Day 1: Wednesday, May 24 / Jour 1: Le mercredi 24 mai

Presentations are listed in the language in which they will be presented
Les exposés seront inscrits au programme dans la langue de leur presentation

1:00PM – 2:15PM CONCURRENT SESSION A

A1: ACCESS & EQUITY | ACCÈS ET ÉQUITÉ

The association between financial barriers and adverse clinical outcomes among patients with cardiovascular-related chronic diseases

Presented by: **David Campbell**, Clinician-Fellow, University of Calgary

We sought to confirm findings of previous self-report studies, by using linked survey and administrative data to determine, among patients with cardiovascular-related chronic diseases, if there is an association between perceived financial barriers and the outcomes of: (1) disease-related hospitalizations, (2) all-cause mortality, and (3) inpatient healthcare costs. We used 10 cycles of the Canadian Community Health Survey to identify a cohort of adults with hypertension, diabetes, heart disease or stroke. Perceived financial barriers to various aspects of chronic disease care and self-management were identified from the survey questions. The cohort was linked to administrative data sources for outcome ascertainment (Discharge Abstract Database, Canadian Mortality Database, Patient Cost Estimator). We utilized Poisson regression techniques, adjusting for potential confounding variables (age, sex, education, multimorbidity, smoking status), to assess for associations between financial barriers and outcomes. In a subcohort we used gross costing methodology to estimate excess inpatient costs. We identified a cohort of 120,752 individuals over the age of 45 years with one or more of hypertension, diabetes, heart disease or stroke. One in ten experienced financial barriers to at least one aspect of their care, with the two most common being financial barriers to accessing medications and healthy food. Even after adjustment, those with at least one financial barrier had an increased rate of disease-related hospitalization and mortality compared to those without financial barriers with adjusted incidence rate ratios of 1.36 (95% CI: 1.29-1.44) and 1.24 (1.16-1.32), respectively. Furthermore, having a financial barrier to care was associated with 30% higher inpatient costs, compared to those without financial barriers. After adjusting for relevant covariates, perceiving a financial barrier was associated with increased rates of hospitalization and mortality, and higher hospital costs, compared to those without financial barriers.

Co-Author(s): David Campbell

The impact of homelessness on the frequency of accessing primary health care

Presented by: **Laura Rivera**, Research Associate, University of Calgary

While it has been well documented that homeless individuals have difficulty accessing primary care, there is a lack of knowledge about their experience once homeless individuals are able to access primary care health services. The objective of work is to elucidate the impact of homelessness on frequency of visits to primary care providers. This work takes place in Calgary, a medium-sized Canadian city which has a large homeless population. The study data originated from an inner-city clinic's electronic medical record, HealthQuest. The study investigated the relationship between current homelessness status and the rate of visits to primary care, defined as the count of visits associated with a patient accounting for the length of time the length of that patient's relationship with their primary care physician. We used negative binomial regression to elucidate this relationship, multivariate adjusting for patient age, sex, and Charlson comorbidity score. The study analyzed 336 patients, of which 49 were homeless (14.6%). The mean number of visits for homeless patients was 11.4 for the study period, compared to 3.8 visits for non-homeless patients ($p < 0.0001$). Overall, the multivariate adjusted model indicated that the rate of homeless individuals accessing primary care physicians was 2.65 times greater than the rate for non-homeless individuals (rate ratio [RR] 2.65, 95% confidence interval [95% CI] 2.11-3.33; $p < 0.0001$) when adjusted for age, sex, and comorbidity score. When stratified by sex, the magnitude of the risk ratio was stronger for males (females, RR 2.01, 95% CI 1.33-3.05, $p < 0.0001$; males, RR 2.85, 95% CI 2.16-3.77, $p < 0.0001$). Homelessness status is associated with an increased rate of visits to family physicians. These results bear implications for primary care physicians whose practices include homeless individuals, and for decision-makers involved in developing physician remuneration schemes that may be able to incentivize physicians to roster complex patients such as the homeless.

Co-Author(s): Laura Rivera, Matthew Henschke, Edwin Khoo

Wait Times and Cost Barriers to Care in Canada: Results from The Commonwealth Fund's 2016 Survey of Adults in 11 Countries

Presented by: **Alison Ytsma**, Program Lead, CIHI

Provide perspective on how Canada compares internationally for timely acess to care and cost barriers to care Identify how results are changing over time and where improvements can be made Highlight how health care experiences and perceptions vary across Canadian provinces and between socio-demographic groups The Commonwealth Fund's 2016 International Health Policy Survey of Adults in 11 Countries reflects self-reported experiences from a random sample of those age 18 and older in 11 countries: Australia, Canada, France, Germany, the Netherlands, New Zealand, Norway, Sweden, Switzerland, the United Kingdom and the United States. A total of 4,547 respondents were interviewed in Canada by phone (landline and cell phone) from March to June 2016. The data were weighted by age and gender. Data were also weighted by province to reflect Canada's population distribution. Significance tests compared Canadian and provincial results against the average of all 11 countries. Canadians continue to report longer wait times for doctors, specialists, elective surgery, and emergency department visits than all other countries. While primary care physicians have reported improvement to timely access, the general population results are unchanged. Longer waits may be related to Canadians reporting more consultations with physicians than people in other countries, while Canada reports fewer doctors per capita. Canadians appeared to be facing cost barriers to care not covered under the Canada health act (Dental Visits and Pharmaceuticals). Both younger Canadians and low income Canadians are facing greater cost barriers to care overall. More Canadians reported that they worry about having enough money for meals, and mortgage or rent. The 2016 results suggest that timely access to care continues to be a problem for Canadians with little improvement over the past 6 years. Cost is also a barrier to care with younger and lower income Canadians report facing more cost barriers to care.

Co-Author(s): Alison Ytsma, Geoff Paltser

Tuberculosis and Healthcare Use: A Population-Based Investigation

Presented by: **Lisa Lix**, Professor, University of Manitoba

Active tuberculosis (TB) requires a lengthy and intensive treatment process, but contacts with the healthcare system may vary over time and across patient groups. Our objectives were to characterize the associations of population origin and disease characteristics with healthcare use (HCU), and changes in HCU before and after TB diagnosis. Manitoba's population-based TB Registry was linked with multiple administrative health databases. Individuals with a TB diagnosis between 1999 and 2013 comprised the TB cohort. A matched, disease-and-treatment-free cohort was also constructed. Generalized linear models with generalized estimating equations tested for differences in relative rates (RR) of inpatient hospitalizations, length of stay (LOS), specialist visits, family physician visits, emergency department visits, and non-TB prescription drugs one year before and two years after diagnosis. Population origin was tested for its association with HCU in both the TB and matched cohorts after adjusting for socio-demographic and comorbidity characteristics. The TB cohort included 1419 cases; 62% were First Nations (FN) and 24% were foreign-born. The matched cohort comprised 7078 individuals. Off-reserve FN TB cases had higher HCU than non-First Nations Canadian-born cases for hospitalizations, LOS, non-TB prescriptions and family physician visits; the same was true for on-reserve FN TB cases except for family physician visits. Foreign-born cases had the lowest HCU. HCU differences between First Nations and non-First Nations were similar for the TB and matched cohorts, except for LOS (TB RR = 1.7; 95% CI: 1.2, 2.3; matched RR = 1.2; 95% CI: 0.8, 1.9) and non-TB prescription drugs (TB RR = 2.3; 95% CI: 1.9, 2.4; matched RR = 1.6; 95% CI: 1.5, 1.8). HCU was typically higher after diagnosis than before. This study integrated information from multiple sources to provide an in-depth examination of HCU associated with active TB disease. We demonstrated significant differences in HCU pre- and post-diagnosis and by population origin. These data will be useful for developing performance measures to compare with other provincial and international jurisdictions.

Co-Author(s): Lisa Lix, Pierre Plourde, Kathi Avery Kinew, Linda Larcombe, Andrew Basham, Shelley Derksen, Scott McCulloch, Jennifer Schultz

A2: CANCER

Looking Forward: Co-designing and evaluating a cancer survivorship program

Presented by: **Mona Magalhaes**, Project Coordintator, St. Mary's Research Centre

To develop an intervention that helps prepare patients for transition from acute treatment toward recovery by: exploring informational and psycho-social needs of adult cancer patients; engaging patients and clinicians to co-design a supportive program; evaluating the program's acceptability and impact on patient's perceived preparedness for re-entry and patient health education. This study adopted a participatory approach using experience-based co-design. Five focus groups were held to obtain perspectives on care experiences and support needs from 15 patients and 11 clinical and community-based professionals. At a co-design session, patients and professionals agreed priorities for intervention content and format. Evaluation employed mixed methods pre-post to assess perceived preparedness (adapted from the Perceived Preparedness Re-entry Scale), health education (heiQ), and user feedback. 47 adult patients ending adjuvant chemotherapy or radiotherapy within the previous three months (English or French, without severe cognitive impairment or recurrent/metastatic cancer) participated in the pilot study and completed follow up. The final intervention design included: a group orientation session facilitated by a healthcare professional; an introductory animated video; and seven information booklets (English and French): Mindfulness of the 'new normal', Side effects and Symptoms, Emotions and fears, Regaining function and health, Back to work, Caregiver support, Finding reliable information. Results of the pilot and evaluation show significant improvement in perceived preparedness for re-entry from baseline to 1 month follow-up with an effect size of 0.75. Also noted were improvements in three health education domains (health behaviour, active engagement, self-monitoring) with a standardized effect size of 0.42, 0.55, 0.40 respectively. User feedback regarding overall usefulness (six questions) was relatively high with an average of 5.4 (95% CI: 5.2-5.6) on a six point Likert scale. A patient-centered co-design approach enabled patients and professionals to share perspectives, and develop a re-entry program for cancer survivors. Patients demonstrated a high willingness to participate as collaborators. Patients identified needs for detailed health information which at times contrasted with professional's views. Pilot results suggest acceptability of the program.

Co-Author(s): Susan Law, Mona Magalhaes, Rosana Faria, Maud Mazaniello, Tarek Hijal, Joan Zidulka, Monique Ferland, Laurie Hendren, George Michaels, Danielle Potas, Givette Volet

Reducing repeat imaging in hepatico-pancreatico-biliary cancer care through shared diagnostic imaging repository.

Presented by: **Julie Hallet**, Surgical Oncologist, Sunnybrook Health Sciences Centre

With regionalization of cancer services, patients often undergo treatment in institutions other than where initial investigation is conducted. The hospital diagnostic imaging repository services (HDIRS) facilitates electronic sharing of imaging among institutions. We assessed the impact of HDIRS on processes of care and outcomes of hepato-pancreatico-biliary (HPB) cancer surgery. We conducted a retrospective cohort study linking administrative datasets at the Institute for Clinical Evaluative Sciences. We included HPB cancer patients operated at a tertiary cancer centre (2003-2014). HDIRS and non-HDIRS groups were based on where initial imaging (CT or MRI within 6 months of surgical consultation) was conducted. Outcomes were repeat imaging before surgery, divided into same (e.g. repeat CT after initial CT) and different modality (e.g. repeat CT after initial MRI), wait time for surgery from initial imaging and surgical consultation, 90-day post-operative morbidity, and overall survival. Univariate and multivariate analyses examined the association between HDIRS and outcomes. Of 839 patients, 474 (56.5%) were from HDIRS institutions. HDIRS patients had lower use of repeat imaging overall (57.6% Vs. 76.2%; $p < 0$ .01). Median wait time to surgery from initial imaging (64 Vs. 79 days; $p < 0$ .01) and surgical consultation (39 Vs. 45 days; p=0.046) was shorter for HDIRS patients. Post-operative morbidity and survival did not differ. After adjusting for demographic, social, and clinical factors, HDIRS patients had 22% lower odds of repeat imaging (odds ratio – OR 0.22 [0.15-0.33]), whether same (OR 0.43 [0.30-0.60]) or different modality (OR 0.65 [0.46-0.93]). Repeat imaging using the same modality and the same protocol was less likely for HDIRS patients (OR 0.45 [0.32-0.64]). 03-1.84]). Imaging sharing with HDIRS significantly reduced repeat cross-sectional imaging for HPB cancer surgery, including repeat imaging with same protocol that is less likely to add information. It shortened wait time to surgical care. HDIRS could improve quality and efficiency of care. Future studies should focus on patient and provider experience.

Co-Author(s): Julie Hallet, Natalie Coburn, Amanda Alberga, Longdi Fu, Sukirtha Tharmalingam, Laurent Milot, Calvin Law

Quality Assurance Process Significantly Affects Breast Cancer Screening Performance

Presented by: **Yan Yuan**, Assistant Professor, University of Alberta

Biennial breast cancer screening using mammogram is a strategy for secondary cancer prevention in developed countries. However, mammography can also cause harm, so quality is critical. Measures of screening programs such as recall rate and post-screen cancer rate vary between EU, USA and Canada. We investigated performance indicators in Alberta. Breast cancer screening and diagnostic data from 2006 to 2010 in Alberta were obtained from two complementary data sources: 1) physician claims data, which covers radiologists in private clinics working under a fee-for-service model, similar to the USA model; 2) data from provincial Screen Test (ST) program that employs sessional radiologists and has a quality assurance process, similar to European models. Information on diagnosed breast cancers was obtained from the provincial cancer registry. Performance indicators were calculated for eligible women at their index screens. Logistic regression and Poisson regression were used to estimate odds ratios and rate ratios, respectively. Index screening mammograms were analyzed on 183,704 and 206,084 Alberta women in July 2006 – June 2008 and July 2008 – June 2010, respectively. 12.7% of screening mammograms were performed and interpreted by the Screen Test program. In 2006-2008 period, the ST program has a lower i) abnormal recall rate (3.8% vs. 9.8%, OR: 0.41, 95%CI:0.39-0.43), ii) false positive rate (3.4% vs. 9.4%, OR: 0.37, 95%CI:0.35-0.39), and iii) post-screen cancer rate (7.5 vs. 18.6 per 10,000 person-year 12-24 months after a normal screening mammography, RR: 0.40, 95%CI:0.24-0.64), but a higher iv) cancer detection rate (4.5 vs. 3.5 per 1,000 screens, RR: 1.3, 95%CI: 1.1-1.6), when compared to screening mammograms interpreted outside the ST. These performance indicators were largely similar in the 2008-2010 period. The Screen Test program, which has a rigorous quality assurance process in place, performed significantly better during 2006 – 2010. This provides empirical evidence of the effectiveness of a quality assurance process, and may explain some of the variation in the reported performance indicators of breast cancer screening across countries.

Co-Author(s): Yan Yuan, Ye Shen, James Dickinson, Marcy Winget

Développement d'un algorithme pour la surveillance de l'incidence du cancer colorectal à Montréal avec les banques de données médico-administratives de la RAMQ

Presented by: **Mamadou Diop**, Étudiant, École de santé publique de l'Université de Montréal, Département de médecine sociale et préventive

Nous développons un algorithme pour identifier les cas incidents de cancer colorectal (CCR) en utilisant les banques de données médico-administratives et le fichier des tumeurs du Québec (FiTQ). Nous évaluons sa performance relative aux méthodes actuelles en termes de nombre total de cas identifiés et parmi différents groupes des patients. L'étude porte sur 2 013 430 usagers montréalais des services de santé, de 2000 à 2010. Les codes de diagnostics du fichier de facturation des actes médicaux (SERVMED), du fichier des hospitalisations (MED-ÉCHO) et du FiTQ sont utilisés. Nous avons choisi, parmi trois algorithmes, le plus performant en termes de nombre de cas identifiés et de concordance des cas avec ceux du FiTQ. Il définit un cas lorsqu'une personne a un code CCR dans MED-ÉCHO ou deux codes dans SERVMED, séparés au minimum de 30 jours sur deux ans. Les cas additionnels sont évalués avec les codes d'actes de traitement dans SERVMED. Les résultats préliminaires indiquent que l'algorithme identifie 13 076 des 13 077 cas incidents de CCR du FiTQ. Il permet aussi d'identifier 4 040 cas additionnels dont 99,8 % ont reçu un traitement de CCR. Les pourcentages de femmes, des moins de 50 ans, et des plus favorisés socio-économiquement sont plus élevés dans les cas additionnels comparativement à ceux identifiés par le FiTQ. L'algorithme est probablement plus sensible aux cas diagnostiqués précocement que le FiTQ ne capte pas. Il y a également plus de chance que ces cas soient identifiés par dépistage que par la présence de symptômes. Le FiTQ sous-estime le fardeau du CCR, surtout dans certains groupes socio-économiques où un dépistage efficace pourrait avoir un impact important. Notre algorithme détecte plus de cas de CCR que le FiTQ. Il donne un portait plus exhaustif et les cas additionnels semblent avérés. Il pourrait servir de base de planification et favoriser une priorisation objective du futur programme québécois de dépistage du cancer colorectal (PQDCCR).

Co-Author(s): Mamadou Diop, Erin Strumpf, Geetanjali Datta

A3: CHRONIC DISEASE MANAGEMENT | GESTION DES MALADIES CHRONIQUES

Health profiles and associated service use among adults with HIV and intellectual and developmental disabilities

Presented by: **Anna Durbin**, Research Associate/Fellow, Canadian Mental Health Association, Centre for Addiction and Mental Health

Due to the commonly held notion that individuals with intellectual and developmental disabilities (IDD) have low risk of HIV acquisition, we compared the prevalence of HIV infection among people with and without IDD. We also examined health status and health service use among the HIV-infected group. We compared HIV prevalence between Ontario adults with IDD (n=64,008) and a 20% random sample of Ontario adults without IDD. Among the HIV-infected group, we compared adults with and without IDD in terms of comorbid chronic physical conditions and mental health (MH) disorders, as well as use of overall health services, MH services, and HIV-specific services. HIV prevalence per 100,000 population was similar for adults with IDD [163.38 (95% CI: 132.27,199.6)] and without IDD [172.45 (95 CI: 167.48,177.53)]. Among the HIV-infected group, those with IDD had more comorbid chronic physical conditions and MH disorders. They also had greater use of overall health services and MH services. However, use of HIV-specific services was similar for those with and without IDD. A similar prevalence of HIV among adults with and without IDD accentuates a need for individuals with IDD to be included in HIV prevention efforts. High comorbidity and health service use among people with HIV and IDD highlights a need for comprehensive and coordinated care for this complex patient group.

Co-Author(s): Anna Durbin

The Prognostic Utility of Patient-Reported Outcomes for Risk Prediction Modelling in Coronary Artery Disease

Presented by: **Tolulope Sajobi**, Assistant Professor, University of Calgary

Risk prediction models are useful for predicting health outcomes and healthcare utilization in chronic disease populations. However, most of the existing models don't adjust for patient-reported outcomes (PROs). This study investigates the value of including PROs in predicting mortality and length of stay (LOS) among coronary artery disease (CAD) patients Data were obtained by linking the Alberta Provincial Project for Outcome Assessment in Coronary Heart Disease, a population-based registry of CAD patients, to Discharge Abstract Database. PROs in this study included self-reported health-related quality of life which was assessed using the Seattle Angina Questionnaire (SAQ), as well as self-reported depression and anxiety measured by the Hospital Anxiety and Depression Scale (HADS). Generalized linear regression with logistic and negative binomial distributions were used to develop prediction models for all-cause mortality and LOS, respectively. The prognostic contributions of these PROs were assessed using area under the curve (AUC) and mean square error Of the 5159 patients included in this analysis, 535 deaths were reported within five years of first catheterization, while the average hospital LOS was 3 days. Self-reported PROs such as SAQ physical limitation domain and HADS depression and anxiety were significant predictors of both all-cause mortality and hospital LOS, accounting for about 2.8% and 45.2% improvement in predictive accuracy of mortality and LOS risk prediction models, respectively This study demonstrates the prognostic utility of PROs in accurately estimating patient-specific risk of mortality and prolonged LOS in CAD patients. We recommend that PRO should be evaluated as candidate predictors when developing risk prediction models for clinical outcomes and patterns of health services utilization in individuals with CAD

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The impact of Telehomecare on blood pressure control among patients with chronic obstructive pulmonary disease and heart failure in Ontario

Presented by: **Valeria Rac**, Assistant Professor, IHPME; University of Toronto

High blood pressure (BP) continues to be a major modifiable risk factor for cardiovascular mortality and morbidity. The objective of this abstract is to evaluate the impact of Telehomecare program on blood pressure control in patients with chronic obstructive pulmonary disease (COPD) and heart failure (HF) in Ontario. The study utilized a longitudinal cohort design. The cohort included COPD and HF patients enrolled in Telehomecare program from July 2012 to Jul 2015. The outcome of interest was change in biweekly average of systolic and diastolic blood pressure (BP) levels over a six month program duration. Data was extracted from the Ontario Telemedicine Network database and analyzed using general linear mixed model procedures in SAS. Based on patient BP values at baseline, two subgroup analyses were conducted to evaluate changes in BP over time: in patients with controlled BP (< 1 40/90 mm Hg) and uncontrolled BP levels (?140/90 mm Hg). Overall, data for 3513 patients were analyzed. Average age was 74.1±11.4, 62% had HF, 55% had COPD. At baseline, the systolic and diastolic BP were 130.5±19.2 mm Hg and 72.2±12.6 mm Hg. Over 6 month program period, there were 4.0 mm Hg (95% CI: -4.5 to -3.5) and 2.7 mm Hg (95% CI: -3.1 to -2.4) reduction in systolic and diastolic BP respectively, adjusted for confounders. About 35% (n = 1220) of the cohort had uncontrolled BP levels at baseline (150.7 ±10.4 /80.2±13.5 mm Hg). In subgroup analyses of patients with uncontrolled BP levels, the reduction in systolic BP was 12.5 mm Hg (95% CI: -13.4 to -11.6) and in diastolic BP was 7.1 mm Hg (95% CI: 7.8 to 6.5) over 6 month period. The systolic and diastolic blood pressure levels significantly decreased in patients with COPD and HF enrolled in the Telehomecare program. The changes seen in patient BP over time, leads us to interpret that patients with elevated levels of BP may benefit the most from participating in Telehomecare program.

Co-Author(s): Yeva Sahakyan, Lusine Abrahamyan, Nida Shahid, Aleksandra Stanimirovic, Petros Pechlivanoglou , Welson Ryan, Nicholas Mitsakakis, Murray Krahn, Valeria Rac

The Internal Consistency and Comparability of Three Commonly Used Measures of Self-Management Ability in Persons with Neurological conditions

Presented by: **George Kephart**, Professor, Community Health and Epidemiology, Dalhousie University

Self-management (SM) ability is commonly assessed in chronic disease care and research. Qualitative literature shows SM to be a multidimensional concept, but many measures treat it as unidimensional. We assessed if three commonly used self-management outcome measures: (1) each measure a single construct, and (2) all measure the same construct. As part of the National Population Study on Neurological Conditions, a national survey of persons 17 years of age and over with one or more neurological conditions included data (N=742) on three commonly used self-management tools: the Partners in Health Scale (PIH), the Patient Activation Measure (PAM) and the Self-Efficacy for Managing a Chronic Disease Scale (SEMCD). Using confirmatory factor analysis, the fit of the three tools was assessed, and areas of poor fit identified. As well, confirmatory factor analysis was used to test whether indicators for the three tools measure the same, or three different latent constructs. Confirmatory factor analysis models showed poor fit statistics for each of the measures when treated as single (unidimensional) constructs; especially for the PIH and PAM for which fit statistics were far short of criteria for good fit. The SEMCD provided a better fit to the data, but still did not meet the fit criteria. Modification indicies showed high correlations between error terms, suggesting the presence of other domains. Only a 4-factor version of the PIH, proposed in a recent study, but with an insufficient number of items for sub-scales, provided an acceptable fit to the data. Confirmatory factor analysis showed the three tools do not measure the same construct. Rather, the measure correlated, but separate latent constructs. Correlations between latent constructs ranged from .74 to .84. The PAM, PIH and SEMCD scales are not interchangeable measures of the same construct. None, when treated as single, unidimensional constructs, provides an acceptable fit to our data. While these measures may provide reliable summative measures, multi-dimensional scales are needed for clinical use and more detailed research on self-management.

Co-Author(s): George Kephart, Tanya Packer, Asa Audulv, Grace Warner

A4: COLLABORATIVE HEALTHCARE IMPROVEMENT PARTNERSHIPS | PARTENARIATS DE COLLABORATION POUR L'AMÉLIORATION DES SERVICES EN SANTÉ

Spreading integrated funding models: Lessons from six Ontario pilot programs

Presented by: **Gayathri Embuldeniya**, Qualitative Researcher, University of Toronto

Faced with rising costs and healthcare system inefficiencies, the Ministry of Health and Long-Term Care (MOHLTC) invited proposals for integrated funding models (IFMs) across Ontario. Six programs were selected, and a low-rules environment established to enable implementation diversity and explore what worked best to inform future IFM spread. We present results from the qualitative component of a mixed-methods provincial evaluation. We sought to identify factors key to program success. IFM programs were established based on the premise that hospital and community organizations working together to provide seamless care would result in better patient outcomes and cost savings. As such, multiple organizations were typically involved in each program, with programs featuring heterogeneous patient populations. Forty-eight stakeholder interviews were conducted to capture this diversity, including practitioners, organization leaders, and policy informants. Thematic analysis was performed on anonymized transcripts coded with NVivo. A realist framework informed analysis. Six key factors that impacted program function were identified: 1) program structure (decision-making about clinical condition, program scale and organization size), 2) the quality of and ability to leverage existing partnerships, 3) trust-building, 4) thoughtful model development, 5) clinician engagement, and 6) information-sharing. The scale and spread of these models will also be contingent on stakeholders' ability to work through challenges related to differences in motivation and discrepancies with existing funding models, while negotiating the larger cultural shift of working across the traditionally siloed acute and home care sectors. These six factors manifested in unique local contexts, where they interacted with already existing organizational cultures so that each model had a unique configuration of integration-generating mechanisms. While there may be uncertainty about their generalizability, they had observable impacts, and therefore provide a productive starting point for discussing IFM spread.

Co-Author(s): Gayathri Embuldeniya, Maritt Kirst, Kevin Walker, Walter Wodchis

The DIVERT- CARE Catalyst Trial: Targeted Multi-disciplinary Chronic-Disease Management for Frail Home Care Clients

Presented by: **Andrew Costa**, Assistant Professor | Schlegel Chair in Clinical Epidemiology & Aging , McMaster University

Home care patients are a large population of vulnerable older adults who access care across settings, have very high rates emergency department use, and have relatively poor access to effective chronic disease management. We tested a multi-disciplinary intervention deployed with a case-finding tool to determine its 'real-world' effectiveness. A cardio-respiratory disease management intervention was developed based on existing guidelines and deployed using the validated Detection of Indicators and Vulnerabilities of Emergency Room Trips (DIVERT) Scale. Intervention components were refined and delivered by a multi-disciplinary group of geriatricians, cardiologists, primary care providers, home care coordinators, nurses, and pharmacists. Components included: sustained self-care training, patient self-care resources, medication review, advanced care planning, clinician communication tools, and staff education. We conducted a non-randomized pragmatic cluster trial. The control group included patients who met the same eligibility in the six surrounding geographic areas. A city-wide control group was also included ad hoc. Data were analyzed based on intent-to-treat. One hundred home care patients from three geographic areas were enrolled for the intervention over 6 months. The hazard ratio (time to first emergency department visit) was reduced by 79% over the 7-month follow-up period. The absolute risk of an emergency department visit was reduced by 20%. Nursing costs increased by approximately $4 per day, or approximately $500 over the entire follow-up period. Interviews revealed most intervention components were well received. Results were similar with the ad hoc control group. Targeted, multi-component cardio-respiratory disease management interventions are feasible and effective for home care clients. A large pragmatic cluster-randomized trial is now underway.

Co-Author(s): Andrew Costa

The Nova Scotia Health Atlas: A collaborative approach to evidence-informed decision making through health georgraphy

Presented by: **Adrian Levy**, Nominated Principal Investigator, Maritime SPOR SUPPORT Unit

The Nova Scotia Health Atlas is a patient-centred, web-based interactive mapping tool that illustrates health care utilization and outcomes in the province of Nova Scotia. The objective of this application is to provide a comprehensive, cohesive visual representation of patterns of health care utilization and patterns to inform health decision-making. In order to engage in prospective health systems planning and evidence informed decision-making, in Nova Scotia, meaningful geographic areas were developed for consistent use in research and evidence-informed decision-making. Community Clusters were created through a collaboration between the Nova Scotia Department of Health and Wellness, the Nova Scotia Health Authority, and the MSSU. A distinct advantage of Community Clusters are that they are composed of census dissemination areas (to the greatest extent possible) and nest within NS health planning geographies: Community Networks and Health Management Zones. This represents a common language for research and health system planners and policy-makers moving forward. The Atlas builds on existing reports generated by the MSSU, for example Small Area Rate Variation (SARV), which displays regional variation in the rate high cost users in small geographic areas throughout the province, measured by cost of physician and hospital inpatient services. Additional possible features of this application include geographic representation of the following topics: Rates and incidence of multi-morbidity; Spatial access to health services (primary to tertiary care); Provincial programs, such as Cancer Care and Diabetes Care; and Socioeconomic determinants of health. Census dissemination areas, Community Clusters, Community Networks and Health Management Zones are the units of analysis and geographic display. We are presently at the stage of acquiring additional data sets. Collectively, this research will form the evidentiary basis for provincial evidence-informed decision-making around health service planning, management, and evaluation. This tool will display indicators of population health and will assist policy-makers and health system decision-makers in planning and designing targeted health services, and facilitate the linking of health service cost information and health outcomes to social determinants of health. The Nova Scotia Health Atlas can be viewed at www.healthatlas.ca

Co-Author(s): Laura Dowling, Mikiko Terashima, Beau Aherns, Pamela Jones, Adrian Levy

Co-designing an optimal discharge process for internal medicine: understanding the challenges faced by clinicians and staff

Presented by: **Kathleen Charlebois**, Senior qualitative researcher and project coordinator, St.Mary's Resarch Centre

The objective for this study was to obtain clinical and staff perspectives about improving discharge processes on two internal medical wards in a large teaching hospital. The findings will contribute to an experience-based co-design initiative in partnership with patients, caregivers, and staff to identify priorities for change. Experience-based co-design (EBCD) consists of two phases: discovery and co-design. In this presentation we focus on the overall methods for this study, and results of the discovery phase, which included interviews with the healthcare team. Semi-structured interviews were conducted with staff and clinicians to include a diverse sample of those involved in the discharge process. A conceptual framework comprising core aspects of the discharge process (planning, coordination, teaching and outcomes) guided data collection and analysis. Thematic analysis was then used to analyse the data. Major themes were developed by contrasting empirical data and the conceptual framework. Seventeen interviews were completed. Three overarching themes emerged from our analysis. First, discharge planning is an iterative, multidisciplinary process. However, breakdowns in communication occur as changes are not always communicated to staff and clinicians in a timely manner. Second, a reduced sense of control was expressed by staff at the point of discharge regarding placement. One contributing factor was thought to reside in some of the organizational change within their institution as well as across community-based institutions. Third, the need to address the lack of informal social support among certain patients, particularly those living alone and/or with cognitive difficulties, to help them cope following their discharge from hospital was highlighted as a major impediment to discharge. Readmissions tended to be attributed to such situations. Iterative planning along with strategies to facilitate the coordination of patients' discharge from the internal medicine unit constitute efforts to ensure a flexible process that responds to patients' specific needs and preferences. Challenges persist for staff regarding autonomy and resources attributed to measures aimed at centralizing services.

Co-Author(s): Kathleen Charlebois, Susan Law, Sylvie Lambert, Laurence Green, Sarah Elsayed, Robyn Tamblyn

A5: HEALTH ECONOMICS/FINANCING/FUNDING | ÉCONOMIE DE LA SANTÉ / FINANCEMENT / SUBVENTION

A Needs-based Approach for Funding, Using Quality-Based Procedure of Hip and Knee Replacement in Ontario as An Example

Presented by: **Shengli Shi**, Methodologist, Ontario Ministry of Health and Long-Term Care

Current Ontario hospital funding is a utilization-based approach with funding allocation based on actual volume. This study explored a needs-based approach to estimate volume across LHINs adjusting for geographic variation in clinical conditions and socioeconomic disparities that are related to needs for hip and knee replacement. A direct stratification approach is taken to adjust for variations in risks for hip and knee replacement, including age, sex, clinical conditions of arthritis, obesity and diabetes, and geographic characteristic of income quintile, rurality and single households. Ontario adult population in FY2015 were first stratified by risk factors and rate of hip and knee surgeries was calculated for each stratified group. The provincial rates were then applied to the LHIN population of the funding year assuming they shared the same population composition as FY2015. Then apply market share of hip/knee replacement to convert residence LHIN volume to service LHIN volume. Among Ontario adult population, hip/knee replacement rates were significantly much higher in cohorts with clinical condition of arthritis, obesity, and diabetes. Female and older population also shows much higher hip/knee replacement rates. The surgical rates were lower in areas that are rural or populated with single households. The distributions of risk factors vary across LHINs of residences. The variation in prevalence rates for arthritis ranged from 11.8% to 18.7%, and from 3.6% to 6.3% for obesity/overweight. Age, gender, income compositions and single households also differ across the LHINs. Adjustment of the risk factors results in changes in expected hip/knee volumes in both residence and service LHINs, and LHINs with population with higher chances of needs for hip and knee surgery also have higher expected volumes. Hip/Knee replacement surgery rates differ across various levels of the risk factors. Distributions of these risk factors vary across LHINs. Adjustment upon these factors could lead to better estimates of procedure volumes that reflect the needs and provide better evidence for funding.

Co-Author(s): Shengli Shi, Sping Wang

Patient preferences for massively parallel sequencing genetic testing of colorectal cancer risk: a discrete choice experiment

Presented by: **Deirdre Weymann**, Health Economist, BC Cancer Agency

Massively parallel sequencing (MPS) of genes may replace traditional diagnostic testing for inherited colorectal cancer and polyposis syndrome (CRCP) given its improved ability to find causal pathogenic variants. Our study aims to enumerate preference-based personal utility and willingness-to-pay for MPS genetic testing of colorectal cancer (CRC) risk. Our setting is the New Exome Technology in (NEXT) Medicine Study, a randomized control trial of usual care genetic testing versus exome sequencing in Seattle, Washington. Using discrete choice techniques, we elicited patient preferences for information on genetic causes of CRC. We estimated personal utility for the following attributes: proportion of individuals with a genetic cause of CRC who receive a definitive diagnosis, number of tests used to search for genetic cause, wait time for results, and cost. We analyzed preference data by estimating an error-component mixed logit model. Of the 139 patients enrolled in the NEXT Medicine study, 95 completed this DCE (68% response rate). Preferences for information on Mendelian causes of CRC were somewhat heterogeneous. On average, participants preferred to undergo genetic tests identifying more individuals with a definitive genetic etiology and involving a shorter wait time for results. Assuming that MPS identifies more individuals with a Mendelian form of CRC risk, involves fewer genetic tests, and results in a shorter wait time than traditional diagnostic testing, average willingness-to-pay for MPS ranged from US$1,850 (95% CI: $1,438, $2,252) to US$2,150 (95% CI: $1,595, $2,698). Approximately 83% to 87% of participants were predicted to choose to receive MPS over traditional testing. Patients value information on genetic causes of CRC and replacing usual care genetic testing with MPS testing of CRC risk will increase patients' utility. Future research exploring costs and benefits of MPS for inherited CRCP is warranted.

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Costs of adolescent cancer by phase of care: a population-based study in British Columbia and Ontario, Canada

Presented by: **Mary McBride**, Distinguished Scientist, BC Cancer Agency

Adolescent cancer care presents unique issues relating to diagnosis, treatment, late effects, and survivorship, but little is known about costs, which are useful for economic evaluation and healthcare planning. This study estimates and compares cancer-attributable costs for cancer in adolescents in two Canadian provinces in four phases of care. Patients diagnosed with cancer 1995-2010 aged 15 to 19 years were identified from British Columbia (BC) and Ontario (ON) cancer registries. Resource-specific costs (Canadian $, 2012) were estimated for all patients in pre-diagnosis, initial year of treatment, continuing phase, and final year of life (for those who died) using linked clinical and administrative healthcare databases. Net costs were calculated by subtracting healthcare costs for propensity-score-matched province specific samples of adolescents without cancer from cancer patient costs. Costs in each phase were standardized to per 60 days for pre-diagnosis, and 360 days for initial, continuing, and final phases. In both cohorts (NBC = 775;NON = 2,443), approximately (26BC, 29ON)% had lymphoma, (17BC, 13 ON)% germ cell tumours, and (19BC, 24 ON)% other malignant epithelial neoplasms and malignant melanomas; 94% survived > = 1 year. Both provinces reported highest costs in the final phase. Mean overall net costs in BC were $3,486, $61,130, $8,254, and $233,849 in pre-diagnosis, initial, continuing, and final phases respectively. ON mean overall net costs were $1,018, $62,919, $7,071, and $242,008 by phase. Inpatient hospitalizations represented 40%, 60%, 54%, and 72%BC and 40%, 67%, 55%, and 77%ON of net costs by phase. CNS tumours had the highest pre-diagnosis costs and leukemia the highest initial and final costs in both provinces. For continuing costs, leukemia was highest in ON and bone and soft tissue highest in BC. Hospitalization was the single largest cost driver in both provinces in all phases. Higher overall costs in Ontario are likely due to higher cost per weighted case values in Ontario hospitals. Overall adolescent cancer costs are lower than costs for cancer among children, and higher than for cancer among adults.

Co-Author(s): Mary McBride, Ross Duncan, Claire de Oliveira, Karen Bremner, Ning Liu, Mark Greenberg, Paul Nathan, Paul Rogers, Stuart Peacock, Murray Krahn

Does Real-Time Continuous Glucose Monitoring Reduce Short-term Medical Costs for Patients with Type 1 Diabetes and Hypoglycemia Unawareness in Ontario, Canada?

Presented by: **Shraddha Chaugule**, Sr. Manager, Health Economics & Outcomes Research, Global Market Access, Dexcom, Inc

Assess the impact on short-term direct medical costs of replacing self-monitoring of blood glucose (SMBG) with real-time continuous glucose monitoring (RT-CGM) in patients with type 1 diabetes (T1DM) and hypoglycemia unawareness (HUA) from the public payer perspective in Ontario over 1 year and 5 years. All model inputs, including incidence rates and costs related to SMBG, ER visits, and hospitalizations, were derived from published literature or publicly available sources. The prevalence of diabetes is 10.5% in Ontario; 7.5% of patients with diabetes have T1DM (112,860), of whom ~20% have HUA (n=22,572) and a 4.5-fold increased risk of severe hypoglycemia (SH). Data from randomized controlled trials indicate that RT-CGM reduces the incidence of SH by 59% and HbA1c by 0.6% compared with SMBG. Device costs were provided by the manufacturer (Dexcom G5™ Mobile; Dexcom, Inc., San Diego, CA, USA). Costs were adjusted to 2016 Canadian dollars. Annual direct medial costs for emergency treatment of SH in patients receiving SMBG and RT-CGM are, respectively, $228,314,534 and $83,069,877. The reduction in HbA1c conferred by RT-CGM results in an annual savings of $109,023 (-$805 per 1% HbA1c reduction). The annual cost of SMBG and RT-CGM is $31,274,535 and $148,723,782, respectively. The annual and 5-year net impact of replacing SMBG with adjunctive RT-CGM was estimated to be ?$27.9 million (-11%) and -$140.3 million (-10%)., respectively. One-way sensitivity analyses showed that results were most sensitive to the cost of RT-CGM and hospitalization, incidence of hospitalization, and reduction in SH conferred by RT-CGM. By reducing the risk of costly acute complications among high-risk patients with T1DM, RT-CGM may save short-term direct medical cost compared with SMBG.

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A6: HEALTH SYSTEM PERFORMANCE | RENDEMENT DU SYSTÈME DE SANTÉ

PATIENTS' PREFERENCES AND TRADE-OFFS IN CHOOSING A SURGEON TO DECREASE WAITING TIMES

Presented by: **Tom Noseworthy**, professor, University of Calgary

Patients face significant waiting times for hip and knee total joint replacement (TJR) in Canada. One waiting time management strategy is the single-entry model (characterized by pooled referrals, central intake and triage for referral to specialist). Central intake can improve access by offering the choice of next available surgeon. We aimed to assess patients' preferences and trade-offs for reducing waiting times for TJR including surgeon choice.We administered a questionnaire, including a discrete choice experiment (DCE) with 12 choice tasks, to Canadian patients (>18 years) referred as candidates for TJR. Five attributes were included based on our previous research, pre-testing and pilot testing: surgeon reputation, surgeon selection process, waiting time to surgeon visit, waiting time to surgery and travel time to hospital. Preferences were assessed using hierarchical Bayes analysis and evaluated for goodness-of-fit. We conducted simulation analyses for alternative scenarios representing various combinations of attributes. Of 422 participants, 59% were female and 68% were referred for knee TJR. Overall, mean baseline EQ-5D was 0.4 and mean Oxford score was 19.8. The most important attribute was surgeon reputation followed by waiting time to surgery, waiting time to surgeon visit, surgeon selection process and travel time. Patients appear willing to wait 10 months for consultation with an excellent reputation surgeon before switching to a good reputation surgeon. Simulations indicate that patients in the lowest pain category have stronger preferences for choosing their surgeon than those in the highest category. Patients in the highest pain category were willing to wait 7.3 months, after which they would accept the next available surgeon. Those experiencing the least pain were willing to wait 12 months. Next available surgeon increases choice and may result in shorter waiting times. However, surgeon reputation is a dominant consideration, albeit poorly assessed by patients.

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Dialysis patients in hospitals: risk of hospitalization and associated costs

Presented by: **Michael Terner**, Program Lead, Canadian Institute for Health Information

Dialysis-dependent patients have a higher risk of hospitalization than other patients, leading to increased patient burden and healthcare system costs. Using pan-Canadian data, this study highlights the factors affecting risk of hospitalization among dialysis-dependent patients and the associated costs of these hospitalizations. This study identified a cohort of 38,369 new dialysis patients using data between 2005 and 2014 from the Canadian Organ Replacement Register (CORR). This patient data was linked to hospitalization data from the Discharge Abstract Database (DAD) and the Ontario Mental Health Reporting System (OMHRS). We calculated hazard ratios for all-cause and infection-related hospitalizations (IRHs; those related to dialysis care). Covariates included age, sex, race, income, comorbidity, primary diagnosis, year of dialysis start, care type and dialysis modality. Comparable costing data for hospitalizations were estimated using CIHI's Cost of a Standard Hospital Stay (CSHS) indicator. All-cause hospitalization rates across age groups ranged from 1.1 to 2.5 hospitalizations per patient-year on dialysis. Pediatric (0–17 years) dialysis patients had higher risks for all-cause hospitalizations (HR = 2.73; p-value < 0 .001) and IRHs (HR = 1.30, p-value = 0.164) than patients age 45–64. Indigenous dialysis patients also demonstrated higher risks for both all-cause hospitalizations (HR = 1.20; p-value < 0 .001) and IRHs (HR = 1.30, p-value = 0.001) than Caucasian patients. For all-cause hospitalizations, patients on either hemodialysis or peritoneal dialysis modalities had similarly decreasing risks of hospitalization over time 7 days after starting dialysis. The average estimated hospitalization cost per patient-year was higher for younger patients ($27,344 for pediatric patients) than older patients ($8,149 for patients age 75 and older). Dialysis patients are at a high risk of hospitalization, which are costlier than other patients. IRHs for these patients can be prevented by adhering to dialysis catheter guidelines and promoting greater arteriovenous fistula use. Special attention should be given to higher risk populations such as pediatric and Indigenous dialysis patients.

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Did introduction of medical homes with mandatory after-hours provision reduce emergency department use?

