilst most total knee arthroplasty (TKA) patients report high levels of satisfaction, up to 1-in-5 express dissatisfaction with the outcome of their surgery. Our project's goal was to understand the experiences and satisfaction of South Asian TKA patients in British Columbia (BC), with a view to identifying a South Asian patient-oriented research agenda for TKA in Canada. To our knowledge, this study is the first to elicit research priorities from South Asian patients.

Approach:

We undertook a mixed methods modified Delphi study in BC. Three focus groups were conducted with South Asian TKA patients/caregivers, in English, Punjabi and 'Hinglish', to identify survey items. Participant recruitment was through community and health system outreach, seeking diversity in sex, age and TKA outcome satisfaction. Focus groups were audio-taped and transcribed, and data analyzed using thematic analysis. A Delphi questionnaire was then developed and administered over two rounds, to a panel comprising two stakeholder groups: South Asian TKA patients/caregivers and health professionals. The Round 2 questionnaire only included topics 'strongly' supported by at least one stakeholder group.

Results:

A total of 27 TKA patients/caregivers attended the focus group discussions. Our analyses resulted in six broad themes (Reducing the need for TKA; Preparing for, and timing of, surgery; Improving knee implants; Improving surgical techniques; Enhancing in-hospital recovery; Supporting longer-term recovery), and 25 specific research topics. The Delphi survey (both Rounds 1 and 2) was completed by 32 (54% response) patients/caregivers and 25 (76% response) clinicians. Two topics were indicated as top priorities for both patients/caregivers and clinicians: Promoting exercise following surgery and Self-management after hospital discharge. One of the highest ranked topics for patients/caregivers – Improving knee implants to allow for kneeling, squatting and walking downhill – was only supported by 36% of clinicians.

Conclusion:

Typically, research agenda settings exercises exclude minority groups, thereby preventing identification of culturally-specific research topics. Our study is a response to such concerns. The findings point strongly to future research priorities for South Asian TKA patients on promotion of exercise and self-management following surgery, and improvement in knee implants.

H4.2

Theme: Patient Engagement

ROOM 507

Comparing Transitions Between Care Settings Among Older Adults and their Caregivers: A Qualitative Study

Presented by: **Marianne Saragosa**, PhD Student, university of toronto

Canadians ≥ 65 years can become high users of health care resources. Consequently, these patients tend to experience more care transitions from hospital to home and are the target of multiple improvement initiatives. There is scarce literature comparing the discharge and the post-hospitalization experience between different care settings. Our study aimed to compare the care transition experience from acute care versus rehabilitation to home among older patients and their caregivers.

A qualitative descriptive design was employed using telephone semi structured interviews. Participants were recruited from several inpatient units within acute care hospitals and rehabilitation facilities throughout Ontario, Canada, who were enrolled in a randomized control trial (RCT) of a discharge summary intervention. Inclusion criteria included non-palliative participants ≥ 65 years discharged home with congestive heart failure, pneumonia, chronic obstructive lung disease, and hip fracture or hip replacement within the previous 30 days. The following question was used when asking participants to describe their transition experience, 'What stands out for you regarding your transition home after being discharged from [site name]?'

Sixteen patients (mean age 76 years, 56% female) and four caregivers of patients who underwent a care transition participated in a one-time interview. Interviews were conducted between October 2017 and July 2018. Commonly experienced across all care settings was the integral role of a family/informal caregiver in facilitating the transition, patients and caregivers experiencing variable discharge preparation, and health care providers optimizing transitions through relating well with patients and caregivers. The role of a prior transition experience in preparing a patient for discharge and managing their recovery was more commonly voiced by orthopaedic patients. Several gaps identified by this same group and those leaving rehabilitation concerned having to unexpectedly coordinate ongoing post-discharge care and having to wait for outpatient physiotherapy services.

Differing responses between acute care and orthopaedic settings suggest efforts need to be contextualized and embedded in practice but also to prioritize a high level of patient and caregiver engagement during discharge preparation. Our findings underscore the need to create targeted improvement efforts that better support older patients and their caregivers navigating transitions in care.

H4.3

Theme: Patient Engagement

ROOM 507

Collaborating with Patient and Public Research Partners to Enable Meaningful Engagement in Research

Presented by: **Ruta Valaitis**, Professor; Dorothy C. Hall Chair in Primary Health Care Nursing, McMaster University

Background and objectives: Researchers, policymakers, and research funders recognize the value and importance of patient and public partnership in health and social care research. Partnerships support alignment of research with public priorities, leverage their expertise and skills, and enhance potential for impact. The Aging, Community and Health Research team at McMaster University collaborated with older adults to explore existing resources to orient Patient and Public Research Partners to research, identify gaps, and co-design new tools to address gaps.

Approach: A systematic search of web-based resources on patient and public engagement and research training materials was conducted. Patient and Public Research Partners reviewed the materials and identified several gaps in foundational content to recruit and orient them to potential research team roles, and the research process. Patient and Public Research Partners were engaged in co-designing materials to support training of this population in health and social care research. To ensure these materials met their needs, iterative refinement of recruitment and orientation materials was completed by the Patient and Public Research Partners together with the research team.