Presented by: **Tara Kiran**, Family Physician, St. Michael's Academic Family Health Team

Compared to other high-income countriesCanada has one of the highest rates of emergency department visits and lowest availabilty of alternative after hours care . We sought to understand whether the introduction of primary care medical homes in Ontario with mandatory after-hours provision reduced emergency department use. We examined emergency department and primary care visit trends for Ontario residents 19 years and older who transitioned to a medical home between April 1, 2003 to March 31, 2014 and lived outside rural areas (n= 8,946,398). For residents who had a minimum of three years of data available before and after the year of transition (n=4,409,593), we used segmented negative binomial regression to assess the impact of transition on emergency department use. Resident age, neighbourhood income quintile, co-morbidity, and morbidity were included as time-varying co-variates and resident sex as a stable variable in the models. n 2014, there were approximately 4.1 million emergency department visits and 8.2 million after hours visits to primary care. Between 2003 and 2014, the crude rate of emergency department visits rose from 333 to 370 per 1000 persons. During the same period, the proportion of primary care visits that occurred on the weekend rose from 2.2% to 3.7%, but there was a secular decrease in both the primary care visit rate and continuity with the primary care physician. In the years before transition to a medical home, the emergency department visit rate was decreasing by 2.8% (95% CI, 2.7% to 2.9%) per year. After transition, the emergency department visit rate was increasing by 1.4% (95% CI 1.4% to 1.4%). Transition to a medical home with mandated after-hours services was associated with an increase in emergency department use despite an increasing trend in the proportion of primary care visits that occurred on the weekend. I

Co-Author(s): Tara Kiran

Impact of different models of physician-based palliative care on costs in the last year of life

Presented by: **Peter Tanuseputro**, Investigator, Bruyère Research Institute & Ottawa Hospital Research Institute

To describe the healthcare costs across all sectors incurred in the last year of life by individuals receiving different models of physician-based palliative care. This includes outpatient palliative care by different specialties (i.e., family physician vs. palliative care specialist), and physician home visits by family physician or palliative care specialists. All decedents in Ontario were captured between April 1, 2011 and March 31, 2015. Physician billing data captured in the Ontario Health Insurance Plan (OHIP) dataset was used to categorize decedents by the type(s) of physician-based palliative care they had received. Health care costs across all sectors (e.g., home care, hospitals, long-term care) were estimated for each decedent and then averaged across the care type to provide an estimate of the costs incurred for each care type and compared to those who did not receive such care. Approximately 50% of all decedents will have at least one palliative care visit in the last year of life. Of those who received palliative care, 64% received palliative care in an outpatient setting and only 18% received home visits. Conversely, 85% of individuals who received palliative care received inpatient care, incurring large healthcare costs. We determine if those who receive physician-based palliative care at home or in the community result in lower overall cost – in the last year of life and across all healthcare sectors – than those not receiving palliative care. Furthermore, we seek to determine physician type (e.g., family physicians or palliative care specialist) or setting of care further impacts overall healthcare cost. Little is known about the cost associated with different models of palliative care and the fiscal impact on the healthcare system overall. This project provides insight into the cost of delivering physician-based palliative care, which can inform policy decisions around the allocation of finite resources across competing end-of-life care needs.

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A7: HEALTH SYSTEM PERFORMANCE/CHRONIC DISEASE MANAGEMENT
RENDEMENT DU SYSTÈME DE SANTÉ / GESTION DES MALADIES CHRONIQUES

Medications Prescribed, Stopped and Modified at Hospital Discharge and Filled Medications in the Community: Impact of Failure to Follow in-Hospital Medication Changes on Adverse Health Outcomes 30-days Post Hospital Discharge

Presented by: **Daniala Weir**, PhD Candidate, McGilll University

To determine the impact of failure to follow changes made to patient drug regimens during hospitalization on 30-day hospital re-admissions and emergency department visits for patients admitted at two urban, tertiary care academic hospitals in Montreal, Quebec between October 2014 and May 2016 with at least two chronic conditions This study was restricted to solid, oral medications covered under the provincial drug plan. Failure to follow medication changes was measured by comparing patient discharge prescriptions (patient chart) to medications filled in community 30-days post-discharge (dispensing data). Failure to follow changes made in-hospital included i) community medications that were stopped in-hospital and filled post-discharge, ii) community medications that were modified in-hospital but not filled at the modified daily-dose, and iii) new medications not filled post-discharge. Logistic regression was used to determine the impact of failure to follow changes made to community medications in-hospital on 30-day hospital re-admissions and ED visits. Among the 872 included patients, mean age was 72 (SD 13) and 37% were female. Patients had a median of 9 (IQR: 7-11) in-hospital medication changes; 489 (56%) patients had at least one medication change during hospitalization not followed post discharge. 27% of patients without a failure post-discharge had an ED visit or hospitalization in 30-days, 30% with 1-2 failures experienced an event, and 57% of patients with 3+ failures had an event. After adjusting for patient demographics, healthcare service utilization one year prior to hospitalization, hospital length-of- stay and comorbidity level, as well as the total number of in-hospital medication changes, each additional failure post-discharge was associated with a 25% increased odds of hospital re-admission or ED visit (OR: 1.25, 95% CI: 1.10-1.41). Not only did the majority of patients not follow all medication changes that were made during hospitalization, the extent to which this occurred significantly impacted the risk of hospital re-admissions and ED visits. Policy and patient level interventions should be developed specifically targeting barriers for adherence to medication changes.

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Application of cluster analysis to inform geographically-targeted STI interventions

Presented by: **Liam Rémillard**, Student, Queen's University

The objective of the present study was to Identify if STIs exert spatio-temporal patterning in order to inform future STI interventions. Using the 2006 Census boundaries, a unique geography combining both census tracts (CT) and census subdivisions (CSD) was developed. Ontario STI cases of chlamydia, gonorrhea, and syphilis diagnosed between 2005-2010 were geocoded from identified case data, and age- and sex-standardized rates were calculated for each Ontario CSD and CT. To assess global autocorrelation trends, Moran's I statistic and local indicators of spatial autocorrelation (LISA) were calculated for each STI annually. In addition, Kulldorff's cylindrical scan statistic was applied to identify the most likely spatio-temporal cluster location for each STI. This research suggests that STIs are not spatially random with each exerting deferring degrees of spatial autocorrelation in Ontario. Although syphilis cases are becoming increasingly clustered between 2005-2010, both chlamydia and gonorrhea are becoming more diffuse. Results also identify the presence of regions with excess risk. In contrast to chlamydia and gonorrhea, findings suggest that the increasingly clustered nature of syphilis may benefit from future geographically-targeted interventions. Therefore, maintaining spatially invariant interventions may be the best approach for chlamydia and gonorrhea; however, syphilis interventions should be geographically-targeted.

Co-Author(s): Liam Rémillard, Paul Belanger, William Pickett, Kieran Moore, Anna Majury

Case distribution and complications of mid-urethral sling surgery in a Canadian city before and after Health Canada advisory on pelvic floor mesh

Presented by: **Anika Sehgal**, Research Assistant, vesia [Alberta Health Services]

Mid-urethral mesh slings are used for treating female stress urinary incontinence. Incidences of complications resulted in the Food and Drug Administration and Health Canada issuing advisories. The purpose of this study was to assess the effect these advisories had on the number of surgeons performing MUS surgery and post-surgical complications. This study conducted a retrospective analysis of administrative data between 2006 and 2011 in maintained by Alberta Health Services. Post-surgical complications were identified using ICD-10 codes. All rates were adjusted for the increase in female population in Calgary during the study period. An interrupted time series model was used to evaluate any changes in the number of surgeons performing MUS surgery and any post-surgical changes from the period of time before and after the advisories. A total of 3,321 initial MUS surgeries were conducted in Calgary during our study period. On average, there were 49.1 surgeries conducted per month in the pre-warning period, 49.6 surgeries per month during the warning period, and 39.5 surgeries per month during the post-warning period. The number of surgeons performing MUS surgery and the number of surgeries performed decreased over the study period, although neither of these were significantly related to the advisories. In terms of complications, we did not observe a significant change in the rate of repeat MUS surgeries, inpatient admissions, emergency department visits, and ambulatory care visits within two years of initial surgery. The Food and Drug Administration and Health Canada advisories had no effect on the use of MUS in Calgary. This suggests either that they bear little influence on local surgeons' practices, or that safety was already at such a high level that improvements were not possible.

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Dimensions of quality of care assessed by chronic pain providers in Quebec

Presented by: **Diana Zidarov**, postdoctoral fellow, University McGill

To develop quality indicators (QI) for the management of chronic pain (CP) across a continuum of care in an integarted care network. One step of this process is to identify QI actually used by CP healthcare organisations and to identify quality domains where indicators are lacking. A survey was developed to collect information from CP healthcare organisations about the level of care provided, volume of patients waiting for care and mean waiting time, and the use of QI. An assessment of the survey's completeness and clarity was performed through cognitive debriefing with 3 chronic pain experts (1 researcher and 2 program managers). The Quebec's Association of Chronic Pain web site was used to identify CP healthcare organisations. QI were classified according to the Triple Aim Framework and classification will be validated by an expert panel. 87 % (n=20) of CP healthcare organisations participated in the survey. 85% (n=17) provided care to adults. Ten percent (n=2) provided primary care, 30% secondary (n=6), and 15 % (n=3) tertiary level care, 45% (n=9) provided more than one level of care. The mean waiting time for individuals to access CP services is 13.6 ± 7.6 months (range 3-24 months) and the mean number of persons on waiting lists is 495.4 ± 455.8 (range 6-1400 persons). Sixty percent (n=12) of healthcare organisations used QI to evaluate quality of care. In total, 80 unique QI were identified. Triple Aim dimensions assessed were: effectiveness (n=20; 25%); utilization rate (n=23; 29%) and access to care (n=11; 14%). Dimensions that were lacking QI were safety, efficiency and cost. This study provides the state of use of QI among CP healthcare organisations in Quebec and identified dimensions of quality of care that need development of QI. The results will inform a stakeholder engagement plan to develop a common QI framework to improve the care delivered to individuals with CP.

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A8: PRIMARY HEALTH CARE | SOINS DE PREMIÈRE LIGNE

Delivery of pediatric primary care in the context of primary care reform in Ontario, Canada: a population-based study.

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

Primary care has undergone major reforms in Ontario. Pediatricians were not included in reforms yet provide a proportion of primary care to children. We sought to describe patient characteristics of children receiving primary care by pediatricians versus family practitioners in various reform enrollment models over time. Population-based repeat cross-sectional study using linked health administrative and demographic databases of all children living in Ontario (0-17 years) with insurance under the universal provincial health plan (2.8 million/year) from 2005 to 2014. Patients were assigned annually to primary care providers based on their enrollment in a care delivery model. Unenrolled patients, including those served by pediatricians, were assigned their usual primary care provider using all fee-for-service primary care billings to identify the majority provider. Socio-demographics and case-mix were ascertained through census data and inpatient and outpatient health records. Changes over time in patient characteristics by care model were analyzed. Pediatricians provide primary care for 10.0% of children (vs. 12.5% in 2005) and 7.2% have no regular care provider. Over time, children cared for by pediatricians declined (23.7% in 2005 vs. 18.9% in 2014 for 0-2-year-olds; 14.4% in 2005 vs. 10.8% in 2014 for 3-10-year-olds). Overall (2014), among children followed by pediatricians, 25.7% live in high-income neighbourhoods whereas the largest proportion in fee-for-service models (23.5%) or without care providers (26.6%) are in the lowest income neighbourhoods. In major urban centres, pediatricians care for 12.2% of children (vs. 15.3% in 2005). Case-mix for those with mental health problems was similar across care-models and over time. Pediatricians cared for a higher proportion (8.0%) of patients with complex chronic conditions compared with all pediatric care providers (6.0%). With reforms to primary care delivery, fewer children are receiving primary care from pediatricians and differences exist by income and geography. The impact of reform on workforce, and accessibility and quality of pediatric primary care services remains to be studied.

Co-Author(s): Natasha Saunders, Christina Diong, Richard Glazier, Astrid Guttmann

Are Primary Care Physicians who Provide Obstetrical Care in BC a Dying Breed?

Presented by: **Lindsay Hedden**, Postdoctoral Research Fellow, Centre for Clinical Epidemiology and Evaluation

Concerns have been raised that fewer primary care (PC) physicians may be including obstetrics in their practices, despite significant financial incentives for the delivery of these services. Our objective was to examine trends in and determinates of the provision of obstetrical care within the PC context among physicians in BC. This is a population based, longitudinal cohort study covering all primary care physicians practicing in BC between 2005/6 and 2011/12. We used fee-for-service (FFS) billings to identify the provision of prenatal and postnatal care and deliveries. We modeled the proportion of physicians who participated in one or more deliveries, and the proportion who included any obstetrical care provision in their practice over time using longitudinal mixed effects log linear modeling. We also modeled the proportion of all care related to obstetrics using a logit-transformed outcome and a normal linear mixed effects model. Model covariates included physician and patient-population demographic characteristics. The proportion of physicians attending deliveries or providing any obstetrical care declined significantly over the study period (OR deliveries 0.90, 95%CI 0.88-0.92; OR obstetrics 0.92, 95%CI 0.90-0.93). Further, by the end of the study period obstetrical care provision accounted for a significantly smaller proportion of overall practice activity (OR 0.93, 95%CI 0.92-0.95). Female physicians were significantly more likely to attend deliveries (OR 1.21, 95%CI 1.04-1.37) and to include any pre- and post-natal care provision in their practices (OR 1.46, 95%CI 1.27-1.68). Obstetrical care more generally also made up a significantly larger proportion of the practices of female PCPs (OR 1.26, 95%CI 1.09-1.44). Older physicians and those located in metropolitan centres were less likely to provide obstetrical care or attend deliveries. The provision of maternity care in the PC context is declining significantly over time, suggesting the possibility of a growing access issue in this area. This issue presents a particularly salient problem in rural/remote communities where family physicians are often the sole provider of maternity services.

Co-Author(s): Lindsay Hedden, Morris Barer, Kimberlyn McGrail, Michael Law, Ivy Bourgeault

Improving the performance reporting of primary care patient experience

Presented by: **Sabrina Wong**, Professor, University of British Columbia

Performance reporting in primary care (PC) in Canada is recent. In part, there is a need for improvement in the science of performance measurement. The goal of this work was to specify the patient experience information needed to provide a high level snapshot of PC performance on several key dimensions. Cross sectional patient experience data were collected as part of a larger practice-based survey across three geographic areas in British Columbia, Ontario, and Nova Scotia. We mapped items and scales from the patient survey to core constructs of PC. Next, we conducted exploratory and confirmatory factor analyses of intended constructs, using the core PC constructs as a framework (second order CFA models). We then created indices from the items and scales that measure the same construct (e.g. equity orientation, coordination). Each index is made up of both positive and negative indicators. Data from 1,207 patient experience surveys were used; Patients were clustered into 56 clinics (n=12, BC; n=15, ON; n=26, NS).Our factor analyses suggests patient experience data can be grouped into the following seven dimensions: accessibility orientation, relationship-based care, promoting health, self-management support, coordination orientation, safe care and equity orientation. Patient demographics and health status across geographic areas were similar but their experiences varied. Clinic means for each geographic area are reported since actionability on improving performance is likely to happen at the organizational level. ON clinics consistently had the highest performance in all dimensions, followed by those in NS and then BC. Within each area, there are practices who scored lower than their peers and those who scored substantially higher than the geographic mean. These seven dimensions of patient experiences in PC can provide actionable and sensitive information to enhance or improve performance. Policy interventions (e.g., interprofessional teams) aimed at the clinic level could lead to more impact on improving PC performance and strengthening the PC system.

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Cree youth engagement in community-based health planning - perspectives on process and priorities: review of evidence and methodology

Presented by: **Nickoo Merati**, Student, McGill University

While many health problems in James Bay Cree communities primarily affect youth, engagement of young voices in health planning to date has been limited. Objectives: to (1) review the evidence and best practices regarding Indigenous youth engagement in health planning and evaluation, and (2) co-design a strategy for engaging Cree youth. This project is nested within an ongoing community-based participatory research evaluation (CIHR-PHSI grant) of a Cree community-based health planning initiative. The Cree conceptualization of health is known as 'Miyupimaatisiiun', best interpreted as 'being alive well'. Our research question is: What does Miyupimaatisiiun mean for Cree youth? This qualitative descriptive study will involve a review of the evidence, a partnership with local youth leaders and councils, and co-designing a strategy for youth engagement in their own Miyupimaatisiiun planning and evaluation. We will recruit approximately 8-10 Cree youth leaders and youth community members (aged 14-25) and conduct 2-3 focus groups, with selected in-depth follow-up interviews. We will present the overall methods and preliminary findings of the literature review: including evidence about Indigenous youth priorities for health and healthcare, and best practices of how to gather youth voices (particularly through the use of social media). Overall, we anticipate this project will contribute to: i) a better understanding of youth perspectives on planning processes and priorities for their health and healthcare; ii) the co-creation of new knowledge about methods for engaging young Indigenous people in health planning and research processes; iii) strengthened partnerships between the McGill academic team, the Cree Health Board, and the James Bay Cree youth and communities; and iv) knowledge translation products (including a final report and plain language briefings for Cree youth). This study will help fill the knowledge gap for James Bay regarding what Cree youth perceive to be effective strategies for gathering young voices about health and healthcare, and preliminary insights on priorities. We anticipate that the youth perspectives will differ from that of local and regional leadership.

Co-Author(s): Nickoo Merati, Mary Ellen Macdonald, Jon Salsberg, Susan Law

A9: HOME CARE, LONG TERM CARE AND AGING | SOINS À DOMICILE ET DES SOINS DE LONGUE DURÉE

Dementia Population Risk Tool (DemPoRT): Predictive Algorithm for Assessing Dementia Risk in the Community Setting

Presented by: **Stacey Fisher**, PhD Candidate, Ottawa Hospital Research Institute

Existing population projections of dementia prevalence are simple and have poor predictive accuracy. The Dementia Population Risk Tool (DemPoRT) seeks to predict the incidence of dementia in the population setting using multivariable modeling techniques. Projection of disease in the population typically does not consider potential confounding and interaction, and assumes that risk factors will remain stable over time. DemPoRT overcomes these limitations and includes a more comprehensive list of predictors than existing algorithms. Incident dementia among elderly Ontario respondents of the 2001-2007 Canadian Community Health Surveys (CCHS) was identified through individual linkage of survey respondents to population-based databases. Using time of first dementia capture as the primary outcome and death as a competing risk, sex-specific proportional hazards regression models were estimated. The derivation cohort consists of 47,776 survey respondents, of which 4,867 (10%) were identified as having incident dementia. The pre-specified model includes 32 predictors (63 degrees of freedom) capturing variables on sociodemographics, general and chronic health conditions, health behaviors and physical function. Preliminary results suggest that the model is well-calibrated and has good discrimination. Diabetes, stroke and diet were strong predictors of dementia for males and females. Body mass index and needing help managing finances were also predictive in females, while self-rated health was predictive in males. After model reduction, the contribution of health behaviors to dementia incidence will be assessed and future prevalence of dementia in Ontario will be projected. DemPoRT will be validated using the 2008/09 CCHS in Ontario. Health system planning in anticipation of growing dementia prevalence requires reliable projection estimates. DemPoRT will be the first and most comprehensive population-based algorithm for predicting dementia incidence, with the potential to improve the ability to answer key policy questions with respect to the future burden of dementia in Canada.

Co-Author(s): Stacey Fisher, Nassim Mojaverian, Amy Hsu, Monica Taljaard, Doug Manuel, Peter Tanuseputro

Low Disability at Admission Predicts Faster Disablement in Long-Term Care Residents

Presented by: **Walter Wodchis**, Associate Professor, University of Toronto

Disablement is when people lose their ability to perform activities of daily living (ADLs) over time; it is associated with lower quality of life and higher healthcare costs. This study examines whether disability and specific geriatric syndromes present at long-term care admission predict residents' rate of disablement over two years. Longitudinal study of 12,334 residents admitted to 633 Ontario long-term care homes between April 1st 2011 and March 31st 2012. Eligible residents received an admission assessment of disability using the RAI-MDS 2.0 ADL long-form score (range 0 – 28) and two subsequent disability measures in the home they were admitted to. Regression models estimated the adjusted association between low versus high disability, pain, balance impairment and cognitive impairment at admission with residents' rate of disablement over two years. Residents had a median disability score of 13 at admission. Residents with disability scores below or equal to the sample median experienced disablement at a rate of 0.43 (95% CI: 0.42, 0.45) points per month, whereas those with above-median disability at admission became disabled at a rate of 0.17 (95% CI: 0.15, 0.18) points per month. Pain, balance impairment and cognitive impairment at admission had negligible effects on resident disablement over two years. Residents who are more disabled at admission experience slower disablement over two years than residents who are less disabled at admission. This rate difference may reflect an untapped opportunity for slowing disablement among residents who are admitted to long-term care with lower disability.

Co-Author(s): Natasha Lane, Therese Stukel, Cynthia Boyd, Walter Wodchis

The Association Between Home Care Services and Same Day Emergency Department Utilization

Presented by: **Aaron Jones**, PhD Student, McMaster University

Home care patients are a large and expanding subpopulation of older adults characterized by high rates of emergency department (ED) utilization. The relationship between ED visits and home care services is poorly understood. This study examines the impact that home care services have on same day ED utilization. A population-based longitudinal retrospective cohort was created of all adult home care patients in a large health region of Ontario. The cohort included all days that a patient was available for home care service from January 1st 2015 to December 31st 2015, minus holidays and weekends. Conditional logistic regression was utilized to explore the effect that different types of home care visits during the day had on ED visits after 5pm of the same day, controlling for temporally dependent risk factors. Analysis was stratified by whether a patient was receiving on-going ("Long Stay") or episodic ("Short Stay") care. Home care patients were considerably more likely to visit the ED after 5pm on days that they had any type of nursing service [Long Stay OR 1.51 (1.39-1.63), Short Stay OR 1.48 (1.33 – 1.64)]. The effect size was similar when restricted to ED visits that did not result in a hospital admission but greater for non-urgent ED visits [Long Stay OR 1.91 (1.53-2.39), Short Stay OR 1.62 (1.31 – 2.00)]. Clinic nursing tended to be more strongly associated with ED visits than home nursing. No effect was seen for personal support, therapies, or care coordination.

Home care nursing services were positively associated with same day after-hours ED visits. The effect was persistent across patient groups and nursing service types, but absent for other home care service types. The task-based nursing model employed by home care agencies could be leading to higher ED utilization rates.

Co-Author(s): Aaron Jones, Andrew Costa

How palliative care utilization differs by disease trajectory

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

Prior research showed that half of decedents in Ontario received at least palliative care service in the last year of life, mostly from hospitals and close to death. We investigate the variation in utilization and timing of palliative care services in the last year of life by major disease trajectory. Using linked administrative databases, we examined all decedents in Ontario between FY 2010/11 to 2012/13. We categorized disease trajectories into terminal illness (e.g cancer), organ failure, frailty, other, and sudden death using ICD-10 codes. From billing records, we examined which palliative care services, if any, were used across multiple settings and providers, the mean number of days of utilization, and timing of initiation of services. We also used a multi-variable model to determine how disease trajectory was associated with any use of palliative care and number of palliative care days. We identified 235,159 decedents, of which 31% died of organ failure, 32% terminal illness, 29% frailty, 5% other, and 3% sudden death. Overall 80% were 65+ years old, and 75% had 3+ chronic conditions. 88% of terminal illness patients ever used palliative care, using a median of 49 days of services total and initiated 107 days before death among users. 44% of organ failure patients used palliative care for a median of 23 days and initiated 22 days before death; 32% of frailty patients used palliative care for a median of 21 days and initiated 24 days before death. Regression analysis showed that terminal illness trajectory had 14x higher odds to use any palliative care and 6.5x more days than frailty trajectory. Palliative care is predominantly delivered to cancer patients. To improve palliative care access for the other disease trajectory groups, this analysis highlights which settings and provider groups that palliative care services can be increased and delivered earlier.

Co-Author(s): Hsien Seow, Peter Tanuseputro

A10: HEALTH POLICY, HEALTHCARE REFORM, AND HEALTH ACCORD
POLITIQUES DE SANTÉ ET RÉFORME DES SOINS DE SANTÉ

Healthcare system performance: what if it were about power?

Presented by: **Astrid Brousselle**, Professor, Université de Sherbrooke

To analyze preferences regarding potential solutions to improve the healthcare system among four groups of key actors of the healthcare system such as managers, physicians, nurses and pharmacists. This project is based on an exploratory sequential design. First, we explored the views of various stakeholders by conducting 31 in-depth interviews with key stakeholders that have an influence on Quebec's health policy. The interviews focused on the healthcare system's strengths, problems, solutions and on identifying the most influential groups regarding healthcare policies. Interviews were analyzed using a social network analysis strategy. Second, we conducted a survey among 2503 respondents (pharmacists, physicians, senior level managers and nurses) on a set of solutions aiming at improving the performance of the healthcare system. Analysis compared the positions of professional groups. The participants agree that Quebec's healthcare system needs improvement. There is a large consensus on solutions identified to improve the healthcare system. In the survey, resistance is observed in two major areas: information systems and changes directly affecting physicians' practice. Our results show the central role of medical federations in influencing public policies related to healthcare. They also show that our inability to implement solutions to improve the healthcare system's performance can't be explained by a polarization among professional groups' positions nor by a disagreement among key stakeholders. It then raises new questions on the actual sources of resistance and on the influential role of medical federations in the healthcare system. Our results show the central influence of medical federations on health policies. This disrupts our representations of the influence on health policies and invites both researchers and decision-makers to consider their actions differently, if they are to have an impact on health policies.

Co-Author(s): Astrid Brousselle, Damien Contandriopoulos, Mylaine Breton, Jeannie Haggerty, Michèle Rivard, Marie-Dominique Beaulieu, Catherine Larouche, Geneviève Champagne, Mélanie Perroux, Enkelejda Sula Raxhimi

Implications of Medical Power in Quebec's Health System and Policy

Presented by: **Enkelejda Sula Raxhimi**, Postdoctoral Fellow, Université de Sherbrooke

A recent study conducted among key health stakeholders in Quebec indicates the central influence of the medical federations over public policies, which hinders parts of the implementation of the reform. This paper analyzes, through an anthropological and sociological perspective, the medical power and its roots in the Quebec's health system. One question stems from the interviews: where and how does the medical body finds its power within the system and what are the implications for the reform implementation at large? This presentation questions the current state of affairs, and seeks to discern and shed light on multiple facets that medical power might take. We draw on Foucauldian perspective, and on anthropological and sociological analyses to conceptualize the medical power in Quebec's healthcare system, using qualitative data from several sources: interviews with 31 stakeholders, academic as non-academic journals and literature from several disciplines such as anthropology, sociology, philosophy, history. Our analysis offers a conceptualization of medical power in Quebec, which allows us to better understand its influence on health policy implementation, to anticipate resistance zones and to identify the potential marge de manoeuvre for necessary changes to take place and improve the health system. It shows that these power relations are based on a system of differentiation that allows some to influence or act upon the actions of others. They materialize as traditional differences of status or privilege, of economic nature, of know-how possession and competence, but they can also be linguistic and cultural differences. Power relations mobilize such differences, which are both "its conditions and its effects". Considering power as a diffused notion based in power relations, it should be possible to challenge the current status quo of the power relations between the medical body and other professionals and institutions. Public opinion should play a role in decision-making concerning the system, choices and quality of services.

Co-Author(s): Enkelejda Sula Raxhimi, Astrid Brousselle, Damien Contandriopoulos, Mylaine Breton

"And if I ever did have a daughter, I wouldn't raise her in New Brunswick": Exploring the impact of Regulation 84-20 on access to abortion services

Presented by: **Kathryn LaRoche**, PhD Candidate, University of Ottawa

We set out to document women's experiences obtaining abortion care in New Brunswick before and after *Regulation 84-20 was amended, identify the economic and personal costs associated with obtaining abortion care, and examine the ways in which geography, age, and language-minority status condition access to care. We conducted 37 semi-structured telephone interviews with NB residents who had abortions between 2009 and 2014 (n=27) and after January 1, 2015 (n=< /span>10) in both English and French. We audio-recorded and transcribed all interviews verbatim and conducted content and thematic analyses using ATLAS.ti software to manage our data. We found that the cost and burden of travel is significant for NB residents trying to access abortion services. Women reported significant wait times which impacted not only the disclosure of their pregnancy but also the gestational age at the time of termination. Further, many women reported that physicians refused to provide information about, or referrals for, abortion care. Even after the amendment to 84-20, almost all participants reported that they were still required to have two physicians approve their procedure in order to access fundedcare. The funding restrictions for abortion care in New Brunswick represent a profound inequity. Amending Regulation 84-20 is an important step but fails to address the fundamental issue that clinic based abortion care is not funded and significant barriers to access persist.*

Co-Author(s): *Kathryn LaRoche, Angel Foster*

Defining Public Health Systems: A critical interpretive synthesis of how public health systems are defined and classified.

Presented by: **Tamika Jarvis**, Masters Student, McMaster University

With recent emphasis on creating a stronger, more patient-centred, health system in Ontario, there remains no clear definition of a "public health" system, hindering the ability to integrate preventive public health and healthcare practices. This study aims to describe public health systems and initiate a research agenda for this field. A critical interpretive synthesis of the literature was conducted using six electronic databases. In addition, data extraction, coding and analysis followed a best-fit framework analysis method. Initial codes were based on two current leading health systems and policy classification schemes: health systems arrangements (based on governance, financial and delivery arrangements) and the 3I+E framework for health policy formulation (institutions, interests, ideas and external factors). New codes were developed as guided by the data. A constant comparative method was used to develop concepts and to further link these into themes. Additional documents were identified to fill conceptual gaps. 5,957 unique documents were found through the electronic database searches. 5,600 were excluded through title and abstract reviews. From the remaining 357 documents, 87 documents were purposively sampled for full-text review, and 61 of these were included in this study. Six documents were used to fill conceptual gaps. For the most part, public health systems can be defined using traditional health systems and policy frameworks. However, there was a stronger emphasis on identifying and standardizing the roles and functions of public health. In addition, public health systems relied on partnerships (both community and multi-sectoral) and communication, which were markedly different than for healthcare systems. Acknowledging the need to develop and/or strengthen public health systems is prevalent, particularly in regards to emergency planning. Understanding public health systems can help strengthen these systems and further integrate preventive public health and primary care services. Systems are influenced by organizational and contextual factors that need to be explored to improve population health. A research agenda is proposed to move this field forward.

Co-Author(s): Tamika Jarvis

A11: MATERNAL AND CHILD HEALTH | SANTÉ MATERNELLE ET INFANTILE

The Effects of Early Pregnancy Loss on Health Care Utilization and Costs

Presented by: **Erin Strumpf**, Associate Professor, McGill University

Early pregnancy loss occurs in 15-20% of pregnancies and has significant effects on the family, but implications for the health care system are poorly understood. We study the predictors and the effects of these prevalent losses on health care use and costs to better understand how bereavement affects Canadian women. We developed an algorithm to identify miscarriages and ectopic pregnancies in linked administrative health databases from Manitoba using diagnosis and billing codes. To minimize bias in our effect estimates, we created a propensity score model to match women who experienced their first loss from 2003-2010 to women with a live birth within 6 months. Predictors of loss included social, clinical, and health care use factors. To estimate the effect of loss on health care use and costs, we used multivariate regressions and our matched sample. Outcomes included GP and specialist visits, use of psychotropic medications, and their costs. Before matching, women experiencing their first early pregnancy loss differ in important ways from women who have a live birth. Prior to the loss, exposed women have lower parity, higher morbidity, higher rates of psychological distress, more ambulatory care visits, and live in areas with lower socioeconomic status. Our propensity score matching procedure achieved balance on all predictors of loss in a final sample of approximately 18,000 women. Preliminary results indicated that a miscarriage or ectopic pregnancy increases costs for specialist visits by approximately 50%, and GP visits by 4%, in the two years after the loss. We observe increases in new prescriptions for psychotropic medications in both groups – women with a live birth and women who experience a loss – after the event. Beyond the direct effects on family members, early pregnancy loss leads to increases in certain types of health care utilization among affected women. This could mean higher health care costs and likely reflects increased physical and mental health needs.

Co-Author(s): Erin Strumpf, James Bolton, Marni Brownell, Dan Chateau, Patricia Gregory, Maureen Heaman, Ariella Lang

Effect of geographic accessibility and delivery volume on maternal and neonatal obstetrical outcomes: a population-based study.

Presented by: **Kris Aubrey-Bassler**, Director, Primary Healthcare Research Unit, Memorial University

When determining the appropriate level of obstetrical services to offer at a given hospital, it is unclear how to trade off higher delivery volumes with geographic accessibility. We completed a population-based study in Canada to determine the relative effect of these parameters on obstetrical outcomes while adjusting for important covariates. 2006-09 maternal and neonatal obstetrical data for all provinces except Quebec were accessed from the Canadian Institute for Health Information and linked to census and road network data. Road distance from maternal home to delivery hospital and obstetrical volume were categorized, and hierarchical regression models were used to determine the effect of these variables on perinatal mortality and a composite of maternal morbidity and mortality. Catchment-area based analyses (averaging predictor variables at the home hospital catchment area) were used to minimize the effect of unobserved confounding. In 820,761 mothers delivering 827,504 infants, travel distance had essentially no effect on perinatal mortality, but the effect on maternal outcomes was non-linear. Compared to mothers who travelled 0-9 km, the risk of the maternal outcome decreased for women who travelled 20-49 km (odds ratio (OR) 0.80, 95% confidence interval (CI) 0.75-0.86) and increased for women who travelled the longest distances (>400km, OR 2.22, 95%CI 1.06-4.63). Relative to the highest volume hospitals (>2500/year), the odds of the maternal outcome were roughly equivalent for hospitals ranging from 1-49 (OR 1.20, 95%CI 1.00-1.43) to 500-999 deliveries per year (OR 1.27, 95% CI 1.17-1.39). There was more variability in the perinatal outcome, ranging from an OR of 1.08 (95%CI 0.76-1.54, 100-199 deliveries/year) to 1.55 (95%CI 1.07-2.23, 50-99 deliveries/year). These results suggest that hospitals greater than approximately 200 km from other services should attempt to offer maternity care, even if local delivery volumes are quite low. Obstetrical outcomes do not improve until delivery volumes exceed about 1000/year.

Co-Author(s): Kris Aubrey-Bassler, Alvin Simms, Richard Cullen, Joan Crane, Shabnam Asghari, Marshall Godwin

Quality of antenatal care and its relationship with women's intended use of the same facility for delivery: a national cross-sectional study in Kenya

Presented by: **Jisoo Kim**, MSc Candidate, University of Western Ontario

Having a skilled birth attendant (SBA) can prevent the majority of maternal deaths in developing countries. Most SBA-assisted deliveries take place at an institution. The objective of this study is to determine if quality of antenatal care (ANC) is associated with Kenyan women's intention to deliver at the same facility. The 2010 Service Provision Assessment survey of Kenya was used. This national cross-sectional survey sampled health facilities and patients to examine quality of care and patient experience. A total of 1,178 women, sampled during their antenatal care (ANC) visit, were included in this study. Structural and process aspects of quality were assessed by a third-person at individual facilities and women were interviewed after their ANC. Multilevel mixed-effects logistic regression was used to estimate the effect of quality of ANC, and maternal, facility, and provider characteristics on mothers' intentions to deliver at the facility where they received their ANC. Controlling for other variables, quality of care variables of interest were not significantly associated with women's intentions to deliver at the facility where they received ANC. However, mothers who had their ANC at hospitals were more likely to intend to come back for delivery (OR=0.03 with hospital as reference, 95% CI [0.00, 0.35]). Distance was also positively associated with intention to deliver at the same facility (OR=7.23, 95% CI [1.58, 32.9]). Nevertheless, some established determinants of SBA usage, such as cost of normal deliveries and education, were found to have no association with women's intentions to deliver at the same facility. Among Kenyan women who receive ANC, the quality of care provided was not significantly associated with their intentions to deliver at the same facility. However, those women who received ANC at a hospital closest to her home were most likely to express her intention to return for delivery.

Co-Author(s): Jisoo Kim, Bridget Ryan, Neil Klar, Amardeep Thind

Selecting performance indicators for maternity care in a circumpolar context: A modified Delphi approach

Presented by: **Rebecca Rich**, resident physician, Department of Obstetrics and Gynaecology, University of Toronto

Performance measurement is popular tactic in the pursuit of improved health care quality, accountability, and value for money. For circumpolar states, the selection of contextually relevant indicators presents a challenge. Indicators aligned with national strategies may ignore or even conflict with the priorities of northern, remote, or Indigenous populations. The aim of this project was to identify contextually appropriate performance indicators for the evaluation of maternity care in circumpolar regions. A scoping review generated a working list of indicators. Fourteen circumpolar maternity care experts then participated in a two-round modified Delphi consensus process. Participants rated 62 proposed indicators on a 7-point Likert scale according to importance, circumpolar relevance, validity, and reliability and suggested additional indicators for consideration. Agreement was measured using Cronbach's alpha. Consensus was achieved after two rounds as measured by a Cronbach's alpha of 0.87. Eleven indicators were rated highly on all four criteria. Twenty-nine additional indicators, largely focused on social determinants of health, responsiveness and accessibility, were identified as being important and relevant but did not reach the threshold for validity and reliability. This approach was effective in identifying contextually appropriate indicators for maternity care in circumpolar regions. A small number of indicators were considered to be both scientifically robust and relevant to the circumpolar context. This study demonstrated that while most circumpolar health systems engage in performance reporting for maternity care, current indicators do not always reflect local priorities. Future work should ensure that circumpolar performance indicators appropriately capture issues related to social determinants of health, travel for care, and cultural competency.

Co-Author(s): Rebecca Rich, Thomsen D'Hont, Jeremy Veillard, Kellie Murphy, Susan Chatwood

A12: MENTAL HEALTH | SANTÉ MENTALE

Geographic marginalization among psychiatric inpatients in Ontario

Presented by: **Sebastian Rios**, PhD Candidate, University of Waterloo

To link a geographically based index to mental health services data in order to understand the areas where persons receiveing inpatient mental health treatment reside in Ontario, Canada. Socio-environmental markers such as discrimination and other forms of social disadvantage have been associated with increased risk of mental illness. In this presentation, clinical characteristics associated with living in areas with high marginalization will be explored and assessed using the Ontario Marginalization Index (ONMarg), a census and geographically based index that measures four domains: material deprivation, ethnic concentration, residential instability, and dependency. Clinical characteristics from the Ontario Mental Health Reporting System, which uses the interRAI-MH as its primary assessment system will be used to evaluate the relationships between these characteristics and the four dimensions of the ONMarg index. The majority of inpatient mental health services recipients live in neighbourhoods with high levels of social deprivation, ethnic concentration, residential instability and dependency scores. There is a clear positive relationship between the type of mental health diagnosis and the degree of neighbourhood marginalization among recipients of inpatient mental health services. This relationship is also true for social and service use characteristic, as well as mental health symptoms. These results confirm that socio-environmental factors play an important role in mental illness and highlight a new way to study these factors using publicly available data. Identifying and understanding the context of where a person lives can influence policy and help ensure that services and programs are available to those who need it, and reduce inequities through appropriate targeted care.

Co-Author(s): Sebastian Rios, Christopher Perlman

'Chasing Time': A Theory of Parents' Experiences in Accessing Autism Spectrum Disorder Diagnostic and Treatment Services for their Children

Presented by: **Joanne Smith-Young**, Research Coordinator, PhD Candidate, Medicine, Memorial University of Newfoundland

Our study objectives were to: 1) determine the process parents of children and adolescents diagnosed with Autism Spectrum Disorder (ASD) go through to access diagnostic and treatment services for their children throughout the life course of their disease; and 2) explore whether parents' socioeconomic status (SES) affected this process. Semi-structured interviews were conducted with 17 parents of children and adolescents diagnosed with ASD living in an urban community in Newfoundland and Labrador, Canada. We used a grounded theory approach to data analysis. Interview data were analyzed by identifying, categorizing, and describing common processes through the means of constant comparison. Processes were then integrated and refined to form the resulting theoretical model that involved choosing a core category that unified the strategies used by parents to access care. This study received approval from the Memorial University Health Research Ethics Board. The process included three main phases and various sub-phases within each phase: (1) Watchful waiting (noticing behaviors and searching for assessment and diagnosis); (2) Informed waiting (receiving the diagnosis, facing challenges in accessing services, and realizing the impact of an ASD diagnosis); (3) Contemplative waiting (pondering the future, reflecting on the past and making recommendations). 'Chasing Time' was the core category that parents used to resolve their main concern of having to perpetually wait to access ASD diagnostic and treatment services for their children. Factors that influenced the process included: SES, parents' perceived self-efficacy in caring for a child with ASD, and severity of ASD symptoms. Canadian parents of children and adolescents with mental health disorders such as ASD, expect timely access to healthcare services. However, our results illustrate the many struggles parents face including factors related to SES, that create disparities and financial hardships for parents attempting to pay privately for needed services.

Co-Author(s): Joanne Smith-Young, Roger Chafe, Richard Audas

Concurrent Physical Pain and Opiate Use in Inpatient Psychiatry.

Presented by: **Christopher Perlman**, Assistant Professor, University of Waterloo

Understanding and managing physical pain is complex among individuals with mental health and addiction conditions. This study investigates contextual, clinical, and demographic factors that are related to concurrent physical daily pain and opiate use among Ontario inpatient psychiatry clients. We used a cross-sectional design to examine the prevalence of concurrent physical pain and opiate use among individuals admitted to inpatient psychiatry in Ontario between 2006 and 2015. Data from the Ontario Mental Health Reporting System at CIHI were used to identify individuals reporting daily physical pain, use of opiates, and abuse of medications within 90 days of admission. Bivariate and multivariate regression analyses were used to identify contextual, demographic and clinical factors associated with pain and opiate use. Among the 295,267 assessments during the study period, 37,391 (13%) reported daily physical pain. The prevalence of daily pain remained consistent between 2006 and 2015. Among those reporting daily physical pain the prevalence of opiate use was 31%. Just over half were admitted due to threat or danger to self and/or a problem related to addiction. About 52% had psychiatric admissions in the prior 2 years. The most common diagnosis was mood disorders (61%) followed by substance related disorders (54%). Individuals with concurrent pain and opiate use tended to reside in areas of greater deprivation, although this pattern was not different from those experiencing pain but not reporting opiate use. Understanding the demographic patterns of physical pain and opiate use in inpatient psychiatry may lead to improved interventions for targeting safe approaches to pain management. The identification of contextual factors in relation to pain and opiate use exemplifies potential inequity in pain management and addiction.

Co-Author(s): Michael Poydenko, Christopher Perlman

Mental Health Inpatient Use Over Time: Identifying Characteristics Associated with Increased Use Following Index Admission

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

The purpose of this study was to describe patterns and predictors of inpatient mental health service over 5 years following index admission. Specifically, we examined individual and socio-environmental factors associated with high use following index admission. Data from the Ontario Mental Health Reporting System (OMHRS) and the Ontario Marginalization Index were merged using geographic indicators. OMHRS includes individual-level demographic, clinical, and health service data for everyone admitted to inpatient psychiatry in Ontario (N=21,070). We used a retrospective cohort design. Individuals with index admissions between 2006 – 2009 were followed for 5 years to identify additional admissions. Days in hospital and episodes following index admission were examined, with high-intensity use defined as use in the 90th percentile for either variable. Logistic regression using generalized estimating equations (GEE) were used to determine factors associated with high intensity use. Following index admission, 70% had no additional use the following 5 years. Schizophrenia and psychotic symptoms increased the odds of being high intensity users, while individuals with dementia, substance use, and adjustment disorders had decreased odds. Two interactions predicted high intensity daily use: Individuals who were never married and had high levels of positive symptoms scores or individuals who were male and had high levels of impaired cognitive performance. At the geographic level, living in an area with higher dependency scores predicted high intensity episodic use. Schizophrenia and psychotic symptoms drive high intensity inpatient use following index admission, though observed interactions suggest that social support issues could lead to increased time in hospital following index admission. Socio-environmental factors play a smaller role—after adjusting for individual factors—in high intensity inpatient use following index admission.

Co-Author(s): Kyle Rogers, Christopher Perlman, Samantha Meyer, Ashok Chaurasia

2:45PM - 4:00PM CONCURRENT SESSION B

B1: ACCESS & EQUITY | ACCÈS ET ÉQUITÉ

Integrating Indigenous Traditional Health Knowledge in the Health System: Issues, Opportunities and Recommendations of Manitoba First Nations.

Presented by: **Grace Kyoon-Achan**, Research Fellow, University of Manitoba

First Nations are calling for holistic and traditional healthcare approaches to be recognized and connected to the biomedical health system. We discuss ways to integrate traditional knowledge into primary healthcare, elaborate on areas of opportunity for collaboration and highlight possible implementation challenges. The study involved eight (8) Manitoba First Nations collaborating with University based researchers and the Manitoba First Nations Health and Social Secretariat to understand community-based experiences of primary healthcare. Our goal was to identify innovations and facilitate transformation. 299 in-depth interviews were conducted with participants from all participating communities. The 8 FNs were involved in developing the questions, conducting interviews and the analysis of data. Grounded theory informed data analysis using Nvivo software. First Nations are clear that increased access to traditional health knowledge should be a part of the existing health care system. Elders and healers should be meaningfully involved in the delivery of primary healthcare in First Nations communities. Funding for traditional medicines and approaches to wellbeing, are necessary components of primary healthcare. An overall respect for indigenous health knowledge will aid transformation in community-based primary healthcare and overall health outcomes. Traditional knowledge is currently being used as a parallel system of health care and prevention but is not yet commonly recognized by the mainstream health system. Change on a transformative scale would involve formal recognition, active support, and protection of Traditional Healers and Medicines as part of addressing the Legacy and intergenerational impact of assimilative policies, as the Truth and Reconciliation Commission of Canada has stated in its Calls to Action in its final report (2015).