Results: The result of this co-design process was the creation of 6 electronic and hard-copy pamphlets, now publicly available on the Aging, Community and Health Research Unit's website. Pamphlets address the following topics: a) how older adults can partner with researchers, b) what constitutes health and social care research, and c) how older adult research partners can inform the development of a research plan, data collection, data analysis, and how research findings are shared. Pamphlets describe the meaningful and collaborative roles Patient and Public Research Partners can take in contributing to each stage of the research process. Additionally, a repository of relevant web-based resources, organized by research phase, was created to support the development of an online toolkit for broad dissemination.

Conclusion: Patient and Public Research Partners need appropriate orientation and training to enable meaningful engagement with the research team. Future directions include an evaluation of available resources and utilizing and tailoring the pamphlets to support recruitment and engagement of new older adults into specific health and social care research studies.

H4.4

Theme: Patient Engagement

ROOM 507

What are the strategies used by health researchers to communicate their findings to the public in the digital and social media ecosystem? Results from a scoping review

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

Background and objectives: Communicating findings of health research to the public is crucial to inform policy-making and support individuals' self-care. Health researchers play a growing role in science communication (SC). This is especially true now that the public has direct access to information from researchers through the digital and social media ecosystem. This scoping review aimed to describe the SC strategies and communication channels used by health researchers with the public in the digital and social media ecosystem.

Approach: This scoping review followed the Joanna Briggs Institute methodological framework. In April 2018, six bibliographical databases were searched for literature published since 2000 that met inclusion criteria. Publications were included if they described a process or an activity of SC targeting the public initiated by health researchers in the digital and social media ecosystem. Grey literature sources, trial registries, and journals were also hand-searched. Reviewers worked independently and in duplicate to screen titles and abstracts, perform full-text assessment, and extract data. A constant comparative method was used to identify the types of SC strategies reported in included publications.

Results: From a pool of 960 publications, 18 met inclusion criteria. Overall, 75 SC strategies used by health researchers in the digital and social media ecosystem were identified. These SC strategies were regrouped under 9 types: content, credibility, engagement, intention, linguistics, planification, presentation, social exchange, and statistics. Only 13 SC strategies (17.33%) were cited more than once, and the most frequent were: "Announcing new studies, research articles and findings" (content), "Use hashtags" (engagement), "Consider the usefulness of the research findings for the target audience" (intention), "Minimize the use of, or replace, scientific jargon" (linguistics), and "Encourage discussion, participation and engagement on digital and social media" (social exchange). The most frequently cited communication channels were Twitter, blogs, Facebook, personal websites, and YouTube.

Conclusion: Findings suggest health researchers employ several types of SC strategies ranging from planification to social exchange in order to communicate their findings to the public in the digital and social media ecosystem. Future research should focus on evaluating the effect of SC strategies on the public's understanding of science.

H5.1

Theme: Mental Health

ROOM 506

The design of a qualitative research strategy for a network initiative aimed at service improvement in youth (11-25 years) mental health: the ACCESS Open Minds (OM) initiative

Presented by: **Kathleen Charlebois**, Research Associate, Douglas Hospital Research Institute

Background and objectives : This presentation focusses on a qualitative research design strategy within a youth mental health initiative ACCESS Open Minds (ACCESS OM-Esprits ouverts), designed as a systemic response to improving youth mental health services through service transformation, stakeholder engagement and evaluation. With its 14 urban, rural and Indigenous sites providing youth mental health services, it prioritizes various stakeholders' input (youth, families, clinicians, researchers, service providers and decision-makers) in service delivery as well as in evaluation.

Approach: ACCESS OM service transformation comprises five major objectives considered key to improving youth mental health services (early identification, rapid access for a first assessment, continuity of care across the age spectrum, appropriate care within 30 days and youth/family engagement). ACCESS OM also comprises a governance structure that includes national advisory councils (youth, family and Indigenous). The challenge lies in developing a project evaluation research strategy that recognizes the heterogeneity and identity of each site, along with practical and methodological considerations. The inclusion of stakeholders in the evaluation process becomes paramount in reconciling these concerns.

Results : Following extensive consultation around a qualitative strategy, including meetings and an e-survey, stakeholders identified challenges in applying the ACCESS OM model to implementing youth mental health services. This concern guided researchers' choice of the theoretical framework (Normalization Process Theory (NPT)) as well as case study design. The decision was made to conduct a single case study around the ACCESS OM model and discern common characteristics of implementation processes across sites and the specific contextual elements shaping those processes. A participatory approach will underpin data collection and analysis as stakeholders will play a role in interviewing participants (youth, families, clinicians, service providers, researchers, youth/family council representatives and decision-makers), a photovoice project and in coding the data.

Conclusion : Our hope is that this presentation will not only open avenues as to how best to craft a qualitative research strategy for an initiative like ACCESS OM by involving stakeholders and incorporating them into the research process, but also highlight the interdependency between research, service implementation and stakeholder engagement.

H5.2

Theme: Mental Health

ROOM 506

The use of videoconferencing to deliver psychotherapy for postpartum women: A pilot study

Presented by: **Rebecca Yang**, Research Coordinator, WCH

Depression and anxiety are prevalent during the postpartum period. Psychotherapy is the first-line treatment for this condition, but many women face barriers to attending in-person appointments. Videoconferencing (VC) as a mode of delivery for psychotherapy presents an exciting opportunity to provide flexible and accessible mental health care. The objectives of this study were to explore the feasibility, acceptability, and preliminary effectiveness of optional VC in addition to standard office-based psychotherapy among postpartum women.

We conducted a pilot parallel group randomized controlled trial in a specialized mental health program within an Ontario academic hospital comparing in-person psychotherapeutic treatment as usual (TAU) delivered by psychotherapists, and TAU with additional optional VC (TAU-VC) for postpartum depression and anxiety. Primary outcomes were recruitment feasibility, acceptability of the TAU-VC intervention, and trial adherence. Participants completed symptom measures (Edinburgh Postnatal Depression Scale (EPDS), Generalized Anxiety Disorder 7-Item (GAD-7), Parental Stress Scale (PSS)) at baseline and three months post-randomization. We also conducted semi-structured interviews with psychotherapists and 13 participants, and qualitative data was analyzed thematically for insights on study objectives.

38 participants were enrolled in the study (19 per condition). Among TAU-VC participants, 74% used the VC option at least once, and rated the VC option highly in terms of quality of care, perception of interaction, and similarity to in-person interaction. TAU-VC participants also reported an average cost savings of \$26 CAD and time savings of 2.5 hours per session related to preparation and transportation. There were no statistically significant differences between groups in terms of therapy attendance ($p=0.71$) or symptoms at three months post-randomization (EPDS: treatment effect size -0.42 , [95% CI $-4.23, 3.91$]; GAD-7: -0.44 , [95% CI $-4.49, 3.62$]; PSS: 3.42 , [95% CI $-1.74, 8.59$]). The qualitative data further contextualized the findings by detailing the participants' and therapists' attitudes and experiences with VC psychotherapy.

Psychotherapy delivered through VC is acceptable among postpartum women, with benefits such as time and cost savings. VC psychotherapy is also a feasible program for an urban hospital, and a larger study is justified to definitively understand its effectiveness and to inform further scale.

H5.3

Theme: Mental Health

ROOM 506

Development and evaluation of an instrument to measure discharge planning processes in mental health care: Preliminary findings

Presented by: **Sarah Xiao**, PhD Candidate, Lawrence S. Bloomberg Faculty of Nursing, University of Toronto

Background and Objectives:

To ensure continuity of care as mental health patients transition from hospital to community settings, discharge planning is essential. However, there is currently little agreement on how to effectively assess the quality of discharge planning processes. To address this knowledge gap, a multi-phase study is underway to develop an instrument to measure and evaluate the quality of discharge planning processes in mental healthcare settings. This paper will present preliminary findings from the first study phase.

Approach:

This study consists of three phases. In Phase I, domains and indicators of quality discharge planning processes were identified through a concept analysis and literature review, and validated through focus groups with mental healthcare providers. This step was followed by a two-round Delphi process to generate consensus amongst an interdisciplinary expert panel on key indicators for measuring the quality of discharge planning processes. In Phase II, preliminary instrument items will be constructed and validated using a formal content validation process. In Phase III, the instrument will be pilot tested through chart reviews and cognitive interviews at a mental healthcare facility.

Results:

The concept analysis and literature review yielded 72 quality indicators in six domains: comprehensive needs assessment; collaborative, patient-centered care; resource availability management; care and service coordination; discharge planner; and discharge plan. Two additional domains (i.e., information gathering and synthesis, patient capacity assessment) and 7 indicators were included after the focus group discussions. In the first Delphi round, 40 expert panelists were sent a survey with the 79 quality indicators and asked to rate the importance of each indicator. Preliminary data analysis revealed a 92.5% response rate ($n=37$) and consensus on 74 quality indicators. It is anticipated that the second survey round and expert panel results will inform a precise list of quality indicators for the development of valid and reliable instrument items in Phase II.

Conclusion:

The instrument developed can be used by healthcare providers to provide insight into practice and knowledge gaps in care, organizational leaders to inform process and structural improvements in mental healthcare settings, and policymakers to design more effective policies and practice guidelines for safer care transitions from hospital to community.

H5.4

Theme: Mental Health

ROOM 506

An examination of mental health and addictions policy implementation efforts and the structures that support them in New Zealand, Canada (Ontario) and Sweden

Presented by: **Heather Bullock**, PhD candidate, Health Policy, McMaster University

Background & Objectives: There is a growing body of research about effective programs and services to address mental ill health and reduce substance use problems, and policy directions aimed at achieving better mental health outcomes. Yet we still do not know enough about how to implement and scale these evidence-informed policies and programs effectively across systems. This study focuses on how implementation is structured and the methods being used in large, well-developed mental health systems.