Co-Author(s): Grace Kyoon-Achan, Kathi Avery-Kinew, Wanda Phillips-Beck, Josee Lavoie, NASER IBRAHIM, Stephanie Sinclair , Alan Katz

Hospitalization for Ambulatory Care Sensitive Conditions Across Neighborhoods in Montreal and New York: A Comparative Analysis

Presented by: **Erin Strumpf**, Associate Professor, McGill University

High hospitalization rates for ambulatory care sensitive conditions (ACSC) often reflect barriers to ambulatory care. We compare ACSC hospitalization rates between the islands of Montreal and New York (NY), two cities with comparable populations. We then document the association between neighborhood poverty levels and ACSC hospitalization rates in both cities. We calculate age-standardized ACSC hospitalization rates using discharge data from 2011-2013 for NY and admissions data (2007/8-2009/10) for Montreal. Neighborhood poverty (percent below median income) is from national surveys in each country. We use multivariate logistic regression to estimate, separately for each city, the correlation between neighborhood poverty and the odds of hospitalization for ACSC. The first set of regressions controls only for independent variables that are comparable across cities (age, sex, number of diagnoses, etc.). The second set of regressions includes larger sets of potential confounders differentially available in each city (e.g., race in NY and morbidity in Montreal). Crude ACSC hospitalization rates were more than twice as high in NY as Montreal (12.6 vs. 4.8 per 1000 population). Crude rates varied substantially by neighborhood poverty in NY, but were fairly constant in Montreal. The adjusted odds of ACSC hospitalization were much higher in the poorest quartile of neighborhoods in NY, and the gap declined with the addition of NY-specific confounders (ORs 1.76; 1.33). In Montreal, higher odds in the poorest quartile neighborhoods emerged after controlling for confounders (ORs 1.18, 1.22). In both cities, men, older, and sicker adults had higher odds of ACSC hospitalizations. In NY, those without private insurance and who are non-white had higher odds. In Montreal, those with heart failure and low-to-moderate predicted health care use had higher odds. Our findings are consistent with the hypothesis that universal insurance coverage contributes to lower ACSC rates in Montreal. However, other important factors may include fewer acute hospital beds per capita and more redistributive social and tax policies in Canada compared to the United-States.

Co-Author(s): Michael Gusmano, Erin Strumpf, Julie Fiset-Laniel, Daniel Weisz, Victor Rodwin

L'adaptation des services à l'évolution du contexte migratoire : opportunités d'innovation dans la région de Québec

Presented by: **Julie Massé**, Étudiante à la maîtrise, Département de médecine sociale et préventive, Université Laval

L'évolution du portrait démographique amène à adapter les modèles d'organisation des services de santé à l'immigration. L'objectif de cette recherche était de documenter l'expérience des professionnels et intervenants œuvrant en périnatalité auprès d'une clientèle présentant des barrières linguistiques et culturelles à l'accès aux services dans la région de Québec. Reposant sur un devis qualitatif de type exploratoire et descriptif, la collecte de données s'est appuyée sur 13 entrevues individuelles semi-dirigées réalisées à l'hiver 2016 auprès de professionnels du CIUSSS de la Capitale-Nationale et d'intervenants d'organismes communautaires du territoire travaillant en périnatalité auprès de familles immigrantes. L'analyse thématique, réalisée avec le logiciel QDA Miner, a mis en lumière les difficultés rencontrées ainsi que les pistes de solutions envisagées par les répondants, et ce, dans le but d'éclairer les décideurs régionaux dans le développement d'un modèle organisationnel novateur visant à répondre aux besoins induits par l'évolution du contexte migratoire local. Deux types de défis se répercutant sur l'accès des familles immigrantes aux services sont identifiés : (1) les particularités de la clientèle (ex. : spécificités linguistiques et culturelles, précarité financière et statuts migratoires); (2) les défis organisationnels et structurels (ex. : rigidité des programmes, complexité des trajectoires de services, difficultés d'accès géographique, ressources humaines et budgétaires limitées, formation interculturelle et coordination de la prise en charge). Face à ces défis, les participants formulent des pistes de solution touchant le développement d'un portrait plus fin de la réalité immigrante, le déploiement de mesures renforçant l'accès aux services, un accompagnement durable et intégré offert aux familles, l'adaptation des outils d'intervention et programmes et la création d'une structure de prise en charge périnatale de proximité spécialisée en interculturel. Nos conclusions suggèrent la nécessité de développer un modèle intégrateur d'organisation des services favorisant un accès de proximité, équitable et adapté aux besoins des familles ayant des barrières linguistiques et culturelles dans une approche sensible aux spécificités du contexte migratoire local.

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A Cohort Study Examining Emergency Department Visits Among People Who Use Drugs in Ottawa, Canada

Presented by: **Ahmed Bayoumi**, Scientist, Li Ka Shing Knowledge Institute

The health of people who use drugs (PWUD) is characterized by multimorbidity and chronicity of health conditions, necessitating an understanding of their health care utilization. The objective of this study was to evaluate emergency department (ED) visits among a cohort of PWUD. We used a retrospective observational study design between 2012 and 2013 in Ottawa, Ontario. The population was a marginalized cohort of PWUD (the PROUD study) for whom survey data was linked (n=663) to provincial health administrative data housed at the Institute for Clinical Evaluative Sciences. We constructed a 5:1 comparison group matched by age, sex, income quintile, and region. The main outcome was defined as having two or more ED visits in the year prior to survey completion. We used multivariable logistic regression analyses to identify factors associated with ED care. Compared to the matched cohort, PWUD had higher rates of ED visits (rate ratio 7.0; 95% confidence interval [95%CI] 6.5 to 7.6). After adjustment, factors predicting two or more ED visits were receiving disability (odds ratio [OR] 3.0; 95%CI 1.7 to 5.5) or income assistance (OR 2.7; 95%CI 1.5 to 5.0), injection drug use (OR 2.1; 95%CI 1.3 to 3.4), incarceration within 12 months (OR 1.6; 95%CI 1.1 to 2.4), mental health comorbidity (OR 2.1; 95%CI 1.4 to 3.1), and a suicide attempt within 12 months (OR 2.1; 95%CI 1.1 to 3.4). Receiving methadone (OR 0.5; 95%CI 0.3 to 0.9) and having a regular family physician (OR 0.5; 95%CI 0.2 to 0.9) were associated with lower odds of having more ED visits. Improved post-incarceration support, housing services, and access to integrated primary care services including opioid replacement therapy may be effective interventions to decrease acute care use among PWUD, including targeted approaches for people receiving social assistance or with mental health concerns.

Co-Author(s): Lois Crowe, Lisa Boucher, Amy Mark, Alana Martin, Zack Marshall, Rob Boyd, Pam Oickle, Nicola Diliso, Dave Pineau, Brad Renaud, Tiffany Rose, Sean LeBlanc, Mark Tyndall, Ahmed Bayoumi

B2: CHRONIC DISEASE MANAGEMENT | GESTION DES MALADIES CHRONIQUES

Getting to Goals: Using the electronic Patient Reported Outcome (ePRO) mobile app to support complex patients in primary care settings.

Presented by: **Carolyn Steele Gray**, Scientist, Bridgepoint Collaboratory for Research and Innovation

Goal-oriented care approaches are viewed as an effective way of prioritizing and managing the health care needs of individuals with complex chronic disease and disability (CCDD) in primary care settings. Our objective is to support adoption of goal-oriented care in primary care settings through implementation of an innovative mobile application. A multi-phased user-centred design method was used to build an app to meet both CCDD patient and provider needs around goal-setting. After development and usability testing a 4-month exploratory trial was conducted with two Family Health Teams in Toronto as a preliminary exploration of the app's impact on patient outcomes and implementation. Patients were randomized into control and intervention groups and compared at baseline and post study on outcomes measures (quality of life and activation) and system usability. Semi-structured interviews were also conducted with providers and patients in the intervention group to better understand implementation and impact. Eight providers and 16 patients (7- control, 9 - intervention) participated in the study (2 patients withdrew due to health issues and conflict with another study). Outcome measures were captured using the AQoL-4D and PAM surveys which were analyzed using descriptive statistics. Interviews were conducted with 7 providers, and 9 intervention patients; transcripts were analyzed using inductive thematic analysis. Most notable are qualitative findings regarding the goal-oriented care process which can be broken down into three key stages: 1) goal-setting; 2) goal-monitoring; and 3) follow-up. While, the ePRO tool was found to be most useful in stages 2 and 3, it was the activities in stage 1 that were of greatest importance to ensure goals were meaningful and relevant to both patients and providers. The ePRO tool can play an important role in the adoption of goal-oriented care in primary care settings. However, technology, like ePRO is not a stand-in for collaborative decision-making between patients and providers in development of meaningful goals. Implementation of technology should occur at the right stages to be useful.

Co-Author(s): Carolyn Steele Gray, Parminder Hans, Jason Nie, Janelle Gravesande, Cheryl Cott

A Patient-Centred Framework of Everyday Self-Management Strategies

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

Existing self-management definitions and frameworks do not explain the challenges faced by people living with neurological conditions in sufficient depth to guide care, integrate systems or measure outcomes. Our goal was to develop a comprehensive and unified framework for understanding how people self-manage everyday life. A preliminary framework was derived through an extensive concept mapping study of the qualitative and quantitative neurological literature (n=77 articles). Structural features (definition, characteristics, boundaries, preconditions and outcomes) of three overlapping concepts, coping, adaptation and self-management were examined; 68 strategies in eight categories were identified. Deductive content analysis of original data from open ended questions in a cohort study (n=117 adults aged 18-65 interviewed over 11 months) confirmed and refined strategy categories to form the Taxonomy of Everyday Self-Management Strategies (TEDSS) Framework. Finally, frequency and commonality of strategy use were assessed by calculating the proportion of participants using each category. Twenty-nine strategies were identified in the data. For the final TEDDS framework, these were grouped into 7 strategy categories, five of which were goal-oriented and two of which were support-oriented. High proportions of participants reported using strategies in all seven categories, attesting to patient relevance. Goal-oriented categories (Internal Strategies, Social Interaction Strategies, Activities Strategies, Health Behavior Strategies and Disease Controlling Strategies) strongly represent important life priorities for patients. Support-oriented categories (Process Strategies and Resource Strategies) are crosscutting in that they can facilitate all goal oriented strategies. For example, information seeking and problem solving support (Process Strategies) underpin many goal-oriented strategies. Interestingly, literature in self-management measurement, interventions and outcomes are diverse in which of the TEDDS categories they emphasize. TEDSS provides a patient-centred framework that can help guide health services research and policy on self-management. It delineates patient self-management strategies to achieve life goals (Goal-oriented categories), and crosscutting, fundamental strategies for meeting them (Support-oriented categories). These categories identify targets for outcomes measurement based on patient experiences and needs.

Co-Author(s): Tanya Packer, Asa Audulv, Setareh Ghahari, Grace Warner, George Kephart, America Fracini

Evaluating quality of care among older adults with diabetes with comorbid chronic conditions: a retrospective cohort study

Presented by: **Yelena Petrosyan**, PhD candidate, University of Toronto

1) to examine the difference in the quality of care between patients with selected concordant vs. discordant comorbid conditions, and 2) to examine associations between quality of care measures and all-cause hospitalizations among older adults with diabetes with selected comorbid conditions. This population-based cohort identified all people aged 65 and over with diabetes in Ontario having at least one selected condition, using clinical administrative databases, in the period from 2010 to 2014. The cohort was stratified into four disease combinations, including concordant: diabetes 1) with hypertension, 2) with hypertension and ischemic heart disease, and discordant: diabetes 3) with osteoarthritis, and 4) with osteoarthritis and depression. A specific set of measures identified using a Delphi approach was used for the purpose of this study. A generalized estimating equations approach was used to examine associations between the quality of care and all-cause hospitalizations. The study findings suggest that patients with 2 vs.1 selected comorbid conditions are at risk of suboptimal care, especially those with discordant conditions. The incidence of all-cause hospitalizations markedly increased in diabetes patients with 2 vs. 1 selected comorbid condition, especially in those with discordant conditions. The median score of continuity of care declined in patients with 2 vs. 1 selected condition, especially in those with discordant conditions. The greater continuity of care was associated with lower hospital utilization for diabetes patients with comorbidities, including concordant: 1) with hypertension, 2) with hypertension and ischemic heart disease, and discordant: 3) with osteoarthritis, 4) with osteoarthritis and depression (OR=0.70, 95% CI 0.69-0.72; OR=0.74, 95% CI 0.72-0.77; OR=0.73, 95% CI 0.72-0.74, and OR=0.72, 95% CI 0.67-0.80,respectively). There is a need for a holistic approach in education and clinical care of older adults with diabetes taking into account concomitant conditions that affect patient's health status. Chronic disease management programs among older diabetes patients must incorporate levers to promote continuity, especially for those with discordant conditions.

Co-Author(s): Yelena Petrosyan, Jan Barnsley, Kerry Kuluski, Barbara Liu, Walter Wodchis

Implementation Evaluation of an Integrated Healthcare Delivery Initiative for Low Back Pain

Presented by: **Regina Visca**, Director of the McGill RUIS Centre of Expertise in Chronic Pain, and PhD student, McGill University

An integrated interdisciplinary primary care based approach to the management of LBP was implemented in four primary local health and social services centres (HSSC) in Quebec. This study seeks to identify the contextual factors that influence implementation, and the ability of each HSSC to integrate and sustain the program. This was a comparative in-depth longitudinal multiple case study with embedded units of analysis (policy, organization and clinical practice) to evaluate the contextual factors that impacted the level of service integration. Data collection included interviews with family physicians, nurses, physiotherapists, psychologists, managers and policymakers at various points. These data were complemented by onsite observations of numerous committee meetings, and analysis of project documentation. Thematic analysis was conducted to identify themes of contextual determinants that influenced integration of the model across five dimensions: integration of care, integration of clinical teams, functional integration, normative integration, and systemic integration (Champagne's model). The integration of care in all sites focused on coordinating comprehensive care provided by the various healthcare professionals to meet the specific needs of each patient. In terms of clinical team integration, support for interdisciplinary practice was provided to clinicians. Ongoing quality improvement of the delivery of care was observed. Functional integration, including the degree to which strategic management, leadership and organizational structure, varied among the sites and impacted the cooperation among stakeholders and ultimately the efficiency and effectiveness of the program. Professionals and managers were able to recognize the organizational dynamics (ex. cooperation and coordination) that played a critical role in service integration, suggesting normative integration took place. At the level of systemic integration, the ministry exerted an influence on implementation through the allocation of funding. The integration of the program in a traditional organizational context required recurrent changes in stakeholder actions and relationships to facilitate integration across all dimensions. The sites fulfilling the conditions for a strong leadership, time and resources were more successful in the integration of the LBP program.

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B3: HEALTH POLICY, HEALTHCARE REFORM, AND HEALTH ACCORD
POLITIQUES DE SANTÉ ET RÉFORME DES SOINS DE SANTÉ

The Land of Perpetual Pilot Projects: A Failure of Innovation or A Failure of Policy?

Presented by: **Karim Keshavjee**, CEO, InfoClin

Canada is still the country of perpetual pilot projects in health care. We developed a framework to assess health innovation programs and agendas to identify why innovations become stranded in the healthcare system. We analyzed recent health innovation strategies at the Federal and the Ontario and Alberta Provincial governments. We conducted a literature review on innovation assessment frameworks and synthesized the perspectives of multiple stakeholders to develop a framework which assesses Canada's health innovation strategies. The framework utilizes 22 evaluation criteria in 5 categories (Governance, Health System Partnerships, Innovation Policies, Implementation/Dissemination Strategies and Evaluations) to provide an analysis of program performance. Provincial and Federal health innovation strategies perform well on Governance and Health System Partnerships criteria. However, Provincial programs underperform in promoting policies which encourage the development, refinement and dissemination of innovations by private industry. All health innovation strategies performed poorly in encouraging wider dissemination and uptake of innovations by providers, patients, and health care organizations. All innovation strategies perform poorly in encouraging the types of evaluations which are most likely to lead to wider dissemination including economic evaluations from the perspectives of multiple stakeholders, i.e. patients, providers, and health systems. Qualitative evaluations or worse, self-congratulatory evaluations, do not lead to breakthroughs in dissemination and thus do not represent an adequate method of evaluation to promote innovation in healthcare. We encourage all levels of government that wish to transform the health care system to embrace additional policy elements that will encourage informed risk taking among all healthcare stakeholders and that will remove the bottle-necks that are preventing pilot projects from gaining wider traction.

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Medicare Services Bought with the 2004 Health Accord in Canada: What Is the Evidence?

Presented by: **Ruolz Ariste**, Program Lead, Physicians' Information, CIHI

With the 2004 First Minister's Health Accord showcasing a 10-Year Plan to strengthen health care in Canada, significant investments have been made to improve access to health services. This study aims to assess to what extent these increases have translated into more Medicare services (hospital and physician) for the population An increase in health expenditure may arise from a price change, which can be caused by higher compensation rates. On the other hand, it can also be caused by increased utilisation of health care services due to demographic or technological changes. The distinction between these two components can be the key information needed to find policy solutions for sustainable health care spending. An accounting approach is used to address the issue of Medicare cost drivers. Growth in total costs is broken down into several components: inflation (general and sector-specific), demographic (population growth and aging) and others, including utilization. Average annual growth rate (AAGR) between 2004 and 2014 was 5.1% for hospitals and 6.7% for physicians. Results suggest that in the case of hospitals, wage per hour for staff (excluding physicians) accounted for 2.5% of the total AAGR while demographic factors were responsible for 2.2% (1.1% for population growth and 1.1% for aging), with 0.4% for other factors. As for physicians, the average unit fee was responsible for 3.1% of the total AAGR; demographic factors accounted for 1.8%, leaving a similar proportion for other factors. This suggests that unit cost was a moderate cost driver in hospital and physician spending growth. However, considering that general inflation was on average 1.8% per year, growth in the inflation-adjusted unit cost for physicians represented almost twice that for hospital staff. Unit price was responsible for slightly less than 50% of the total cost increase for hospital and physician services. Yet, this unit price increased more substantially for physicians than for hospital staff. In the case of physicians, there was also a substantial increase in other factors such as volume of services due to technological improvement, mix of services, morbidity, etc.

Co-Author(s): Ruolz Ariste, Geoff Ballinger

Reform but No Change: The Case of Aging at Home Policy in Ontario, Canada

Presented by: **Allie Peckham**, Post-Doctoral Fellow , University of Toronto

This study considers Ontario policy responses to an aging population and identifies challenges of sustaining reform in unstable sub-sectors. Namely, the home and community care sector (H&CC). We analyze community based long-term are policy in Ontario, specifically the legacy of what has been referred to as 'aging at home' strategy. This research is a case study of aging at home policy in Ontario. Two qualitative methods were employed to understand the trajectory of the Aging at Home strategy: 1) document review and 2) semi-structured interviews. The document review looked to identify the missions, visions, and goals of the aging at home strategy to document the course of the policies implementation. A total of 22 interviews lasting 60 to 90 minutes were completed between October 2015 and November 2016. An iterative inductive thematic analysis was conducted to identify constructs related to the implications of policy shifts in the H&CC sector. After an analysis of key documents and interviews with policy experts two primary themes emerge. Firstly, Health systems are not monolithic; and secondly, health policy change can be contingent on competing policy agendas in other health system sectors. Drawing from critical theories of policy dynamics and change – we are better able to understand the dynamics at play between the hospital and the H&CC sectors, where we are likely to continue to see certain sectors dominate the reforms embedded within the H&CC sector. In the case of Aging at Home, findings suggest it was largely appropriated by the interests of more critical subsectors. The sectors within healthcare systems have divergent political dynamics, institutional arrangements, and policy histories. We suggest that existing theoretical frameworks do not fully capture the processes of policy change in unstable and contested policy fields like long-term H&CC.

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The Development and Implementation of the Off-Premise Outlet Density Expansion Initiative within Ontario's New Beer Framework: A Case Study

Presented by: **Stephanie Simpson**, Doctorate Student , Western University

This study examined the role of health information (e.g., research evidence), and the contexts and factors which shaped its use, in the development and implementation of the policy to expand beer sales in up to 450 grocery outlets as part of the Ontario government's New Beer Framework, implemented in 2016. This qualitative case study employed Kingdon's Streams Model (2011) (problem, policy, and politics) to guide a directed content analysis of transcripts of semi-structured interviews conducted with a range of policy actors, including government policymakers, alcohol researchers, and knowledge translation and media personnel (n=11). This data set was triangulated through additional analysis of policy-related documents, including Hansard transcripts, press releases, position papers, formal letters disseminated by public health organizations, as well as news articles (n=69). As such, the framing of the policy issue, as well as stakeholder perspectives regarding the extent to which health information informed the expansion initiative, were identified. The policy to expand beer sales to 450 Ontario grocery outlets was framed as an economic and consumer convenience initiative within policy-related documents. Moreover, many interview participants perceived that the decision to implement the policy preceded health stakeholder consultations. This perception was consistent with official policy documents released by the Premier's Advisory Council on Government Assets. Thus, despite efforts to highlight concern regarding the potentially negative population health impact following increases to outlet density, knowledge translation strategies by public health actors remained reactive and unpersuasive. Accordingly, the expansion policy appears largely incongruent with pre-existing public health frameworks at both government and organizational levels, as well as a Health in All Policies (HiAP) approach, more broadly. Health information pertaining to the relationship between increased alcohol outlet density and population health impact appears to have had a minimal role in informing the development and implementation of Ontario's beer retail expansion initiative. Future public policy development should prioritize health considerations through transparent consultation processes with relvant health-related stakeholders.

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B4: HEALTH SYSTEM PERFORMANCE | RENDEMENT DU SYSTÈME DE SANTÉ

Potentially Unnecessary Diagnostic Imaging for Minor Head Trauma

Presented by: **Jihee Han**, Senior Analyst , Canadian Institute for Health Information

Choosing Wisely Canada (CWC) recommends against head imaging for minor head trauma patients unless they exhibit signs that warrant a scan. In close collaboration with CWC, we estimated the extent of head scanning performed to these patients in emergency departments in Alberta and Ontario. We looked at adults 18 to 64 years of age who visited emergency departments in Alberta and Ontario in the fiscal year of 2015 with documented head trauma and excluded patients with signs for severe head trauma identified by CWC and experts. Then we estimated brain or cranial X-ray, CT, or MRI scanning rates and ran logistic regression to find factors associated with high scan rates. Overall, 31% of minor head trauma patients 18 to 64 years of age without signs warranting imaging received X-ray, CT, or MRI head scans at emergency departments from Alberta and Ontario which translates to roughly 15,000 potentially unnecessary scans. CT accounted for the majority of scans (98%). While the provincial rates were similar (29% in AB vs. 31% in ON), the regional results showed variations even after adjusting for age and sex. Wider variation was observed in Ontario compared to Alberta (14% to 46% vs. 19% to 41%) and the variation among EDs was even wider (0 to 68%). Minor head trauma patients without indications for head imaging who were older, male, or living in lower income neighbourhoods were more likely to receive imaging. Despite the clinical guidelines that recommend against imaging for minor head trauma without indications, close to one third of patients with minor head trauma received head scans. The wide variations among health regions and emergency departments indicate room for improvement and peer learning to reduce the potentially unnecessary scans.

Co-Author(s): Jihee Han, Hani Abushomar

Adoption and level of use of a population-based health information exchange in Québec

Presented by: **Aude Motulsky**, researcher, Centre de recherche du CHUM

Health information exchanges (HIE) are seen as an essential technology for improving healthcare quality and efficiency by allowing patient-centered data exchange over time and across organizations. The objective of this study is to describe the adoption of an HIE in the province of Quebec two years after its full implementation. An analysis of usage data between January 1st 2016 and July 31st 2016 was performed to describe the usage of three types of clinical data (medication dispensations, laboratory results, and diagnostic imaging) available through this HIE. The number of authorized users, active users, and number of accesses per user according to their role (physician, nurse, pharmacist, other [technicians, archivists, midwives, etc.]), medical specialty, and clinical setting (acute care, long term care, primary care, pharmacy) were described. Data were obtained from the Health Ministry of Québec. During the study period, a total of 26 939 (56% of 48 065 authorized users) active users accessed the HIE: 29% physicians, 28% nurses, 25% pharmacists, 4% medical residents, and 14% other. Among physicians, 75% were GPs, 25% were specialists. 80% (6 669/8 319) of the total number of potentially authorized pharmacists in the province accessed the HIE, 66% (5 980/8 906) of GPs, while only 20% (1 949/9 748) of specialists and 10% (7 443/74 579) of nurses accessed it. Of the three types of clinical data available, medication data was the most likely to be accessed by any user. GPs had the greatest number of mean accesses during the study period (565), followed by pharmacists (441), nurses (269) and medical residents (177). This HIE was used by a diverse group of healthcare professionals. Most pharmacists and the majority of GPs in the province have adopted the tool. Medication data was the domain that was used the most, indicating that it has broad value across clinical settings.

Co-Author(s): Aude Motulsky, Daniala Weir, Nadyne Girard, Claude Sicotte, Marie-Pierre Gagnon, David Buckeridge, Robyn Tamblyn

Preventable and Repeat Adverse Drug Events in Canadian Emergency Department Patients

Presented by: **Maeve Wickham**, PhD Student, University of British Columbia

Adverse drug events (ADEs), unintended, harmful medication-related events, commonly cause emergency department (ED) presentations. Understanding their preventability and contributing factors may aid in developing strategies for prevention. Our objective was to determine the proportion of preventable and repeat events, and to identify contributing factors for ADEs causing ED presentations. We conducted a retrospective chart review of systematically-selected ED patients diagnosed with an ADE at the point-of-care in one of three prospective cohorts. A pharmacist and physician independently reviewed all charts and applied preventability algorithms, searched for repeat events, and recorded contributing factors. The main outcome was a probably or definitely preventable ADE (avoidable by adhering to best practice, appropriate monitoring, taking a history of prior ADEs, compliance with recommended therapy, and error avoidance). Secondary outcomes included repeat ADEs (same drug or drug-class re-exposure or repeat inappropriate drug withdrawal causing a similar presentation). We investigated contributing factors using logistic regression. 670 patients were diagnosed with 725 ADEs. We deemed 61% (95%CI:57-65%) preventable, the largest proportion of which were due to non-adherence (30%,95%CI: 25-34%). Overall, 20% (95%CI:17-23%) of ADEs were repeat events, most of which were moderate (61%) or severe (32%). 33% of repeat ADEs required hospital admission, 59% clinical monitoring, 50% additional medications to treat the ADE and 35% follow-up testing. The most commonly implicated drug classes were antithrombotics (17%), psycholeptics (12%) and analgesics (9%), and common contributing factors were inadequate patient counselling (15%), insufficient laboratory monitoring (12%), and provider non-adherence with treatment guidelines (7%). On multivariable regression, mental health diagnoses were associated with preventability of ADEs (OR 2.1, 95%CI:1.3-3.3, p=0.002). Diabetes was marginally significant in association with repeat ADEs (OR 1.6, 95%CI: 1.0-2.5,p=0.06). The majority of ADEs presenting to the EDs of five hospitals were deemed preventable, incurring substantial hospital resources. Fully 20% were repeat ADEs. Interventions that improve adherence behaviour, target high-risk medications, and improve management for patients with mental health diagnoses or diabetes may reduce ED visits for ADEs.

Co-Author(s): Maeve Wickham, Stephanie Woo, Amber Cragg, Christine Ackerley, Diane Villanyi, Frank Scheuermeyer, Corinne Hohl

B5: MATERNAL AND CHILD HEALTH | SANTÉ MATERNELLE ET INFANTILE

The long arm of childhood mental health on adult outcomes

Presented by: **Claire de Oliveira**, Scientist/Health Economist, CAMH

Little research has examined how poor child health, in particular poor mental health, affects outcomes in adulthood, and the mechanisms through which this occurs. The objectives of this study are to examine and compare the impact of childhood mental health and other major childhood health conditions on early adult outcomes. We obtained administrative health records for all children born between 1991 and 1996 (roughly 467,000) in Ontario, Canada's largest province, and observed their outcomes as young adults in 2014. Our child health measures were mental health (conduct disorder and ADHD), injuries (including poisoning), asthma, and other serious health problems (other major chronic and acute illnesses). Our early adult outcomes included poor physical and mental health, suicide attempts, and deaths. We made use of several econometric models to undertake our analysis, controlling for child characteristics and maternal physical and mental health. We found that all childhood conditions were predictive of the likelihood of poor adult physical health, although injuries had the largest impact. We found similar findings for adult mental health; however, mental health had the largest impact for this outcome. Injuries and in particular mental health were predictive of the likelihood of suicide attempts in young adulthood. Mental health, injuries and other serious health problems at older ages (only) predicted the likelihood of death in adulthood. Poor maternal physical health at all child ages and poor maternal mental health at older child ages were also significant predictors of the likelihood of poor physical health, poor mental health and suicide attempts in adulthood. Childhood mental health is a significant determinant of poor physical and mental health, suicide attempts and death in young adulthood. Prevention and better care for children with mental health problems can help improve later life prospects. In addition, addressing maternal health problems can improve children's health outcomes in early adulthood.

Co-Author(s): Claire de Oliveira, Joyce Cheng, Paul Kurdyak

Postpartum mental health of biological mothers involved with child protection services at birth: A retrospective cohort study using linkable administrative data

Presented by: **Elizabeth Wall-Wieler**, PhD Student, University of Manitoba

Mental disorders are a common sequela of childbirth. This study examines the mental health outcomes of mothers who whose children were taken into care at birth, mothers who received other protection or support services, and mothers not involved with child protection services. The population-based cohort consisted of all women whose first child was born in Manitoba, Canada between April 1, 1995 and March 31, 2015. The cohort consisted of 464 mothers whose first-born was taken into care at birth, 1,514 mothers receiving services from child protection services within the first week of their first-born's life, and 1,978 mothers who were not involved with child protection services. Mothers involved with child protection services had higher rates of mental disorder diagnoses and treatment use in the year postpartum. Among those involved with child protection services, mothers whose children were taken into care had higher rates of depression (Adjusted Rate Ratio (ARR) = 1.29), anxiety (ARR = 1.34), substance abuse (ARR = 1.55), physician visits for mental illness (ARR = 1.41), and psychotropic medication use (ARR = 1.34) than mothers who received services. Having a child taken into care at birth is related to worse mental health than the stresses of new motherhood.

Co-Author(s): Elizabeth Wall-Wieler, Leslie Roos, Nathan Nickel, Marni Brownell, Dan Chateau, Kendra Nixon

A population-based study of contraception methods among women with intellectual and developmental disabilities

Presented by: **Hilary Brown**, Dr. Hilary Brown, University of Toronto

Delivery of appropriate reproductive healthcare to women with intellectual and developmental disabilities (IDD) is challenging. The postpartum period represents an opportune time to initiate contraception to prevent negative outcomes (e.g., rapid repeat pregnancy). We compared contraception methods among women with and without IDD in the year following a live birth. We undertook a population-based study using Ontario health and social services administrative data. We identified women with (n=1,182) and without IDD (n=36,261) who had a live birth in 2002-2014 and were Ontario Drug Benefit recipients. The primary outcome was any contraception use in the year following the live birth. We examined non-surgical (oral contraception, injectable birth control, intrauterine device) and surgical contraception (tubal ligation, hysterectomy) as well as the specific approaches within these categories. Multivariable modified Poisson regression was used to assess risk, adjusting for age, parity, neighbourhood income quintile, rurality, physical and mental health, and continuity of primary care. Women with IDD were more likely than those without IDD to use any contraception in the year following a live birth (52.7% vs. 39.8%; aRR 1.29, 95% CI 1.17-1.42), including non-surgical (47.0% vs. 36.8%; aRR 1.23, 95% CI 1.13-1.34) and surgical contraception (9.8% vs. 6.7%; aRR 1.50, 95% CI 1.24-1.80). Higher rates of non-surgical contraception were driven by injectable birth control (19.0% vs. 9.5%; aRR 1.93, 95% CI 1.68-2.21). Oral contraception (23.7% vs. 21.8%) and intrauterine devices (9.4% vs. 9.1%) were no more common among women with IDD than those without. We could not examine specific approaches to surgical contraception due to small numbers of hysterectomies. Results were similar when analyses were restricted to women who were primiparous at the index delivery. Because women with IDD have difficulty advocating for condom use, it is reassuring that their contraception rate is higher than that of women without IDD in the postpartum period. Women with IDD not using contraception may benefit from accessible reproductive health education to avoid rapid repeat pregnancy.

Co-Author(s): Hilary Brown, Yona Lunsky, Simone Vigod

A population-based cohort study of rapid repeat pregnancy among women with schizophrenia

Presented by: **Simone Vigod**, Clinician-Scientist, Women's College Hospital

Rapid repeat pregnancy, a second pregnancy within 12 months of a live birth, is associated with perinatal morbidity and mortality. Women with schizophrenia are at risk, related to inconsistent contraception use and high sexual assault rates. We evaluated their risk for rapid repeat pregnancy in a large representative sample. Using linked Ontario health administrative data, we conducted a population-based cohort study, comparing women with (n=1,686) and without schizophrenia (n=< /span>983,516) who had a live birth between 2002 and 2014. The primary outcome was rapid repeat pregnancy following this live birth; we also examined type of subsequent pregnancy (i.e., live birth, fetal death/stillbirth, or induced abortion). Modified Poisson regression was used to generate crude and adjusted relative risks (aRR). The model was adjusted for maternal age, parity, neighbourhood income quintile, rurality, chronic medical conditions, and continuity of primary care physician contact. Women with schizophrenia were younger, poorer, and more likely to have chronic medical conditions than women without schizophrenia, but they had higher continuity of primary care. About 2.9% of women with schizophrenia had a rapid repeat pregnancy, compared to 1.5% of women without, higher both before and after covariate adjustment (RR 1.91, 95% CI 1.44-2.54; aRR 1.62, 95% CI 1.21-2.15). Rates of rapid repeat live birth (1.3% vs. 0.6%, RR 2.09, 95% CI 1.38-3.18), fetal death/stillbirth (1.1% vs. 0.7%, RR 1.65, 95% CI 1.04-2.62) and induced abortions (0.6% vs. 0.2%, RR 2.33, 95% CI 1.21-4.49) were all higher for women with vs. without schizophrenia in crude models. Only risk for rapid repeat live birth remained statistically significant after adjustment (aRR 1.75, 95% CI 1.15-2.66). These data provide new insight about the need for effective family planning among women with schizophrenia. Postpartum contacts with the health care system present key opportunities to provide women with schizophrenia additional support to initiate and maintain appropriate contraception, and avoid negative outcomes associated with a rapid repeat pregnancy.

Co-Author(s): Simone Vigod, Cindy-Lee Dennis, Hilary Brown

B6: MENTAL HEALTH | SANTÉ MENTALE

The Effect of Housing Stability on Service Use among Homeless People with Mental Illness: Results of a Multi-site Randomized Trial of Housing First

Presented by: **Nick Kerman**, PhD Candidate, Clinical Psychology, University of Ottawa

This presentation will explore how service use of homeless people with mental illness changes as they become stably housed. The objective is to achieve a greater understanding of service use patterns that are associated with successful community living and ones that may be risk factors for recurrent homelessness. This study used longitudinal data from the At Home/Chez Soi demonstration project, a randomized controlled trial of housing first that was conducted in five cities across Canada. All participants were [a] homeless, and [b] had a recent diagnosis or met criteria for a mental disorder at study entry. A total of 2,039 participants were included in this study, 1,131 of whom received housing first and 908 who received standard care. Linear mixed models were used to examine what effects the intervention and housing stability had on nine types of self-reported health, community, and justice service use over 24 months. Changes in housing stability affected use of several institutional services. In particular, use of inpatient psychiatric hospitals decreased across the two intervention groups as individuals' housing stability increased. Within the housing first group, participants experiencing continued or recurrent housing instability also spent more time in prison over the study period. Emergency department visits decreased across all groups. No changes in use of outpatient hospital services, medical hospitalizations, or specialized crisis services were found. As for community services, use of food banks increased among participants who became stably housed. Use of homeless shelters declined in the first year across groups and continued to decrease in the second year for all participants except for those that experienced recurrent housing instability. Visits to drop-in centers declined across groups. Overall, the findings show that, as homeless people with mental illness become stably housed, their use of costly institutional services either decreases or remains low. Service use patterns, in particularly with regard to psychiatric hospitalizations and time in prison, may signify persons at-risk of recurrent homelessness.

Co-Author(s): Nick Kerman, John Sylvestre, Tim Aubry, Jino Distasio

From Outcomes to Impact in Psychotherapy

Presented by: **Robbie Babins-Wagner**, CEO, Calgary Counselling Centre

The fundamental goal of psychotherapy is the improvement of patient mental health status. This study explored the impact of incorporating routine collection of patient reported alliance and outcome measures into mental health services delivery over a seven-year period. Clients who reported mental health distress at intake were eligible for inclusion if they received at least three psychotherapy sessions with the same clinician. The resulting sample included 5,128 clients seen by 153 clinicians. Outcomes were measured using the Outcome Questionnaire (OQ-45.2), a 45-item self-report measure designed specifically to capture change that occurs during the course of psychotherapy. Calgary Counselling Centre systematically collects OQ 45 data prior to each service contact upon arrival at the Centre. A multilevel modelling approach was applied to the data to explore outcomes stratified by the centre as a whole, year and individual provider. Over the course of treatment, mental health symptoms decreased on average by OQ 19.64 points, which is a significant pre-post change, corresponding to a Cohen's d of 1.17. Further analysis demonstrated that client outcomes improved across time. A significant effect was noted indicating that outcomes (patient-level pre-post ds) were becoming 0.035 standardized units larger each year. Changes were found in client outcomes across therapist experience indicating that therapists' outcomes improved 0.034 standardized units per year. The agency has been working to create an outcome informed culture for clinical practice since 2008. The discussion will focus on both the methods and process being used that may be contributing to these changes over time. Lessons learned and implications for practice will also be discussed.

Co-Author(s): Robbie Babins-Wagner, Simon Goldberg , Sandy Berzins

Access to Mental Heath Services among Youth: An Analysis of Individual and Ecological Determinants

Presented by: **ISABEL GARCES DAVILA**, STUDENT, University of New Brunswick

The objective of this study was to identify determinants of youth access to professional mental health services (i.e., types of professionals consulted and hours of consultation). This study followed an ecological approach, examining the contribution of individual and neighborhood-level variables to explain access to mental health services. Data from the Canadian Community Mental Health Survey (CCHS-MH; (2011-2012) and the Postal Code Conversion File Plus (PCCF+) were linked and analyzed to examine individual (e.g., education, perceived need for care) and neighborhood (e.g., community size)-level determinants of access to mental health services among youth with mental disorders (i.e., depressive disorders, substance use disorders, and comorbid disorders). Specifically, the data were weighted based on the Canadian population of individuals aged 15 to 24, and a series of sequential binary and multinomial logistic regression analyses were conducted. Results indicated that individual determinants, such as living in households with high income, perceiving a need for care, and having a social support system were associated with greater access to services among youth. Among neighborhood-level determinants, living in urban areas enabled access to services for youth. In addition, findings indicated that having a family doctor increased the likelihood of consulting mental health services by 71%. Females were 3 times more likely to consult services from 2 to 5 types of professionals (e.g., family doctors and psychiatrists) than males. Consistent with the study's hypothesis, findings demonstrated that 25% of youth with comorbid disorders received 11 or more hours of consultation, compared to 9% of youth with substance use disorders. Using a nationally representative sample of adolescents and young adults to examine access to mental health services, our results provide information on estimates of access to mental health care following individual and ecological variables. Implications and future directions will be discussed.

Co-Author(s): ISABEL GARCES DAVILA, Scott Ronis, Paul Peters, Margaret Holland

Patient safety practices in the care of individuals with self-harm behaviour admitted to inpatient psychiatry in Ontario, Canada.

Presented by: **Christopher Perlman**, Assistant Professor, University of Waterloo

This study examined patterns of patient safety among individuals at risk of self-harm and suicide receiving inpatient mental health services in Ontario, Canada. It examines individual and service factors associated with the receipt recommended care practices, such as close or constant observation. We examined all non-forensic, adult admissions to inpatient psychiatry in Ontario between January 1, 2012 and December 31, 2015 (N= 59,922). Using Resident Assessment Instrument for Mental Health (RAI-MH) data from the Canadian Institute for Health Information we identified all cases that had engaged in self-harm behaviour in the 7 days prior to admission (excluding personality disorders). Patient safety included indicators of confinement to room or unit, close/constant observation at various intervals, and a proxy indicator of potential documentation errors. Individual factors included demographics, diagnoses, symptoms, and functioning. Service factors included admission types, involuntary admission status, and hospital About a third of the sample (29%) had engaged in self-harm behaviour in the 7 days prior to admission. Of those with self-harm, 59% had a suicide plan and 77% had family/caregiver concerned for the person's safety. In terms of safety, 63% experienced any form of confinement (room or unit), 37% were checked at 5 or 15 min. intervals, and 7% received any constant observation over any of the first 3 days of admission. We also identified documentation issues in 16% of cases where a discordence in reports of self-harm behaviour existed between admission and discharge assessments. The presentation will highlight a number of patterns of patient safety among individuals with self-harm behaviour by individual and service-related characteristics. This study highlights variability in the types of patient safety procedures that are practiced in inpatinet psychiatry among adults admitted with self-harm behaviour. It also highlights new approaches for using standard clinical assessment data for monitoring the quality of care related to self-harm and suicide risk.

Co-Author(s): Christopher Perlman, Eva Neufeld

B7: PATIENT ENGAGEMENT | PARTICIPATION DU PATIENT

Integrated Funding Models in Ontario: Validating a Patient Experience Survey

Presented by: **Vidhi Thakkar**, Doctoral Candidate, University of Toronto IHPME

The objective is to assess the reliability and validity of a patient experience survey that includes measurement of acute and community care settings and the transition between the two. The survey was implemented as part of an evaluation of an integrated funding model (IFM) pilot program implemented in Ontario. A survey with 28 substantive items was administered in six pilot IFM projects across six different regions in Ontario. Survey questions were related to: patients' experience during their index hospitalization, transition from hospital, and care in the community. Questions were selected from existing validated surveys found in the literature. Each IFM project provided a list of consenting patients from which a random sample of participants was selected. Participants had paper, electronic, and telephone options to complete the survey. Exploratory factor analysis was used for survey validation and Cronbach's alphas were used to assess reliability of the resulting scales. The total response rate across all the sites in the first four months of the survey was 48.5% (229/472). 40% of the sample was 75 years and older and 51% were male. Exploratory factor analysis revealed a 5-factor solution for which scales were calculated and termed: hospital care, transition from hospital to community, continuity of community care, access to community services, and promotion of self-management. All Cronbach's alphas were above the recommended cut off of 0.7. Variability in outcomes between programs provides an indication of discrimination. For most programs, transition of care scored the lowest. Results are based on data collected before December 2016, updated results will be provided at the conference. Exploratory factor analysis showed 5-factors associated with the integrated care pathway, each of which had high internal consistency. Relevant domains aligned closely with patient care trajectory and previously validated factors. The instrument is also used in monthly reporting to sites to identify areas to focus improvement.

Co-Author(s): Vidhi Thakkar, Kevin Walker, Kayla Song, Sydney Jopling, Sara Shearkhani, Jasleen Arneja, Walter Wodchis

Using patient narratives in the development of a priority setting instrument for cataract surgery

Presented by: **Morgan Lim**, Associate Scientist, Trillium Health Partners

Patient and clinician perspectives differ when considering impact on patient quality of life. To ensure a cataract surgery priority setting instrument was relevant to patients' concerns, we filmed a series of patient narratives. The objective was to understand how the narratives affected the clinician perspective when developing the instrument. To develop the instrument, a modified Delphi process was used with an expert panel of 13 clinicians specializing in eye care. The process consisted of 3 rounds of electronic surveys and 1 face-to-face meeting. Patient narratives, in video format, were presented to the expert panel before the first round of surveys. The panel was asked to provide feedback on what they believed to be key messages and the narratives relevance to instrument development. For the narratives, patients were selected to represent differing experiences through a pre-screening process. Once selected, an experienced interviewer and videographer conducted the interview in the patient's Three patient narratives were presented to the expert panel in a 6 minute video. The following topics were reported back as being key messages from the narratives: challenges accessing and waiting for cataract surgery, multiple factors contribute to disability from cataracts, impact of vision loss on quality of life, patient's level of visual disability and how overall health affects prioritization, and the importance of patient self-advocacy. The majority of panelists reported that the narratives were relevant to this process because: they provided insights into impact of vision loss on quality of life, that multiple factors should inform appropriateness determinations, there are consequences to long wait times, and that prioritization should be based on patient needs and disability level. Presenting patient narratives to the expert panel provided deeper insights into the patient experience that may not necessarily be assessed during surgical consultation where surgery priority is set. It is necessary to engage the patient perspective to ensure priority instruments assess the full potential impact on quality of life.