Approach: We conducted a comparative case study using an iKT approach to examine the role of intermediary organizations supporting implementation in mental health systems. Selected cases (based on Mill's Method of Similarity) included: New Zealand, Canada (Ontario) and Sweden. We then drew from established explanatory frameworks to address three questions: 1) Why were the intermediaries established? 2) How are intermediaries structured and what functions do they fulfill in systems to support the implementation of policy directions? and 3) What explains the differences among them?

Results: Data collection included site visits, key informant interviews and document analysis. A total of 47 interviews were conducted and policy and other publicly available documents were reviewed. In each jurisdiction, a unique set of problems, policies and political events were coupled by a policy entrepreneur to bring intermediaries onto the decision agenda. While intermediaries varied greatly in their structure, their functions were surprisingly similar, with some key differences. These differences are explained using the 3I+E framework (Lavis 2004).

Conclusion: Intermediaries are enablers of policy implementation and are critical in filling the gap between evidence-informed policy goals and outcomes. Policy-makers working in mental health and addictions must consider capacity to support implementation, which should include intermediaries that have skills and expertise in knowledge translation, implementation science and quality improvement.

H6.1

Theme: Maternal and Child Health

ROOM 505

Health care utilization for children in the last year of life and the system-level impact of availability of pediatric palliative care services

Presented by: **Sarah Spruin**, Methodologist I, ICES UOttawa

Background: Pediatric palliative care (PPC) improves quality of life for children and families facing life-threatening conditions, and often includes end-of-life care. For individual children, specialist PPC services (consultant teams and/or inpatient hospice facilities) have been associated with decreased health care utilization and costs. This study compares regional health care utilization and costs for pediatric decedents, across two regions, one with and one without the availability of these PPC services.

Approach: A retrospective cohort study compared all decedents aged 1 month to 19 years at time of death (January 2010 to December 2014) from regions surrounding CHEO in Ottawa and McMaster Children's Hospital (MCH) in Hamilton. The regions were similar during this time period, except that the CHEO region had a specialist PPC team and a pediatric hospice facility, while the MCH region had neither. All decedents eligible for Ontario's Health Insurance Program in their last year of life were included. Outcomes measures included days accessing health care, health care costs in the last year of life, and location of death.

Results: 807 decedents were identified (45% CHEO, 55% MCH). Statistically significant differences included the CHEO region having more decedents living rurally (29.8% vs. 10.8%, $p < 0.001$); fewer mean home care days (18.7 vs. 30.9, $p=0.006$), and a smaller proportion of in-hospital deaths (55.1% vs. 63.7%, $p=0.013$). Non-significant trends included fewer mean days in ICU (9.9 vs. 13.6, $p=0.11$), more days in emergency (1.49 vs 1.29, $p=0.11$), and lower measured mean health care costs (\$68,748 vs \$87,766, $p=0.13$). Hospice days and costs, however, are unfortunately not captured in this dataset, and are an area for further research. The potential cost-savings for the MCH region (\$1,700,000/year) exceeded the total ministry of health funding for the CHEO region hospice (~\$1,000,000/year), which also encompassed the care of many non-decedents.

Conclusion: Health care utilization in the last year of life as well as location of death were different between these regions during this time period. The presence of PPC services may be one contributing factor. Further research is required to determine the strength of this association.

H6.2

Theme: Maternal and Child Health

ROOM 505

Barriers and facilitators of access to midwifery care for people of low socio-economic status: a qualitative descriptive study

Presented by: **Liz Darling**, Associate Professor, McMaster University

Background and objectives: Improving access to midwifery care was a goal of regulating and funding midwifery care in Ontario; however, people of low socio-economic status (SES) remain less likely to access midwifery care. Little is known about why this is the case and about how barriers to midwifery care can be mitigated. Our objective was to explore the barriers and facilitators to accessing midwifery care identified by people of low SES.

Approach: We conducted a qualitative descriptive study using semi-structured interviews with pregnant and post-partum people of low SES in Hamilton, Ontario. Participants were recruited through social media and local health and social service locations. We screened potential participants for eligibility to participate using questions about education, employment status, occupation, income support, and household income. A non-midwife research assistant conducted and digitally recorded individual interviews in person or by telephone. We managed transcribed interviews in NVivo software. Using Sandelowski's methods of qualitative descriptive analysis, the research assistant coded transcripts using open coding techniques and then the research team conducted thematic analysis.

Results: We interviewed 13 midwifery care recipients and 17 non-recipients of midwifery care. Four themes arose from the interviews: "I had no idea...", "Babies are born in hospitals", "Physicians as gateways into prenatal care", and "Why change a good thing?". Non-recipients of midwifery care had misconceptions and low levels of knowledge about midwives' scope of practice and education. Concerns about risk and safety led participants to seek physician care. Physicians are considered the entry point into the health care system, and few participants received information about midwifery from physicians. Recipients of midwifery care found it to be highly appropriate for people of low SES. Word of mouth was a primary source of information about midwifery and the most common reason for people to seek midwifery care.