Co-Author(s): Morgan Lim, Seema Marwaha, Elizabeth Mansfield, Marvilyn Palaganas, Bronwyn Thompson, Robert Reid, Devesh Varma, Dean Smith, Sherman Quan, Tien Wong, Iqbal Ahmed

Operationalizing Patient-Centered Integrated Care: The Gap Between Discourse and Action in Ontario's Health Links

Presented by: **Reham Abdelhalim**, PhD Student, Institute of Health Policy, Management and Evaluation, University of Toronto

Health Links (HL) was launched as a patient-centered initiative to better coordinate care for complex patients in Ontario. HL business plans demonstrated a clear vision to putting patients front and center in every step of the intervention. This study explored if the vision of patient-centeredness was operationalized as planned. We conducted evaluative case studies of three HLs within one regional health authority (Local Health Integration Network) in the spring/summer of 2016. Data was collected through semi-structured interviews with leaders and providers working within each case and an in-depth document analysis of business plans, pre-implementation documents, meeting minutes and all publicly available electronic materials. We compared documentation to interview data, conceptualizing documents as the source of the planned view and draw the operationalizing view from the interviews with leaders and providers. Our preliminary results show that leaders and providers agree with planned view that patient-centeredness and engagement is the key philosophy behind HL as a program. However, participants identified ambiguity about the mechanisms of execution especially when working with such complex patients. Although the documents emphasized the importance of patients in managing their own care, leaders and providers found many barriers to this, for example low buy-in from some patients and lack of patient access to medical records. While having patients on HL committees was emphasized in all HL documents, leaders and providers highlighted that most of the time patients do not have a voice and that a single patient will never represent all patients.

Co-Author(s): Reham Abdelhalim, Agnes Grudniewicz, Jennifer Gutberg, Sobia Khan, Jenna Evans, Walter Wodchis

Developing a user-centered design to improve public reporting of health system performance data

Presented by: **Isra Khalil**, Policy Analyst, Health Quality Ontario

Increasing the availability of information to enable better decision making is a strategic priority at Health Quality Ontario (HQO). To realize this priority, HQO developed a user-centered design for its webpages to make publicly available information on the performance of Ontario's health system accessible, relevant and actionable for its users. To create a user-centred design, both user groups: patients, caregivers and members of the public as well as health system stakeholder organizations were engaged. Recognizing that each of the two user groups consumes health system performance data differently, appropriate engagement tactics were developed for each user type. Users were involved in selecting the measures of health system performance, in prioritizing existing measures on the basis of their perceived importance and in selecting how the measures would be communicated through text and visuals. Users also provided input on the design, layout and overall navigation through the webpages. Engaging the two audience types through different tactics was crucial to receiving usable results. The consultations provided HQO with valuable insights into what motivates each user type to seek health system performance data and how they search for it. Multiple points of engagement throughout the build of the webpages ensured that user perspective was included from the beggining to the end. The engagements influenced decisions about which measures were reported online and the way in which they were communicated. The writing of the content as well as the organization and ordering of the content on the webpages was informed by the consultations. The consultations not only provided Health Quality Ontario with the information needed to ensure a user-centered design for its two audience types but also facilitated system-wide conversations about the use of different tactics to engage and consult with differing audiences.

Co-Author(s): Isra Khalil, Amira Salama, Susan Brien

B8: PRIMARY HEALTH CARE | SOINS DE PREMIÈRE LIGNE

Changes in Determinants of the Supply of and Requirements for Family Physicians in Nova Scotia, 2006-2016

Presented by: **Adrian MacKenzie**, PhD Student, Memorial University of Newfoundland

The objectives of this study are to a) estimate changes in population need for primary care and family physician supply and productivity in Nova Scotia between 2006 and 2016, and b) identify gaps and limitations of existing sources of data pertaining to family physician supply and requirements in Nova Scotia. This study was conducted by the Maritime SPOR SUPPORT Unit. It is a quantitative, descriptive study with a mix of repeated cross-sectional and longitudinal elements. Existing data on seven immediate determinants of family physician supply and requirements between July 1st 2006 and June 30th 2016 were compiled according to the elements of an established analytical framework for needs-based health workforce planning. Data sources included administrative health care databases, population health surveys, physician surveys, and previously published documents. Perspectives from patients, family physicians, and decision-makers were elicited to inform the analysis and interpretation of data. Changes in each determinant of the analytical framework – including 1) population size and demographics, 2) population health status, 3) levels of service, 4) family physician productivity, 5) the number of licensed family physicians, 6) family physician participation levels, and 7) family physician activity levels – between 2006 and 2016 are described. There are gaps in data pertaining to levels of primary care service provision and family physician activity and productivity in Nova Scotia. Existing data sources pertaining to the health status of Nova Scotia's population are subject to multiple limitations, including i) under-representation of disadvantaged populations, ii) infrequent collection, iii) sample sizes too small for many sub-provincial analyses, iv) delays in availability, or v) lack of information on severity and impacts of health issues. The identified changes have direct implications for health human resources (HHR) planning in Nova Scotia, and underscore the need to broaden this planning beyond single professions such as physicians. Improving HHR planning in Nova Scotia will require investments in addressing the identified data gaps and limitations.

Co-Author(s): Adrian MacKenzie, Elizabeth Jeffers, David Stock, Adrian Levy

Planning Geographic Based Primary Care Networks for Patients That Travel for Care

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

My Health Teams is a primary care reform initiative of Manitoba Health in which providers and other professionals enter into formal agreements to work together. How many patients would be part of a network is not easy to define. Where patients live and where they receive primary care are not the same. Using the Manitoba Population Research Data Repository, patients were allocated to physicians based on an accepted algrotihm. The location of the physician clinic was compared to the geographic area where the patient resided, creating two cohorts (provider based vs residence based). The total populations for each cohort were calculated for each My Health Team in Manitoba, as well as their demographic characteristics, health care use and complexity, and measures of the social determinants of health (i.e., receipt of income assistance, involvement with child and family services, involvement with the justice system, newcomers to Manitoba). By requiring at least 3 visits in a three year period, the provider based cohort is smaller than the residence based cohort, with markedly fewer youth and younger males. Urban areas and their associated rural fringe see much more movement between areas when comparing the residence based cohort to the provider based cohort. Rural areas in close proximity to a large city, and where commuting is common, have patient populations that are reduced by as much as half, with patients allocated in large numbers to physicians in the adjacent urban areas. Urban core areas with large primary care clinics have a much different patient population in terms of age, SES, and other measures comparing the residence based cohort to the provider based cohort. When planning for primary care, the patient population being considered may be very different depending on how it is defined. A population based on location of residence may provide a very different picture of care needs than one that is defined on where patients currently go to receive care.

Co-Author(s): Dan Chateau, Alan Katz, Chelsey McDougall, Carole Taylor, Scott McCulloch

Changing practice patterns of recent entrants to family medicine in BC

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

Doctors who have recently completed residency training, and have newly entered practice, may be practicing differently than previous cohorts. They may be choosing to specialize within family medicine, practicing as hospitalists, or opting for walk-in clinic style practice. We examine practice patterns using administrative health data in BC. We present descriptive, cross-sectional analysis at two points in time. We use province-wide administrative health data capturing fee-for-service physician payments, hospitalizations, and prescriptions filled, linked to physician characteristics from the College of Physicians and Surgeons of BC (CPSBC). We focus on family physicians/general practitioners identified based on specialty recorded with the BC College of Physicians and Surgeons. We compare new entrants (<= 10 years since graduation) and established physicians (>10 years since graduation) at two points in time (2003/4 and 2013/14) with respect to physician demographic characteristics, service volume, responsibility for longitudinal patient care, and other practice characteristics. The total number of primary care physicians registered with CPSBC increased by almost 20% between 2003/4 and 2013/14, but the proportion of new entrants has remained constant at 19%. A higher proportion of new entrants in 2013/14 trained outside of Canada, and is practicing in Health Authorities within the densely-populated lower mainland. Total (constant dollar) billings were lower among new entrants in both years, but this gap has not increased. The number of total patient contacts, and unique patients seen fell among all physicians, but even more rapidly among new entrants than established physicians. Changes in measures of responsibility and other practice characteristics were observed among both new and established physicians. Observed changes in service volume and practice patterns have enormous implications for the supply of physicians available to provide comprehensive primary care, but are not unique to new entrants. Findings may help explain why, despite having more primary care physicians than ever before, patients still report difficulty finding family doctors.

Co-Author(s): Ruth Lavergne, Sandra Peterson, Kimberlyn McGrail

Integrating Volunteers into Community-Based Primary Healthcare Service Delivery: Development of a Volunteer Program Supporting Vulnerable Populations in Two Complex Interventions

Presented by: **Lisa Dolovich**, Professor, Leslie Dan Faculty of Pharmacy, University of Toronto

In primary healthcare, volunteerism is a largely untapped potential resource. The Health TAPESTRY (Health Teams Advancing Patient Experience: Strengthening Quality) program in Hamilton integrates community volunteers, novel technologies, and community resource linkages into primary healthcare teams. This presentation will describe processes, barriers, and facilitators in integrating volunteers into the program. In Health TAPESTRY-Older Adults (TAP-OA), trained volunteer pairs visited adults aged 70+ in their homes, gathering health information and goals via a tablet, which was summarized into reports and sent electronically to patients' interprofessional primary healthcare teams. Health TAPESTRY with Health Connectors for Diabetes Management (TAP-HC-DM) had trained volunteers communicating weekly (by phone, electronic message, or home visit) with patients with diabetes and hypertension, providing motivation, education, community linkages, and, again, connections to primary healthcare team via reports. Quantitative and qualitative data was collected, including number of visits, patient self-reported health outcomes, volunteer activity logs/narratives, interviews/focus groups to explore experiences. Volunteers were trained using multiple methods (in-person, online, manual) and coordinated by a community partner. In TAP-OA, 393 home visits were conducted by 78 trained volunteers to 312 clients. This first iteration of the volunteer program recruited an engaged set of volunteers and established that volunteers can be trained to collect health data which can be relayed to clinic teams for follow-up. Challenges such as scheduling/continuity of volunteers at home visits, volunteer support of patient self-management, goal-setting dialogue/outcomes were identified. These learnings helped develop the TAP-HC-DM volunteer role. In 220 client communications conducted by 20 volunteers to 28 clients, the program demonstrated volunteers' capacity for carrying out an even more demanding and time-consuming role within primary care, focused on patient self-management, goal setting, and motivation. Generally, volunteers participating in Health TAPESTRY felt their role was a personal growth experience. New and valuable information was relayed to the interprofessional team, to the benefit of patient care. With appropriate training and coordination, meaningful volunteer roles can be created and integrated into community-based primary healthcare service delivery.

Co-Author(s): Doug Oliver, Ruta Valaitis, Jessica Peter, Laura Cleghorn, Gina Agarwal, Larkin Lamarche, Fiona Parascandalo, Lisa Dolovich

B9: DATA MINING/BIG DATA ANALYTICS | EXPLORATION DE DONNÉES/ANALYTIQUE DE GROS VOLUMES DE DONNÉES

Incremental Healthcare Utilization and Costs Among Senior High Cost Users in Ontario

Presented by: **Sergei Muratov**, Doctoral student, McMaster University

To determine the magnitude of incremental healthcare use and costs among incident senior high cost users (HCUs) compared to matched non-HCUs across various care components in the province of Ontario. We conducted a retrospective, population-based cohort study using administrative healthcare records. Incident senior HCUs were defined as Ontarians age ?66 years who were in the top 5% of healthcare cost users during fiscal year 2013 (FY2013) but not during fiscal year 2012 (FY2012). Each HCU was matched to 3 non-HCUs by age, sex and health planning region. Where possible, incremental healthcare use and costs were determined estimating the difference between the change in outcomes before versus after the index date in HCU compared to non-HCU groups ('difference in differences' approach). Incident HCUs (n=176,604) accounted for 46% of all HCUs in FY2013 (n=387,759). 78.6% of HCUs had at least one hospitalization in the incident year compared to 2.6% in the preceding year. The proportion of hospitalized non-HCUs was 1.6% and 1.8%, respectively. Compared to the year before becoming HCU, the annual incremental resource utilization per senior HCU was a mean of 1.31 emergency department visits, 29.7 physician visits (73% attributable to specialist visits), and 24.9 home care visits (63% due to personal support). Compared to non-HCUs (n=529,812), HCUs incurred an additional $23,765 per patient in total healthcare costs. Inpatient care had the highest incremental costs ($12,143) representing 51% of the total incremental spending, followed by physician services ($3,015), home care ($1,387), and rehabilitation ($1,345). Healthcare resource use is substantial among senior HCUs, with the greatest incremental costs originating from inpatient care. Additional research is needed to determine an optimal mix of cost-effective interventions and services for these individuals.

Co-Author(s): Sergei Muratov, Justin Lee, Anne Holbrook, Michael Paterson, Kednapa Thavorn, Lawrence Mbuagbaw, Tara Gomes, Wayne Khuu, Jean-Eric Tarride

The costs associated with idiopathic pulmonary fibrosis in Quebec

Presented by: **Jean-Eric Tarride**, Associate Professor, McMaster University

The objective was to estimate the economic burden of illness of idiopathic pulmonary fibrosis (IPF) using mandatory administrative databases for the province of Quebec. We used multiple provincial databases from fiscal years 2006-2011 to capture acute institutional care, physician billings, prescription drugs, emergency visits, home care, and long-term care. Cases were identified from acute care with an ICD-10-CA diagnosis code of J84.1 and from physician billings with an ICD-9-CM code of 516.3. We used a broad definition that excluded cases with subsequent diagnosis of other interstitial lung diseases and a narrow definition that required further diagnostic testing prior to IPF diagnosis. Using a time series approach, an average cost per patient for each year pre- and post-diagnosis was estimated in 2016 Canadian dollars. Over the five year period, the 5 year incidence of IPF using a broad definition was 4,485 cases (22.5/100,000 per year) for women and 6,094 cases (31.1/100,000per year) for men. Overall, 10,579 and 8,683 satisfied the broad and narrow definitions, respectively. The average annual cost per patient 2 years prior to diagnosis was $6,180 and costs rose 68% in the first year post-diagnosis. Average annual costs remained elevated in the years following diagnosis. The cumulative incremental costs relative to baseline was $50,295 for a broad definition and $52,973 for a narrow definition. Incorporating multiyear annual cost prior to and after diagnosis results in higher estimate of burden of IPF compared to previous studies.

Co-Author(s): Jean-Eric Tarride, Natasha Burke, Jason Robert Guertin, Charlene Fell, Geneviève Dion, Martin Kolb, Robert B. Hopkins

IMPACTS OF ALTERNATIVE PAYMENT PLAN BILLING CLAIMS ON HYPERTENSION PREVALENCE, MORTALITY AND CARDIOVASCULAR DISEASE HOSPITALIZATION ESTIMATES IN ALBERTA, CANADA

Presented by: **Hude Quan**, Professor, University of Calgary

In Canada, there are concerns nationally that APPs are associated with decreased billing claims submission resulting in suboptimal data quality. We examined the impact of APPs on hypertension prevalence, mortality and cardiovascular (CVD) disease estimates in Alberta. The following administrative databases were used for this study: Alberta Health Care Insurance Plan registry; discharge abstract data; physician claims and; vital statistics. Patients with hypertension (>20 years) between April 1, 2004 and March 31, 2009 were defined based on a validated algorithm. Hypertension cases were stratified into FFS and APP billings. Descriptive statistics, all-cause mortality and CVD-related hospitalizations were reported for both the FFS and APP groups. In total, 613,844 adult hypertensive cases were identified using the validated case definition. The majority of hypertension cases (99.4%) were identified using FFS billings. Among FFS, overall hypertension prevalence was 22.2% and the effect of APP billing estimates (0.13%) on hypertension prevalence was small. All-cause mortality (33.8/per 1000 person years, 95% CI 33.6-34) was higher for FFS than APP billings (19.0/per 1000 person years, 95% CI 16.6-21.8). A similar pattern was seen for CVD admissions. The impact of non-submission of APP claims (i.e. shadow billings) on disease estimates and outcomes appear to be minor during the study periods examined, however variations in mortality and cardiovascular hospitalization rates warrant further investigation with updated data.

Co-Author(s): Ceara Cunningham, Nathalie Jette, Hude Quan

The Experience of Patients Undergoing Coronary Artery Bypass in Alberta Hospitals

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

Despite being a life-saving procedure, coronary artery bypass grafting (CABG) can have sub-optimal outcomes. Research has shown that better overall patient experience is associated with better outcomes among cardiac patients. The objective was to examine patient experience survey data to identify targeted areas for improvement among CABG patients in Alberta. This cohort study included randomly-selected patients who underwent CABG at two cardiovascular centres and completed a telephone survey within six weeks of hospital discharge. A modified, Canadian version of the Hospital-Consumer Assessment of Healthcare Providers and Systems (H-CAHPS) instrument was used. The survey contained 56 questions which examined aspects of care such as communication with providers, medications, discharge instructions, and general care. Responses to each question were classified as “top box” versus other, where “top box” represented the best possible result (e.g. nurses “always” explaining things in a way patients could understand, patients “always” being involved in care decisions). From April 2014 to March 2016, 308 patients completed the survey. Patients were predominantly male (n=257, 83.4%), had a mean age of 66.3±9.5 years, and a mean length of stay of 10.7±6.6 days. The top three performing questions were nurses treating patients with courtesy and respect (90.3% reporting “always”), doctors treating patients with courtesy and respect (83.8% reporting “always”), and hospital staff doing everything they could to help with pain (80.7% reporting “always”). The five poorest performing questions were room quietness at night (35.5% reporting “always”), staff describing possible side effects of new medication (42.1% reporting “always”), room/bathroom being kept clean (60.8% reporting “always”), receiving timely help after pushing the call button (66.0% reporting “always”), and receiving support for anxieties, fears or worries (66.7% reporting “always”). Our results provided patient-reported data that identify areas where care for CABG patients is performed well. Patients also identified targeted areas for quality improvement, which, if improved upon, may improve outcomes for CABG patients. Further research to compare patient-reported data and outcomes from a quality improvement perspective is necessary.

Co-Author(s): Kyle Kemp, Hude Quan, María José Santana

B10: PHARMACEUTICAL POLICY | POLITIQUE PHARMACEUTIQUE

The estimated effects of adding universal public coverage of an essential medicines list to the existing complement of public drug plans in Canada

Presented by: **Steven Morgan**, Professor, University of British Columbia

Canada’s universal health care system does not include universal coverage of prescription drugs. We sought to estimate the effects of a step toward such coverage: adding universal public coverage of an essential medicines list to existing public drug plans in Canada. We used administrative and market research data to estimate the 2015 shares of the volume and cost of prescriptions filled in the community setting that were for 117 drugs on a model list of essential medicines for Canada. We compared prices of the essential medicines in Canada with prices in the USA, Sweden, and New Zealand. We estimated the cost of adding universal public drug coverage of the essential medicines based on anticipated effects on drug utilization and pricing. The 117 essential medicines accounted for 44% of all prescriptions and 30% of total prescription drug expenditures in 2015. Average prices of generic essential medicines were 47% lower in the USA, 60% lower in Sweden, and 84% lower in New Zealand; brands were priced 43% lower in the USA. Universal public coverage of the essential medicines could save patients and private drug plan sponsors $4.272 billion per year (28%; range $2.721 to $5.831 billion) at an incremental government cost of $1.229 billion per year (11%; range $373 million to $1.979 billion). Adding universal public coverage of essential medicines to the existing public drug plans in Canada could address most of Canadians’ pharmaceutical needs and save billions of dollars while more comprehensive pharmacare reforms are planned.

Co-Author(s): Steven Morgan, Winny Li, Brandon Yau, Nav Persaud

How Canadian oncology drug prices measure up: A cross-country comparison

Presented by: **Sonya Cressman**, Health Economist, BC Cancer Agency

Recent cross-country comparisons indicate that prices for oncology drugs can fluctuate dramatically. In this study, we assessed whether Canadian oncology drugs are over or underpriced relative to comparison countries, and if there are any identifiable market or drug-based characteristics that could explain instances of overpricing. We used ex-factory prices to determine the percent price difference for 31 oncology drugs in Canada from the median prices in comparison countries from the Organization for Economic Cooperative Development (OECD). A parallel analysis was undertaken using prices from the US RedBook. We used an ordinary least squares regression analysis to test for dependence of percent difference on independent market variables (generic or orphan drug status, number and class of indications, time from market authorization), pharmaceutical variables (oral vs. intravenous delivery, tyrosine kinase inhibition and other mechanisms of action) and clinical benefit scores according to ASCO and ESMO evaluative frameworks. We found excessive pricing for 29% of the drugs under study with difference in prices that were up to 146% higher than the OECD median. Prices in the USA were unanimously excessive for all drugs under study. Using an ordinary least squares regression analysis, we found that Canadians pay less for generic and oral cancer drugs while Americans pay more for drugs that are approved for a greater number of oncology indications and less for drugs that also have non-oncology indications. We did not find a relationship between clinical benefit scores with either evaluative framework or for any variables related to the mechanism of action of the drugs, in either country. Market effects such as generic availability and the existence of other indications appear to influence North American drug prices, rather than effects related to mechanism or clinical benefit. Generic cancer drug policy has protected against excessive prices in Canada.

Co-Author(s): Sonya Cressman, Kelvin Chan , Nicole Mittmann, Stuart Peacock

Cost Drivers in Public Drug Plans in Canada, 2015/16 – CompassRx

Presented by: **Greg McComb**, Senior Economist, National Prescription Drug Utilization Information System (NPDUIS)

After several years of low or negative growth, drug expenditures in public drug plans increased sharply by 12.2% in 2015/16. The 3rd edition of the CompassRx provides insight into the factors that contributed to this remarkable growth in cost. The analysis uses claims-level public drug plan data from the Canadian Institute for Health Information's NPDUIS Database for the 2011/12 to 2015/16 fiscal years. A sophisticated cost-driver model isolates the key factors contributing to changes in drug and dispensing costs: the mix of drugs, drug prices, dispensing fees, the volume of drugs, and changes in the demographic profile of the beneficiaries. The striking growth in drug costs in 2015/16 was due to the combined effect of limited generic savings and an increased use of high-cost drugs. The hepatitis C drugs Harvoni, Sovaldi and Holkira alone contributed 7.3% toward this increase in growth, while other high-cost drugs continued to put pressure on costs. The generic drug use and lower prices, which markedly pulled down drug costs in recent years, had a diminished cost saving impact from -9.2% in 2012/13 to -4.1% in 2015/16 and was no longer able to offset the effect of higher-cost drugs. A greater understanding of the forces driving expenditures in Canadian public drug plans will inform policy and stakeholder discussions and aid in anticipating, managing and responding to evolving cost pressures.

Co-Author(s): Greg McComb

The Canadian market for biologic response modifiers, 2015

Presented by: **Karine Landry**, Economic Analyst, PMPRB

The market for biologic drugs used in the treatment of chronic inflammatory conditions has rapidly evolved over the last two decades. This study provides insight into the uptake in utilization, market shares, pricing, annual treatment costs and the broader drug portfolio of manufacturers operating in this space. This project was initiated in response to a request from the NPDUIS Advisory Committee in support of the pan-Canadian Pharmaceutical Alliance (pCPA). The drugs considered are Enbrel, Remicade, Kineret, Humira, Rituxan, Orencia, Simponi, Cimzia and Actemra. International comparisons focus on the seven countries the PMPRB considers in reviewing the prices of patented drugs (PMPRB7): France, Germany, Italy, Sweden, Switzerland, the UK and the US, as well as select countries in the Organisation for Economic Co-operation and Development (OECD). The report focuses on 2015 calendar year and provides a retrospective look at trends since 2010. The study shows that the sales and use of these biologic drugs are higher in Canada than in most comparable international markets. Despite the availability of lower-cost treatments, the majority of Canadian patients continue to use the drugs with the highest treatment costs: Remicade, Humira, and Enbrel. Aligning Canadian drug prices with international levels, especially for Remicade, and using less expensive alternative therapies, such as biosimilars, would result in lower drug costs for Canadians. This report is designed to inform policy discussions on the price and reimbursement of this drug class at public and private payer level, including the pricing and uptake of emerging biosimilars.

Co-Author(s): Elena Lungu, Karine Landry

B11: MIXED METHODS | MÉTHODES MIXTES

Advancing the measurement of equity in health care with common stratifier definitions

Presented by: **Harshani Dabere**, Analyst, Canadian Institute for Health Information

There are documented inequalities in access, quality and outcomes of health care in Canada; however, diverse approaches are used to measure inequalities. This work aims to facilitate consistent pan-Canadian measurement by developing common definitions for selected equity stratifiers (socio-demographic variables) and applying them to health indicators using linked data. A literature review was conducted to describe and evaluate definitions for 5 equity stratifiers identified as high priority through an in-person facilitated stakeholder dialogue: Age, Sex, Geographic location, Income, and Education. Pan-Canadian web-based focus groups were held to generate discussion and seek agreement on the recommended stratifier definitions. Using linked health and social data (e.g., hospital-census), we are collaborating with Statistics Canada to apply these working stratifier definitions to analyze hospital-based indicators of health system performance, including sensitivity testing of stratifier definitions. Results of the web-based focus groups yielded working definitions of the 5 equity stratifiers, along with considerations for their application and future research. For example, it was recommended to use multiple ordinal categories of educational attainment to stratify by education; a dichotomous variable was deemed insufficient. For the geographic location stratifier, recommendations include defining urban versus rural and remote using Statistical Area Classification type, prioritizing developing a methodology to better distinguish rural and remote areas, and defining a travel burden measure. The findings from the stratified analysis of hospital-based indicators using the linked data will be presented. We will also discuss the challenges and opportunities of examining equity in health care across multiple stratifiers at the national and provincial level using linked health and social data. Developing and promoting the adoption of common stratifier definitions will facilitate comparisons across jurisdictions and inform data collection initiatives, with the goal of informing action toward equity in health care. Future work will include developing definitions and conducting analysis of other stratifiers of importance such as race/ethnicity and language.

Co-Author(s): Sara Allin, Christina Catley, Harshani Dabere, Stephanie Ko, Erin Pichora, Dana Riley, Geoff Hynes, Jean Harvey

Identifying Causes of Funding Volatility in Ontario Hospital Funding Model

Presented by: **Shannon Collinson**, Methodologist, MOHLTC

Stability and predictability are vital to hospital funding. We investigate whether the HBAM funding formula or factors therein are possible causes of volatility and oscillation in funding allocation, year-over-year. The HBAM funding formula was investigated in two ways. A one-factor-at-a-time sensitivity analysis was conducted on the explicit funding formula using FY2014/15 funding data of 69 HBAM hospitals. The second approach was a Monte Carlo simulation for a simulated hospital system, for a simplified version of the formula, to look at funding stability over time. Again, a one-factor-at-a-time approach was taken to determine the impact of the variables on the funding share. In both cases, the standard deviation of the HBAM share percent change was calculated for each factor analysed; the magnitude of the standard deviation determined how the factor. Both the one-factor-at-a-time sensitivity analysis of the model using the data and the one-factor-at-a-time analysis for the simulated hospital system in a Monte Carlo framework concluded that the percent Based Funded Expenses (%BFE) was the component of the model that caused the most variability. There is no specific component of the HBAM funding formula that obviously drives oscillating behaviour in funding share. The largest effect is seen from changes in %BFE. From the Monte Carlo simulation, we can see that the effect is amplified over time.

Co-Author(s): Shannon Collinson, Sping Wang

Developing quality improvement indicators for a patient safety program in obstetrics

Presented by: **Cara Bowman**, Epidemiologist, The Canadian Medical Protective Association

We developed a set of quality improvement indicators, using internationally recognized healthcare frameworks, to support measurable improvements in obstetrical practice. We focused these indicators on areas of practice associated with increased risk of medico-legal risk. We analysed medico-legal data from a national database to identify areas of greatest medico-legal risk in obstetrical practice. We conducted a literature search for pre-existing quality indicator frameworks. We selected relevant quality indicators that mapped to the identified high risk medico-legal areas and developed new potential measures as necessary. To ensure face validity of these measures, we conducted consultations with internal experts, and relevant external obstetrical quality organizations. We identified 5 areas of increased medico-legal risk in obstetrical practice among 686 closed cases (2010-2014). We found 5 published quality indicator frameworks; these focused on clinical and process of care (PoC) outcomes, but lacked balancing measures. We selected and developed 23 PoC, 14 clinical care and 3 balancing measures. For each high risk area, we identified the following measures: 15 for labour induction and augmentation of labour (e.g. proportion of protocol use as indicated); 13 for shoulder dystocia (e.g. frequency of shoulder dystocia risk assessment); 16 for assisted vaginal delivery (e.g. delay to delivery time); 10 for delayed decision to C-section (e.g. proportion of cases where both forceps and vacuum used for single delivery); and 8 for collaborative care (e.g. number of inter-professional huddles). We developed a comprehensive but pragmatic list of quality indicators for 5 areas of medico-legal risk in Canadian obstetrical practice. These indicators can be used to facilitate future quality improvement work in obstetrics, with the complementary aim of reducing medico-legal risk.

Co-Author(s): Lisa Calder, Qian Yang, Tunde Gondocz, Christina Young, Cathy Zhang, Anna MacIntyre, Cara Bowman, Sharon Caughey, Peter O'Neill, Charmaine Roye, Guylaine Lefebvre

B12: HEALTH ECONOMICS/FINANCING/FUNDING | ÉCONOMIE DE LA SANTÉ / FINANCEMENT / SUBVENTION

Using Administrative Databases to Estimate Medical Procedure Cost

Presented by: **Sping Wang**, Senior Methodologist, MOHLTC

Policymakers have a keen interest in comprehending medical cost of particular procedures for funding, improving efficiencies and lowering health care costs. The information, however, is not always transparent as reporting can vary from one facility to another. We demonstrated methods of estimating procedure cost using Ontario administrative databases. We first identify functional centres under which cost of procedure is reported in Ontario Case Costing Initiative (OCCI) database. Cost accrued in the functional centre over a patient's hospital stay is used for statistical modeling of incremental cost of procedure. Two modeling approaches explored were propensity score matching and generalized linear modeling. Estimates between two methods were compared. Content validity is established by comparing estimates with product costs from select hospitals and subject matter experts. Socio-demographic and clinical factors related to cost were controlled or matched. We applied the methodologies to quality-based procedures recommended for stroke and COPD patients. Procedure cost was estimated for CT or MRI scan of brain, Ultrasound, CT or MRI carotid arteries, and thrombolytic therapy of stroke patients, and for non-invasive and invasive positive pressure ventilations of COPD patients. Overall incremental cost estimates from the two modeling approaches were similar. Stability and accuracy of procedure cost estimates hinges on quality of financial and clinical data. If cost data is not consistently recorded in well-defined functional centres across facilities participating in OCCI, estimates are often biased and unstable when a different method or a different year of data is used. Likewise if reporting of a procedure is not mandatory in clinical databases, the inconsistent assignment of patients in case and control groups resulted in questionable cost estimates. Administrative database is a valuable source for estimating procedure costs, which can be used for understanding medical cost or for funding. While the methodology or statistical modeling is sound, reliability of results greatly depends on the quality of data. Results are sensitive to data quality in administrative databases.

Co-Author(s): Sping Wang, Kamil Malikov

Rapid Endovascular Therapy – Policy Responsive Evidence Synthesis

Presented by: **Laura Sevick**, Graduate Student, University of Calgary

Objectives: The objectives of this research were to (1) summarize the body of evidence on the clinical effectiveness, costs, cost effectiveness and the patient experience with rapid endovascular therapy (EVT) and stroke, and (2) to estimate the number of patients who would be eligible for treatment in British Columbia. Approach: To assess clinical effectiveness, a recent systematic review was identified and critically appraised by two reviewers. A sub-analysis and comparison of only the recent 2015 literature was completed. Two de-novo systematic reviews were completed; one assessing the cost and cost effectiveness of EVT and one assessing stroke patients' experience with travelling for care. Systematic review best practices were followed. The number of patients eligible for treatment with EVT in British Columbia was estimated by Health Service Delivery Areas. A map was generated to highlight policy considerations including time constraints and transport coordination. Results: The clinical effectiveness systematic review found that the odds of being functionally independent at 90-days were 1.71 times greater for the EVT group than the control (Confidence Interval: 1.18-2.48). Seven cost-analyses and ten cost-utility studies were then identified. All cost-utility studies reported a cost per quality adjusted life year of less than $50,000 (2016 CND); the results of the studies varied by perspective and time horizon adopted. Two qualitative studies examining the stroke patient experience with being treated away from home or travelling for care were identified. Both studies reported a strong preference to be home as opposed to in hospital. Finally, a coordinated transportation plan would enable BC patients from across the province to be eligible for EVT treatment. Conclusions: EVT appears to be clinically effective and good value for money. Stroke patient preferences regarding repatriation should be considered. Healthcare systems will need to consider the broad evidence base, technological expertise, transportation available and the coordination of the health system resources to optimize patient outcomes with this new technology.

Co-Author(s): Laura Sevick, Sarah Ghali, Michael Hill, Vishva Danthurebandara, Diane Lorenzetti, Tom Noseworthy, Eldon Spackman, fiona clement

Socioeconomic gradients in supplementary health insurance coverage: Evidence from two repeated cross-sectional datasets

Presented by: **Elaine Guo**, Student, McMaster University

Our first objective is to describe comprehensively the extent to which Canadians have access to supplementary health insurance coverage. The second objective is to identify characteristics that are associated with having coverage. In particular, we investigate the role of socioeconomic status in accessing coverage. We use repeated cross-sectional data from six waves of Commonwealth Fund's International Health Policy (IHP) Survey and six waves of Canadian Community Health Survey (CCHS). IHP and CCHS complement each other's insurance data. CCHS focuses on Ontario while IHP provides national data. IHP only concerns private insurance while CCHS covers public insurance, employer-sponsored insurance and self-purchased insurance. IHP does not specify the type of coverage while CCHS examines prescription drug coverage, dental coverage and vision coverage separately. Using these two datasets, we construct cross-tabulations and logit models to examine the level of coverage and the presence of socioeconomic gradients. IHP data suggest that around two-thirds of Canadians in the below 65 age group have private health insurance and this proportion does not vary significantly over time or across regions. As expected, this proportion is lower for the above 65 age group given the existence of provincial drug plans for seniors. The level of private coverage is also lower for the fair or poor self-reported health group likely due to risk selection of private plans. CCHS reveals that around one-fifth of Ontarians lack coverage from any source. Its estimate regarding private coverage conforms to that of IHP. Positive gradients by income and education are evident in private coverage in both IHP and CCHS and negative gradients are discovered in public coverage in CCHS. IHP and CCHS collectively suggest that positive income and education gradients in coverage persist and the current patchwork system does not suffice. This finding supports the national pharmacare advocacy and informs other innovative solutions like Ontario's Low-Income Health Benefit proposal aiming to fill gaps in coverage for Ontario's working poor.

Co-Author(s): Elaine Guo, Dennis Ren, Emmanuel Guindon, Arthur Sweetman

Can High-Cost Spending in the Community Signal Admission to Hospital? A Dynamic Modelling Study for Urgent and Elective Cardiovascular Patients

Presented by: **Deborah Cohen**, Manager/Post Doctoral Fellow, , Canadian Institute for Health Information/University of Toronto

Studying care trajectories for high-cost patients with cardiovascular disease can shed light on the dynamic interplay between community-based and acare care along the care continuum, and provide information about spending signals in the community that can be used to predict difficult-to-anticipate future hosptilizations. Using linked health administrative data in Ontario, Canada, 74683 incident cases with cardiovascular disease between 2009 and 2011 were included in the study. Patients were followed from 36 months (total study duration 2009-2014) until the first elective or urgent admission to hospital for a heart-related condition. We used an extended Cox model with time varying covariates and competing risks to study the way that high-cost spending in the community (e.g. monthly spending for general practitioners (GP) & specialists visits, home care, laboratory services and emergency department (ED) services) could be used to predict two mutually exclusive outcomes: time to urgent or elective hospitalization. Elective hospitalizations were most clearly signaled by high-cost spending in community-based specialist visits in the month prior to hospital admission (Hazard Ratio 9.0, $p < 0$ .0001), while urgent care hospitalizations were signaled by high-cost spending across all community-based sectors (from GP and specialists visits, to home care vists, laboratory services and emergency department (ED) visits). Urgent hospitalizations were most clearly signalled by high-cost spending in ED services in the month prior to hospitalization (Harzard Ratio 2.6, $p < 0$ .0001) By studying the dynamic nature of patient care trajectories, community-based spending patterns can serve as signals in the system for urgent CVD patients for whom hospitalizations are otherwise difficult to anticipate. These signals may also point to optimal opportunties for intervention along the care trajectory in order to reduce the likelihood of future hospital admissions.

Co-Author(s): Deborah Cohen, Walter Wodchis, Andrew Calzavara

4:15PM - 5:30PM CONCURRENT SESSIONS C

C1: HEALTH HUMAN RESOURCES | RESSOURCES HUMAINES EN SANTÉ

Exploring early professional socialization across five health professions

Presented by: **Sheri Price**, Assistant Professor, Dalhousie University

We will present emerging findings of a longitudinal, qualitative study examining early professional socialization among students from five health professional programs. This research, grounded in narrative methodology, seeks to understand how interprofessional collaboration can be enhanced at an earlier stage in the professional socialization process. Health professional students (n=49) entering health professional programs at Dalhousie University, Canada in fall 2015 participated in repeat, 1:1, audiotaped interviews starting before formal orientation. Pre-entry interviews focused on factors influencing students' career choice and expectations of their own profession and of early interprofessional learning and practice. Subsequent interviews – completed after the participants' first term of study (n=44) and first year of study (n=39), respectively – focused on professional identity formation and interprofessional collaboration experiences throughout the first year of health professional training. Emerging findings suggest that participants chose the health professions out of a desire for career fulfillment and satisfaction. Myriad roles and experiences influenced their exact career choice and framed the social positioning of their future career (e.g., leadership, social prestige, autonomy). Pre-entry conceptualization of the health professions continued to play a role in participants' experiences as first year students. In some cases, participants' prior assumptions about their health profession led to dissatisfaction with their experience as a first year student. Participants' universally described that the opportunity for tangible learning within a practice setting was the critical turning point in the development of not only their own professional identity, but also provided meaningful exposure to other health professions and setting a foundation for future interprofessional collaboration. To our knowledge, this is the first study to explore early professional socialization and professional identity over time among several health professional student groups. Findings provide valuable direction for pre-entry career choice messaging and refining or enhancing initiatives that promote positive professional identity formation within the context of interprofessional collaboration.

Co-Author(s): Sheri Price, Scott Reeves, Cynthia Andrews, Harriet Davies, Katherine Harman, Evelyn Sutton, Joan Almost, Hossein Khalili, Meaghan Sim

Boundary Work and Retention: Experiences of Midwifery Students' in Clinical Placement

Presented by: **Irina Oltean** , Research Assistant, University of Waterloo

To understand the challenges faced by midwifery students during the course of professional socialization in identifying the boundaries of their professional responsibility. To demonstrate the relationship between boundary work and workplace retention in order to assist researchers and policy makers in facilitating best policy and practice. This paper is based on the qualitative analysis of 19 interviews conducted with students attending the Midwifery Education Programs across Canada. The interviews were conducted over the phone with students who underwent at least one clinical placement. The semi-structured interview guide focused on students' experiences in the classroom and in clinical placements, challenges experienced in the program and the relationship between these challenges and students' intention to stay. The interviews were recorded and transcribed verbatim. Data were analyzed using line-by-line coding followed by a more focused coding and thematic analysis. The theme of professional boundaries was derived inductively during the analysis. Findings indicate that midwifery students experience challenges identifying the boundaries of their professional responsibilities in three different areas: (1) interprofessional boundaries, which reflect the tension between midwifery professionals and other healthcare professionals (nurses) with respect to the scope of practice and its affect on the interprofessional relationship; (2) intraprofessional boundaries, which reflect the power relationships between midwifery students and their preceptors as well as unclear work expectations regarding student roles; and (3) Learning, work and life boundaries, which include emotional struggles resulting from challenging work experiences and balance between personal life and work/study. In order to facilitate best policy and practice, programs should be better designed to increase retention of healthcare professionals by focusing on the relationship between boundary work and work place satisfaction. It is necessary to tailor support to the needs of healthcare professionals by defining their roles and responsibilities.

Co-Author(s): Irina Oltean , Elena Neiterman , Farimah HakemZadeh, johanna geraci, Isik Zeytinoglu, Derek Lobb

Evaluating the 4th Measure of QUADRUPLE AIM in Primary Care: "Provider Experience"

Presented by: **Grace Moe**, Executive Director, Innovations & Strategic Planning, Westview Physician Collaborative/Westview Primary Care Network

The study-envisioned "QUADRUPLE AIM" adds the "Provider Experience" domain to Institute of Healthcare Improvement's Triple Aim of enhancing "Patient Experience", improving "Population Health", and reducing "Healthcare Cost". Study objective is to examine the extent that implementation of a 2005-incepted Alberta Primary Care Network (PCN) could positively augment its providers' experience. Design: Multi-year surveys of PCN-affiliated providers using self-reported questionnaires. Data Collection Years: 2007 (n=19), 2011 (n=42), 2013 (n=38) and 2015 (n=34). Tools: To capture the multiple dimensions of "Provider Experience": 2 published (Worklife Pulse and Saskatchewan Team Effectiveness) and 2 internally-designed ("ac3" and Satisfaction) instruments were used. Sampling Frame included all PCN-affiliated clinical staff, physician and non-physician providers. Analyses: Descriptive statistics; and between-year comparisons, using Independent T-tests on item mean scores and one-way ANOVA on calculated subscale scores. Satisfaction with intra-team members improved progressively since PCN inception. Satisfaction levels with professional life, worklife balance and external provider relationships showed an initial spike improvement between 2007 and 2011; dipping as the PCN matured between 2013 and 2015. Relationship with specialties remains a challenge. "ac3" represents 4 measures: "Autonomy" in making informed decisions to influence health policy directions; "Choice" of evidence-based options in primary care, "provider Capital for change" and "stakeholder Collaboration for positive changes". There were no significant between-year differences in respondent-rated "Autonomy", "Choice" and "Collaboration". "Capital" showed a significant decrease (p=.022) between 2013 and 2015. Overall Team Effectiveness and 3 sub-domains—Team Purpose/Vision, Team Support and Service Delivery improved significantly since 2007. Site-specific personnel perception of work environment varied between clinics. Provider Experience impacts on patient safety, organizational performance and quality of care. To build sustainable healthcare systems, understanding of provider-side values and resources is needed. An observational study is needed to examine site-specific contributing factors to study observed between-clinic variances and the "Hype Cycle" curve of improvement in provider experience.

Co-Author(s): Grace Moe

Nurse prescribing in Quebec: a tool to improve health services efficiency

Presented by: **Roxane Borgès Da Silva**, Professeure adjointe, Université de Montréal (Faculté des sciences infirmières)

La prescription infirmière (PI) a été promulguée au Québec le 11 janvier 2016. Depuis, les infirmières peuvent prescrire dans certaines situations cliniques. Objectifs : 1) décrire la prescription infirmière et dresser un portrait de son implantation 2) identifier les facteurs limitant et facilitant l'utilisation du droit de prescrire. Un devis quasi-expérimental a été utilisé pour comparer 1) les infirmières ayant leur attestation de prescription et celles ne l'ayant pas demandé et ensuite, 2) les infirmières ayant prescrit au moins une fois et celles n'ayant pas prescrit. Deux enquêtes ont été menées conjointement. Le premier questionnaire, en ligne, s'adressait à toutes les infirmières travaillant dans les services ambulatoires du Québec. Le second s'adressait aux Directions de soins infirmiers (DSI) chargées du déploiement de la prescription infirmière sur leur territoire. Des analyses bivariées et des régressions logistiques ont permis de répondre à nos objectifs. Un an après la promulgation de la PI, 3047 attestations ont été accordées aux infirmières, ce qui est inférieur aux cibles prévues (n?10000). L'absence de rémunération et la surcharge de travail sont des raisons évoquées par les infirmières pour ne pas demander l'attestation. Dans les territoires où les DSI ont mis en place des interventions pour améliorer le déploiement, on observe une plus grande proportion d'infirmières titulaires de l'attestation. Parmi les 3047 infirmières ayant l'attestation, moins de 20% se seraient prévalues de leur droit de prescrire. Les mêmes facteurs évoqués ci-dessus sont associés au fait qu'une infirmière n'ait pas encore fait de prescription. La crainte de générer des conflits avec les collègues s'ajoute aux facteurs limitant l'utilisation du droit de prescrire. Le règlement de la prescription infirmière s'inscrit dans une logique de transferts des tâches entre les professionnels pour améliorer l'accessibilité aux services ambulatoires. Plusieurs recommandations sortent de notre étude dont, entre autres, un plan de déploiement plus uniforme des DSI et une sensibilisation des professionnels au travail d'équipe.