Conclusion: Inequitable access to midwifery care for people of low SES is exacerbated by lack of knowledge about midwifery within social networks and a tendency to move passively through a system which traditionally favours physician care. Targeted knowledge mobilization efforts will be necessary to reduce disparities in midwifery care access.

H6.3

Theme: Maternal and Child Health

ROOM 505

Midwifery work to increase access to midwifery care for people of low socio-economic status: a qualitative descriptive study

Presented by: **Lisa Nussey**, Masters student, McMaster University

Background and objectives: Increasing access to midwifery care for disadvantaged groups was an explicit goal of the regulation of midwifery in Ontario. However, people of low socio-economic status (SES) remain less likely to receive midwifery care. Our objective was to identify strategies to improve access to midwifery care by exploring what midwives do to make midwifery care accessible to people of low SES and what barriers midwives face in working to increase access for this group.

Approach: We conducted a qualitative descriptive study using semi-structured interviews. We used purposive sampling to recruit Ontario midwives serving people of low SES. Interviews were conducted by a research assistant who is a registered midwife, and were digitally recorded and then professionally transcribed. Transcripts were analysed using NVivo software according to Sandelowski's methods of qualitative descriptive analysis. Two research assistants conducted the initial open coding, and then thematic analysis was conducted collaboratively by the principal investigator and the research assistants. The study had ethics approval.

Results: Our thirteen participants practice midwifery in settings ranging from a remote solo practice to a large urban practice. We identified two approaches to increasing access to care: 1) Working to maximize the existing beneficial aspects of the midwifery model to whoever presents to care, and 2) Stepping outside of the confines of the midwifery model, to provide what we call "community-centred care," in which midwives are both a part of and responsive to the broader communities that they serve. Aspects of the Ontario midwifery model that reduce barriers to care include mobile on-call care and relationship building. Barriers include the course of care funding structure, a shortage of providers, and a lack of training and mentorship in caring for clinically or socially complex clients.

Conclusion: The intentional, pro-active approach used by midwives providing community-centered care could be implemented more broadly to improve access to midwifery care for people of low SES. At a systems level, funding alternatives that support inter-professional collaboration and innovation in how midwifery care is delivered could also improve access.

H6.4

Theme: Maternal and Child Health

ROOM 505

Impact of Using Patient-reported Outcome Measures in Routine Clinical Care of Pediatric Patients with Chronic Conditions: A Systematic Review

Presented by: **Sumedh Bele**, PhD Student, University of Calgary

Background:

Integrating Patient-Reported Outcomes Measures (PROMs) in routine clinical care has shown to reduce utilization of healthcare services while improving patient outcomes. The objectives of our study were to: 1) identify previously implemented and evaluated PROMs for chronic conditions in pediatric settings; 2) consolidate the evidence to evaluate the impact of integrating PROMs on various factors including health-related quality of life (HRQoL), patient outcomes and quality of care among pediatric patients with chronic conditions.

Methods and analysis:

Following electronic databases were systematically searched: MEDLINE, EMBASE, CINAHL, PsychINFO and Cochrane library. Reference lists of included studies were searched in the Web of Science (Thomson Reuters) database to ensure more complete coverage. All longitudinal studies including randomized control trials, cohort and case-control studies were included. Two reviewers independently screened the studies and extracted the data using standardized form. Extracted data was analyzed and synthesized. Quality of studies included was assessed using the Downs and Black quality assessment scale. A narrative synthesis of summarized data will be presented. The protocol for this review has been registered on PROSPERO database (CRD42018109035).

Results:

Our database searching yielded 5564 articles after removing duplicates, with 30 articles meeting full text inclusion criteria. 6 articles reporting the results from 5 studies were identified for final review including 3 cohort studies and 2 randomised control trials. All the studies were conducted at the outpatient clinics of tertiary hospitals with 4 out of 5 studies conducted in Europe. The Pediatric Quality of Life Inventory™ (PedsQL™) was the most commonly used generic PROM. No studies assessed the impact of integrating PROMs on healthcare utilization or quality of care. Integration of PROMs increased identification and discussion around HRQoL especially in psychosocial and emotional domains. Two out of three studies reported reduction in consultation time while the number of referrals did not show statistically significant increase.

Conclusion:

This review shows the positive impact of integrating PROMs on improving routine clinical care for chronically ill pediatric patients. While these findings inform future integration of PROMs in pediatrics, they also identify significant gaps in current literature around the impact of integrating PROMs on healthcare utilization and quality of care.

H7.1

Theme: Health Policy

ROOM 503

Achieving the enriched HSPR core competencies in a Canadian doctoral program: results from an online survey

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

Background and Objectives:

Greater attention is being paid to aligning the training in health services and policy research (HSPR) doctoral programs to a range of career paths. Bornstein et al. (2018) identified six professional core competencies relevant to Canadian HSPR doctoral programs. We surveyed current trainees and alumni in one of these programs to assess the importance of these competencies to HSPR trainees and the extent to which they are being integrated in their doctoral training.