Co-Author(s): Roxane Borgès Da Silva, Isabelle Brault, Aude Motulsky, Alexandre Prud'homme, Carl-Ardy Dubois

C2: HEALTH POLICY, HEALTHCARE REFORM, AND HEALTH ACCORD | POLITIQUES DE SANTÉ ET RÉFORME DES SOINS DE SANTÉ

The associations between e-cigarettes and binge drinking, marijuana use, and energy drinks mixed with alcohol

Presented by: **Sandra Milicic**, Postdoctoral Fellow, University of Waterloo

Use of e-cigarettes by youth is proliferating world-wide but little is known about the behavioural profile of youth e-cigarette users and the association of e-cigarette use with other health-risky behaviours. We examine the associations between e-cigarette use and tobacco, marijuana, and alcohol use among a large sample of Canadian youth. Using Canadian data from 39,837 grade 9 to 12 students who participated in Year 3 (2014-15) of the COMPASS study, logistic regression models were used to examine how current use of e-cigarettes were associated with tobacco, marijuana, binge drinking, and energy drinks mixed with alcohol. Pearson's chi-square tests were used to examine subgroup differences by sex. Overall, 9.75% of respondents were current e-cigarette users. Current cigarette smokers (OR 3.009), current marijuana users (OR=5.549), and non-current marijuana users (OR=3.653) were more likely to report using e-cigarettes than non-cigarette smokers and non-marijuana users. Gender differences among males and females showed higher risk of e-cigarette use among female current marijuana users (OR=7.029) relative to males (OR=4.931), and female current smokers (OR=3.284) compared to males (OR=2.862). Compared to non-binge drinkers, weekly (OR=3.253), monthly (OR=3.113), and occasional (OR=2.333) binge drinkers were more likely to use e-cigarettes. Similarly, students who consume energy drinks mixed with alcohol (OR=1.650) were more likely to use e-cigarettes compared to students who do not consume them. We identify that youth who binge drink or use marijuana have a greater increased risk for using e-cigarettes compared to cigarette smokers. These data suggest that efforts to prevent e-cigarette use should not only be discussed in the domain of tobacco control.

Co-Author(s): Sandra Milicic, Scott Leatherdale

A Policy framework for Marijuana Legalization (A Systematic review)

Presented by: **Siavash Jafari**, Physician, Vancouver Coastal Health

Currently, marijuana is considered an illegal substance in Canada and is only available for medical purposes. The main objective of this study is to review the available national and international policies and create a framework that assists policy makers with their decision making for legalization of marijuana in Canada. We conducted a systematic review of the published and gray literature that has investigated the marijuana policies. We used MeSH terms to search for peer reviewed articles, conference abstracts, organizational policies, and federal and provincial guidelines and policy papers that discuss marijuana legalization. Two independent researchers (SJ and PG) reviewed the titles of the available publications. Abstracts of the relevant publications were selected for in-depth review followed by the full text. Data was gathered to spread sheets. Narrative analysis was used to compare the available policies and their benefits and risks. Fifty two peer reviewed articles and government guidelines were included in the systematic review. Similar to any substances, illegality is causing more harm than substance. A range of approaches, from non-legalization to medicalization and full-legalization were identified. Potential benefits of marijuana such as reduction of anxiety, improvement of sleep, prevention of seizure and reducing pain levels and muscles spasms were reviewed. Adverse effects such as driving under influence, promotion of marijuana use, promotion of smoking, increased blood pressure, increased risks related to smoking during pregnancy and risk of psychosis have been discussed in the included literature. Policy approaches are grouped under five main categories: 1) licensing, 2) education, 3) legal requirements, 4) monitoring, and 5) product supply and approval. This framework helps policy makers/politicians to consider all aspects of the legalization of marijuana. When applied properly, such a framework reduces the burden on the societies and creates job opportunities and most importantly revenue for the government.

Co-Author(s): Siavash Jafari, Souzan Baharlou, Pooria Ghadiri, Nazila Hassanabadi, Ashkan Nasr

A review of public coverage of CDR reviewed drugs

Presented by: **Karine Landry**, Economic Analyst, PMPRB

This PMPRB study analyzes the coverage of drugs reviewed by the CDR across Canadian public drug plans, and examines both the number of drugs and the extent of reimbursement. The drugs reviewed by the CDR from December 2003 through June 2015, along with their listings as of December 2015, were obtained from IMS Brogan's iMAM and public formularies. The sales data for 2015 was retrieved from the IMS Brogan Private Drug Plan and IMS AG MIDAS™ databases. The coverage rates for 10 provincial drug plans and the NIHB were calculated as simple and weighted percentages of all select drugs. The analysis also includes an inter-jurisdictional comparison using simple agreement descriptive statistics. The CDR issued positive recommendations for 55% of the analyzed drugs, with provinces following the CDR recommendation in 78% of the cases. With sales weighting, most provinces listed all major drugs. An inter-jurisdictional comparison of all CDR drugs indicates medium to high rates of coverage agreement, ranging from 50% to 86% across all pairs of the public drug plans. When weighted by sales, the percentage of coverage agreements notably increases. The study results suggest a relatively high coverage and inter-jurisdictional agreement of the CDR drugs, and highlights differences across public drug plans. These findings are expected to inform policy discussions around a national formulary.

Co-Author(s): Nevzeta Bosnic, Karine Landry

Understanding the role of midwifery in Ontario's health system

Presented by: **Cristina Mattison**, PhD candidate, McMaster University

Despite the significant variability in midwifery across provincial/territorial health systems, there has been limited scholarly inquiry into whether, how and under what conditions midwifery has been assigned roles into Canada's health systems. Our study examines Ontario's response to maternity care needs in the context of broader efforts to transfer the province's system. We use Yin's (2014) explanatory single-case (embedded) study design, to qualitatively assess how, since the regulation of midwives in 1994, the Ontario health system has assigned roles to midwives as a service delivery option. The study focuses on two recent key policy directions (2014 creation of two midwifery-led birth centres and the 2015 primary care reform discussion paper by the Ministry of Health and Long-Term Care) that present opportunities for the integration of midwives into the health system. Key informants (n=18) were sampled purposively based on whether they have been involved in or affected by the policy directions. Our emerging findings suggest that while midwives, at the time of regulation, were created to be an autonomous profession, health-system transformation initiatives have restricted the scope of practice and integration of midwives into Ontario's health system. Birth centres have surprisingly introduced constraints to midwifery practice, including the capping the number of births attended by midwives at hospitals, as well as number of midwives able to hold hospital privileges. Primary care reform has failed to incorporate midwives as members of the primary care team. Ongoing analyses are examining the factors that explain these emergent findings. This will be the first study to explain why midwives have not been fully integrated into the Ontario health system as well as the limitations placed on their role and scope of practice. It builds a theoretical understanding of the integration process of healthcare professions within health systems.

Co-Author(s): Cristina Mattison, John Lavis, Eileen Hutton, Michael Wilson, Michelle Dion

C3: HEALTH SYSTEM PERFORMANCE | RENDEMENT DU SYSTÈME DE SANTÉ

Active change interventions to reduce low-value healthcare practices: a scoping review

Presented by: **Gillian Elliott**, PhD Student, University of Toronto

There is recognition that overuse of procedures, testing and medications strains the healthcare system financially and can cause unnecessary stress and harm for patients. The purpose of this scoping review was to identify and characterize studies that used an active change intervention to reduce or eliminate a low-value healthcare practice. Research suggests that passive interventions, such as the publication of guidelines, are often not sufficient to change behaviour and that active change interventions are required to implement significant, sustained practice change. We conducted a review of English articles using MEDLINE, EMBASE, CINAHL and Scopus databases using key search terms, including but not limited to de-adoption, de-implementation, low-value and Choosing Wisely. The database searches identified 977 articles (after duplicates were removed) for which the titles and abstracts were screened for inclusion; 39 items were selected for full text review. Twenty articles were excluded upon further review. Nineteen studies met the inclusion criteria. Sixty-three percent of the studies (n=12) reported a reduction in the target low-value practice. The majority of studies cited Choosing Wisely recommendations as the rationale for pursuing a practice change (n=16). Half of the studies reported on efforts to reduce low-value practices listed on the Choosing Wisely International Top 10 List. Two-thirds of the studies targeted diagnostic imaging or screening, and a third targeted therapeutic practices. The active change interventions used 14 different strategies to reduce low-value practices, with education the most commonly used, which were implemented at the individual and/or organizational level. Eleven studies employed single interventions and 8 studies employed multifaceted interventions. In eighty percent of the studies (n=15) interventions were targeted to change healthcare providers' behaviour. Our findings indicate that single, organizational level interventions and multifaceted interventions implemented at both the individual and organizational levels are most effective. Single interventions implemented at the individual level were least effective at reducing the target low-value practice. These results can provide insights for future primary research in de-implementation.

Co-Author(s): Gillian Elliott, Tim Rappon, Whitney Berta

Hospital characteristics and use of evidence-based discharge practices in Ontario, Canada

Presented by: **Jennifer Innis**, PhD Student, University of Toronto

The objective of this study was to examine the relationship of hospital size, teaching status and location with the use of evidence-based discharge practices based on Project RED (Re-Engineered Discharge). These practices are associated with improved patient and health system outcomes. Larger organizational size, teaching status and urban location have been associated with the increased use of evidence-based practices in health care organizations. A survey measuring the use of evidence-based discharge practices was administered to all 143 acute care hospitals in Ontario that have an inpatient medicine unit, and 79 hospitals responded (55% participation rate). Multiple regression analysis was used to examine the relationship between survey score and the hospitals' size (number of acute care beds), teaching status and location (region and rurality). Smaller hospital size was significantly associated with greater use of evidence-based discharge practices, and survey scores were found to be highest in the north region of the province, a largely rural area. A significant interaction was found between size and rurality. No relationship was found between teaching status and use of evidence-based discharge practices. There may be improved information continuity and sharing of resources between smaller hospitals in rural settings. In addition, it is possible that there are different relationships between hospitals and other health care settings, such as primary and long-term care organizations, in urban and rural regions. These are factors that may be associated with an increased use of evidence-based discharge practices. The use of evidence-based discharge practices was higher in small, rural hospitals and in the north region of the province. Future research into the reasons for these differences could offer insight into those factors that may influence use of evidence-based practices in hospitals.

Co-Author(s): Jennifer Innis, Jan Barnsley, Whitney Berta, Imtiaz Daniel

Streamlining the process of indicator development, maintenance and evaluation through the indicator lifecycle

Presented by: **Vanita Gorzkiewicz**, Program Consultant, Canadian Institute for Health Information

With rapid growth in health information, many organizations face challenges in keeping up and balancing the demands of regular reporting of health indicators and the development of new indicators. We have developed a standardized repeatable process for indicator development, maintenance and evaluation that can help streamline processes and decision-making. Building on long-standing structured approaches for indicator development, reporting and evaluation in health system performance, as well as an organizational consultation, we defined a lifecycle for an indicator, consisting of multiple iterative phases. Included in the overview of each lifecycle phase is the identification of key stakeholders, milestones, and decision points to guide the flow to different phases of the lifecycle. To ensure continuous reporting of "fit" indicators we also leveraged evidence-based criteria in our organization's information quality framework to identify relevant criteria applicable to each phase. Multiple iterative phases for the indicator lifecycle were identified including: methodology development and validation, result validation, calculation and maintenance, pre-release and client support, release and client support, and a key phase of evaluation to guide decision-making to develop new indicators and to maintain, redevelop or retire existing indicators. An additional resource aid with practical questions grounded in evidence-based criteria applicable to each indicator lifecycle phase was developed to help guide decision-making along the process. Reporting of indicators that potentially no longer (optimally) support improvements in health care, health system performance or population health can lead to indicator chaos. To help mitigate this issue, we will share the process for the lifecycle of an indicator that can be adapted for use by other organizations.

Co-Author(s): Vanita Gorzkiewicz, Chantal Couris, Farhat Farrokhi, Mary Elias, Tobi Henderson, Kira Leeb

Utilization of Licensed Practical Nurses in Alberta Health Services

Presented by: **Stephanie Hastings**, Senior Consultant, Alberta Health Services

The goal of the current study was to examine the roles and opportunities for Licensed Practical Nurses (LPNs) in different practice settings within Alberta Health Services (AHS). Specifically, we examined LPNs' utilization in emergency departments (EDs), mental health (MH) units, and labour and delivery (L&D) units. Phase 1 of the study, reported here, used staff and patient data from various data systems within AHS. We did descriptive analyses of the data to examine how LPNs are mixed with other staff and distributed across unit types, facilities, and AHS zones. We also examined the distribution of LPNs in relation to patient volume and workload and classified units with and without LPNs. For EDs, we also examined staffing in relation to Canadian Triage and Acuity Scale scores. Finally, we examined whether LPN staffing was correlated with staffing of other nursing and non-nursing providers. Slightly more than half (58%) of EDs had LPNs in their staff mix; LPNs represented 6.5% of all nursing full time equivalents (FTEs) and 5.1% of all provider FTEs. LPNs were almost evenly distributed between EDs with higher acuity (54%) and lower acuity (46%) patients. The majority (74%) of MH units had LPNs in their staff mix but LPNs accounted for only 9.7% of nursing FTEs and 7.6% of all provider FTEs. There was wide variation across zones in how LPNs were included in MH units and units with Health Care Aides tended to have fewer LPNs. LPNs were staffed on 58% of L&D units but made up only 2.5% of nursing provider FTEs. We could find no patient volume or acuity patterns to explain We found LPN staffing was inconsistent across zones and service types and patient intensity and acuity did not seem to factor heavily into staffing decisions. Our results suggest that other factors might have influenced decisions about whether to include LPNs in these units and further study is necessary.

Co-Author(s): Stephanie Hastings, Michelle Stiphout, Shelanne Hepp, Leah Phillips

C4: HOME CARE, LONG TERM CARE AND AGING | SOINS À DOMICILE ET DES SOINS DE LONGUE DURÉE

Validation of incident long-term care admissions in Ontario using administrative data

Presented by: **Nassim Mojaverian**, Methodologist, Institute for Clinical Evaluative Sciences (ICES)

This validation study evaluated algorithms based a combination of prescription drug claims and physician billings for determining admissions into publicly-funded long-term care (LTC) homes in Ontario prior to 2010, where there was an absence of longitudinal LTC data at the individual level. The analysis utilized health administrative data at the Institute for Clinical Evaluative Sciences (ICES). Prescription drug claims, physician billing, and LTC entry were obtained from the Ontario Drug Benefit (ODB) database, the Ontario Health Insurance Plan (OHIP) data, and the Continuing Care Report System (CCRS), respectively. The CCRS – the reference standard – contains records of LTC admissions/discharges, as well as comprehensive health assessments of residents in LTC homes from 2010 onwards. Various combinations of OHIP and ODB records (2012-2013) were validated against the CCRS. Performance measures included sensitivity, specificity, predictive values and proximity to the CCRS admission date. In 2012, 25 162 Ontarians over the age of 50 were admitted into LTC for the first time. The average age of the residents at admission was 83 years. The results from our preliminary analysis indicate the best performing algorithm uses 2 OHIP, 2 ODB, or 1 OHIP and 1 ODB claims that were no more than 365 days apart between any 2 codes (sensitivity: 99.3%, specificity: 98.8%). The validated algorithm identified fills an existing data gap by expanding our capacity to determine the incidence of LTC entry and examine the health care needs of new LTC residents prior to the introduction of the CCRS. Further analysis will use the validated algorithm to determine the health profiles of new LTC residents over 15 years (2000-2015). The validated algorithm will enable future researchers to examine LTC use and trends prior to the systematic collection of CCRS data. Our findings will also provide policymakers in Ontario with a better understanding of the trends in LTC utilization and the health care needs of new residents.

Co-Author(s): Nassim Mojaverian, Ryan Ng, Amy Hsu, Natasha Lane, Peter Tanuseputro, Walter Wodchis

Associations between organizational practices, work stress and health: Evidence from the survey of Ontario community personal support workers

Presented by: **Isik Zeytinoglu**, Professor of Management and Industrial Relations, McMaster University

A healthy workforce is crucial for providing good quality continued care in the community. Objectives of this study are to present evidence on the emotional and physical health of personal support workers (PSWs) in the community, and examine the associations between organizational practices, work stress, and PSWs' health. This study is based on our 2015 Ontario survey of PSWs employed in the community care (n = 1,746). Measures of dependent variables are self-reported health, emotional health (life stress), and physical health (musculoskeletal disorders (MSDs)). Organizational practices (full-time hours, guaranteed hours, and support at work), workers' preferences (for more, same, or less hours) and satisfaction (with work hours, schedule/shifts, amount paid, benefits) and work stress are independent variables. A number of demographic characteristics and work factors are included as control variables. Descriptive statistics, correlations and multivariate regression analyses are conducted. PSWs report excellent/very good or good health (94%); 22% consider their lives as stressful; and between 9-20% report pain or discomfort due to MSDs most or all of the time (with pain or discomfort in the neck or shoulder as the highest (20%)). Reporting on significant associations and controlling for demographic characteristics and work factors, results show that full-time hours is negatively associated with life stress and MSDs but not with self-reported health. Guaranteed hours is not associated with health. Support at work is negatively associated with life stress and MSDs. Work stress is negatively associated with self-reported health, and positively associated with life stress and MSDs. Preference for work hours, and satisfaction with schedule/shifts and amount paid are also associated with health. PSWs report good health but also life stress and MSDs. Organizational practices and work stress are significant contributors to these outcomes. Managers are recommended to pay attention to these factors to better facilitate PSWs health, and retain a healthy workforce for good quality continued care for the recipients.

Co-Author(s): Isik Zeytinoglu, Margaret Denton, Catherine Brookman, Sharon Davies, Firat Sayin

The Effects of Regulation on Quality: Evidence from the Nursing Home Industry

Presented by: **Meghan McMahon**, PhD candidate, Institute of Health Policy, Management and Evaluation, University of Toronto

Improving nursing home (NH) quality of care (QoC) is consistently identified as a top but challenging priority. Insufficient evidence exists about the effects of the most commonly used tool to ensure quality: government regulation. This study systematically reviews the empirical literature about the effects of government regulation on NH QoC. The review protocol was informed by a group of academics and decision makers with expertise in the areas of NH regulation, quality monitoring and reporting, and economics, and a search strategy was then developed with the help of a library scientist. Peer-reviewed papers on the effects of government regulation on NH QoC published between 1985-2016 were identified through searches of seven databases using MeSH and keyword terms related to nursing homes AND quality of care/quality of life AND government regulation. Articles deemed relevant for inclusion underwent systematic data extraction and were assessed for their methodological quality. Results are forthcoming and will be first presented at CAHSPR. Initial results indicate that: 1) the majority of evidence is from the US; 2) study designs and model specifications vary in their ability to identify causal relationships and minimize bias; 3) regulations more frequently target nurse staffing levels (e.g., minimum direct care staffing requirements) and process of care inputs (e.g., use of restraints, catheters, feeding tubs) rather than QoC outcomes (e.g., pressure ulcers, falls); 4) where outcomes are targeted they tend to focus on clinical outcomes more than quality of life or resident experience outcomes; 5) the effects of regulation are inconsistent across studies and quality measures; and 6) evidence of offsetting behaviour (e.g., diversion of efforts to measured quality, input substitution) is apparent. The design of effective regulation is acknowledged to occur in an iterative cycle of testing and refinement. Given the importance of providing high quality NH care and the widespread use of regulation as a tool to ensure quality is achieved, it is essential to have rigorous evidence about its effects.

Co-Author(s): Meghan McMahon, Walter Wodchis, Peter Coyte, Colleen Flood, Audrey Laporte

Impact of proximity as a factor in rates of transfers from long-term care homes to hospitals in Ontario

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

Transfers from long-term care (LTC) to acute care facilities can be costly to the healthcare system and a cause for emotional distress among elderly residents. This study aimed to investigate the proximity of acute care facilities to LTC homes as a potential predictor (among others factors) influencing patient transfer rates. Information on LTC homes was obtained from the Ontario Ministry of Health and Long-Term Care's directory of LTC homes, and hospitalization data was obtained from the Institute for Clinical Evaluative Sciences. The 6-month hospitalization rate following an incident LTC admission was derived from a prospective cohort of LTC residents (2010-2012). LTC homes and acute care facilities were subsequently tagged with geographic information systems (GIS) software (ArcGIS), where travel time and road distance between facilities were calculated. Multivariable regression models were used to determine the relationships between transfer rates and facility proximity, as well as other home and population characteristics. Small LTC homes (less than 100 beds) have a transfer rate that is approximately 10% higher than that of larger homes, despite having less access to acute care facilities (i.e., have a higher average distance to the nearest facility and averaging fewer facilities within 30 km by road). Small population centres have the highest transfer rates compared to both rural areas and larger population centres. LTC homes in more rural areas have more acute care facilities within 30 km than small or medium population centres, despite having a greater distance to the nearest facility. Non-profit LTC homes were found to have approximately 15% fewer transfers compared to the average in Ontario, despite having superior accessibility to acute care facilities as for-profit homes. We demonstrate variations in patient transfer rates based on LTC homes' proximity to acute care facilities, showing that shorter distances and travel times suggest lower transfer rates. These results provide insight into areas that may be underserved, as well as how to maximize the accessibility of new facilities.

Co-Author(s): Michael Ip, Peter Tanuseputro, Sarah Simpkin, René Duplain, Daniel Kobewka, Amy Hsu

C5: KNOWLEDGE TRANSLATION & EXCHANGE (INCLUDES KTE METHODS)
TRANSFERT ET ÉCHANGE DE CONNAISSANCES (COMPREND LES MÉTHODES DE TEC)

Knowledge broker mentoring program builds capacity for evidence-informed decision making in public health

Presented by: **Emily Clark**, Information Management Specialist, National Collaborating Centre for Methods and Tools

The National Collaborating Centre for Methods and Tools (NCCMT) has successfully piloted a 16-month mentorship program to provide public health professionals with the knowledge, skills and tools needed to act as knowledge brokers within their Health Department and advance the uptake and use of research evidence in public health practice. Senior management at each of five participating health units participated in a focus group that assessed the organizational culture in their health unit for evidence-informed decision making (EIDM) and identified targets for change to support EIDM. Five or six front-line staff from each health unit completed a 16-month curriculum. This included two in-person workshops at McMaster University at program initiation and at 6 months. Staff also participated in monthly webinars and monthly phone and email support with a senior knowledge translation expert. Finally, a practice-based issue was identified by each health unit and a rapid review conducted by the participants. Strategies to improve the support and use of EIDM at the organizational level were identified and implemented. Knowledge broker trainees completed an EIDM Skills Assessment prior to and upon completion of the curriculum. Changes in performance were analyzed using a paired t-test (non-parametric test, Wilcoxon Signed Ranks Test). A statistically significant increase in EIDM knowledge and skill was observed following the program ($p < 0.017$); specifically, statistically significant improvements were observed regarding interpretation of quantitative findings from single studies ($p < 0.001$) and meta-analyses ($p < 0.001$). Mentoring of knowledge brokers provides a statistically significant increase in skills for evidence-informed decision making in public health. This pilot program shows promise as an effective strategy to support and develop knowledge and skills in EIDM among public health professionals. Ongoing evaluation of this strategy is recommended.

Co-Author(s): Emily Clark, Maureen Dobbins, Donna Ciliska

Teasing apart 'the Tangled Web' of Influence of Policy Dialogues: Lessons from A Case Study of Dialogues About Health Care Reform Options for Canada

Presented by: **Gillian Mulvale**, Assistant Professor, Health Policy and Management, McMaster University

Our objective was to understand whether the intended capacity development effects of policy dialogues described in the literature were borne out in practice, based on a series of policy dialogues on health care reform in Canada, and if so, how enhanced capacities influenced participants' subsequent activities in the policy realm. We conducted a qualitative case study of four policy dialogues that were convened in 2011 among national, provincial and regional stakeholders on topics pertaining to health care financing and funding. Data sources included videos of participant perspectives recorded during or immediately following each dialogue and follow up key informant interviews among dialogue participants during 2015. Initial coding was based on a conceptual framework that relates dialogue features to the development of participant capacities in the short term, and organizational and health systems capacities over the medium and long terms for evidence-informed policy-making. The framework was extended based on emergent themes. The findings suggest a 'tangled web' of mechanisms by which capacities developed by policy dialogue participants may influence subsequent policy development as well as possible barriers and facilitators. In the short term, discussion of ideas, including policy problems and their framing as well as potential solutions may influence the problem definition and agenda-setting stages of policy making. In the medium term, better engagement of senior leaders, positioning of the options that are up for discussion and creating excitement around a policy problem can help to draw attention to the issue. Over the longer term, dialogue attendance can create a more cohesive policy community, encourage policy-relevant research, and the development of new knowledge exchange approaches can support policy implementation and evaluation. Policy dialogue planning should consider the stage of the policy cycle, the characteristics of the organization (skilled managers, change champions, staff stability) and political context (will for reform, leadership) to assess the potential for knowledge exchanged at the dialogue to influence policy development, particularly in the decentralized Canadian context.

Co-Author(s): Gillian Mulvale, Sandra Milicic, Samantha McRae

Positive and negative behaviours in workplace relationships: A scoping review

Presented by: **Joan Almost**, Assistant Professor, School of Nursing, Queen's University

1) To provide results from a synthesis of the vast amount of literature from many disciplines examining behaviours in workplace relationships. 2) To provide practical information to inform policies, education program development, and interventions in the workplace for dealing with issues and challenges regarding workplace behaviours. A scoping review was conducted using the methodological framework developed by Arksey and O'Malley. In collaboration with knowledge users, an overall research question was used 'What is known about the positive and negative behaviours of workplace relationships?' A literature search was conducted using selected electronic databases from 2000 to 2015. Inclusion criteria were primary studies, all settings, all research designs, coworker-to-coworker behaviours and English language. Data was analyzed using a descriptive and thematic analysis. The descriptive numerical analysis described characteristics of included studies. The thematic analysis provided an overview of the breadth of the literature. A total of 19,601 citations were screened. Of the 1,933 studies reviewed for full-text screening, 372 were included in the review. One hundred and fifty-three studies had taken place in healthcare settings and 219 studies in non-healthcare settings. Quantitative designs were used most frequently in the included studies. Forty behaviours specific to co-worker workplace relationships were identified with 20 positive and 20 negative behaviours. The most frequently studied positive behaviours were social support, organizational citizenship behaviour, mentoring, and helping. The most frequently studied negative behaviours were conflict, bullying, incivility and horizontal violence. Hundreds of antecedents and outcomes emerged with conceptual inconsistencies and conflicting results. A number of potentially useful instruments were found, and only 30 studies had evaluated an intervention. Engaging in teamwork requires a clear understanding of the behaviours that act as facilitators and barriers to effective workplace relationships. This synthesis is a critical step for policymakers and leaders to effectively use what is known thus far, enabling them to more effectively manage and reduce corrosive behaviour and increase collaborative behaviour.

Co-Author(s): Joan Almost, Angela Wolff, Sheri Price, Barbara Mildon, Christina Godfrey, Amanda Ross-White, Sheile Mercado-Mallari

Intervention Mapping as a Planning and Improvement Tool for Provincial Knowledge Translation Consultation Services

Presented by: **Kelly J. Mrklas**, PhD Trainee, University of Calgary

Evidence-informed knowledge translation (KT) consultation within the healthcare system requires the consistent availability of consult-applicable knowledge; however, such evidence is scarce. This study used evidence from a previous barrier-facilitator-context assessment to build an evolving program-level adaptome (Chambers & Norton, 2016) for planning, quality improvement and KT strategy development. A previous barrier-facilitator-context assessment (n=100 KT consultations) was used to map theory-based domains and intervention functions (Theoretical Domains Framework; Michie and Consolidated Framework for Implementation Research; Damschroder). A dictionary of potentially relevant, evidence-based intervention strategies was developed to address barriers, facilitators and consider context. Consultations were examined and strategies mapped by case, on individual and group levels, as appropriate. A modified APRAISE (Michie) assessment was used to identify strategies of potential fit, and the dictionary was synthesized thematically, to inform program development. A comprehensive supports assessment was not undertaken. Consultations comprised service and research activity (n=100) and barrier-facilitator codes spanned the theoretical domains (n=290 barriers, n=550 facilitators). A full 75% and 97% of consults were associated with more than one barrier and facilitator, respectively. A third of coded barriers focused on context/resources and knowledge issues, generating an intervention map focused on training, environmental restructuring and enablement strategies (e.g. knowledge brokering, changes in scope/nature of benefits and services, formal integration of service, leadership and financial parameters), and population-specific education interventions. There was high overlap between the top 5 barrier-facilitator categories, revealing opportunities for tactical strategy mapping (e.g., in environmental restructuring, enablement, education, modeling, and persuasion). Among facilitators, social roles and influences were prominent, and intervention strategies to lever peer and professional influences were identified. Findings demonstrate use of a theory-driven, evidence-based approach to case- and program-level KT consultation assessment in a provincial healthcare system. Findings will be integrated into research, training and consult service tactics and will guide program improvement. Future research should include systematic assessment of interventions and their adaptations to elaborate the adaptome.

Co-Author(s): Kelly J. Mrklas

C6: MATERNAL AND CHILD HEALTH | SANTÉ MATERNELLE ET INFANTILE

Manitoba First Nations Indicators of Well-being for Early Childhood Development

Presented by: **Venkata Ramayanam**, Statistical Analyst, Nanaadawewigamig

First Nations well-being has been measured against Western Canadian standards, such measures of progress counted First Nations as “deficit white people”. Manitoba First Nations (MFNs) developed their own community-based indicators of change through workshops guided by the MFNs advisors, leadership and Elders in discussions about "We are Who We are". Based on these early discussions MFNs developed their own Indicators of Wellbeing moving away from a silo program and policy approach to seeking overall wellness of communities, families and individuals. The regional component of the Regional Early Childhood Development, Education and Employment Survey (REEES) was used to test the MFN wellbeing measures. Questions were developed to measure the following indicators of wellbeing: Independence and Inter-dependence, Governance, Economic Development, Lands, Waters, Environment and Identity, Identity and Language, Housing, Lifelong Learning and Quality of Life. The MFN indicators of wellbeing were based on Positive, Goal Orientated, Community Based; and Culturally Rooted and Relevant to create change based on the strengths of who we are as the original peoples of these lands and territories within Turtle Island. Data collection was by 95 First Nations data collectors who were hired and trained to conduct interviews in 35 MFNs. Collectively they interviewed 3837 MFNs who live on reserve, achieving 82.2% of our targeted sample within 35 MFNs. The presentation will focus on responses provided by the 1396 parents who were interviewed on behalf of their child under the age of 12 years old. The indicators of wellbeing that include the many SDoH and the insistance by MFN that indicators are culturallyrooted and include strength based measurements. Such measurements would empower our MFNs working from the strength of First Nations identity, toward closing the gap between between First Nations SDoH and the rest of Canada.

Co-Author(s): Leona Star, Kathi Avery-Kinew, Venkata Ramayanam

Children born to mothers with diabetes in pregnancy in Manitoba: Long term educational outcomes.

Presented by: **Chelsea Ruth**, Assistant Professor in Paediatrics and Child Health Section of Neonatology, University of Manitoba, Manitoba Centre for Health Policy

It is becoming clear that diabetes in pregnancy (DIP) leaves a legacy on the fetus. There are higher rates of neonatal and childhood morbidity, including worsened developmental and cognitive outcomes in children exposed to DIP. Our hypothesis is that exposure to DIP will negatively affect education attainment in the offspring. Using population-based, de-identified, linked administrative databases, 2 cohorts of children were categorized into those exposed to pre-pregnancy diabetes (PGD) or gestational diabetes (GDM). Multiple databases were used to construct outcomes including grade 12 graduation (G12G) rates and acceptable grade 9 achievement (G9A), as well as to correct for social and medical confounders. Cases were matched 1:3 by birth year, gender and gestational age with controls. Children were excluded if they died, emigrated, or attended school on a First Nations reserve. Multivariate logistic regression was used to determine the association between in utero diabetes exposure and G12G rates and G9A. The exposure rates to PGD and GDM were 475 and 982 per 100 000, respectively. The model size varied slightly by outcome and diabetes type but contained 5197-13796 students. Over 80% of PGD exposure was to type 2 diabetes. An association between G12G rates and exposure to GDM (OR, 0.70 [95% CI, 0.62-0.79]), and PGD (OR, 0.57 [95% CI, 0.47-0.69]) was seen. An association between G9A and exposure to GDM (OR, 0.75 [95% CI, 0.68-0.83]), and PGD (OR, 0.78 [95% CI, 0.66-0.92]) was also seen. The predicted probability of G12G was 86% for PGD and 87% for GDM compared to control rates of 91% and 90% respectively. The predicted probability of G9A was 73% for PGD and 66% for GDM compared to 77% and 72% in controls. There was an association between exposure to either PGD or GDM and lower grade 12 graduation rates and lower grade 9 achievement. It is critical to optimize the educational outcomes of these children to promote upward social progress and to break the cycle of poverty, social isolation and detrimental health outcomes.

Co-Author(s): Kyle Millar, Chelsea Ruth

Evaluation of a school-based visual screening program for kindergarten children

Presented by: **Mayu Nishimura**, Director of Research, Kindergarten Vision Screening Program, The Hospital for Sick Children

About 10% of kindergarten children have undetected refractive errors and 3-5% need treatment to prevent amblyopia - the number one cause of blindness. In many jurisdictions, there is no universal screening to detect these problems. We evaluated a school-based program for kindergarten children in 28 schools in Ontario. Using the five best evidence-based tools that are appropriate for children age 3-6 years, in Study 1 we measured visual acuity, stereovision, binocular alignment, and refractive error. Screening took 10-15 minutes per child. Any child who did not pass all 5 screening tests were referred for an optometry exam by a licensed optometrist at school, with a parent/guardian present. If glasses were needed, they were dispensed at no cost. 2529 kindergarten children were screened. In Study 2, we compared the number of glasses prescribed through our program to the status quo. Data were analyzed using descriptive measures. 45% of the children passed screening and 55% were referred for optometry exams. For the referred children, 83% of parents consented to the in-school optometry exam. Most (80%) parents who opted out indicated that the child had already seen an eye doctor. 9% of the screened children were discovered to have amblyopia risk factors (of which 5% were newly discovered) and 6% to have significant refractive errors (of which 4.6% were newly discovered). Results from Study 2 revealed that more children were wearing glasses at the end of the school year in schools where we offered our screening program (56 students, a 300% increase from September counts) compared to control schools that did not receive our program (20 students, a 33% increase) Both studies suggest that a school-based vision screening program can be effective in detecting eye problems that might otherwise be missed in children before Grade 1, when reading becomes increasingly important for academic success. Challenges to, and strategies for, scaling the program to universal coverage will be discussed.

Co-Author(s): Mayu Nishimura, Daphne Maurer, Agnes Wong

Parents' willingness to pay for pediatric weight management programs

Presented by: **Olivier Drouin**, Research Fellow, Harvard-wide Pediatric Health Services Research Fellowship

Understanding parents' willingness to pay (WTP) for pediatric weight management programs could help inform implementation and funding for such programs. We aim to determine the extent to which parents are willing to pay for pediatric weight management programs and explore factors influencing their decision. Participants were parents of 2-12 year-olds with BMI >85th percentile who participated in the Connect 4 Health randomized trial that included two interventions arms: enhanced primary care (EPC) vs enhanced primary care + individualized health coaching (EPC+C). At 1-year follow-up, we assessed parental WTP out-of-pocket for a similar program by self-report. We used multivariable log binomial regression to examine differences by intervention arm and explore individual and family-level factors associated with WTP. Among parents willing to pay, we used multivariable linear regression to evaluate the effect of those same factors on the amount they were willing to pay per month. Of the 721 participants enrolled in the trial, 636 (88%) parents responded, and 38% were willing to pay for the program (31% for EPC vs. 45% for EPC+C). In multivariable models, EPC+C parents were more likely to endorse WTP than EPC parents (Odds Ratio [OR] 1.38; 95% CI: 1.13, 1.69). Parents "very/somewhat satisfied" with either program (v. "very/somewhat dissatisfied"; OR: 6.68; 95% CI: 2.56, 17.42) were also more likely to endorse WTP. Children's baseline BMI z-score (p=0.74), amount of 1-year BMI z-score change (p=0.49), or other socio-demographic factors were not associated with WTP. Among the 240 parents willing to pay, the median (interquartile range) amount they would pay was $25/month ($20-50) and there were no significant differences between the intervention arms or other covariates. Parents were more likely to endorse WTP for a pediatric weight management program that included individualized health coaching. Parental satisfaction with the program and Hispanic race/ethnicity were strong predictors of WTP, whereas baseline BMI, household income, and amount of BMI change were not.

Co-Author(s): Olivier Drouin, Mona Sharifi, Monica Gerber, Christine Horan, John Orav, Elsie Taveras

C7: MENTAL HEALTH | SANTÉ MENTALE

Mothers' Care-Seeking Journeys for Daughters with Depression

Presented by: **Sarah Gallant**, Graduate Student, University of Prince Edward Island

The objectives were to explore Atlantic Canadian mothers' experiences seeking mental health care and support for their adolescent daughters' depression, to illustrate the power dynamics that mothers face in the system while seeking care, and to understand how support for mothers of youth with depression can be improved. The depression care-seeking journeys were depicted through the narratives of seven mothers whose eight daughters accessed the provincial mental health system and obtained a diagnosis of depression. Qualitative semi-structured interviews and visual patient journey mapping methods guided data collection and analysis to assist in understanding mothers' experiences in the mental health system, education system, and family life. The interview transcripts and journey maps were analyzed using narrative and thematic analysis, where narrative summaries and theme webs were created and analyzed in combination with the participants' journey maps. The three overarching themes in the care-seeking journeys were marginalization and loss of control, becoming empowered, and hope for the future. Participants' narratives and visual maps displayed fragmented journeys and exemplified power struggles in their interactions with people in the mental health system, education system, and family life. Examples of marginalization and loss of control included receiving blame, being ignored, and lacking support and guidance. Examples of becoming empowered included questioning professional treatment, educating and advocating for daughters, and understanding daughters' mental health needs through experience. The final theme of hope for the future consisted of mothers' main recommendations for improving and facilitating depression care-seeking journeys through the system. The depression care-seeking journeys of mothers and daughters in Atlantic Canada could be improved by enhancing the continuity of mental health care, increasing collaborative team-based supports within and between systems, and strategizing quality mental health education and accessible service navigation resources for parents, educators, and health providers.

Co-Author(s): Sarah Gallant, Kate Tilleczek, Brandi Bell

To everything there is a season: Child, Adolescent and Adult Psychiatric Admissions to Hospital in New Brunswick (2004-2014)

Presented by: **David Miller**, Doctoral Student, University of New Brunswick

The primary objective of this study was to identify seasonal variations in mental health-related hospitalizations by children and adolescents from 2004-2014 using administrative health data from New Brunswick, Canada. Hospital admission records from January 2004 to March 2014 were sourced from the New Brunswick version of the Discharge Abstract Database (DAD). Seasonality was measured using a cosinor model to estimate the peak, amplitude and phase of seasonal variations in psychiatric admissions over the 12-month period from January-December for children and adolescents (3 to 19 years of age), and adults (20 years and older). We adjusted for the average number of days per month and provincial population counts using offsets in the general linear model. Data were modelled using the season package in R. Between 2004 and 2014, there were 57,730 mental health-related hospital admissions by 41,690 patients. Psychiatric admissions by children and adolescents (aged 3-19) increased from 44 admissions per 100,000 in 2004 to 51 admissions per 100,000 in 2014. . The opposite trend was observed for adults 20 years and older that decreased from 465 admissions per 100,00 in 2004 to 325 in 2014. The results of the cosinor model indicated that child, adolescent and adult psychiatric admissions per 100,000 exhibited significant seasonality (p<.025). The highest rates of child and adolescent admissions were in February (phase=2, amplitude=4.4) whereas adult admissions to hospital peaked in early May (phase=5.3) with an amplitude of 9.7. The results of this study indicate that hospital admissions by children, adolescents and adults are highly variable by season. We found that psychiatric admissions to hospital peaked in the winter months for children and adolescents, whereas admissions by adults were the greatest in the spring (May and June).

Co-Author(s): Amanda Slaunwhite, Scott Ronis, David Miller, Paul Peters

Youth Journeys in Mental Health

Presented by: **Kate Tilleczek**, Scientific Director, Young Lives Research Laboratory

In this presentation, we will share early learnings from a longitudinal study on youth mental health in Atlantic Canada, specifically addressing how qualitative and arts-based research methods are being employed to engage young people and families in conversations to inform youth mental health research, policy, and action. Atlantic Canada Children's Effective Service Strategies in Mental Health (ACCESS-MH) is a 5-year research study, funded by the Canadian Institutes of Health Research. It aims to deepen understanding of child/youth mental health in Atlantic Canada. Grounded in critical ethnography and Complex Cultural Nesting theory, we incorporate visual mapping and photo-elicitation into in-depth interviews with children/youth (identifying with depression, anxiety, eating disorders, conduct disorders, or autism spectrum disorders), parents (of children/youth identifying with a mental health challenge), and service providers (medical and community) engaged with the youth mental health and associated systems. Our findings suggest that family, peer, and community members play key roles in youth journeys and create communities of support for youth as they access and navigate care. However, even with these supports in place many youth continue to struggle. Journeys often become fractured and many youth fall through the cracks. Navigation of this system is complex, and a detailed literacy of both overt and covert pathways to care are often necessary. Our arts-based patient journeys approach provides a way to engage participants and give emphasis to these often long and complex stories of struggle; helping to understand issues such as service coordination, wait times, stigma, and spaces for families, schools, and mental health professionals to support youth's journeys of recovery. Patient journeys and arts-based research methods are important tools for improving understanding of youth mental health from the perspectives of those most affected. Learning from those with lived experience will better address mental health system issues.

Co-Author(s): Kate Tilleczek, Brandi Bell, Matthew Munro, Sarah Gallant

Narratives of Barriers and Facilitators in the Treatment of Youth Anxiety

Presented by: **Matthew Munro**, Graduate Research Associate, University of Prince Edward Island

This presentation discusses the implications of youth mental health journeys research. The primary objective of this work is to explore how youth with anxiety disorders have experienced treatment in the mental health system in Atlantic Canada, and how youth perspectives can inform mental health research. Data was collected as part of the Atlantic Canada Children's Effective Service Strategies in Mental Health (ACCESS-MH) study. Semi-structured qualitative journey interviews were conducted with youth aged 13-18 who have been diagnosed with anxiety disorders and have sought treatment. The research explored how participants experienced barriers/facilitators accessing services and being treated in the system. The interview analysis was grounded in critical ethnography to study how social, political, and economic systems impacted youth journeys. The design of the study promoted youth voice with the infusion of patient perspectives in qualitative health systems research. Participants identified barriers/facilitators at personal and systematic levels that acted as a barrier or facilitator in different circumstances. Key themes were therapeutic relationships, medicalization, wait times, and being treated in schools. Journeys were complex and participants highlighted bureaucratic barriers that impacted their treatment. Participants often did not feel the system responded appropriately to the critical and sensitive nature of their needs. There were communication barriers with mental health providers where youth voices felt marginalized, issues around trust, and confusion regarding the appropriateness of some treatment options. Many participants felt stuck in the margins and did not know if they were sick enough to access services. These themes represented the paradoxical struggles youth faced when being treatment in the mental health system. Youth negotiate treatments through complex networks and require more support when navigating the system. Providers, researchers, and policy makers should consider youth perspectives when making informed decisions for mental health interventions and service design. This work raises concerns regarding equity and accessibility when treating youth anxiety disorders.

Co-Author(s): Matthew Munro, Kate Tilleczek, Brandi Bell

C8: PATIENT ENGAGEMENT | PARTICIPATION DU PATIENT

Early patient and public engagement strategies in the Community Assets Supporting Transitions study: Building a foundation for collective impact

Presented by: **Rebecca Ganann**, Postdoctoral Fellow, McMaster University

Engagement of older adult patients, caregivers, and communities is a critical foundation for successful tailoring and implementation of the Community Assets Supporting Transitions (CAST) intervention study. This presentation will frame CAST's early engagement strategies within the context of the study's broader collective impact model (collaborative partnerships in research). The CAST study will examine implementation and impact of a hospital-to-home support program for older adults with depressive symptoms and multimorbidity. Early engagement activities involved hosting community forums and meetings with key informants in three diverse Ontario communities. Across sites, these activities engaged over 70 community members including patients, caregivers, service providers, administrators, community agencies, and advocacy groups. These early engagement activities helped identify local hospital-to-home transitional care issues. A Patient and Public Engagement training workshop was also held to inform engagement efforts and develop shared understanding of effective patient and public engagement strategies amongst CAST's academic and patient/caregiver co-researchers. CAST's early engagement activities have established a foundation for the next steps in our collaborative patient-oriented partnership model, which will involve adapting, implementing, and testing a community-based transitional care intervention in three communities. The community forums and key informant meetings provided valuable insights into existing gaps, burden, opportunities, and local issues related to hospital-to-home transitional care for older adults. Engagement of patients/caregivers helped to adapt the intervention and ensure a patient-centred lens to meet the needs of CAST's target population. Many of the community forum participants have committed to ongoing engagement in subsequent study phases. Strategies to engage and support patients/caregivers in the research process will be tailored to individual needs. A comprehensive patient engagement strategy will support implementation, evaluation, and scale-up of the intervention. Early patient and public engagement in CAST has provided valuable insight into existing community assets, gaps, and local contexts, which are necessary for subsequent study implementation. Early partnership building is critical to engage study communities in CAST's collective impact model and understand factors influencing successful implementation of the CAST program.