Approach:

We administered an online survey using LimeSurvey in April 2018 to current trainees and alumni. The survey consisted of scaled (7-point) and open-ended questions. Respondents were asked to identify and rank the importance of the six HSPR professional competencies, the extent to which their program provides opportunities to hone those competencies, and to share their feedback on how the program could better address these competencies or other competencies of value to them. Descriptive statistics were calculated for quantitative variables and stratified by year in the program, career path, and alumni status. Content analysis of the qualitative responses was also performed.

Results:

Our survey achieved a 78% response rate (n = 39); 58% of respondents were in their fourth year or beyond and/or alumni. Among respondents who intend to pursue a research-oriented career, interdisciplinary work had the highest average importance rating (6.38), and 92% indicated it was very or extremely important. The dialogue and negotiation competency had the lowest average importance rating (5.25) within this group. Among respondents who intend to pursue non research-oriented careers, the most highly rated competency was networking (6.25), with 88% indicating it was important or very important. Interdisciplinary work was rated lowest (5.12) within this group. Qualitative responses identified the need for formalized mentorship, targeted networking and internship opportunities, and opportunities to collaborate and learn from and with fellow trainees.

Conclusion:

Our doctoral program provides opportunities for trainees to master professional HSPR competencies. Trainees and alumni reported their desire for more explicit, structured opportunities integrated into their doctoral training tailored to specific career paths. These findings are relevant to all academic institutions offering HSPR doctoral training.

H7.2

Theme: Health Policy

ROOM 503

The health impact of living in a nursing home with a predominantly different spoken language

Presented by: **Ricardo Batista**, Postdoctoral Fellow, OHRI-ICES Ottawa

Background and objectives. Research have shown that patient–healthcare provider language concordance can foster trust, improve communication, have a positive impact on the quality of care, and on patients' health outcomes. We compared healthcare quality indicators and health outcomes between Anglophones and Francophones in a linguistic minority situation, across all nursing homes in Ontario. We also examined the impact of the discordance of primary language spoken by residents and main language of the facility on health outcomes.

Approach. Population-based retrospective cohort study using linked databases. Demographic data was obtained from Ontario Registered Persons Database (RPDB) and linked to the Continuing Care Reporting System (CCRS), which contains health information on nursing homes residents in Ontario. Main exposure measures were primary language spoken (Francophone and Anglophone) and predominant language of the nursing home (English or French).

Primary outcomes of interests were healthcare quality and safety indicators, 12-month rates of hospital admissions, emergency room (ER) visits, and mortality. Cox-proportional hazards models were estimated to examine time to first hospitalization and ER visit by resident's language and main language of the homes. Results. Out of 609 homes, 2.8% (17) were identified as French. Francophones residents in French homes had 5.3% lower hospitalizations and 5.4% lower ER visits rates than Francophones in English homes, although the difference was only significant for ER visits rates. However, there were no differences in risk of hospitalization and ER visits by resident language and main language of the home, after adjusting for sociodemographic and health factors. There were no differences in mortality (crude rates Francophones 34.1 vs. Anglophones 33.6 x 100 person-days). The multivariate models revealed that gender, number of chronic conditions, home size, and ownership had significant effects on the risk of occurrence of these outcomes. The multivariable adjusted interaction between resident language and main language of the home was not significant. Conclusions. This study suggests that discordance between resident language and main language of the home have negative effects on health outcomes, but we found that effect to be small. However, future research needs to further explore factors influencing differences in outcomes among people

H7.3

Theme: Health Policy

ROOM 503

Exploring the Impact of Linguistic Concordance and the Active Offer of French Language Services on Patient Satisfaction in Northern Ontario

Presented by: **Patrick Timony**, Research Associate, Centre for Rural and Northern Health Research

Background and objectives: Communication is essential to providing quality primary care. Linguistic concordance between patients and their physician has been linked to improved health outcomes and greater patient satisfaction. Although Canadian Francophones residing in minority contexts often struggle to access linguistics concordant health services, the concept of the Active Offer of French Language Services (FLS) has gained popularity. However, the impact of language concordance and the Active Offer of FLS on patient satisfaction among Francophones remain largely unknown.

Approach: Patient satisfaction surveys were collected as part of a continuing education program targeted at Family Physicians (FP) in Northern Ontario. Surveys consisted of patient satisfaction questions and select questions from the Active Offer of French Language Services in Minority Context Measure. The purpose of the surveys was: 1) to assess current Active Offer behaviours in order to tailor the education program to physician needs; 2) to collect data which would allow us to determine whether Francophones who have a French speaking physician and who report actively receiving services in French are more satisfied with their care.

Results: Valid surveys were received from 242 patients. Just under half of these (43.8%) identified as being Francophones, 62.4% had a French-speaking FP and 30.6% reported ever speaking in French with their FP. There was a slight tendency for Francophones with French speaking FPs, as well those who have spoken French with their FP, to report higher satisfaction scores. However, these difference were not statistically significant. There was however a statistically significant interaction between these two variables with Francophones who reported speaking in French with a French speaking FP being more satisfied than those with Non-French speaking FPs ($p < 0.01$). Furthermore, a positive correlation between patient satisfaction scores and provider Active Offer scores was found in Francophones ($r = 0.492$, $p < 0.001$). This was not observed in Non-Francophones.