Co-Author(s): Rebecca Ganann, Carrie McAiney, Maureen Markle-Reid, Ruta Valaitis, Jenny Ploeg, Agata Drozd, Kristina Chang, Gail Heald-Taylor, William Johnson, Lawrence Ogden, Patricia Reid

Patient and Public Engagement Evaluation Toolkit

Presented by: **Audrey L'Espérance**, Manager, Partnership Lab, Centre of Excellence on Partnership with Patients and the Public

This project has 3 main objectives: 1) to review existing evaluation instruments to assess public and patient engagement (PPE) in health research and health-system transformation; 2) to produce a PPE evaluation toolkit; and 3) to identify gaps that can lead to develop a common research and evaluation agenda. Using the critical interpretive synthesis method, we searched the published and grey patient and public engagement literature with a focus on original, review articles of empirical studies of evaluations (and evaluation tools) and and background papers offering critical discussions of key evaluation tools that pertain to the field of PPE in health research and health-system transformation. Covering all available years from 1980 to June 2016, we conducted an electronic literature search of all major databases without any language restriction. Inclusion and exclusion criteria were defined by a steering committee and used for data extraction and anlysis. A consensus building exercise helped identify needs and gaps. More than 10 569 hits were classified, 554 articles/webpages were analyzed, 51 tools were found, 29 were included as responding to all inclusion/excusion criteria and 12 were excluded but indexed on a second list. Data extraction made possible three main observations that fostered much discussion among the 30 participants the consensus building exercise (among them 14 patients). First, the majority of tools are not founded on a clear evaluation approach or PPE conceptual framework. Second, very few instruments show the patient/public and professionnal perspectives in relation to one another, and/or were developed by/with patient(s)/public members. Finally, from the list of excluded tools, most were not specifically oriented towards the evaluation of PPE participation (e.i. stakeholders), or specifically developed for the health domain, while proving to be useful to a broader conversation about the science and practice of PPE. This Toolkit provides not only an exhaustive list of evaluation tools, but also recommendations about strengths, weaknesses and most appropriate use of each evaluation instruments to facilitate the decision-making process of SUPPORT Units guiding PPE initiatives across Canada. We also documented the gaps and the needs that can lead to develop a common research/evaluation agenda.

Co-Author(s): Audrey L'Espérance

The research interests of those with lived experience of depression

Presented by: **Ping Mason-Lai**, Associate Director, Alberta SPOR SUPPORT Unit, Patient Engagement Platform

The Alberta Depression Research Priority Setting Project was a collaborative process to engage patients/persons with lived experience, carers, and clinicians/researchers as partners to create a Top-10 list of depression research questions most relevant and important to those dealing with depression. Meaningful engagement and partnership were critical to the project: The Steering Committee was comprised of patients/persons with lived experience, carers, and clinicians/researchers. They designed and implemented a survey that sought the input of Albertans with experience of depression; the survey collected questions that Albertans believe need to be focused on by mental health research. After the survey closed, the Committee then themed and sorted all the responses. A literature review was conducted to highlight under-researched areas. The questions that warrant further investigation went through a two-step prioritization process modelled after the James Lind Alliance methodology. Over 900 questions were submitted by Albertans. The majority were well-conceived, thoughtful, and intentional, demonstrating that persons with lived experience can be engaged in the research process as more than subjects of research. Some themes that emerged were: treatment (methods, options, access); biology/physiology (heritability, recovery); and age- specific (child/youth behaviour, education). 920 questions were reduced through several prioritization stages. The first stage involved reduction by the Steering Committee to a Top-30 list. Additional stakeholder perspectives were solicited in an all-day workshop to reach a Top-10 prioritization of depression research questions. The Top 10 will be utilized by several organizations: the Addictions and Mental Health Strategic Clinical Network, Alberta Health Services and the Canadian Depression Research Intervention Network. Patients/persons with lived experience bring thoughtful and important insights to the research team. This project provided evidence that engaging patients/persons with lived experience as collaborators or partners is beneficial for patient-oriented research. Priority setting is an effective method of patient engagement.

Co-Author(s): Ping Mason-Lai, Lorraine Breault, Katherine Rittenbach, Sharon Unger, Kelly Hartle, Scot Purdon, Ashton Michael, Catherine DeBeaudrap, Yamile Jasaui, Emily Ardell, Brad Necyk, Lorin Vandall-Walker, Ginger Sullivan, Robbie Babins-Wagner

Patient Preferences and Perceived Utility of Incidental Genomic Sequencing Results

Presented by: **Chloe Mighton** , Research Assistant , St. Michael's Hospital

Guidelines recommend clinicians inform individuals of their incidental results (IR) when having genomic sequencing (GS) to diagnose their diseases or target their treatments. Policy-makers are grappling with how to value the array of IR. We describe patient preferences and perceived utility of learning their IR to inform health technology assessment. Semi-structured interviews were conducted with 15 breast and colon cancer patients (53% female; 73% >age 50) who took part in usability testing of a decision aid (DA) designed to assist with the selection of IR. 6/15 participants had previously undergone genetic testing. Patients selected from 5 categories of incidental results that were defined as either medically actionable or not. Content analysis was used to analyse the data. Transcripts were coded for categories and themes within and across interviews. Initial codes were derived from topics explored in the interview guide; constant comparison allowed novel codes to emerge from the data. After using the DA, participants were enthusiastic towards GS testing and IR. Indeed, all participants chose to receive some IR; 13 participants selected at least three of the five categories of IR. They expressed an inherent value in learning IR, primarily to inform their disease prevention or treatment. Even when considering IR about diseases without known preventions or treatments, participants believed this information would encourage them take actions to slow or delay onset of disease. Participants also valued learning IR to benefit their relatives' health and to inform their families' future financial or reproductive planning. Although, all participants were in favour of GS, several participants expressed concerns regarding the potential risks associated with learning of their IR, specifically, insurance issues and/or psychosocial concerns. Despite this small sample size, results reveal patients' enthusiasm for receiving IR. Patients applied broader definitions of medical actionability than medical experts, reflecting a key divergence in valuing this incidental information. These findings have implications for clinicians and policy-makers about the expected return and anticipated use of IR from GS.

Co-Author(s): Yvonne Bombard , Marc Clausen , Chloe Mighton , Lindsay Carlsson , Selina Casalino , Emily Glogowski, Kasmintan Schrader, Adena Scheer , Michael Evans , Jada Hamilton , Kenneth Offit , Mark Robson, Nancy Baxter, Kevin Thorpe , Jordan Lerner-Ellis , Andreas Laupacis

C9: PRIMARY HEALTH CARE | SOINS DE PREMIÈRE LIGNE

The Implementation of An External Audit and Feedback Program in Team-Based Primary Care Practices in Ontario – Lessons for Design and Execution

Presented by: **Daniel Wagner**, Student, University of Calgary

In 2014, the Association of Family Health Teams of Ontario launched Data to Decisions (D2D) as a change management strategy to advance manageable meaningful measurement in primary care. One goal was to enable local quality improvement. This study evaluated how teams implemented D2D as an Audit and Feedback program. To recruit family health teams for interviews, criterion sampling was implemented to ensure variation in setting, teaching status, roster size and patient complexity. Qualitative data were collected using semi-structured in-depth interviews, informed by the Consolidated Framework for Implementation Research (CFIR). Questions explored rationale for participation in D2D. In addition, questions elicited details regarding the barriers and facilitators to using the initiative to support quality improvement efforts. Interview transcripts were analyzed deductively to specific CFIR constructs, which were subsequently used to unearth key themes associated with participation and implementation. Of the 184 eligible teams in Ontario, 120 were participating in D2D by February 22nd, 2016. Interviews were completed with 25 key informants, including executive directors, from 18 family health teams across Ontario. Participation was facilitated by existing relationships between AFHTO and the participants and was primarily associated with the perception that D2D would evolve into the gold-standard for A&F in primary care. Teams successfully implemented the audit processes and reviewed and discussed the feedback, however this did not lead to commensurate quality improvement efforts. Thus, D2D could be characterized as an incomplete feedback loop. Key reasons for this result included: i) a resource intensive audit process and ii) the strength of the relationship between the physicians and organizational administrators among other factors. Consistent with A&F literature, the successful implementation of the audit process and results discussions yielded no impact on quality improvement efforts. CFIR provides one approach to understand how well and why initiatives are reaching their goals. Addressing identified barriers and completing the feedback loop will enhance the program's value proposition.

Co-Author(s): Daniel Wagner, Noah Ivers, Janet Durbin, Jan Barnsley

CERVICAL CANCER SCREENING AMONG WOMEN FROM MUSLIM-MAJORITY COUNTRIES IN ONTARIO, CANADA

Presented by: **Aisha Lofters**, MD PhD CCFP, St. Michaels Hospital/ Department of Family and Community Medicine, University of Toronto /Dalla Lana School of Public health

Immigrant women are less likely to be screened for cervical cancer in Ontario. Religion may play a role for some women. We used country of birth as a proxy for religious affiliation and examined screening uptake among foreign-born women from Muslim-majority versus other countries, stratified by region of origin. In this population-based retrospective cohort study, we linked several provincial databases housed at the Institute for Clinical Evaluative Sciences. We identified all women eligible for cervical cancer screening between April 1, 2012 and March 31, 2015. Women were classified into region of origin based on country of birth. For women who were born in South Asia, the Middle East & North Africa, Eastern Europe & Central Asia, Sub-Saharan Africa, and East Asia & the Pacific, countries were classified as Muslim-majority (50% or more of the country's estimated 2010 population identifying as Muslim) or not. We found that being born in a Muslim-majority country was significantly associated with lower likelihood of being up-to-date on Pap testing, after adjustment for region of origin, neighbourhood income, and primary care-related factors (adjusted relative risk 0.93 [95% CI 0.92-0.93]). Sub-Saharan African women from Muslim-majority countries had the highest prevalence of being overdue for screening (59.6%), and the lowest adjusted relative risk for screening when compared to their peers from non-Muslim-majority Sub-Saharan African countries (ARR 0.77 [95% CI 0.76-0.79]). Other factors independently associated with screening for women in our study population included neighbourhood income, immigrant class, having a family physician, sex and region of training of the family physician, and primary care model. We have shown that being born in a country where the majority of citizens identify as Muslim is associated with a decreased likelihood of being up-to-date on cervical cancer screening in Ontario. Future research should explore this relationship in a culturally safe manner and using more individual-level data sources.

Co-Author(s): Aisha Lofters, Mandana Vahabi, Eliane Kim

Relationship between Family Physician Retention and Avoidable Hospitalization in the Province of Newfoundland and Labrador: a population-based cross-sectional study

Presented by: **John Knight**, PRIIME Newtork Epidedmiologist, Primary Healthcare Research Unit

Physician turnover, involving a physician leaving clinical practice in a specific area, may disrupt continuity of care leading to poorer health outcomes and greater healthcare utilization. The aim of the current study was to investigate the relationship between family physician retention and avoidable hospitalization. A population-based cross-sectional study was conducted involving linkage and analysis of provincial health administrative data for residents of the province of Newfoundland and Labrador (NL) holding a provincial health card between 2001 and 2009. Individuals migrating outside or within the province were excluded from analysis. Five-year family physician retention was calculated by regional economic zone (EZ) and aggregate retention scores were assigned to individuals based on postal code of residence. Individuals were divided into tertiles based on retention level. Multi-variate negative binomial regression was used to compare hospitalization rates for ambulatory-care-sensitive conditions (ACSCs) among retention tertiles while adjusting for covariates. There was an inverse relationship between family physician retention and ACSC hospitalization where individuals with lower retention had higher hospitalization rates. Individuals residing in areas with moderate physician retention had a 28.0% higher hospitalization rate for ACSCs compared to areas with high retention [rate ratio (95% confidence interval)]: 1.280 (1.243-1.332), while those residing in areas with low retention had a 35.2% higher hospitalization rate for ACSCs [rate ratio (95% confidence interval]: 1.352 (1.303-1.403). The relationship was attenuated but still significant when analysis was limited to seniors and when controlling for number of family physicians per capita. Higher family physician retention is associated with reduced hospitalization for ACSCs when controlling for other factors affecting hospitalization. This is consistent with physician turnover acting to disrupt continuity of care, resulting in higher hospitalization rates. Findings are of interest to clinicians and decision-makers seeking to design cost-effective primary healthcare interventions.

Co-Author(s): John Knight, Maria Mathews, Kris Aubrey-Bassler

Improving the timeliness of information generated from administrative databases to enable quality improvement in primary care

Presented by: **Wissam Haj-Ali**, Senior Methodologist , Health Quality Ontario

Administrative databases used to generate audit and feedback reports are not timely enough to support quality improvement. The objective of this work was to improve the timeliness of data that is currently presented to primary care physicians and administrators across Ontario, to better inform quality improvement efforts and ultimately improve patient care. Using a two-staged approach, we assessed the feasibility of using quarterly instead of annually refreshed data from the Discharge Abstract Database (DAD) and National Ambulatory Care Reporting System (NACRS) databases, in an attempt to produce timelier primary care performance data. First, we verified data source completeness by comparing data in annual versus quarterly refreshed records, from both the DAD and NACRS databases, for the time period of April-September 2014. Next, we computed physician-specific rates for hospitalisation and emergency department indicators using both the annual and quarterly data. Finally, we calculated the percent difference between the quarterly and annual results. When comparing quarterly to annual DAD records, the results showed 98.8% and 99.5% completeness for the second and third quarter data feeds respectively. For NACRS records, we observed 99.6% and 99.9% completeness for the second and third quarter data feeds respectively. For hospitalization using DAD records, when compared with rates computed using the annual data, 96.8% of physicians had the same rate when using the second quarter data feed and 99.1% had the same rate when using the third quarter data feed. For non-urgent ED visits, using NACRS records, when compared with rates computed using the annual data, 89.8% of physicians had the same rate when using the second quarter data feed and 95.5% had the same rate when using the third quarter data feed. This work reduced administrative data lag from one year to six months, allowing timelier audit and feedback information provided back to primary care physicians/ administrators. This advancement is considered a step forward towards using administrative databases to produce timely information that can drive primary care improvement and better patient care.

Co-Author(s): Wissam Haj-Ali, Michael Campitelli , Maria krahn , Jonathan Lam , Gail Dobell, Chloe Banach

C10: ACCESS & EQUITY | ACCÈS ET ÉQUITÉ

'Index Angiogram' recipient trends among Status First Nations people and all other Manitobans

Presented by: **Annette Schultz**, Associate Professor, College of Nursing, Faculty of Health Sciences, University of Manitoba

Amidst reported disparities of coronary artery disease incidence among Indigenous People, this study explored cardiac health services use of Manitoba 'Status FN people' (FN) and all other Manitobans. Specifically, demographic and comorbid trends were investigated for Manitoban adults (18+) in each group who received an 'index angiogram' during 2000 – De-identified, individual-level health services use data held by the Manitoba Centre for Health Policy were analyzed. An angiogram was identified as an "index" investigation when it was the patient's first angiogram in at least 365 days. In addition, among those receiving an index angiogram, rates of hospitalization with an AMI during the 7 days prior to their index angiogram were calculated for each group and each year from 2000-2009. Descriptive analysis of demographic, urban vs rural residency, socio-economic status and Charlson comorbidity index are presented by group for Manitobans who received an index angiogram during the combined years 2000-2009. During 2000–2009, the rate of FN people who received an index angiogram was 0.27% versus 0.33% ($p < 0$ .001) of non-FN Manitobans. Yearly rates ranged between 0.23% and 0.31% for FN people, and 0.31% - 0.34% for all others. Of the index angiogram recipients, the overall rate of those hospitalized with a diagnosis of AMI during the 7 days prior was FN=28.75% and all others=24.95% (p=0.0061); yearly rate ranges were: FN = 18.71% to 33.17% and all others = 16.93% and 34.08%. The descriptive analysis revealed that FN people were significantly younger; 56.25 vs 63.76 years (p<.0001), and were significantly sicker at time of receiving an index angiogram as indicated by their Charlson index scores; mean score 1.32 vs 0.78 (p<.0001). FN were younger and sicker at time of index angiogram; yet, higher rates of non-FN received this service. Also, FN were more likely to receive an index angiogram as part of urgent versus planned cardiac services. Findings extend our understanding of the nature and scope of FN cardiac service utilization.

Co-Author(s): Annette Schultz, Elizabeth McGibbon, Jarvis Brownlie, Catherine Cook, Lindsey Dahl, Alan Katz, Thang Nguyen, Jo Ann Sawatzky, Moneca Sinclaire, Karen Throndson, Randy Fransoo

The Integration of Gender Sensitivity in Health Human Resources Planning, Development and Management: A Systematic Review

Presented by: **Nour El Arnaout**, Research Assistant, American University of Beirut

The objective of this study is to systematically review approaches to integrate gender sensitivity into health human resources (HHR) planning, development and management in healthcare settings and to identify major barriers for its implementation. Eligible studies addressed any type of information on promoting gender equity between male and female health human resources working in healthcare settings. The search strategy covered several databases including: PubMed, MEDLINE, EMBASE, CINAHL, Sociological Abstracts, Scopus and the Cochrane Library databases. Two reviewers completed in duplicate and independently the processes of study selection, data abstraction, and assessment of methodological features. The review included 11,029 citations, after which rigorous screening identified 72 eligible papers. The most common types of study design included quantitative studies (50%) and reviews (18.09%). Least common were intervention and evaluation studies (5.56%). Majority of studies originated from the USA (61.11%), Japan (8.33%) and England (6.94%). The most studied health professional groups were physicians (34.72%). Investigated themes included family-work balance (55.56%), mentorship (45.83%) and work schedule/working hours (44.44%). Only a quarter of the studies suggested actionable recommendations at the institutional and individual levels, incldiung: ensuring pay equity, enhancing female recruitment, providing equal opportunities for promotion and advancement and building leadership efficacy among female HHR. Proactive approaches were the least identified including ensuring gender equity through workforce planning (8.33%) and creating gender sensitive organizational cultures (5.56%). Evidence-based integration of gender sensitivity into HHR planning and management requires learning from experiences. Expanding the geographic and professional scope (to nurses and other health professions) of studies is necessary. Enhancing the methodological rigor and focusing on proactive approaches must also be supported.

Co-Author(s): Mohamad Alameddine, Nour El Arnaout, Rana Chehab

Values and Health Systems Stewardship in Circumpolar Countries

Presented by: **Susan Chatwood**, Executive and Scientific Director, Institute for Circumpolar Health Research

The objective of this study was to explore and describe the national and indigenous values that underlie and direct effective health systems stewardship in circumpolar countries including the United States, Canada, Finland, and Norway. We explored the health system values in circumpolar nations to gain perspectives on the underpinning of good stewardship within nations, and the comparability between nations. First we reviewed national acts and multinational forums representative of four circumpolar nations (United States, Canada, Norway and Finland) and secondly where gaps exisited in representation of indigenous values an dperspectives, we used a mixed methods consensus process with indigenous knowledge to identify indigenous values in these nations. The method is built on the principles of Etuaptmumk or two-eyed seeing, which included indigenous ways of knowing and the scientific inquiry process to informs the research process. Through the mixed methods participatory process of consensus-building, nine indigenous values were identified and described: humanity, cultural responsiveness, teaching, nourishment, community voice, kinship, respect, holism and empowerment. National policy documents reviewed lacked value statements, instead the focus was on goals that represented undefined values. Some value statements were found in national documents that arose from health and policy forums such as comissions. These value statements were found to align well with the indigenous values as described. There is an ongoing need to understand how indigenous values align with national values and stewardship functions. This will inform how we might improve health systems responsiveness and performance in an indigenous context and advance national goals of improving efficiencies, population health and system performance.

Co-Author(s): Susan Chatwood

Prevalence and Determinants of Antidepressant Use in Ontario: a Population-based, Retrospective Cohort Study

Presented by: **Kednapa Thavorn**, Scientist, Ottawa Hospital Research Institute

The number of antidepressant prescriptions has increased steadily over the last decades. Previous studies showed inconclusive evidence regarding the association between socio-demographic status and antidepressant use. This study was conducted to determine the annual prevalence and predictors of antidepressant use from 2009 to 2014 in the province of Ontario, Canada. We conducted a retrospective population-based cohort study of 4,065,077 Ontario residents who actively receiving publicly-funded drug prescriptions. We identified all antidepressant prescriptions from January 1, 2009 to April 30, 2014. An index event was the date of the first antidepressant prescription on or after January 1, 2009 for anti-depressant users. For non-users, the index event was defined as the first prescription date during the accrual period. All factors associated with anti-depressant use were determined at the time of the index prescription event. A descriptive analysis was performed. Mixed logistic regressions were used to assess the predictor of antidepressant use. From 2009 to 2014, the annual prevalence of antidepressant use increased from 25.4% to 30.9% for the < 6 5 cohort and from 19.7% to 21.2% for the 65+ cohort. Selective serotonin reuptake inhibitors remained the most popular drug class prescribed. Results of the regression analysis showed that greater antidepressant use for both age groups was statistically associated with older age, female sex, increased number of drugs prescribed in a previous year, history of mood disorder, or living in rural area. Living in the area with the largest proportion of recent immigrants was associated with the lowest odds of antidepressant use for both age groups. Long-term care residents aged 65+ had a 3.01 [95% CI: 2.99-3.01] increased odds of being anti-depressant users as compared to non-LTC populations. During a 5-year period, antidepressant use has risen steadily for younger and older populations in Ontario, highlighting improvement in detection and access to treatments of depressive disorders. However, antidepressant use varied across socio-demographic and economic factors. Future studies should assess whether antidepressant use is appropriate especially in long-term care residents.

Co-Author(s): Kednapa Thavorn, Christina Catley, Alan Forster

C11: CHRONIC DISEASE MANAGEMENT/PRIMARY HEALTH CARE
GESTION DES MALADIES CHRONIQUES/SOINS DE PREMIÈRE LIGNE

Validated Case Definitions using Linked Electronic Medical Record (EMR) and Administrative Databases: a systematic review

Presented by: **Stephanie Garies**, Research Associate / PhD Student, University of Calgary

As large, linked health data become more widely used for research and health system improvement, it is important to classify disease cases accurately and efficiently. The purpose of this systematic review is to identify validated case definitions available for use in health databases linked with electronic medical record data. A systematic review was conducted through searches in MEDLINE Ovid, PubMed and EMBASE for studies published between 1970 and 2015. The search included studies that reported on a computerized case definition for a specific disease/illness for use in linked administrative data sources and primary care electronic medical records (EMRs), and reported validity metrics (i.e. sensitivity, specificity, positive predictive value). Abstracts and full-text articles were screened by two independent reviewers. The quality of each study was evaluated using a modified version of the QUADAS tool (used for assessing quality in primary studies of diagnostic accuracy). Our search strategy identified 2669 citations, of which 16 studies were include in the final systematic review. The majority were published between 2012-2014 (56%) and all were located in the United States in various settings (i.e. managed health organizations, federal health service). A total of 14 acute and chronic conditions had case definitions identified, with multiple definitions for diabetes (n=3) and hepatitis B (n=2). All studies used International Classification of Disease version 9 (ICD-9) codes as criteria for the case definition; many also included laboratory values and medications. The majority of studies used positive predictive value (PPV) to assess validity (94%). Studies were found to be of good or very good quality (69%), though case definitions could have been reported in more detail to facilitate replication. This review provides a reference source for case definitions together with their performance metrics and can identify gaps where new or improved case definitions are needed. However, generalizability is limited due to variable quality of constituent studies and the fact that they derived from American health system databases.

Co-Author(s): Stephanie Garies, Paul Ronksley, Cord Lethebe, Kerry McBrien, Hude Quan, Tyler Williamson

Does prompt receipt of a discharge note by a patients' family physician reduce the rate of readmissions and emergency room visits?

Presented by: **Liisa Jaakkimainen**, Scientist, ICES

The objectives of this study were to determine whether the receipt of a discharge note by a patients' family physician (FP) within 3 days, within 30 days and over 30 days after being discharged from hospital are associated with readmissions/emergency room (ER) visits. A retrospective record linkage study in Ontario of FP electronic medical record (EMR) data called the Electronic Medical Record Administrative data Linked Database (EMRALD). All medical and surgical inpatient visits for EMRALD patients over 18 years of age were included. Pregnancy-related admissions were excluded. The EMR discharge notes were extracted from their FPs EMR. Readmissions/ER visits were identified in health administrative data. For EMRALD patients hospitalized in 2012/13, the proportion having a discharge note received by their FP within 3 days, within 30 days and over 30 days was calculated. Bivariate analyses examined these proportions by patient and physician factors. For the 10,397 hospital discharges, there were 489 (4.7%) discharge notes received by the patient's FP within 3 days of discharge and 1558 (15.0%) notes within 30 days of discharge. Of the 489 admissions with a note received within 3 days there were 112 (22.9%) hospital readmissions/ER visits. The odds ratios when adjusted for patient (age, sex, socioeconomic status, comorbidities and location) and provider (age, sex and primary care group) factors for the receipt of a discharge note was 1.1 [0.88, 1.38] for less than 3 days, 1.38 [1.18, 1.53] for within 30 days and 1.21 [1.06, 1.36] for greater than 30 days. A well-coordinated primary care system is associated with high patient and provider satisfaction, good health outcomes and potentially lower health care costs. While prompt receipt of a note was not associated with readmissions/ER visits, delayed or no receipt of a note is associated with readmission/ER visits.

Co-Author(s): Liisa Jaakkimainen, Hong Lu, Bogdan Pinzaru, Hannah Chung, Jacqueline Young, Karen Tu

Aggressive chronic disease management program reduces mortality, morbidity and service use in Peripheral Artery Disease patients

Presented by: **Randy Fransoo**, Researcher, Manitoba Centre for Health Policy

Peripheral artery disease (PAD) is increasing in prevalence, and carries significant risks for amputation, heart disease and stroke. The objective of this study was to evaluate the effectiveness of an aggressive health maintenance program for reducing health service use, amputations, and mortality. This study used a combination of data sources: a detailed clinical database of patients involved in the program was linked into the individual-level, de-identified Data Repository housed at the Manitoba Centre for Health Policy. "Intention to treat" and "as treated" groups were compared to matched controls to assess program effectiveness. Changes in intermediate outcomes were assessed using the program database; other outcomes were identified in administrative data. Rates of physician visits, hospitalizations, days used, and prescription drug use were compared using Poisson models. Major lower limb amputations and mortality were analyzed by Cox proportional hazards regression. Program participants had significantly better intermediate and long-term outcomes. Blood pressure levels, statin usage, antiplatelet therapy and ankle-brachial indices were all significantly improved ($p < 0.05$). Program participants were less likely to start Dialysis (0.6% vs 2.2%; $p < 0.0002$), hospitalized less frequently (378 vs 416 per 1000 person-years; $p < 0.0001$), and for shorter stays when hospitalized (3.7 vs 5.4 days, $p=0.0014$). Their adjusted mortality rate was significantly lower than the control group (aHR = 0.79; $p < 0.0001$). Amputation rates also appeared to be lower, but this difference did not reach statistical significance (aHR = 0.85; $p = 0.31$). The program's aggressive management of risk factors resulted in significantly better intermediate and long-term patient outcomes. It was also associated with lower rates of health service use. Savings from reduced hospital usage alone would cover the cost of program operations, but have not provided sufficient motivation to continue the program.

Co-Author(s): Randy Fransoo, Sebastian Launcelott, Carole Taylor, Asad Junaid

C12: PHARMACEUTICAL POLICY / POLITIQUE PHARMACEUTIQUE

A Systematic Review of Cost-Related Medication Nonadherence in Canada

Presented by: **Anne Holbrook**, Director, Division of Clinical Pharmacology & Toxicology, McMaster University

Our objective in this review was to summarize the literature evaluating cost-related nonadherence (CRN) in Canada – its prevalence, predictors, and effect on clinical outcomes. Canada's patchwork coverage of increasingly expensive outpatient drug therapies may lead to CRN, which has been associated with adverse clinical outcomes. This systematic review was designed to adhere to PRISMA guidelines. We searched Embase, Medline, Google Scholar, and the Cochrane Library databases from 1992 to Feb 2016 for original data related to at least one of the three objectives. Where multiple countries were involved in a study, inclusion required ability to separately identify data from Canadian patients or citizens. Articles were screened and full text reviewed in duplicate. Data were extracted on study design, population, sample size, CRN-related definitions, outcome measures, results and statistical analysis. Quality ratings used GRADE criteria of within-study risk of bias, directness of evidence, heterogeneity, and precision of effect. Of 119 articles identified by the literature search, ten studies (n = 229,907 unique individuals) were eligible for inclusion. Overall GRADE quality was low due to observational designs, risk of bias in all studies, and indirectness of evidence in several. Data from six studies reported on the overall prevalence of self-reported CRN, which ranged from 5.1 % to 15%. Predictors of CRN, self-reported in four studies and inferred by before and after cost-sharing policy change analyses in four studies, included out of pocket spending, low income, young age, chronic illness, financial burden, and insurance type. One study on the impact of cost sharing in Quebec suggested that CRN was associated with a small increase in serious adverse events in both elderly patients and welfare recipients. Our systematic review suggests that CRN affects a significant number of Canadians, predictors tend to be financial and the specifics of public drug plan insurance rules impact CRN. However, the association with clinical outcomes is uncertain and high quality evaluations of interventions to alleviate CRN are needed.

Co-Author(s): Anne Holbrook, Michael Law, Darcy Ellis, Emily Wilton, Winnie Chan, Zoe Yen-Chen Fu

Understanding cost-related non-adherence to prescription medicines over time from the patient's perspective

Presented by: **Laurie Goldsmith**, Assistant Professor, Simon Fraser University

While prior work has indicated that cost-related non-adherence (CRNA) to prescription drugs exists for many Canadians, we know little about the experience of patients who report CRNA. We conducted the first (to our knowledge) qualitative examination of CRNA to provide an in-depth understanding of this phenomenon from the patient's perspective. Twenty-eight adults with experience with CRNA were recruited from Vancouver and Toronto. We conducted two semi-structured, in-depth interviews with each participant, with Interview 2 occurring approximately six months after Interview 1. Participants were purposefully recruited through posters in community and health care settings, and online and newspaper advertisements. Our initial sampling criteria used key characteristics previously found to influence CRNA; we refined our purposeful sampling criteria as we learned more about CRNA from the patient's perspective. We used our CRNA typology developed through framework analysis from earlier work on this project to characterize each individual's experience over time. Most changes in patients' CRNA experiences between interviews resulted from one or more changes in a patient's drug insurance coverage, financial flexibility, the drug cost burden on an individual's budget, and the importance of the drug from the patient's perspective. Some reasons for changes in patients' calculus around their CRNA experiences included qualifying for increased insurance coverage, additions to insurance plan formularies, increased income, dependents gaining financial independence, more affordable medication substitutions or receiving medication samples, and health improvements. Other changes in CRNA experiences resulted from patients finding ways of obtaining medicines outside of the patient-provider relationship, such as using pills from another person's prescription. Most individuals who continued to report CRNA in Interview 2 reported CRNA for the same drug(s) as in Interview 1. Using our CRNA typology across time broadens and deepens our understanding of CRNA from the patient's perspective. Changes in CRNA experiences over a six-month window of time happen for multiple reasons and reflect patients' complicated calculus involving decisions that extend far beyond health.

Co-Author(s): Laurie Goldsmith, Ashra Kolhatkar, Dominic Popowich, Anne Holbrook, Steven Morgan, Michael Law

The Impact of an Income-based Deductible on Drug Use and Health Care Utilization in Older Adults

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

Income-based deductibles are present in several Canadian public drug plans, and have been the subject of extensive debate. However, we have limited rigorous information on their impact. Therefore, we studied the impact of the deductibles used in British Columbia's Fair PharmaCare program on drug utilization and health resource utilization. We used a quasi-experimental regression discontinuity design to study the impact of BC rules that impose no deductible on older community-dwelling adults born before 1939, compared to a 2% of household income deductible to those born after. We used 1.2 million person-years of data between 2003 and 2015 to study public drug plan expenditures, overall drug use, and physician and hospital utilization above and below this threshold. Income-based deductibles led to 28.6% fewer adults receiving public drug plan benefits (95%CI: -29.7 to -27.5), and reduced the per capita extent of annual benefits by $206 (95%CI: -$247 to -$163). Despite this difference in public subsidy, we found no difference in total drug spending and number of drugs received once privately paid amounts were included (p=0.82 and p=0.44, respectively). Further, we found only small or non-existent changes in hospital or physician use at the threshold. Modest, income-based deductibles considerably impacted the extent of public subsidy for prescription drugs. However, we found that it had only a trivial impact on overall access to medicines and use of other health services. Unlike co-payments, modest income-based deductibles may safely reduce public spending on drugs for some population groups.

Co-Author(s): Michael Law, Lucy Cheng, Heather Worthington, Muhammad Mamdani, Kimberlyn McGrail, Fiona Chan, Sumit Majumdar

The Financial Burden of Prescription Drugs for Neurological Conditions in Canada: Results from the National Population Health Study of Neurological Conditions.

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

The specific objective for this study was to explore the perspectives of key stakeholders on the availability of and access to prescription drugs for neurological conditions in Canada. We conducted semi-structured qualitative interviews (n=180) with health care professionals (39%, n=70); community-based non-health care professionals (47%, n=85), policy-makers at the federal, provincial and regional levels (14%, n=25) across Canada to understand the existing health and community service needs for individuals with neurological conditions and their family members/caregivers; and the perceived health system level facilitators and barriers in the management of these conditions in Canada. Data analysis involved an iterative constant comparative process with descriptive analyses. The analysis revealed three primary themes related to the availability of and access to prescription drugs to treat neurological conditions. First, we learned that across Canada there is significant vulnerability and a need for advocacy on behalf of people living with these conditions. Second, we learned that the heightened level of vulnerability and need for advocacy stems in part from the significant differences in the drug coverage available in the different provinces and territories. As a result, there are significant inequities across Canada. Third, we determined that the existing situation is also due to the current approach to health governance (i.e., accountability, transparency). Our study highlights that there are substantial inequities in the availability of and access to prescription drugs for people with neurological conditions across Canada. The inequities identified placed significant burden on persons with neurological conditions, caregivers, health care professionals and community organizations to advocate for increased access.

Co-Author(s): Sara Guilcher, Sarah Munce, James Conklin, Tanya Packer, Molly Verrier, Connie Marras, Tarik Bereket, Joan Versnel, Richard Riopelle, Susan Jaglal

Day 2: Thursday, May 25 / Jour 2: Le jeudi 25 mai

Presentations are listed in the language in which they will be presented
Les exposés seront inscrits au programme dans la langue de leur presentation

10:15 - 11:30 AM CONCURRENT SESSION D

D1: ECONOMIC ANALYSIS OR EVALUATION / ANALYSE OU ÉVALUATION ÉCONOMIQUE

Measuring Equality in Ontario Healthcare Spending
Presented by: **Saad Rais**, Senior Methodologist, Ministry of Health and Long-Term Care
The Gini Coefficient (GC) is typically used as a measure of income inequality in a population. We explored the GC as a viable measure of equality in healthcare spending across LHINs in Ontario. The Gini Coefficient (GC) for healthcare expenditures and funding per capita was calculated and plotted (via a Lorenz curve), using fiscal year 2014 data. Expenditures were obtained through an internal data file that unifies patient costs from every provincially-funded healthcare sector. Funding information was extracted from the Ministry of Finance's public accounts data. For expenditures, the GC was primarily calculated at the LHIN of residence level, and secondarily at the sub-region and patient level. For funding, the GC was calculated at the LHIN of service level. The GC for sector-specific expenditures was also explored. The GC for expenditures at the LHIN level was 0.09, demonstrating strong equality of expenditures per capita across LHINs. At the patient level, the GC was 0.87, showing a highly dispersed expenditure distribution, a result consistent with studies on high cost users. The GC for funding was 0.21, indicating a modest equality of funding across LHINs. The GC was also calculated to measure equality across LHINs in terms of other characteristics, such as immigrant status, and diabetes prevalence. The GC for the immigrant and diabetes populations was 0.11 and 0.09 respectively, both exhibiting strong equality. For sector-specific expenditures, the GC was highest in mental health (0.29) and complex care (0.28), and lowest in primary care (0.04). The GC illustrates high level of equality in health care expenditures across LHINs. High level of inequality in healthcare expenditures at patient level reflects varied healthcare needs across individuals. Some inequality in distribution of sector-specific expenditures by LHIN may reflect concentration of specialized services in the province.
Co-Author(s): Saad Rais, Kamil Malikov

Canadian costs and quality of life associated with different measures of rheumatoid arthritis severity
Presented by: **Jean-Eric Tarride**, Associate Professor, McMaster University
To fill a gap in the literature, the objectives of this study were to determine health-related quality of life (HRQoL) and costs associated with different levels of rheumatoid arthritis (RA) severity in Canada. Data on HRQoL, healthcare resource utilization and productivity losses were collected as part of 2-year double-blind randomized trial conducted at 6 rheumatologist's practices at McMaster University. Severity of RA was evaluated using the Disease Activity Score (DAS-28-4-ESR) and the Health Assessment Questionnaire (HAQ). HRQoL was measured using the Health Utility Index Mark 3 (HUI) and the EQ-5D. Direct and indirect costs were valued in 2016 dollars. Multiple imputations were used for missing data. Between September 2009 and March 2011, 158 patients (mean age: 57 years; 68% female; mean duration of RA: 5.3 years) contributed to the study for a total of 790 observations over time. The baseline mean DAS-28-4-ESR and HAQ scores were 4.3 and 1.1, respectively, indicating moderate disease severity. HRQoL decreased with disease severity while total costs increased with RA severity. For example, the mean HUI score was 0.829 for patients in remission compared to 0.437 for patients with severe RA as evaluated with DAS-28-4-ESR. The mean 6-month direct and indirect costs were $3,410 for patients with remission and $4,105 for patients with severe RA. Similar trends were observed when using the HAQ. The results of this study provides, for the first time, costs and HRQOL per RA disease severity.
Co-Author(s): Jean-Eric Tarride, James M. Bowen, Robert B. Hopkins, Natasha Burke, Daria O'Reilly, Jonathan D. Adachi

Cost-effectiveness of Housing First for high-need homeless people with serious mental illness : Results from the At Home/Chez Soi Randomized Trial
Presented by: **Eric A Latimer**, Professor, McGill University
Scattered-site Housing First (HF) is an evidence-based intervention to help homeless people with mental illness quickly find an apartment and then meet other goals. It is considered a key intervention in programs to address homelessness. We report the results of the first cost-effectiveness analysis of this intervention. The At Home/Chez Soi study recruited 950 high-need homeless individuals with serious mental illness between October 2009 and June 2011 in Vancouver, Winnipeg, Toronto, Montreal and Moncton. Participants were randomly assigned to receive scattered-site HF with Assertive Community Treatment (ACT) or treatment as usual (TAU). Residential stays, service use and income sources were ascertained from participant self-reports at 3- or 6-month intervals for up to two years. Days in stable residence were used as the outcome measure. Analyses were carried out from a societal perspective. Cost-effectiveness was assessed using the net benefit framework, with multiple imputation to address missing data. Unadjusted for baseline differences between HF and TAU groups, the average annualized difference in costs including intervention costs between HF and TAU groups varied by site, from $21,814 (95% CI: $14,642, $30,900) to -$2,084 in Toronto (-$18,174, $14,623). On average across sites, each additional day stably housed using HF cost an additional $74.93 (95% C.I.: $36.58, $115.97). The cost-effectiveness acceptability curve indicates that a decision-maker needs to be willing to pay up to about $87 per day stably housed for the intervention to have an 80% chance of being cost-effective. Although higher functioning and absence of hospitalization or incarceration history were associated with higher net benefit, no baseline characteristic that we tested predicted greater cost-effectiveness, regardless of willingness-to-pay. Averaging across all cities, scattered-site HF was cost-effective when the decision-maker was willing to pay about as much more per additional day stably housed as a day in transitional housing. In this sense, it can be viewed as cost-effective. Individual characteristics were not associated with higher or lower cost-effectiveness.
Co-Author(s): Eric A Latimer, Zhirong Cao, Daniel Rabouin, Angela Ly, Guido Powell

D2: HEALTH POLICY, HEALTHCARE REFORM, AND HEALTH ACCORD
POLITIQUES DE SANTÉ ET RÉFORME DES SOINS DE SANTÉ

Sharing a solution to a common problem: comparing centralized waiting lists for unattached patients in primary healthcare in six Canadian provinces

Presented by: **Mylaine Breton**, Assistant Professor, Universite de Sherbrooke

Many jurisdictions are working to reduce the number of unattached patients (i.e. without a primary care provider).Centralized waiting lists are one solution to help unattached patients connect with a primary care provider.Our objective is to compare the different models of centralized waiting lists for unattached patients implemented in 6 provinces. We compared the centralized waiting lists' logic of intervention. To build each logic model, the grey literature was reviewed and 3 to 9 semi-structured interviews with key stakeholders of the centralized waiting lists were conducted, for a total of 28 interviews. Documents and interview transcriptions were coded using NVivo software with a codebook made up of the logic model components. Then, logic models were created for each province and validated by key stakeholders of the centralized waiting lists. Finally, cross-case (inter-provincial) analysis was performed by comparing the different logic models. The models of centralized waiting lists varied considerably among the provinces analyzed. All provinces, except British Colombia, had a provincially centralized registration.Also, all provinces, except Manitoba, had put in place financial incentives to encourage family physicians' participation. In New Brunswick, new family physicians must take 600 patients from the centralized waiting list in their first year of practice. The prioritization process varied among provinces: in Quebec, Ontario and Manitoba, it was based on a health assessment whereas prioritization was based on chronological in New Brunswick and Prince Edward Island. In all provinces except Quebec, patients could be attached to nurse practitioners. In February, a symposium is organized to bring together researchers and key stakeholders to share the logic models and discuss lessons from each province. Because unattached patients are more likely to have unmet needs and to use services inappropriately, solutions implemented to promote attachment have the potential to improve health systems.Centralized waiting lists are therefore important mechanisms and by comparing different models, our findings may help provinces learn from each other and identify improvement

Co-Author(s): Mylaine Breton, Sara krindler, Jalila Jbilou, Sabrina Wong, Audrey Vandesrasier, Mélanie Ann Smithman, Jason Sutherland, Valorie A. Crooks, Jay Shaw, Astrid Brousselle, Damien Contandriopoulos, Michael Green

Toward a better dialogue between the policy and managerial levels of Quebec's healthcare system in times of reform: what about the in-between capacity?

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

We described the alignment of views and capacities of the managerial level with policy intention and aspiration, through the implementation of Quebec community based primary health care (CBPHC) integrated care initiative for elders. The study was conducted in the context of a massive restructuration (2015) in the Quebec's healthcare system. We conducted multiple case studies exploring the challenges face by organizations in the implementation of the CBPHC model for senior care, in three different regional Integrated Health and Social Services Centers in Quebec. We focus our analysis on four institutional work performed within organizations: conceptual, structural, operational and relational work. Data was collected through thirty-nine semi-structured interviews with key informants at the policy and managerial levels, and we also relied on secondary data (documents, evaluation reports, etc.). Data were analyzed using a conceptual Model of Forms of Institutional Work in the Enactment of Policy Reform (Cloutier et al., 2015). Results show that there seems to be a gap between a vision of service integration promoted by policy actors based on structural integration, compared to a vision based on collaboration among partners promoted by managers. Unshared vision creates a tension between prescribed modes of organizing by the central government, and desire to develop local arrangements to better adapt to regional and local contexts and contingencies. Indeed, models of organizing promoted by the Ministry of Health is divergent with the needs for operational adaptation to regional and local contexts, which reduces managers autonomy, while increasing their workload and performance expectations. The relative absence of relational capacities between these two levels of governance is a critical barrier to build a convergent vision and leadership to support CBPHC. In a reform that includes, both the integration of governance structures and care services, our findings suggest that mediating mechanisms between central and local governance should be developed to consider the need for adaptive capacities in different territorial contexts. Management team-based networks and feedback mechanisms emerge from our empirical study.

Co-Author(s): Élizabeth Côté-Boileau, Maxime Guillette, Jean-Louis Denis, Yves Couturier, Mylaine Breton, Louise Belzile

Managing the Tensions of Whole System Change Through a Partnership of Health Authority, Physicians, and Communities

Presented by: **Martha MacLeod**, Northern Health-UNBC Knowledge Mobilization Research Chair, University of Northern British Columbia

British Columbia's Northern Health Authority (NH) is leading a process of whole system change in partnership with physicians and communities. The objective is to examine how the partners work together, through the challenges and inherent tensions, in creating and scaling-up NH-wide integrated, patient centred, primary healthcare (PHC). A longitudinal, multiple case study approach was used to examine how NH and its physician and community partners are attempting to undertake whole system change. Data consisted of 250 semi-structured interviews regionally and within communities over three years along with NH documents such as meeting minutes and evaluations of implementation initiatives. Thematic analysis was undertaken to understand, in depth, the process of developing integrative PHC approaches and to identify strategies in working through the challenges encountered in changing multi-dimensional systems. Research findings, discussed with physicians, community leaders, and NH leaders, contributed to ongoing PHC transformation and partnership development within communities. We have found that fundamental, transformative change that address the needs of people in communities while meeting regional and provincial directions, takes longer than anticipated; that partnerships have allowed NH and the physicians to work together in managing the dynamic tensions of reformulating services and scaling-up service changes. Finding ways to work through these tensions has been instrumental in transforming the system rather than just fixing aspects or adding on new PHC service structures. Through cooperative efforts, change processes have occurred locally with linkages to the regional direction; new common understandings and expectations are allowing the health system culture to change. Interim indicators of change are reflected in improvements in provider and patient experience, enhanced population health, and no increase in NH costs. An in-depth examination of processes of change illuminates the relationships, challenges, and approaches that are needed for services and structures to be re-formed to better serve the needs of patients and families. Partnerships allow for working through the inevitable tensions and barriers to fundamental, far-reaching change in integrated PHC services.

Co-Author(s): Martha MacLeod, Neil Hanlon, Trish Reay, Dave Snadden, Cathy Ulrich

D3: HEALTH SYSTEM PERFORMANCE | RENDEMENT DU SYSTÈME DE SANTÉ

Deciding who gets care first - A realist review of prioritization in centralized waiting lists for healthcare services

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

Healthcare systems have limited resources. Centralized waiting lists (CWLs) appear to be one way to manage patient's demands according to available resources. Our objective was to identify how CWLs determine which patients are prioritized in receiving healthcare services in different contexts and to analyse factors influencing their implementation. This analysis was conducted as part of a larger realist review on centralized waiting lists. Searches were conducted in Medline, CINAHL, PsychInfo and SocIndex (n=1623 articles). Scientific articles had to feature a prioritization process in a healthcare setting which was could be generalized to other healthcare settings. Articles on simulations, emergency services and transplants were excluded. Articles were selected by two independent team members who discussed selection to reach consensus. Data was extracted from 16 articles using an extraction grid. Grey literature was used to find additional details on the initiatives described in the selected articles. We identified context-mechanism-outcomes configurations. CWLs were implemented to manage the demand for elective surgeries (n=< /em>14), referrals to specialists and diagnostic tests (n=< /em>1) and attachment to primary care providers (n=< /em>1). We identified two different ways CWLs decide which patients get care first: 1) prioritization based on patients' needs (scores (n=< /em>11) or categories (n = 5)) and 2) first-come-first-serve (n = 1). To prioritize patients, CWLs used clinical information (patient reported or medical file) or a combination of clinical and social information. Differences in the design, management and context of CWLs led to variations in implementation (barriers and facilitators) and reported outcomes (wait times, equity, access to services). For instance, the use of maximum wait times were sometimes reported to lead to system gaming whereas non-mandatory guidelines seemed to lead to variations in prioritization practices. The results describe different designs of CWLs. By linking this information with context as well as factors influencing implementation and outcomes, our results provide policy-makers with a menu of options in designing a CWL that best meets their objectives and their context of implementation.

Co-Author(s): Mélanie Ann Smithman, Mylaine Breton, Martin Sasseville, Michael Green, Jalila Jbilou, Sara krindler, Jason Sutherland, Valorie A. Crooks, Jay Shaw, Audrey Vandesrasier, Marie Beauséjour, Damien Contandriopoulos, Sabrina Wong, Astrid Brousselle

Développement et évaluation psychométrique d'un questionnaire mesurant les perceptions d'efficacité des équipes de soins selon la perspective des patients et de leurs proches.

Presented by: **Lysane Paquette**, student, Université de Montréal

Cette étude a pour but d'évaluer les qualités psychométriques d'un questionnaire adressé aux patients et à leurs proches afin de mesurer leurs perceptions d'efficacité des équipes de soins. La présentation décrira la perspective des répondants et discutera des principaux enseignements tirés au cours du projet. Une enquête transversale a été réalisée de mai à octobre 2016 auprès d'un échantillon de convenance de patients et leurs proches. Le questionnaire est constitué de 41 items portant sur les équipes de soins avec ou sans infirmières praticiennes, les processus d'équipes, les résultats sur les soins et les données sociodémographiques des répondants. L'estimation du coefficient alpha de Cronbach a permis d'évaluer la fidélité du questionnaire. La validité de contenu a été évaluée par des experts (par ex., patients, chercheurs) tandis que la validité de construit a été examiné au moyen de la technique des groupes connus. Les répondants (n=320), âgés en moyenne de 50,7 ans ±15.9 et majoritairement des femmes (67%) sont suivis principalement par des équipes de soins de première ligne, pédiatrie, santé maternelle et périnatale et d'oncologie. Plusieurs (85%; n=204/250) estiment que toutes les questions pertinentes sont incluses dans le questionnaire. L'alpha de Cronbach est de 0,836 pour l'échelle des processus et 0,724 pour l'échelle des résultats. Le score moyen des processus est de 5,37±0,9/7 et le score des résultats est de 5,43 ± 1,06/7. La confiance envers l'équipe est la dimension au score le plus élevé (5,64±1,49); suivi par la perception d'efficacité (5,43±0,94). Des différences existent selon la spécialité pour la confiance, les perceptions d'efficacité, la clarté des rôles, les processus et les résultats. L'outil validé évalue la perception d'efficacité des équipes de soins des patients et des proches dans les unités de soins aigus, de première ligne, avec ou sans infirmière praticienne. Il permettra d'identifier les processus d'équipe à améliorer et comment impliquer les patients et ses proches dans l'équipe.

Co-Author(s): Lysane Paquette, Véronique Landry, Eric Tchouaket, Mira Jabbor, Nicolas Fernandez, Claudel Guillemette, Kelley Kilpatrick

Caregivers Voice through a Quantitative Lens

Presented by: **Sara Shearkhani**, PhD Student, Institute of Health Policy, Management, and Evaluation, University of Toronto

Informal caregivers are under-represented in evaluations of health care interventions and health system performance. The purpose of this research was to identify measures of informal caregivers' experience with the healthcare system, costs and health outcomes. Measurement of caregiver experience and outcomes can inform the design and evaluation of future interventions. Using the "Triple Aim" measurement framework, a grey literature search was conducted focusing on reports published in English by government and non-for-profit agencies on caregiving since 2000. To supplement this review, a scoping review was conducted to identify common measurement tools used to capture Alzheimer/Dementia caregiving experiences. A search of three databases (Ovid MEDLINE, EMBASE, and Scopus) was completed for the period of 2011 to 2016. Additionally, we engaged key stakeholders including patients and caregivers to further explore the results of our review in a 5-hour workshop held in Toronto. Twenty-seven reports were identified as eligible for inclusion in the grey literature along with 20 peer-reviewed articles. Common caregiver-self-reported outcome measures were depression, stress, distress, anxiety, burden, and overall mental and physical health. These outcomes were measured using either generic health status instruments such as Health Related Quality of Life, Anxiety and Depression, or caregiver specific tools assessing caregiver burden and strain. Common caregiving costs were out-of-pocket costs, and caregiver productivity loss. Out of 47 articles reviewed, only 6 included experience measures beyond satisfaction in their analysis exploring caregivers' experience with the healthcare system. Consultation with stakeholders revealed the importance of taking into account the dyadic patterns of care between patient and caregiver highlighting that caregivers' wellbeing is closely linked to patients' wellbeing. This study provides evidence that contributes to the design of future healthcare evaluations, interventions, and policies aimed to improve the healthcare system for caregivers. It identifies three main areas that require further investigation, including caregiver's experience with the healthcare system, caregiver's healthcare utilization cost, and the dyadic pattern of care.

Co-Author(s): Sara Shearkhani, Walter Wodchis, Ivy Wong, Dilzayn Panjwani, Geoffrey Anderson

Identifying Patient-Centred Quality Indicators: An Environmental Scan of Patient-Centred Care Measurement in Canada

Presented by: **Chelsea Doktorchik**, Research Assistant , University of Calgary, Department of Community Health Sciences

Patient-centred quality indicators (PC-QIs) allow healthcare systems to monitor and evaluate Patient-Centred Care (PCC) practices and identify needed improvements to healthcare quality. Despite this, standardized PC-QIs are not being implemented across Canada. Our objective was to understand whether Canadian provinces and territories measure PCC, and identify existing PC-QIs being used. An online survey was developed to collect data on demographic characteristics for regional healthcare authorities and quality improvement organizations, PCC practices, PC-QIs used (if any), and methods of collecting, storing and reporting data. Survey respondents included provincial/regional quality improvement leads, identified through existing networks of key PCC stakeholders, an internet search, and use of snowball sampling. The survey was conducted from July-December 2016 using Survey Monkey. Data was analyzed and reported, based on frequency of responses and content analysis methods. PC-QIs identified were categorized according to the Donabedian framework for implementation and evaluation of health services and quality of care. We obtained completed surveys from 87% (26/30) of representative organizations/ agencies across Canada. The majority of healthcare authorities and quality improvement organizations served both adults and children, rural, sub-urban, and urban populations, and provided acute and community services, among others (e.g. long-term care facilities)). No data was available from Nunavut. 91% of the organizations practiced PCC, and of those participants, 74% reported use of PC-QIs/related measures. Most provinces (10/12) used PC-QIs/measures, with the exception the Northwest Territories and Yukon. Data collected to measure PCC was collected from patients, clinicians, families, and health administrators. Most PC-QIs/measures being used across Canada assessed aspects related to Donabedian components of “Process” and “Outcome,” including: communication; engaging patients and caregivers; continuity of care; access to care; and Patient-Reported Outcomes. This environmental scan gave us greater insight into PCC measurement across Canada and helped us to identify PC-QIs currently being used. These results will help us to develop a standard set of PC-QIs that can be used by healthcare organizations to guide PCC measurement, and improve healthcare for Canadians.

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D4: MATERNAL AND CHILD HEALTH | SANTÉ MATERNELLE ET INFANTILE

Determinants of Dysglycemia in Youth: CHMS Survey Results

Presented by: **Celia Rodd**, Associate Professor, University of Manitoba

Population-based rates of prediabetes or dysglycaemia (i.e. elevated A1C) among low-risk youth are not well described. Moreover, the biological and socioeconomic determinants of an elevated A1C in youth remain poorly understood. Our primary objective was to determine the prevalence of dysglycemia in Canadian youth. Youth aged 6-19 years who participated in the first (2007-2009) or second (2009-2011) cycles of the Canadian Health Measures Survey (CHMS) were included in our analyses. The primary outcome was defined using A1C guidelines established by the American Diabetes Association (ADA: 5.7%-6.4%) and Canadian Diabetes Association (CDA: 6.0%-6.4%). Various biological and socioeconomic determinants were compared between healthy and dysglycaemic youth using two sample t-tests and ?2 tests. Multivariable logistic regression was used to calculate adjusted odds ratios for dysglycaemia. Age stratified regression was performed to adjust for physical activity. All analyses were unweighted. Of the 3449 youth studied, 785 (22.8%) and 179 (5.2%) displayed dysglycaemia according to ADA and CDA definitions, respectively. Youth with dysglycaemia (ADA definition) were more likely to be male (55.4 vs. 50.6%, p=0.02), non-white (24.8 vs. 14.6%, p < 0 .001) and obese (16.2 vs. 10.8%, p < 0 .001). Dysglycaemia in youth was more common in those living in households with middle income adequacy (32.6 vs. 26.8%, p=0.006) and lower levels of parental education (high school or less, 15 vs. 11.4%, p=0.007). Similar associations were found using the CDA definition. In the adjusted logistic regression model (age ?12y), significant predictors were age, race, income adequacy, geographic region, obesity (OR=1.60, 95% CI: 1.08-2.35) and physical activity (monthly frequency of activity longer than 15 minutes, OR=0.97, 95% CI: 0.95-0.99). Up to nearly 1 of every 5 youth in Canada are at risk for type 2 diabetes, based on early elevated A1C. Elevated A1C in youth is associated with social determinants of health and some lifestyle factors and both should be addressed in prevention efforts.

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PERINATAL MENTAL HEALTH SERVICE DELIVERY MODELS: A SCOPING REVIEW

Presented by: **Liz Darling**, Associate Professor, McMaster University

Our objectives were to identify the state of the research evidence regarding the effectiveness and cost-effectiveness of, and patient satisfaction with, service models for perinatal mental health services, and to describe the characteristics of models that achieve favourable outcomes. Our focus was comprehensive service delivery models rather than singular interventions. We conducted a scoping review using the methods described by Arksey & O’Malley. Two team members conducted literature searches using pre-determined search terms in three databases. Search results yielded: 707 publications in Medline, 3,485 in SCOPUS, and 3,645 in CINAHL. Abstracts for these publications were assessed based on pre-determined inclusion criteria establishing the population, intervention, comparison, and outcomes of interest. Both English and French publications were included. To verify their relevance, full publications were read for all abstracts that appeared to potentially meet the inclusion criteria. Descriptive data about each publication that was read was extracted and charted. 126 publications were fully read and charted. Only five publications reported outcomes related to effectiveness, cost-effectiveness, or patient satisfaction associated with perinatal mental health service models, thereby meeting our inclusion criteria. Two additional publications described innovative service delivery models without reporting outcome measures. Features of successful service delivery models identified in the five included studies were: community based clinics, multi-disciplinary teams, service providers in advocacy/advisory roles, education and outreach to primary care providers to build capacity in the primary care sector, multi-pronged approaches to maximize accessibility (e.g., easy referral processes, “no wrong door” approach, outreach to women’s homes, activation of women to seek care, good connections to other services, established care pathways, etc.), and collaboration and partnership between existing service providers. There is limited high quality research evidence to guide the organization and structure of perinatal mental health services to optimize clinical effectiveness, cost effectiveness, and patient satisfaction. Innovative service models should take into account known barriers and facilitators of timely access to appropriate care, and evaluation is warranted.

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Healthy Child Development: The Impact of Indigenous Outreach and Home Visiting Programs On-Reserve

Presented by: **Dale McMurchy**, President, Dale McMurchy Consulting

Aboriginal Head Start on Reserve (AHSOR), Maternal Child Health (MCH), and Children's Oral Health Initiative (COHI) are part of FNIHB's Healthy Child Development outreach and home visiting programming. This study assesses how these activities are delivered in communities, integrated, and contributing to the health and well-being of children and families. Study methods included a literature review; program and staff surveys administered in Canadian Indigenous communities selected randomly using a stratified, factorial design; in-person program participant and staff interviews in four communities; and analyses of national level administrative data. The study was supported by a National Working Group and Community Advisory Group which provided input into study design, implementation and final reports. Standard qualitative and quantitative analyses methods were used to analyze program surveys from 17 communities (89% response rate); 55 staff surveys (92% response rate); 26 focus group participant surveys; and interview data from 24 staff and 21 program participants. Increasing awareness and trust is a critical first step to improving program participation and outcomes. Important impacts of the three programs include improved: self-esteem and self-confidence among parents; access to services; knowledge about health and well-being; screening; parenting skills and bonding; family relationships; and school readiness. These programs work together to varying degrees and also have linkages with other on-reserve programs. Communities with two or more programs had higher reported impact in terms of cultural activities, promoting healthy families, effective parenting and healthy child development. Factors critical to program success and impact included: community and client input; effective communication; positive and trusting staff-participant relationships; program approach, including the curriculum, group programs and innovative tools; scheduling; teamwork; staff roles, responsibilities and turnover; staff training; and partnerships. Health Canada's AHSOR, MCH and COHI outreach and home visiting programs provide critical prenatal care, early childhood development and oral health support and services to children and families on-reserve. While the programs would benefit from more resources, they have highly-rated participant-reported experiences and provide important benefits to participants and communities.

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FACTORS INFLUENCING MATERNITY CARE PROVIDERS' PRACTICES REGARDING MODE OF BIRTH AFTER PREVIOUS CAESAREAN SECTION

Presented by: **Esther Shoemaker**, Researcher, Bruyère Research Institute

An increasing proportion of Canadian women are having a repeat Caesarean section (CS). This study explores the factors that influence the practices of maternity care providers (obstetricians, family physicians, midwives, and nurses) regarding mode of birth after a previous CS. A sequential mixed methods approach was used. Twenty-eight providers from different disciplinary backgrounds filled out an adapted form of the Maternity Care Providers' Attitudes Survey. The surveys were analyzed descriptively to explore the providers' practice patterns and perspectives regarding mode of birth after a previous CS. Interviews were conducted with eleven survey respondents, which were analyzed using an iterative deductive and inductive coding approach. Maternity care providers expressed positive attitudes towards vaginal birth and would recommend a vaginal birth after CS (VBAC) for healthy pregnant women with a history of CS. They had different perceptions of the safety of birth to the health of women and infants and different approaches to engage in decision making during consultation. Providers believed women make their decision about mode of birth outside of the clinical consultation and often prior to their subsequent pregnancy. The study illustrates that providers from different maternity care disciplines share a preference for VBAC among healthy pregnant women but they have different perspectives on the levels of risks associated with birth. These differences have an impact on the shared decision making processes that take place during consultation.

Co-Author(s): Esther Shoemaker

D5: MENTAL HEALTH | SANTÉ MENTALE

Two-tier access to psychotherapy: Canada, the UK and Australia

Presented by: **Mary Bartram**, PhD Candidate, Carleton University School of Public Policy and Administration

The objectives of this two-part study are two-fold. First, to measure to what extent income determines access to psychotherapy in Canada, and second, to identify lessons learned from the Australia and the UK about how to break down these inequities. This mixed-methods study first quantifies need-standardized concentration indices of both mental health service utilization and unmet need for mental health services, using data from the Canadian Community Health Survey. The qualitative part of the study uses data from semi-structured interviews with policy-makers and experts in Australia and the UK, regarding the relationship between state governance, service system design, and equity in access to psychotherapy. The results show that two-tier access to mental health services does indeed exist in Canada. Income-based inequities in unmet need for care can be measured using Concentration Indices, for mental health vs physical health problems and for access to service providers who are and are not covered by Medicare. Lessons learned from the IAPT and Better Access initiatives in the UK and Australia indicate that careful planning is needed to ensure that wealth-based inequities are reduced while improving access to psychotherapy across the population as a whole, and that service system design needs to be tailored to the policy levers which are available to different levels of government. Two-tier access to mental health services in Canada is real, particularly for psychotherapy. Even if access can be improved overall, new federal funding may have little effect on income-based inequities. Specific targets and accountability measures are needed, but these may prove challenging in the Canadian constitutional context.

Co-Author(s): Mary Bartram

Mental health status and service utilization among ethnic groups in Ontario, Canada

Presented by: **Maria Chiu**, Staff Scientist, Institute for Clinical Evaluative Sciences

The purpose of this study was to compare the prevalence of mental health service utilization and other self-reported mental health factors across the four largest ethnic groups in Ontario: white, South Asian, Chinese, and black groups. The study population was derived from the Canadian Community Health Survey, using a cross-sectional sample of 254,951 white, South Asian, Chinese, and black residents living in Ontario between 2001 and 2014. Age- and sex-standardized prevalence estimates for mental health service use and other related factors were calculated for each of the four ethnic groups overall as well as within age, sex and immigrant strata. Prevalence of physician-diagnosed mood and anxiety disorders and mental health service utilization was lower among South Asian, Chinese, and black respondents compared to white respondents. Among those reporting past-year suicidal ideation, less than half sought help from a mental health professional, and this was particularly low among ethnic minorities ranging from only 13.9% in the Chinese group to 25.6% in the black group. Family doctors were the most common point of contact for mental health issues for most ethnic groups, with the exception of Chinese individuals who were just as likely to see a family doctor, psychiatrist, or allied health professional. We also found that Chinese individuals reported the weakest sense of belonging and the poorest self-rated mental health compared to all other ethnic groups. The lower rates of mental health service use among ethnic minorities may not solely reflect lower mental health burden, but may also reflect a reluctance to seek help. Efforts are needed to understand why mental health service use is low among ethnic minority groups, even among those reporting severe distress.

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Caregiver strain in families of youth experiencing mental health and/or addiction issues

Presented by: **Emily Levitt**, Research Analyst , Sunnybrook Health Sciences Centre

This study will explore caregiver, youth, and service factors that impact caregiver and youth strain in Ontario families of youth with mental health and/or addiction (MHA) issues. This exploratory cross-sectional survey examined the factors that contribute to caregiver and youth strain in families of youth suffering from MHA issues. Ontario adults responsible for one or more youth up to age 30 were asked to participate in an online survey designed to identify MHA issues, families' service needs, and MHA system navigation needs. A total of 840 subjects participated in the study, with 259 identifying as caring for a youth with MHA issues under 30 years of age. Caregivers' mean age was 45.9 (SD 8.4), with 70.7% female. Youths' mean age was 16.4 (SD 5.7) with 36.7% female. Caregiver Strain was evaluated using 9 items and Youth Strain was evaluated using 5 items. Each scale demonstrated good internal consistency (Caregiver Strain alpha =.91, Youth Strain alpha =.79). Two multiple regression models were used to determine the contribution of the individual items to overall variance in strain. The significant items ($p<.0001$) for Caregiver Strain were barriers to services, number of symptoms, currently waitlisted, and level of education, and the total $r2$ for the model was .49. The significant items ($p<.0001$) for Youth Strain were barriers to services, number of symptoms, currently waitlisted, and caregiver gender, and the total $r2$ for the model was .39. Both families and youth experienced strain related to waitlists and service access barriers. These findings can be used to develop system service solutions and policies that will help reduce burden of MHA in youth and families across Ontario.

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D6: PATIENT ENGAGEMENT | PARTICIPATION DU PATIENT

Co-designing care processes on a geriatric assessment unit

Presented by: **Marcela Hidalgo**, patient engagement coordinator, St. Mary's Research Centre

To engage patients and professionals through an experience-based co-design (EBCD) initiative to identify and implement improvements on an acute care geriatric assessment unit (GAU) in a community general hospital. Additionally, our team aimed to encourage the spread of this approach through enhanced capacity and support within the institution. The EBCD approach includes the following blend of qualitative research methods and quality improvement (processes of 'discovery' and 'design'): a series of ethnographic observations using field-notes to understand the processes and culture on the unit; qualitative interviews using audio/video recording with patients and caregivers; the preparation of a short 'trigger film' using clips from these interviews; qualitative interviews with professionals and staff involved in their care; feedback sessions to validate results and identify priorities for change; and, change management to implement priorities. An advisory panel provides oversight and includes caregivers, professionals, researchers and clinical leaders. Data collection for the 'discovery' phase is complete. Results from the patient and professional interviews revealed emerging themes which included: inconsistent communication between staff and patients/families; challenges with insufficient patient mobility and activity; limited information sharing about care processes including discharge planning; discrepancies between staff and patients/families regarding the role for caregivers in a hospitalization context; and specific ideas for improvement (e.g. greater engagement of patients in daily social activities). A short film was produced that highlights positive and negative experiences of patients - to trigger discussion with professionals in the design phase. Priorities for improvement will be determined in a co-design event to be held in March 2017 and strategies for implementation will be determined (results to be reported). The co-design approach, although time-intensive, facilitates substantial engagement and a deeper understanding of patient-centered priorities for improvement. As an intervention it offers pragmatic, evidence-based and experience-based solutions, as well as an effective process for change. Requests from three additional hospital units to adopt this approach are under consideration.

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What do we need to know about medical aid in dying? Preliminary findings from deliberative forums in Quebec

Presented by: **François-Pierre Gauvin**, Research Associate, Centre of Excellence on Partnership with Patients and the Public AND McMaster Health Forum

In 2014, Quebec adopted Bill 52 allowing for and outlining under which conditions terminally-ill patients can request medical aid in dying. In the spring of 2016, two deliberative forums brought together members of the public (including patients and caregivers) and healthcare professionals to explore their information needs on this issue. A one-day face-to-face forum and a three-week online forum were hosted. Participants were recruited via calls for applications sent to citizen, patient and professional organizations, mass mailing listservs and social media. A purposeful sampling strategy ensured that participants reflected diversity in terms of age, gender, socioeconomic status, expertises, and perceptions about medical aid in dying. Overall, 43 participants took part in the face-to-face forum and 42 in the online forum (60% being members of the public). A series of videos and scenarios were used to prompt deliberations. A thematic analysis was conducted to identify patterns in the data. Participants commonly agreed that there were very limited and fragmented initiatives to inform the public and professionals about medical aid in dying. This resulted in an asymmetry of information between the public and professionals, as well as among professionals. Yet, members of the public and professionals identified 21 common information needs, which go beyond the legal and medical dimensions of medical aid in dying (e.g., how to interpret eligibility criteria; what support patients, caregivers and professionals will receive throughout the process; what are the potential risks; how to maintain privacy of requests; how to humanize the process). Participants identified key information needs at specific stages of medical aid in dying (from formulating a request to documenting and evaluating practices). The forums provided key insights to strengthen the capacity of citizens, patients, caregivers and healthcare professionals to engage in conversations about medical aid in dying. They also revealed how critical it is to have a common information base to support meaningful partnership at the end of life.

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Playing Telephone: Understanding the state of medication decision making in growing healthcare teams in the time of electronic health records

Presented by: **Kelly Grindrod**, Assistant Professor, University of Waterloo

To study how electronic health information is shared across patients, family physicians and pharmacies, including the types of information typically exchanged, tools that support interprofessional shared medication decision-making and best practices related to the use of Electronic Health Records (EHRs) for decision making. We visited community pharmacies, primary care clinics, throughout Ontario, Nova Scotia, Alberta, and Quebec. Research assistants collected data using an ethnographic approach including workflow observations, recordings of clinicians talking aloud while prescribing or dispensing medications, and (where possible) recordings of patient interactions clinicians related to medication therapy. We also completed semi-structured interviews with clinicians to inquire about healthcare provider experiences with medication decision making and EHRs. We transcribed audio recordings and translated all transcripts into English. The team met for two days to develop a multidisciplinary analytic framework, which was used to code the data. We collected data at 25 pharmacies and 11 medical clinics and identified five main themes. First, the Current State of Computer Systems can support or constrain the ability of clinicians to collaborate. Second, Different Communication Expectations mean healthcare providers (primary care, pharmacy) have a limited understanding of the others' contexts around managing medication, leading to frustration in general. Third, when collaborating, clinicians focus on Task Oriented Communication (e.g., errors, fax renewals) rather than decision oriented communication (e.g., choosing the best medication). Fourth, clinicians express that they value Shared Decision Making but in practice focus on informing patients and describing options with minimal patient input, with limited awareness of the contradiction. Fifth, there is a Desire and Need for EHRs which are complete and accurate for making informed decisions. Collaboration between community pharmacists and primary care providers is generally task-based with little opportunity for interdisciplinary shared decision making. EHRs are a potential tool to help clinicians share information. However, to improve the quality of collaboration, more attention will need to be paid to the environmental contexts within which community pharmacists and primary care providers manage medications.

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Development and evaluation of a citizen panel program for engaging citizens in setting direction for broad system change

Presented by: **Michael Wilson**, Assistant Professor, McMaster Health Forum

Our objective was to: 1) describe the phases of building a citizen panels program that gives citizens the opportunity to make informed judgements about pressing health-system issues; 2) evaluate the panels; and 3) to identify a set of values that citizens prioritize for addressing a range of health-system issues. Our approach consisted of three components. First, we documented the evolutionary phases of our approach to citizen engagement to provide insight into a model that could be used by others interested in engaging citizens as part of system-level change. Second, we surveyed all panel participants about their views of the citizen brief sent to them prior to the panel, and about their experience with the panel. Lastly, we analyzed the values articulated across each of the 33 citizen panels convened by the McMaster Health Forum to identify those that were consistently prioritized by citizens to address health-system issues. While some features of our citizen panels have remained in place over the evolution of the program (namely engaging diverse groups of citizens and supporting informed judgements), we have made key changes to enhance the program (e.g., streamlining the citizen briefs and sequencing panels to precede a stakeholder dialogue with health-system leaders to inform their deliberations). Our survey findings indicate that our approach resonates well, with participants providing a 6.1 (n=399; SD=1.1) and 6.7 (n=402; SD=0.6) mean overall assessment of the citizen brief and citizen panels, respectively. In addition, across 33 panels, participants have consistently identified a core set of values (most notably supporting excellent patient experience, ensuring fairness and fostering collaboration across the system) despite panels addressing a broad range of issues. Citizen panels provide a mechanism for evidence-informed deliberation among citizens about pressing health-system issues that emphasizes citizens' views and experiences about an issue, and values and preferences for addressing it. Findings also indicate that our approach has resonated well with participants as a mechanism for supporting people-centred health systems.

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D7: PRIMARY HEALTH CARE | SOINS DE PREMIÈRE LIGNE

Organizational and System Challenges to the Spread and Scale of Integrated Community Based Primary Health Care

Presented by: **Ross Baker**, Professor, University of Toronto

Community based primary health care (CBPHC) organizations are critical providers of integrated care for complex patients. Exemplar cases exist. But efforts to scale up and spread successful practices face major challenges. We identify challenges and approaches derived from literature and 9 cross-jurisdiction comparative case studies. We report on barriers to scale up and spread of integrated CBPHC from the iCOACH project (Integrated Care for Older Adults with Complex Health Needs). The research project draws on key literature and detailed analysis of interviews from 9 in-depth case studies of organizations in Ontario, Quebec and New Zealand. Using a realist theory approach, we outline the challenges of identifying and replicating key mechanisms for integrated care and their adaptation to specific local contexts. Key factors for spread and scale up include the resources and support needed for coordinating care, coaching patients on self-management and facilitating the interaction of providers who form the network serving complex patients. Many successful pioneer CBPHC organizations were mission-driven and, at times had to work hard to challenge the dominant power bases. They relied on visionary leadership and institutional entrepreneurship; however, these assets are difficult to recreate in new settings. These organizations have long histories of inter-personal and inter-organizational relationships contributing to institutionalized knowledge and patterns of practice. They have also maintained a strong ideological commitment to serving the critical needs of their communities. Successful scale up and spread will involve careful attention to local contexts, co-production with clients and engaged local leadership. Integrated CBPHC organizations play an important role for complex patients. Scale up and spread of currently successful organizations requires identifying the key mechanisms that make them successful, understanding how local contexts shape and activate these mechanisms, and providing the resources necessary to launch and sustain these efforts in new settings.

Co-Author(s): Ross Baker, Jay Shaw, Carolyn Steele Gray, Jennifer Gutberg, Jean-Louis Denis, Mylaine Breton, Annette Dunham, Peter Carswell, Tim Kenealy, Walter Wodchis

The more the better: a comparison of access, availability, and comprehensiveness of services between different models of primary health care (PHC) in Nova Scotia. Results from the MAAP-NS study

Presented by: **Emily Gard Marshall**, Associate Professor, Dalhousie Family Medicine

To determine the benefits (e.g., access, availability and comprehensiveness of services) of various models of primary health care (PHC) currently in place as Nova Scotia (NS) develops and implements a collaborative care framework. The MAAP-NS study surveyed all primary care practices (85% response rate) and providers (family physicians and nurse practitioner; 60% response rate) in the province by telephone and fax respectively, collecting information on each provider and practice including: accepting new patients, urgent and non-urgent wait times, walk-in options, and comprehensiveness of services. The independent variables are composites of information gathered related to models of care (e.g., number and type of provider, elements of collaboration, remuneration models and governance structures). Among family physicians and nurse practitioners, 70% are co-located and collaborating (C&C); 73% are provider-owned private practices; 76% are fee-for-service. Each of these variables relate to availability of care: C&C providers work more hours ($p=0.006$) and more often allow walk-ins than solo and not-collaborating providers; non-C&Cs are more likely to accept patients ($p=0.03$); private practices have fewer hours/week, are less likely to accept patients (both $p < 0.001$), and less likely to allow walk-ins ($p=0.03$). Fee-for-service providers work fewer hours/week, are less likely to accept patients or allow walk-ins (all $p < 0.01$) than providers on other funding. Comprehensiveness of services did not differ. Regressions indicate collaborating is most predictive of shorter urgent wait times and private governance predicts fewer hours/week and fewer walk-ins allowed (all $p < 0.05$). Collaborative PHC teams currently provide better access and availability than solo providers or multi-provider/non-collaborating practices in Nova Scotia, Canada. Nova Scotia may thus benefit from investment in the new Collaborative Care Framework towards co-located and collaborative PHC practices.

Co-Author(s): Emily Gard Marshall, Colleen O'Connell, Frederick Burge, Richard Gibson, Beverley Lawson

Synthesizing and translating primary healthcare research findings into policy options

Presented by: **Lisa Dolovich**, Professor, Leslie Dan Faculty of Pharmacy, University of Toronto

Ontario has gone through significant primary care reform, which has been studied by the Innovations Strengthening Primary Healthcare through Research (INSPIRE-PHC) Ontario-based program and network. This project describes a synthesis of INSPIRE-PHC findings, combining observational studies and trials of new practice and system level approaches along with policy implications. A descriptive narrative synthesis of project findings was conducted. Summary findings from each project were generated according to 11 pre-specified themes: ehealth, equity, patient perspective, patient engagement, team based care, access, vulnerable populations, gender, health policy, improvement in health status, and health economics. Research leads worked iteratively in small or large groups and individually to identify, discuss and synthesize findings from across studies. Attention was given to similarities and differences between findings of different studies, patterns in the data, changes in findings over time and the meaning of the data within the context and history of the Ontario health system. Thirty-one projects were synthesized. Projects were anchored in primary care but connected to other sectors including community/home care, in-home care, speciality care, and hospitals. A variety of research methods were used with emphasis on use of health administrative data, randomized controlled trials, program evaluation, surveys, systematic reviews and qualitative analyses. Preliminary synthesis demonstrates that primary healthcare practice and policy innovations are making progress in improving access and system integration, encouraging team based care, engaging community, and improving quality of care. Data platforms are emerging to support population based planning and care delivery. Several promising approaches are being scaled regionally, but special consideration of urban/rural context is required. Many quality domains were targeted; improvements in one domain were often balanced by potential risks for other areas. Research findings support health care reform that promotes the principles of primary healthcare and accompanying policies and practices. Comprehensive outcomes measurement in primary care is needed. Ongoing evaluation of new policy implemented structures or innovations emerging from decision maker priorities is essential to understanding progress towards health system reform goals.

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GETTING FAMILY PHYSICIANS ON BOARD: FACTORS INFLUENCING PARTICIPATION IN CENTRALIZED WAITING LISTS FOR UNATTACHED PATIENTS

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

In various Canadian provinces, centralized waiting lists (CWLs) were implemented to help unattached patients find a family physician (FP). However, FPs' participation in CWLs (i.e. attaching patients from CWLs) is voluntary and varies significantly. Our objective was to identify barriers and facilitators influencing FPs' participation in CWLs. We conducted qualitative multiple case studies of CWLs implemented in four Health and Social Services Centres in Quebec. Each case was purposefully selected by an advisory committee made up of decision-makers, clinicians and researchers. A total of 23 semi-structured interviews were conducted with a range of 5 to 8 key stakeholders involved in each CWL's implementation (FPs, nurses, clerks, medical coordinators and managers). Data were coded with NVivo Software. Intra and inter-case content analysis were performed using the Consolidated Framework for Implementation Research (Damschroder and al., 2009). Five constructs influencing FPs' participation were identified: 1) The complexity of CWLs (e.g., administrative tasks) was an overarching barrier; 2) The tension for change and interest of FP in participating was low as several FPs did not perceive CWLs as needed and helpful to their practice; 3) External policy (i.e., Bill 20 threatened to cut FPs' income) influenced participation in two ways: a number of FPs retired or left for private practice, increasing the number of patients on CWLs, while other FPs attached more patients from CWLs to increase their panel size; 4) Having a committed champion FP in the CWL's implementation facilitated the promotion of the CWLs and enhanced FP participation; 5) Financial incentives provided to FPs were also a facilitating factor. The barriers and facilitating factors identified could guide the development and use of strategies intended to encourage the FPs participation in CWLs and ultimately attach CWL patients. Attachment to FP is a key components of Patient's Medical Home. Learnings could be interesting for different provinces trying to improve attachment.

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D8: KNOWLEDGE TRANSLATION & EXCHANGE | TRANSFERT ET ÉCHANGE DE CONNAISSANCES

Fostering an Academic-Clinical Partnership to Design a High-Dependency Care Policy on a Pediatric Inpatient Unit

Presented by: **Christine Cassidy**, PhD Candidate, Dalhousie University

Develop a partnership between clinicians, administrators, and researchers to conduct a series of knowledge translation (KT) activities to develop a high-dependency care (HDC) policy on a pediatric inpatient unit, including;

Mapping current literature on pediatric acuity tools for allocation of HDC resources; Identifying the barriers and facilitators to implementing HDC. A nursing team from the Medical/Surgical /Neurosciences Unit (MSNU) at the IWK Health Centre participated in a workshop series designed to strengthen clinicians' KT research skills. The team was assigned a KT research mentor to work with them to design a systematic KT process to address their policy change. The partnership endured beyond the workshop series and has led to a scoping literature review and barriers assessment. Five focus groups and eight interviews were conducted with key stakeholders. Focus groups and interviews were guided by the Theoretical Domains Frameworks, audio-recorded, transcribed verbatim, and analyzed using content analysis. An academic-clinical team used the Knowledge-to-Action Cycle as a framework to design a policy related to HDC on the MSNU. The integrated partnership faced many challenges, including differences in priorities, especially with regards to timelines. However, many benefits stemmed from the partnership, including the development of relevant practice change questions and research findings for the practice setting. From the scoping review, ten standardized pediatric acuity tools were identified. No tools were identified for use in allocating HDC in a pediatric setting. The stakeholder consultation participants (n=42) identified enhanced patient safety as a perceived facilitator of HDC, while the lack of guidelines for allocating HDC resources was seen as a potential barrier. This project highlights the first steps in fostering an academic-clinical partnership to redesign nursing care in a pediatric setting. We will use these findings to develop an implementation strategy to overcome the barriers and enhance potential facilitators and implement and evaluate HDC on the MSNU at the IWK Health Centre.

Co-Author(s): Christine Cassidy, Shauna Best , Mary Beth Rowe, Laura Foley, Janet Curran

Using social media and infographics to extend the reach of population health research

Presented by: **Selena Randall**, Associate Director, Planning and Development, University of Manitoba

Our study aimed to identify ways to a) promote the uptake of infographics summarizing research in a public friendly way, using social media; and b) promote traffic to published material on our website. We plan to use this new knowledge to develop future communications campaigns for population health research. Our communications campaign used social media platforms to promote a published research report from Manitoba Centre for Health Policy (MCHP). A public and media-friendly infographic shared key facts and promoted access to our research report. We scheduled 'tweets' and 'posts' over 30 days, using 12 different message styles. We compared messages with and without images or website links; messages targeted to special interest groups and untargeted. We sent messages at different times of day. We used social media analytical tools to measure reach and follow-up actions. We used web analytics to measure hits to our website from these media. 302 new users visited the MCHP website during our study, 62% of whom were directed there from a link shared through our social media campaign. We gained 41 new followers to our social media platforms during the campaign and lost none. Periods of increased traffic to the MCHP website, coincided with posts made to our social media platforms. The first posts of the campaign garnered the greatest engagement from social media users. Analysis showed infographics with website links supported the greatest engagement, and posts targeted at particular interest groups had the most 'likes'. Posts made during the mid-morning and mid-afternoon received more attention than at other times during the day. Social media increases public access to research and stimulates traffic to websites. Images result in greater engagement than text. Tagging influential followers with a potentially far reach (many followers) increases engagement. Social media extends the reach of research, but the capacity of tools to analyze just how far are limited.

Co-Author(s): Selena Randall, Shannon Turczak, Carly Leggett

RESPECT, find out what it means to me: Algorithm for predicting death among older adults in the home care setting

Presented by: **Amy Hsu**, Research Fellow, Ottawa Hospital Research Institute / **Sarah Spruin,** Methodologist, ICES UOttawa

Older adults living in the community often have multiple, chronic conditions and functional impairments. A challenge for healthcare providers working in the community is the lack of a predictive tool that can be applied to the broad spectrum of mortality risks observed and may be used to inform care. RESPECT (Risk Evaluation for Support: Predictions for Elder-life in the Community Tool) is based on a predictive algorithm that estimates survival time for older adults in the home care setting. The algorithm was developed using data at the Institute for Clinical Evaluative Sciences, consisting of information obtained from 436 908 home care recipients between 2007-2012. A proportional hazards regression model was estimated; it contains 35 predictors, including sociodemographic factors, social support, health, functional status, cognition, symptoms of decline and prior healthcare use. The final mortality risk algorithm is implemented as a web-based calculator that can be used by older adults and caregivers. The majority of home care recipients in Ontario were over the age of 70 (83.0%) and female (64.9%). Approximately half of this population was widowed (46.5%) and lives alone or with their adult child (47.3%). 6- and 12-month mortality risk models were estimated. In the 6-month model, the receipt of chemotherapy among cancer patients (HR: 3.25, CI: 3.14-3.36), having a diagnosis of a terminal illness (HR: 3.12, CI: 3.05-3.19), and total dependence on others to perform the activities of daily living (e.g., eating, grooming, toileting, locomotion; HR: 3.52, CI: 3.41-3.65) were the strongest predictors of mortality. Preliminary results suggest that the model has good discrimination (C-statistic: 0.764) and is well-calibrated across vigintiles of mortality risk. RESPECT is a well-performing algorithm that provides health care providers, patients, and caregivers with prognostic data that can be used to inform care, including when palliative and end-of-life care should be initiated. The online implementation of RESPECT presents a valued opportunities for research knowledge translation and patient engagement.

Co-Author(s): Amy Hsu, Doug Manuel, Monica Taljaard, Sarah Spruin, Carol Bennett, Mathieu Chalifoux, Andrew Costa, Susan Bronskill, Daniel Kobewka, Peter Tanuseputro

Interactive Twitter infographics as a knowledge translation method for disseminating research evidence to public health decision makers

Presented by: **Olivia Marquez**, Research Coordinator, Health Evidence

To disseminate actionable messages from high-quality systematic reviews via a 10-week infographic Twitter campaign to increase public health engagement with review level evidence on Twitter and increase access to review evidence via healthevidence.org Health Evidence™ hosts an online repository of 4,800+ quality-rated reviews evaluating effectiveness of public health interventions. A 10-week Twitter campaign posted two interactive infographics each week, disseminating actionable messages from methodologically-strong systematic reviews. Each infographic highlights the Canadian relevance of the health topic/issue and presents an actionable message with supporting review results. Tweets include a link to the review abstract on healthevidence.org and campaign hashtag "HE_Infographic". Twitter and Google Analytics will compare engagement of sharing actionable messages with infographics versus Tweets without infographics using statistics. The @HealthEvidence Twitter account has 6,400+ global followers and tweets are viewed from followers from 119+ counties including: Canada, United States, United Kingdom, and Australia. Preliminary campaign data from Google Analytics reveal an average 265% increase in access to the systematic review on the day-of Tweeting compared to average daily views the month prior. Twitter Analytics show a single infographic Tweet will be viewed by up to 2,200+ followers, and can engage up to 60 people through an average 8 retweets, 6 likes, and 13 link clicks. Compared with text only Tweets, Tweets with infographics attract an average 732 more views and reveal a 26% improvement in engagement and 48% increase in link clicks. Disseminating actionable findings from systematic reviews via engaging infographics that integrate statistical, graphical, and text descriptions of data increase public health decision makers' engagement evidence, compared to text only social media posts. This campaign demonstrates that social media can transform how evidence is disseminated to Canadian and global public health audiences.