Conclusion: Patient satisfaction is a reflection of quality health care. The present findings confirm the importance of linguistic concordant health care for Francophones and suggest that patient satisfaction may be improved through the Active Offer of French language services. A larger and more diverse sample is required to confirm such findings.

H7.4

Theme: Health Policy

ROOM 503

Citizen and stakeholder insights on preventing and managing infectious disease among people who inject drugs in Ontario

Presented by: **Michael Wilson**, Associate Professor, McMaster Health Forum

Injection drug use is associated with a range of infectious diseases that are not being optimally prevented, treated or managed by health or social systems. This points to a need for a person-centred approach across health and social systems to support the prevention and coordinated treatment of infectious disease through access to low-barrier care in common community points of contact and to specialized and integrated treatment for infectious disease, addictions, and/or concurrent mental-health problems. In February 2019 we will convene a citizen panel and stakeholder dialogue with Ontario policymakers, stakeholders and researchers. A diverse group of 7-8 citizens for the panel that have previous experience with injection drugs, as well as 7-8 peer-outreach workers were recruited for the panel. Participants were sent a citizen brief that outlined evidence about the issue, three elements of a potentially comprehensive approach to address it and implementation considerations. Key findings from the panels were included in an evidence brief (a more detailed version of the citizen brief) that was sent to participants in advance of the stakeholder dialogue. We have packaged the best-available global and local research evidence on the challenges regarding preventing, treating and managing infectious disease among people who inject drugs in a plain-language citizen brief. Throughout the citizen panel those who have previous experience with injecting drugs, including peer-outreach workers, will share their experiences in receiving care in the health and social systems to make informed judgements about how to address existing challenges. Following the panel, the stakeholder dialogue will convene health and social-system leaders such as policymakers, stakeholders and researchers in deliberations and identifying actions that can take action towards strengthened efforts for preventing and managing infectious disease among people who inject drugs. The panel and the dialogue will be thematically analyzed. Our findings will support policymakers, stakeholders and researchers with the best-available research evidence, citizens' values and preferences and insights from leaders about actions that are needed to champion change towards addressing one of the most pressing issues in the country.

Benefits realization of electronic medical records in outpatient settings: A systematic review

Presented by: **Hamidreza Kavandi**, PhD student, Telfer school of management _ Ottawa U

Objectives: Electronic Medical Records (EMR) are considered promising tools for healthcare improvement in primary care settings. Yet, evidence on EMR implementation success and benefits remain limited. This study addresses this area and presents a systematic review of the level and extent of impacts associated with EMR implementation in outpatient settings.

Methods: Following the PRISMA guidelines, a comprehensive search was conducted using five major databases including: Pubmed, Medline, CINAHL, Scopus and Web of Science. Groups of keywords covering four main areas were used in combination: (1) benefit (e.g. benefit realization), (2) technology (e.g. EMR), (3) process/setting (e.g. healthcare process), and (4) outpatient (e.g. outpatient). All qualitative and quantitative empirical studies published in English and reporting impacts related to EMR implementation were included. A coding scheme was developed to guide data extraction and synthesis from selected studies, and the level of evidence was assessed using Mrcog (2015) evaluation technique.

Results: A total of 27 studies were included in the review with low to moderate level of evidence. The benefits were classified across six dimensions: operational, managerial, strategic, IT infrastructure, organizational, and patient-level. Overall, 18 studies (67%) showed benefits associated with EMR implementation; the remaining studies reported either no-evidence or negative impacts. The majority of the studies (79%) focused on the operational, managerial and organizational dimensions; four reported significant improvement in productivity and few indicated significant positive impacts on work and business efficiencies. Yet, surprisingly, inconclusive evidence (i.e. no evidence or negative impacts) was observed on these three dimensions by 30% of the studies. Minimal impacts were reported at the strategic and IT infrastructure levels, but improvements were observed in relation to communication with patients. Evaluations that considered physicians as target participants reported more benefits when conducted after two years of implementation.

Conclusion: The impacts associated with EMR implementation in outpatient settings were mostly positive at several levels, but the rigour of the studies was not optimal, and a considerable number reported no-evidence or negative impacts. There was variation in methodological approaches and quality between studies. Future research should focus on assessing the impacts related to areas in which evidence remains scarce and inconclusive while ensuring high rigour.

H8.2

Theme: Health System Performance (includes quality, safety, efficiency, leadership)

ROOM 504

The Utility of Patient Stories on Social media: A qualitative exploratory study

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

Background and objectives

There is a growing body of evidence on the emergence of social media as an incubator for patient stories, and a means for understanding and evaluating the patient experience of illness and healthcare systems. However, there are several challenges in this area, including methodological challenges and data quality challenges. This research study aims to explore the healthcare providers' perceived utility of social media for healthcare quality improvement and patient experience evaluation.

Approach:

We have started a qualitative exploration of the utility of patient stories on social media by interviewing primary healthcare providers in Ontario, including family physicians and nurse practitioners. We are also interviewing healthcare quality managers and health policymakers. We are using the theoretical sampling approach. Data is being collected using a semi-structured interview method where all the questions will be open-ended. To analyze the data, we will use the thematic analysis method, which is appropriate for most types of qualitative research, including narratives and life experiences. A qualitative data analysis software will be used to aid in data analysis.

Results:

The study has started in April 2018, and it is still in progress. However, we aim at concluding it in March 2019, and our report should be ready before the CAHSPR conference. The study will shed light on the perspectives of healthcare providers about social media and patient stories. We also believe that the study will shed light on some of the complexities of the healthcare system in Canada, including healthcare providers' priorities and concerns, and some organizational factors that could enable or impede the use of patient stories on social media.

Conclusion:

We will only make a conclusion upon completing our data analysis.

It should be ready before the CAHSPR conference.

H8.3

Theme: Health System Performance (includes quality, safety, efficiency, leadership)

ROOM 504

Development and Internal Validation of a Prediction Model for Acute Paediatric Hand Fracture Triage

Presented by: **Rebecca Hartley**, Resident, University of Calgary

Background – Referrals of acute pediatric hand fractures to hand surgeons are common, costly, and possibly unnecessary. An easy-to-use tool to quantify necessary referral would help identify patients who might benefit from referral and who might be appropriate for an alternate level of care. **Objective** - To derive and internally validate a prediction model to aid Emergency Department (ED) physicians in determining necessary referral of acute pediatric hand fractures. **Approach** – In a cross-sectional study, 21 variables were collected in patients 17 years and younger with a radiographically confirmed hand fracture who were consecutively referred to the Alberta Children's Hospital hand clinic in Calgary, Alberta over two years (January 2013 - December 2014). The primary outcome was necessary referral, defined as any of (1) surgery, (2) closed reduction or (3) four or more hand surgeon appointments. We used multivariable logistic regression with bootstrapping to derive and internally validate an index to predict fracture acuity. Model discrimination was assessed by an optimism-adjusted c-statistic and calibration by deciles of risk and calibration slope. **Results** – Of 1,173 hand fractures, 417 (35.6%) met criteria for necessary referral. A risk index was created with points assigned to six strong predictors based on their regression coefficients: open fractures (2 points), malrotation (3 points), displacement (0-2 millimeters = 1 point, ³ 2 millimeters = 2 point), angulation (0-5° = 1 point, ³ 5° = 2 points), dislocation (3 points), and condylar involvement (1 point). Point scores ranged from 0 (4.12% expected risk of referral) to 11 (100% expected risk). A scatterplot of points score versus referral revealed a concave curve flattening out at 6 points (84.44% expected risk), with maximum expected risk (100%) at 8 points and above. Model discrimination was strong (C-statistic: 0.86) and calibration was good except at the lowest risk deciles. **Conclusion** – We derived and internally validated a prediction model for necessary referral in acute pediatric hand fractures. While these results require external validation prior to use, this tool may help identify high risk patients and allow for targeted referral, thus avoiding unnecessary referral and cost while providing safe patient care.

Publicly-Funded IVF in Ontario: A Study of the Impact on Patients of the First Year of Implementation

Presented by: **Shawn Winsor**, PhD student, McMaster University

On December 21 2015, the Government of Ontario launched a new, publicly-funded fertility program. This program includes funding for one cycle of in vitro fertilization (IVF) per eligible candidate, and embryo transfers of all resulting viable embryos. This is the first study to assess the impact of this public funding program on participating patients.

A province-wide online survey was completed by 514 individuals. Participants were invited to participate in the electronic survey via posters and brochures that were placed within the waiting rooms of all IVF clinics in Ontario. The survey contained a mix of close-ended and open-ended questions and was administered using the Qualtrics™ system. Quantitative data from the closed-ended questions was summarized using basic descriptive statistics. Qualitative data from the open-ended survey questions was analyzed through a process of data coding involving the constant comparative technique derived from grounded theory methods (Glaser & Strauss, 1967).

Respondents identified the following: **Strengths:** The Program helped destigmatize infertility and validate infertility as a medical condition. By mandating single embryo transfer the Program reduces potential downstream costs to the healthcare system of caring for multiple births. The majority indicated they would not have had IVF treatment if it was not for this Program. **Weaknesses:** Access issues predominated: specifically, the lack of consistency and transparency in how clinics allocate publicly-funded IVF cycles, the long waiting time to access funded cycles, inequities to access based on geography, and the ancillary costs participants must assume to participate in the Program. **Areas for improvement:** Funding should cover more than one IVF cycle as well as the medications required to undergo the treatment. Access to the Program should be targeted to those with the greatest financial needs.

The results of this survey will help:

policy makers determine if they met their goal to improve access for Ontarians and what areas to reevaluate for continued or increased funding; healthcare providers and clinic owners better meet patient need for more consistent and transparent allocation prioritization schemes; and patients' preferences and concerns reach a health policy and provider audience