Co-Author(s): Olivia Marquez, Lina Sherazy, Maureen Dobbins

1:00PM - 2:15PM CONCURRENT SESSIONS E - PANEL SESSION

E1: PATIENT ENGAGEMENT I | PARTICIPATION DU PATIENT I

Approaches to Patient Engagement in the age of the Internet: What roles do people wish to play

Presented by: **Raisa Deber**, Professor, University PARTICIPATION DU PATIENT I of Toronto / **Vidhi Thakkar**, Doctoral Candidate, University of Toronto / **Daniel Saliba,** Doctoral student, University of Toronto / **Claudia Lai**, Student, U of T, iHPME

Patient engagement comprises multiple activities at many levels of health care. This panel will focus on patient preferences for involvement in individual treatment decisions, and how this may have been affected by the growth of information on the Internet. Previous work divided treatment decisions into two sets of tasks – PS (problem solving, which are preference-independent), and DM (decision making, which reflect what outcomes are important to people, and their weighting of risks and benefits). Three potential roles emerged – passive (who wish to hand off both PS and DM to their physician), shared (who wish to be informed about PS and involved in DM), and autonomous (who wish to be involved in both PS and DM). Although previous work had found almost no one preferred an autonomous role unless they did not trust their physician, current patient engagement models often assume that most people should adopt an autonomous role. We are studying whether the increased availability of information on the Internet has really changed preferences, or whether these models are drawing a false dichotomy and do not reflect what role people wish to take. The panel will accordingly discuss pros and cons of different approaches that are reflected in current policy debates. It will also draw on a series of empirical studies (combining surveys, key informant interviews, and website analysis) looking at preferred roles and the existing state of using information technology to enhance patient-physician communication. Scheduled speakers include Raisa Deber (whose work on preferred roles catalyzed this research), and 3 PhD candidates at the University of Toronto: Vidhi Thakkar (who is studying preferred roles among glaucoma patients), Daniel Saliba (who is studying preferred roles among people involved in patient engagement activities), and Claudia Lai (who has studied the contents of patient health-related social media platforms on the Internet), although we hope that other members of our research team, which includes patient representatives, will also attend and share their insights.

Co-Author(s): Raisa Deber, Vidhi Thakkar, Daniel Saliba, Claudia Lai

E2: PATIENT ENGAGEMENT II | PARTICIPATION DU PATIENT II

"We can help with this": Bringing the public's views into decisions about the use of data for research

Presented by: **Kimberlyn McGrail**, Associate Professor, School of Population and Public Health, University of British Columbia / **P. Alison Paprica,** Director, Strategic Partnerships, Institute for Clinical Evaluative Sciences (ICES) / **Evelyn Sparks**, Patient / Public Experience

Canada has a long history of innovative and privacy-sensitive use of administrative data for research. The research paradigm is changing, for example there is interest in hypothesis-generating questions, and researchers wish to link new types of data with administrative data, such as information derived from biospecimens or electronic medical records. High profile initiatives and reports highlight the potential benefits that could be realised through these expanded linkages. "Data access governance" can be described simply as policies about who can have access to what data, for what research purpose, and under what conditions. Legislation and norms around use of person-specific information, with and without consent, underpin current data governance practices. Legislation alone, however, does not provide adequate clarity when different types of data are linked, and social norms and expectations may not be compatible with what is "legally allowed". The public has been woefully underrepresented in policy decisions about data access governance, the result being practices that may either underuse and/or misuse data from the public perspective. In the current context of change, data access governance must use public engagement to ensure the alignment of policies with social values. This panel will help move the conversation forward. It will identify different approaches to public engagement and help set an agenda for research that brings the public's voice to decisions around data use. The panel will include an introduction, a series of presentations, and discussion. Introduction We will start with a brief overview of legislative authority for use of administrative data, and the uncertainty created when broadening the array of data used for research. This will include aspects of technology, "big data", and a summary of existing literature on public attitudes and expectations. Presentations on approaches to public engagement We will review approaches to public engagement undertaken in Ontario and British Columbia. In Ontario, from 2015-2017, the Institute for Clinical Evaluative Sciences (ICES) conducted nine ~ two-hour focus groups, including sessions in downtown Toronto and northern Ontario. These sessions included a very brief overview of the process used by ICES to remove or code identifying personal information prior to making linked health datasets available for research, and discussion of potential benefits and risks in the context of specific case studies. In 2017 in British Columbia we will be conducting a four-day deliberative engagement event, using a method developed over approximately 20 previous engagements. The intent is to inform a "mini public" of approximately 25 people, and then facilitate discussions about what is acceptable and not, with the intent of finding areas of persistent disagreement, representing the more challenging areas for policy development. Evelyn Sparks will provide thoughts about how members of the public can contribute to data access governance policies and her views on the potential benefits and drawbacks of different approaches to public engagement. Discussion We will facilitate dialogue with audience members about their recommendations for a research agenda focused on public engagement in data access governance.

Co-Author(s): Kimberlyn McGrail, P. Alison Paprica

E3: COLLABORATIVE HEALTHCARE IMPROVEMENT PARTNERSHIPS
PARTENARIATS DE COLLABORATION POUR L'AMÉLIORATION DES SERVICES EN SANTÉ

A Collaborative Multi-Method Evaluation of Health Links : Results and Lessons Learned for System-level Program Evaluation

Moderator: **Walter Wodchis,** Associate Professor, University of Toronto

Presented by: **Michael Wilson,** Assistant Professor, McMaster Health Forum / **Mike Green,** Associate Professor, Queen's University / **Ruta Valaitis,** Associate Professor; Dorothy C. Hall Chair in Primary Health Care Nursing, McMaster University / **Richard Glazier**, Scientist, Institute for Clinical Evaluative Sciences / **Agnes Grudniewicz**, Assistant Professor, Telfer School of Management, University of Ottawa / **Phil Graham,** Director, Primary Health Care Branch, Ontario Ministry of Health and Long Term Care

Overview In 2012, the Ontario Ministry of Health and Long Term Care (MOHLTC) launched Health Links, a system-wide transformation to improve the coordination of care for the highest cost users in the health care system. By 2017, Health Links has matured to include more than 20,000 patients with coordinated care plans in nearly 90 individual Health Links across the province. The MOHLTC sought to evaluate the Health Links program by collaborating with Health Links and selected research groups. This panel presentation describes the collaborative evaluation program and results to date with highly relevant lessons for evaluations of broad health system programs. Approach In 2016, the MOHLTC approached five research groups to collaborate on this evaluation. A multi-method approach was undertaken including: 1. A quantitative evaluation using a quasi-experimental design based on a secondary analysis of provincial health administrative data; 2. Case studies of the implementation across six Health Links in three regions in the province; 3. Patient surveys to evaluate the impact of Health Links on patient experience in primary care across nine Health Links in three regions; 4. Caregiver surveys and interviews to assess the impact of Health Links on caregivers in the same nine Health Links ; and 5. A citizen panel to help direct the future orientation and further spread of the Health Links' approach to care. Results and Implications The panel speakers will provide insights from each of these perspectives as well as share their experiences with the broad collaborative approach to the evaluation. The anticipated value of this effort is a robust and time-sensitive evaluation outcome. Each perspective in the evaluation is represented. Dr. Walter Wodchis is scientific lead for the evaluation consortium and will provide context for the evaluation. Dr. Rick Glazier will outline both the opportunities and challenges of implementing a rigorous quasi-experimental design in the absence of a robust patient roster. Dr. Agnes Grudniewicz will highlight the approach and insights obtained from in-depth case studies of the implementation of Health Links, with an emphasis on insights about the organizational context and capabilities for successful implementation of integrated care. Dr. Mike Green will discuss the implementation of a patient survey and use of newly enrolled and existing clients to develop an assessment of the effects of Health Links. Dr. Ruta Valaitis will present a novel approach and insights gained from incorporating caregivers in the evaluation of this program. Dr. Michael Wilson will discuss the approach and outcomes of a citizen's panel on the topic of Health Links. Phil Graham, the director of primary care for MOHLTC will discuss the importance of this project, how the ministry decided to undertake this approach to the evaluation, and also to share his perspectives on policy implications arising from the evaluation.

Co-Author(s): Walter Wodchis, Agnes Grudniewicz, Richard Glazier, Ruta Valaitis, Michael Green, Michael Wilson, Phil Graham

E4: HEALTH SYSTEM PERFORMANCE

Big Data Meets Health Services Research Panel

Moderator: **Alan Katz** , Manitoba Centre for Health Policy

Presented by: **Lisa Lix,** Professor, University of Manitoba / **Karen Tu**, Professor, University of Toronto / **Sabrina Wong**, Professor, University of British Columbia

Objective: To discuss the challenges and potential solutions to the use of analysis of free text for health services research; to share the participants' experience with Natural Language Programming as a tool for Health Services Research in Canada Background: Canadian provincial administrative health and social data holdings have supported cutting edge health services research that has had a significant impact on the provision of healthcare in Canada and as a result on the health of Canadians. Through the addition of data like Electronic Medical Records (EMR) to administrative data repositories the breadth of these structured data holdings can be supplemented by the depth of information available in unstructured free text. Free text Analysis (FTA) transforms unstructured data into a structured form that facilitates further analysis. Analysis of free text or natural language was developed by computer scientists and has been used for some time in other fields. The translation of these techniques to health data has proven to be a particularly complex task in medicine when even specialists in the same field may use different terminology or grammatical constructions to describe the same disease, patient, or treatment status. The analysis of the transformed data could be traditional statistical analysis or a number of analytic techniques not yet commonly used in health services research. The presenters on the panel will share their experience with developing NLP at leading Canadian health services research centres: The Manitoba Centre for Health Policy – Alan Katz and Lisa Lix, the Institute for Clinical Evaluative Sciences (ICES) – Karen Tu, and PopData BC – Kim McGrail. They will share the challenges they have faced and the solutions they have developed including de-identification of free text, development of risk prediction models using free text, and disease identification. They will provide examples of the free text data sources currently being analyzed, the research questions being addressed by these analyses, share early results from these analyses and discuss the potential of future analyses. Relevance: The dramatic growth of EMR data available through networks like the Canadian Primary Care Sentinel Surveillance Network (CPCSSN) and the Electronic Medical Record Administrative data Linked Database (EMRALD®) has highlighted the potential of FTA as a tool to enhance traditional statistical techniques for health services research. The clinical details available through the inclusion and analysis of EMR data have the potential to dramatically enhance the power of health services research in Canada. This session will also provide the opportunity for members of the audience to share their experience with FTA.

Co-Author(s): Alan Katz, Lisa Lix, Kimberlyn McGrail, Karen Tu

E5: CHRONIC DISEASE MANAGEMENT | GESTION DES MALADIES CHRONIQUES

Seeing the forests and the trees-- using systematic reviews of complex interventions to enhance health system decision-making to improve diabetes care

Moderated by: **Noah Ivers,** Scientist and Family Physician, Women's College Hospital

Presented by: **Kristin Danko**, Doctoral Student, Ottawa Hospital Research Institute / **Justin Presseau,** Scientist, Ottawa Hospital Research Institute / **Jeremy Grimshaw,** Senior Scientist, Ottawa Hospital Research Institute / **Carolyn Gall Casey**, Director, Education, Diabetes Canada

Background: An increasing number of systematic reviews document the effects of quality improvement (QI) strategies to assist decision-makers in developing new initiatives. For example, we published a systematic review of 142 trials of QI strategies to improve care for patients with diabetes (Lancet 2012). We found that QI strategies work in general but were unable to offer detailed advice to decision-makers about which strategies to use in specific contexts. Poor reporting of primary studies and limitations in standard methods of meta-analysis reduce the utility of such syntheses for health system decision-makers. This panel will discuss innovative approaches to the conduct and analysis of our updated systematic reviews of diabetes QI to enhance their informativeness for health system decision makers. Methods: We updated our systematic review of diabetes quality improvement strategies, assessed a range of 13 outcomes, and enriched the dataset by surveying authors of all included trials to ensure a fulsome understanding of contextual factors. We used novel approaches for exploring heterogeneity (hierarchical, multivariate meta-regression analyses) to better understand how effective different QI strategies are across different contexts. We also tested the utility of different approaches to characterizing QI strategies, by applying the Behaviour Change Techniques Taxonomy for interventions targeting health professionals and/or patients. Finally, we explored the use of diabetes quality improvement strategies amongst vulnerable populations. Decision-makers were involved throughout to help identify and prioritize variables to be explored and to aid in the interpretation and dissemination of results. Results: We identified 278 randomized trials of diabetes quality improvement strategies, including 69,531 patients 200 patient randomized trials and 165,128 patients from 78 cluster randomized trials. Our panel discussion will present the results: Comparing standard to innovative analytical approaches; Concerning the implications of contacting authors for additional information; Exploring the implications of different approaches to characterise QI strategies; and Exploring the extent that equity considerations have been considered in diabetes QI trials. Finally we will discuss the challenges of maintaining a very large systematic review with rapidly evolving literature and the opportunities to convert our review into a living systematic review to ensure timely information for decision makers. Discussion: Our team of scientists and knowledge users have collaboratively developed and tested new methods to produce outcomes beyond just the 'mean effect' to inform new health system initiatives as they aim to improve outcomes for people with diabetes. We illustrate the value of novel approaches for exploring heterogeneity in meta-analysis of complex interventions, including different ways to describe the effective components of quality improvement strategies. We will also discuss the future of this synthesis as a Cochrane 'living systematic review' and how we are working with decision-makers to optimize evidence-use for new initiatives.

Co-Author(s): Kristin Danko, Noah Ivers, Justin Presseau, Jeremy Grimshaw, Carolyn Gall Casey

E6: MENTAL HEALTH | SANTÉ MENTALE

Quality Standards: Driving Evidence-Based Quality Improvement in Ontario Mental Health Care

Moderated by: **Erik Hellsten**, Manager, Quality Standards Strategy, Health Quality Ontario

Presented by: **Philip Klassen**, Vice President, Medical Services, Ontario Shores Centre for Mental Health Sciences / **George Mihalakakos**, Peer Support Worker, Centre for Addiction and Mental Health / **Ryan Monte,** Measurement Specialist, Health Quality Ontario / **Arielle Baltman-Cord,** Team Lead, Quality Improvement, Health Quality Ontario

It is a well-accepted truth in health care that evidence is a necessary but insufficient condition for achieving consistent adoption of evidence-based practice. The body of evidence to guide high quality care grows exponentially each year, yet wide gaps continue to persist between current practice and evidence-based care in many areas of health care. Traditional evidence translation vehicles such as clinical practice guidelines attempt to close these gaps, but often face challenges in gaining wide uptake due to their broad scope, lack of consideration of measurement or implementation mechanisms as well as resistance of health professionals to change. An increasingly popular guidance vehicle pioneered by England's National Institute for Health and Care Excellence and now adopted in Australia and a growing range of other OECD health systems is the 'quality standard'. Quality standards are concise sets of evidence-based statements that focus on high priority areas for improvement, with an emphasis on measurability, actionability and implementation. In 2016, Health Quality Ontario (HQO) partnered with interdisciplinary expert committees of clinicians, consumers and caregivers from across Ontario to develop Canada's first three quality standards, focusing on mental and cognitive health conditions: major depression, schizophrenia and behavioural symptoms of dementia. This panel session brings together clinicians, administrators, methodologists and consumers that were involved in the making of these quality standards to discuss their initiation, development, dissemination and implementation from their own unique perspectives. The panelists will walk the audience through the methods employed to systematically identify, appraise and synthesize evidence from a variety of guidance sources and then work with interdisciplinary expert panels—including consumer and caregiver representatives—to draw on this evidence to formulate sets of guidance statements directed toward the Ontario clinical context. The session will describe the methods and processes used to develop definitions for structure, process and outcome indicators developed to measure the adoption of these statements and evaluate their impact. Panelists will discuss the processes used to solicit and incorporate feedback from stakeholders, the public and consumer advisory groups on the content of the three draft standards, as well as the approaches used to disseminate the quality standards to a broad range of audiences, including the development of plain language summary versions of the standards designed to be accessible for patients, caregivers and the public. Finally, the panelists will discuss the strategies now underway to support clinical adoption of the quality standards across Ontario, including the use of measurement and reporting vehicles, the development of clinical decision support tools and hospital order sets, and the use of implementation science methods to customize messages and mechanisms to optimize uptake in key audiences. The audience will be invited to join the panelists in a discussion on the barriers, challenges and opportunities for adoption of evidence-based practice in Canadian health systems, with a special focus on the challenge of driving quality improvement in mental and cognitive health.

Co-Author(s): Erik Hellsten, Philip Klassen, George Mihalakakos, Ryan Monte, Arielle Baltman-Cord, Terri Irwin

E7: PHARMACEUTICAL POLICY | POLITIQUE PHARMACEUTIQUE

Exchanging Ideas for Tackling Pharmaceutical Costs

Moderated by: **Cheryl Camillo,** Assistant Professor, Johnson Shoyama Graduate School of Public Policy

Presented by: **Vivian Leong**, Senior Manager/Policy & Integration Unit/Drug Programs Policy and Strategy Branch, Ontario Ministry of Health & Long-Term Care / **Trish Riley,** Executive Director, National Academy for State Health Policy / **Sang Mi Lee**, Senior Pharmacist, pan-Canadian Pharmaceutical Alliance / **Burl Beasley,** Assistant Director-Pharmacy Services, Oklahoma Health Care Authority

Relevance: Pharmaceutical costs are a growing concern for the Canadian and United States health systems. Prescription drugs account for the second largest share (16%) of health spending in Canada and 10% of all health spending in the United States. In the U.S., prescription drug spending grew faster than any other service in 2015. In Canada, CIHI projects that drug spending will grow faster than hospital and physician spending in 7 provinces and territories this year. Due to high costs, many Canadians and Americans, particularly those with low income, go without needed drugs. Recent estimates of non-adherence amongst low-income Canadians range from 10-22%. This problem persists despite efforts to address it in both countries over the last decade, which include the implementation of a National Pharmaceutical Strategy in Canada and the adoption of a Medicare prescription drug benefit in the United States. Constraining costs is a current priority in both countries, at the federal and subnational levels. Amidst calls for universal pharmacare, Prime Minster Justin Trudeau asked Health Minister Jane Philpott in her mandate letter "to improve access to necessary prescription medications... reducing the cost Canadian governments pay for these drugs, making them more affordable for Canadians...." Incoming President Donald Trump American has pledged to reduce "runaway" drug costs. The National Academy for State Health Policy recently formed a Pharmacy Cost Work Group. American Medicaid Directors have made addressing prescription drug pricing a 2017 legislative priority. Objective: This panel will bring together senior Canadian and American health system officials with national and state oversight to exchange new ideas about how to solve the problem, including how they might partner in doing so. Topics will include reimportation of prescription drugs and joint price negotation. Panel: Panelists: Kevin Wilson, Executive Director, Drug Plan and Extended Benefits Branch, Saskatchewan Ministry of Health Trish Riley, Executive Director, National Academy for State Health Policy Anchalee Srisombun, Senior Negotiator, pan-Canadian Pharmaceutical Alliance Rebecca Pasternak-Ikard, Chief Operating Officer, Oklahoma Health Care Authority Moderator: Cheryl Camillo, Assistant Professor, Johnson Shoyama Graduate School of Public Policy

Co-Author(s): Cheryl Camillo, Burl Beasley, Trish Riley, Sang Mi Lee, Vivian Leong

Day 3: Friday, May 26 / Jour 3: Le vendredi 26 mai

Presentations are listed in the language in which they will be presented
Les exposés seront inscrits au programme dans la langue de leur presentation

10:00AM - 11:15AM CONCURRENT SESSIONS F

F1: HEALTH SYSTEM PERFORMANCE | RENDEMENT DU SYSTÈME DE SANTÉ

Indicator Framework for Measurement of Primary Care Performance in Persons with Dementia using Health Administrative Data

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

Health administrative data provide a unique opportunity to study the impact of health policy at a population level, particularly in dementia where comparative data are scarce. This project adapted an existing health performance framework and operationalized feasible indicators to the context of primary care for individuals with dementia in Ontario. We undertook a scoping review and identified 12 frameworks in Canada and elsewhere for the evaluation of primary care performance. We selected the Health Quality Ontario (HQO) framework due to its inclusive list of quality domains, overlap with other published frameworks, extensive number of indicators and relevance to the Canadian healthcare setting. A panel of family physicians, geriatricians, health services researchers and methodologists selected and operationalized HQO indicators relevant to dementia care and feasible with administrative data. Additional indicators of quality of dementia care were included based on the Canadian Consensus Conferences on Diagnosis and Treatment of Dementia (CCCDTD) guidelines. Eight of the nine HQO domains were measurable using health administrative data: Accessibility, Integration, Effectiveness, Efficiency, Equity, Safety, Population Health and Patient-Centeredness. The domain "Appropriate resources" included only practice-level indicators not measurable through administrative data. A subset of 10 HQO and 12 CCCDTD indicators across the eight domains were identified as relevant and feasible by the expert panel. Examples include the proportion with a regular primary healthcare provider (PHP) (accessibility), average number of readmissions within 30 days of hospital discharge (integration), proportion of dementia patients with dementia medication prescribed by a PHP (effectiveness), average cost of health services (efficiency), sex (equity), proportion prescribed anticholinergic medication (safety), proportion immunized for influenza (population health) and proportion who died at home (patient-centeredness). This adapted framework combines operational indicators of primary and dementia care performance measurable through health administrative data. It provides a foundation for the evaluation of primary care performance in the context of dementia, leveraging the rich information contained within health administrative data and based on a validated Canadian conceptual framework.

Co-Author(s): Nadia Sourial, Claire Godard-Sebillotte, Susan Bronskill, Isabelle Vedel

Increasing Trend of Canadian Medico-legal cases Outside Hospitals

Presented by: **Qian Yang**, Manager, Medical Care Analytics, CMPA

Increasingly, Canadian healthcare services are transitioning from hospital to community and ambulatory care settings. We reviewed the Canadian Medical Protective Association (CMPA) data to compare the medico-legal experiences of physicians practicing in hospitals with those in non-hospital settings. We also assessed the severity of patient outcomes associated with practice setting. We divided the CMPA civil legal actions and threat cases into 4 categories based on care setting: emergency department (ED), non-emergency in-hospital, physician office, and other out-of-hospital settings. We examined 10-year (2006-2015) trends of cases opened at CMPA to determine whether the transition of healthcare services out of hospital was reflected in the medico-legal cases. To test the association between severe outcomes (catastrophic, permanent major disabilities and death) and care setting, we built a logistic regression model using cases closed between 2011 and 2015. Other than care setting, independent variables also included patient age, Charlson comorbidity index, and contributing factors. Of the 8950 legal and threat cases opened in the CMPA (2006-2015), 50% were from non-emergency in-hospital settings, and 25% were from physician offices. The proportion of non-emergency in-hospital cases decreased from 53% in 2006 to 41% in 2015. Meanwhile, both ED (12% to 18%) and other out-of-hospital settings (9% to 14%) saw increases in medical-legal cases. Adjusting for patient age and comorbidity, we found no significant differences in patient outcomes from physician office and non-emergency in-hospital settings. However, patients treated in ED had an odds ratio of 2.3 for a severe outcome, with confidence interval of (1.9, 2.8). Contributing factors significantly associated with severe patient outcomes included: inadequate clinical decision making ($p < 0.0001$), poor provider situational awareness ($p < 0.0001$), and communication issues among providers ($p=0.0132$). The CMPA data reflected the transition of healthcare services to out-of-hospital settings. The likelihood of severe patient outcomes was same in physician offices and non-emergency in-hospital, higher in EDs. With increasing number and complexity of patients treated outside hospitals, understanding patient safety in these settings is of even greater urgency.

Co-Author(s): Qian Yang, Cathy Zhang, Lisa Calder

Demonstration of Starfield's observations about relationship between primary care quality and health system cost at the level of primary care teams in Ontario

Presented by: **carol mulder**, Provincial Lead, Quality Improvement and Decision Support , Assoc of Family Health Teams of Ontario

Starfield observed that high quality primary care was related to lower per-capita healthcare costs. The regional/national nature of these observations make them less actionable for providers. This study examines the quality-cost relationship at primary care team level in Ontario to facilitate healthcare sustainability via high quality primary care. All 184 members of the Association of Family Health Teams of Ontario (AFHTO) were invited to contribute quality and cost data to Data to Decisions (D2D), a performance measurement report, now in its 4th iteration. Consistent data extraction and compilation were enabled by team-level Quality Improvement Decision Support (QIDS) specialists. A composite measure of quality was calculated from patient experience, administrative and EMR data. Each component of the composite was weighted by its importance to patients in their relationship with their provider. It was compared to per-capita healthcare costs for primary care, hospitalization, diagnostic and consulting services and institutional care. Data were available for 120 teams (65%). The average quality score was 52.9 (S.D. =11.57, 25.2 – 85.3, compared to an approximated Ontario average of 30.6 based on publicly-reported aggregate data. The average per-capita cost (without institutional costs) was $2456.16 (S.D. = 504.65, 1234.68-4030.03). Linear regression analyses (controlling for patient panel size, Standardized Adjusted Clinical Group Morbidity Index (SAMI), rurality, teaching status and a surrogate measure of EMR maturity) showed that quality was negatively related to cost (R2 = 0.427). The relationship was stronger for urban than rural teams, suggesting other factors might be contributing to costs in different settings. Starfield's observation that high primary care quality is related to lower healthcare system costs applies to this setting. Factors affecting costs in rural/urban settings need further examination. Active participation of AFHTO members (and QIDS specialists in particular) in consistent, ongoing measurement via D2D was a crucial enabler of this study.

Co-Author(s): carol mulder, Richard Glazier

Reducing antipsychotic medication use among long-term care home residents: working together to bring about meaningful improvement

Presented by: **Maaike de Vries**, Senior Methodologist, Health Quality Ontario

The objective of this work was to support the long-term care sector (LTC) in reducing potentially inappropriate use of antipsychotic medication among LTC home residents through a cycle of measuring and reporting, developing evidence, setting quality standards, connecting and building capacity for improvement, and supporting implementation. A public report was released in May 2015 describing variations in antipsychotic prescribing among LTC homes, and home level results were reported publicly the following year. LTC homes were encouraged to include reducing antipsychotic use as a priority in their 2016/16 Quality Improvement Plans (QIPs). To support quality improvement and build capacity, an audit and feedback tool was launched in September 2015 to provide practice level data to physicians and a community of practice was established to connect homes and partner organizations. A quality standard and implementation plan for behavioural symptoms of dementia was released in October 2016. A decrease in potentially inappropriate antipsychotic use among LTC residents continues to be observed in Ontario. 85% of all homes selected appropriate prescribing of antipsychotics as a priority in their QIP, and a benchmark was set to support the setting of targets for this indicator. Physicians expressed that the audit and feedback tool, combined with change ideas, has provided a valuable component to deprescribing and reducing medications. Over 80% of homes found the community of practice to be likely or very likely to influence their approach to quality improvement. The implemented standard supports residents and families to know what care to ask for, help providers to know what should be offered, and organizations to know what to measure and improve in caring for these patients. In an effort to support the LTC sector to improve the quality of care for LTC residents, we continue to work together to bring about meaningful improvement through continued measurement and reporting, implementation of the quality standard, and strengthening the tools that enable quality improvement.

Co-Author(s): Maaike de Vries, Myra Wang, Michal Kapral, Sara Clemens, Cara Mulhall, Hasmita Sing, Julie Skelding, Arielle Baltman-Cord, Susan Brien

F2: MATERNAL AND CHILD HEALTH | SANTÉ MATERNELLE ET INFANTILE

Patterns of methadone use and perinatal outcomes among pregnant women in Ontario

Presented by: **Qi Guan**, MSc Student, University of Toronto

Methadone is the standard treatment for opioid use disorder during pregnancy as it minimizes opioid cravings and withdrawal symptoms without causing sedation or euphoria. In a population-based sample, we aimed to determine when women initiate methadone in relation to their pregnancies, and how timing of initiation may impact pregnancy outcomes. We conducted a population-based cohort study among Ontario female public drug beneficiaries who delivered a baby between 2005 and 2015 and filled >1 methadone prescription between conception and delivery. We compared women stabilized on methadone within 60 days before conception, newly initiated within 60 days before conception, and initiated post-conception on baseline characteristics including age and parity using descriptive statistics and key pregnancy outcomes such as small for gestational age, preterm birth and congenital anomalies using a logistic regression. Key pregnancy outcome rates for the overall cohort were also compared to that of the general population provided by Health Canada. Among 1,842 pregnant women, the median age was 26 (IQR 23-30), 71.2% (N=1,311) were multiparous, and 87.2% (N=1,606) lived in urban areas. Over two-thirds (68.5%; N=1,261) were stabilized on methadone before conception, 19.2% (N=353) were newly initiated before conception, and 12.4% (N=228) initiated after conception. About 22.2% (95% CI 20.3%-24.1%) of infants were small for gestational age, 17.5% were born preterm (95% CI 15.8%-19.4%) and 5.9% (95% CI 4.8%-7.0%) had a congenital anomaly. There was little variability by timing of initiation. These rates were substantially higher than those reported in the general Canadian population, i.e 8.5% for small for gestational age, 6.1% for preterm birth and 3.9% for congenital anomalies. Most Ontario women requiring methadone during pregnancy initiate prior to conception or shortly after conception. Rates of negative pregnancy outcomes do not vary based on timing of methadone initiation, but are higher than the general population. This affects the lives of this already-vulnerable population and should be carefully monitored.

Co-Author(s): Qi Guan, Beth Sproule, Suzanne Cadarette, Simone Vigod, Diana Martins, Tara Gomes

Engaging patients and staff to introduce a quiet time on a maternity ward: post-implementation results

Presented by: **Marcela Hidalgo**, patient engagement coordinator, St. Mary's Research Centre

In a hospital with a 'baby-friendly' designation, the healthcare team introduced a quiet time on the maternity unit in the context of an evaluation to understand the barriers and benefits. The objective in this phase of the study was to assess perceptions and experiences of new mothers, clinicians, and staff. The overall evaluation used a mixed methods pre-post evaluation design, involving concurrent qualitative and quantitative data collection and analysis pre and post intervention. We adopted a participatory approach where the research team worked in partnership with staff and patients on the ward to initiate and conduct the study. In the post-implementation phase, we collected data on patient experience using the Canadian Patient Experience Survey, conducted qualitative interviews with staff and patients, measured noise levels and disruptions on the unit, and met regularly with clinical team members regarding lessons related to obstacles and enablers for this change. Patients and staff reported overwhelming support for the intervention with mention of specific benefits. Data collection has been completed for all aspects and results are being analyzed for presentation. From a preliminary review, we anticipate that there will be low congruence between quantitative and qualitative measures of overall experience and benefits. Noise pre-implementation was above WHO standards; we anticipate improvement post-implementation. Barriers to change related to logistics of communicating the daily quiet time routine and compliance of staff in terms of changing established behaviours and norms. Enablers included motivation and leadership amongst senior staff and flexibility of services to adapt schedules. This initiative has generated interest from other hospital units for adoption. These results contribute to the scant literature in support of quiet time interventions. The implementation of a quiet time on a maternity ward was an important intervention in delivering patient-centered care. This evaluation provided unique insight and understanding of the barriers and enablers to institutional change, and regarding the benefits of a quiet time from the perspective of postpartum mothers and staff.

Co-Author(s): Marcela Hidalgo, Jennifer Somera, Safina Adatia, Marie-France Brizard, Susan Law

Accuracy of community general pediatrician diagnosis of autism spectrum disorder (ASD) compared to multi-disciplinary team (MDT) assessment

Presented by: **Melanie Penner**, Clinician Investigator, Holland Bloorview Kids Rehabilitation Hospital

Encouraging general pediatricians to make ASD diagnoses may increase diagnostic capacity and decrease wait times; however, there are currently no studies evaluating the accuracy of their ASD diagnoses. This study's objective is to determine agreement in ASD diagnosis between general pediatricians and a subspecialist MDT assessment. This study follows a prospective, cross-sectional design. There are two target populations for recruitment: 1) general pediatricians (projected n = 6), and 2) their patients under 5.5 years referred for developmental concerns (n = 60 total; 10/pediatrician). MDT and general pediatrician assessments are conducted blinded to each other's impressions. The MDT consists of a developmental paediatrician and a psychologist. Both the pediatrician and the MDT independently record a forced decision on whether the child has ASD and a Likert scale score assessing their certainty regarding their diagnostic impression. Agreement between the two assessments is measured with a simple kappa statistic. To date, 12 assessments have been completed (7 males, 5 females; mean age 37 months, range 25-55). Ten of the children in the preliminary sample had an ASD diagnosis as determined by the MDT. General pediatricians agreed with the MDT team on 75% of cases (kappa = 0.7, substantial agreement). There was one false negative from the pediatrician in which the pediatrician reported they would have taken a watch and wait approach, and there were two false positives in which pediatricians would have referred to a subspecialist. Of the 9 cases with agreement, pediatricians reported that they would provide the ASD diagnosis for 4 of the cases, watch and wait for 1 of the cases, refer to a subspecialist for 4 of the cases. This ongoing project will evaluate the diagnostic agreement between general pediatricians and an expert MDT. Further analysis of cases with and without agreement will allow for development of triaging procedures to delineate which cases are appropriate for the community and which are sufficiently complex to warrant a tertiary assessment.

Co-Author(s): Melanie Penner, Lana Andoni, Evdokia Anagnostou, Jessica Brian

The moral foundations of child health and social policy: A critical interpretive synthesis

Presented by: **Avram Denburg**, Staff Physician, Hospital for Sick Children

Most societies seem to attach special importance to children and childhood. However, little clarity exists on the values that guide child health and social policymaking. Our research maps the normative dimensions of child health and social policy to inform future analyses of policy for children on a range of issues. We conducted a structured review of the academic and grey literature of the ethical and social values that inform health and social policies for children. Our search strategy followed a critical interpretive synthesis approach: in addition to tightly specificed searches based on systematic review methodology, we undertook purposive and theoretial sampling of the wide-ranging literatures relevant to this question. Data analysis proceeded through four stages: coding of major concepts and values, development of sythetic constructs, interrogation of points of tension or discordance among constructs, and development of a theoretical framework from our main findings. Our review of the literature exposes a paucity of explicit analyses of the normative foundations of child health and social policy. Few formal attempts to name, interrogate, or prioritize select values are evident. Nevertheless, three central themes, each encompassing a few key values, emerge from the literature: potential, rights, and risk. A core set of foundational concepts also cuts across disciplines: well-being, participation, and best interests of the child inform debates on the moral and legal dimensions of a gamut of child social policies. Finally, a meta-theme around embedding emerges from the academic discourse, which gives form to the pervasive issue of a child's place, in the family and in society, at the heart of much social theory and applied analysis on children and childhood. Foundational understanding of the dominant policy frames applied to children can enrich future analyses of social policies for children on a range of issues. Our proposed schema of values will help gauge social policy prescriptions not only by measures of outcome but also by evidence of their alignment with societal values.

Co-Author(s): Avram Denburg, Julia Abelson

F3: MENTAL HEALTH | SANTÉ MENTALE

Guideline-adherent diabetes care for individuals with comorbid schizophrenia: A sex-based analysis

Presented by: **Lucy Barker**, Psychiatry Resident, University of Toronto

Over 10% of individuals with schizophrenia have diabetes, and they are less likely to receive guideline-adherent diabetes care compared to individuals without schizophrenia. Sex and gender contributions to this disparity remain incompletely understood. We aimed to determine whether guideline-adherent diabetes care differs between women and men with schizophrenia. We conducted a population-based cohort study using Ontario health administrative data to compare guideline-adherent diabetes care between women (n=13,972) and men (n=12,287) with schizophrenia (2011-2013). The primary outcome was guideline-adherent diabetes care, defined as > 1 retinal exam, > 4 HbA1c tests, and >1 dyslipidemia test during the 2-year observation period. Secondary outcomes were meeting criteria for each of the different types of tests individually. Logistic regression models generated crude and adjusted odds ratios (aOR) and 95% confidence intervals (95%CI) comparing women to men (referent). Models were adjusted for all baseline characteristics with standardized differences >0.10. Women were more likely to receive guideline-adherent diabetes care than men during the two-year study period (25.2% vs. 23.0%; aOR 1.20, 95%CI 1.10-1.30, adjusted for age, duration of diabetes, and Aggregated Diagnosis Groups measuring medical comorbidity and stable psychosocial stressors). Women were more likely than men to have had at least one eye exam (aOR 1.13, 95%CI 1.08-1.19) and at least four HbA1C tests (aOR1.06, 95%CI 1.01-1.12), but were not significantly more likely to have had at least one dyslipidemia test (aOR 1.04, 95%CI 0.99-1.11). A greater proportion of women met criteria for at least one of the recommended tests (86.3 vs. 82.9%, aOR 1.16, 95% CI 1.08-1.24). Diabetes care is similarly poor in women and men with schizophrenia, with women receiving slightly more frequent guideline-adherent diabetes care. Sex differences in diabetes care among those with schizophrenia are smaller than in other populations, and less significant than the poor quality of diabetes care observed in schizophrenia generally.

Co-Author(s): Lucy Barker, Paul Kurdyak, Binu Jacob, Simone Vigod

Examination of Repeat Hospital Admissions for Mental Health Conditions Among Children and Adolescents in New Brunswick

Presented by: **David Miller**, Doctoral Student, University of New Brunswick

Access to psychiatric services is insufficient for children and adolescents in Atlantic Canada. Unfortunately, the limited available services are exacerbated by youth who are readmitted, with readmission rates ranging from 35 to 50 percent. This study examined predictors of readmission to acute psychiatric care services in New Brunswick. Consistent with the prevailing literature on psychiatric hospitalisations, we examined key demographic, support, and illness/treatment factors. The New Brunswick Discharge Abstract Database (NB DAD) was used to compile a retrospective readmission cohort, consisting of all children and adolescents ages 3 to 19 years who were admitted to psychiatric care in a New Brunswick hospital between April 1, 2003 and March 31, 2014 (N = 3,825). Primary analyses consisted of: (1) Kaplan-Meier survival methods with Log-Rank tests to assess variability in time to readmission and (2) Cox regression to identify significant predictors of readmissions. A total of 27.8 percent of the admitted child and adolescent population experienced at least one readmission in the 10-year period. Of those readmitted, over half (57.3 percent) readmitted within 90 days post-discharge. Bivariate results indicated that male, upper-middle-class adolescents aged 11 to 15 years from non-rural communities were more likely to be readmitted. Factors generally associated with a significantly increased likelihood of readmission were older age, being male, higher SES, referral by medical practitioner/clinician, discharge to another health facility, mood/affective disorder diagnoses, previous psychiatric admission, comorbidity, and ambulance use. In contrast, those factors associated with significantly reduced readmission likelihood were smaller community size and referral to medical practitioner/therapist. Of the associated variables, age, SES, and referral source had the strongest positive relationship with readmission. The impact of demographic and support structures on readmission are pronounced, indicating that those children and youth with certain demographic characteristics and specific types of support structures (that instigate referral) explain a significant portion of the variance in readmission likelihood. Implications and future directions of these findings are discussed.

Co-Author(s): David Miller, Scott Ronis, Amanda Slaunwhite, Michael Zhang, Richard Audas

F4: PRIMARY HEALTH CARE | SOINS DE PREMIÈRE LIGNE

Using an implementation science framework to evaluate an online portal to assess and manage frailty in primary health care

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

This study examined the implementation of a web-based tool called the Frailty Portal; developed to aid in the screening, identification, and care planning of frail patients in primary health care (PHC). An implementation science framework, the Consolidated Framework for Implementation Research (CFIR), guided the evaluation design for the study. Semi-structured key informant interviews were conducted with a purposive sample of stakeholders that included PHC providers, administrators and decision makers. CFIR constructs were reviewed then used to develop open-ended questions to probe different perspectives on the development and implementation of the Portal. Transcripts were coded in Nvivo software. Deductive content analysis was used to make sense of the meanings in the data. Analysis was an ongoing iterative process consisting of multiple reviews of the data that involved both reflexive and interactive processes among team members. Codes aligned with CFIR constructs, then themes emerged using an inductive process A total of 17 semi-structured interviews were conducted with stakeholders that included decision makers (n=2), health authority administrators (n=4), family physicians (n=6), nurse practitioners (n=3) and other (n=2). Themes reflected participants' experiences with the Portal, the complexity of the intervention and implementation processes, and were informed by CFIR constructs. Our three themes were: 1) PHC Practice Context (e.g. difficulty fitting the Portal into their practice routine, opportunity costs to using the Portal) 2) Intervention attributes affecting implementation (e.g. need for follow-up training, not linked to electronic medical record, challenges implementing associated care plans), and 3) Targeting providers with older patients (e.g. frailty was identified as being important by administrators, providers did not take time to use the Portal unless their patient population was primarily elderly). The CFIR-inspired interview questions helped uncover critical aspects of implementation at the organizational and health authority levels that may otherwise not have been identified. The study identified key intervention characteristics that need to be modified to help providers integrate the Portal into their practice routines.

Co-Author(s): Grace Warner, Beverley Lawson, Frederick Burge, Tara Sampalli, Victoria Law

Conditions d'adoption du dossier de santé électronique personnel pour la gestion des maladies chroniques en première ligne au Québec : Perspectives professionnelle et organisationnelle

Presented by: **El Kebir Ghandour**, Étudiant, CERSSPL-UL

Cette étude visait à décrire et analyser, selon les perspectives des professionnels et des gestionnaires, les facteurs influençant l'adoption du dossier de santé électronique personnel (DSE-P) par les professionnels pour le suivi et la gestion des maladies chroniques en première ligne de soins au Québec. Nous avons mené une étude qualitative dans le cadre d'un projet d'expérimentation du DSE-P au Québec. Les entrevues individuelles semidirigées réalisés auprès de professionnels et gestionnaires directement impliqués dans l'implantation du DSE-P dans une organisation de première ligne. Les entrevues sont enregistrées et transcrites verbatim avant l'analyse de contenu, type thématique. Nous avons préconisé une analyse inductive-déductive, itérative et très flexible. Notre recherche s'inscrivant dans un contexte d'implantation, nous avons étendu notre analyse aux concepts du cadre proposé par Holahan et al. (2004), liant l'efficacité de l'implantation et l'adoption aux antécédents organisationnels dans le contexte précis d'implantation de système d'information. Nous notons l'ouverture des professionnels et organisations de première ligne aux approches innovantes d'optimisation de la gestion des maladies chroniques. Six thèmes principaux regroupant des facilitateurs ou des barrières à l'adoption et l'intégration du DSE-P dans la pratique ont été identifiés : un contenu pertinent complémentaire, une communication bidirectionnelle soutenant le développement du partenariat patient-professionnels, le support et le leadership des cliniciens, la maturité et l'intégration avec les systèmes disponibles et l'adaptation au contexte de la pratique clinique. Les précurseurs organisationnels identifiés réfèrent à l'ouverture de l'organisation envers l'innovation, aux valeurs des participants, mais surtout aux pratiques mises en place pour supporter l'adoption du DSE-P aussi bien par les professionnels que leurs patients. Aussi, le coût est un enjeu important à l'implantation du DSE-P. Le DSE-P est un outil prometteur pour soutenir un rôle plus actif des patients atteints de maladies chroniques dans leurs soins en collaboration avec l'équipe clinique. Cependant, plusieurs facteurs individuels, organisationnels, liées aux patients utilisateurs et à la technologie offerte déterminent l'adoption et l'intégration de l'outil dans la pratique clinique.

Co-Author(s): El Kebir Ghandour, Marie-Pierre Gagnon, Jean-Paul Fortin

Multimorbidity in Canada: Understanding the Patterns and Progression of Multiple Chronic Diseases Using a Pan-Canadian Electronic Medical Record Database

Presented by: **Kathryn Nicholson**, Doctoral Candidate, Western University

Multimorbidity, that is the coexistence of multiple chronic diseases within an individual, is an increasing burden for patients, primary health care (PHC) providers and policy-makers alike. Enhanced understanding of multimorbidity in Canada is needed. The objectives of this research were to determine the patterns and progression of multimorbidity over time. Data were derived from the Canadian Primary Care Sentinel Surveillance Network (CPCSSN) electronic medical record (EMR) database of longitudinal, de-identified information from PHC practices across Canada. Patients who had > 1 in-office encounter recorded in their EMR and who were > 18 years at first encounter date were included (N=367,743). The ICD-9 classification system identified chronic disease diagnoses and a list of 20 chronic disease categories identified patients with multimorbidity. The most commonly occurring unique combinations (unordered clusters) and unique permutations (ordered clusters) were computed using JAVA programming, while descriptive and multilevel survival analyses were conducted using Stata 14.1 software. Among all adult PHC patients, 53.3% were living with at least 2 chronic diseases and 33.1% were living with at least 3 chronic diseases. A high proportion of these patients with multimorbidity were female and under the age of 65 years. A total of 6,095 combinations and 14,911 permutations were detected among female patients with multimorbidity. A total of 4,316 combinations and 9,736 permutations were detected among male patients with multimorbidity. The most frequent patterns (combinations and permutations) of multiple chronic diseases will be presented, stratified by patient sex and age category. Specific longitudinal patient profiles will also be presented. A multilevel survival analysis indicated decreased time elapsing until subsequent chronic disease (33.0% increase in rate until next chronic disease), as well as relevant predictors. This research explores the complex clinical profiles of adult PHC patients with multimorbidity in Canada. These findings will contribute the Canadian context to the international multimorbidity literature, and can be used strategically to inform more effective health care delivery and health policy decisions for adults living with multimorbidity in Canada.

Co-Author(s): Kathryn Nicholson, Amanda Terry, Martin Fortin, Tyler Williamson, Amardeep Thind

Primary care accessibility for adolescents in the medical home: a population-based retrospective cohort study in Québec

Presented by: **Hyejee Ohm**, Student, McGill University

To assess the extent to which Family Medicine Groups (FMGs) are associated with increased access to care and decreased health inequalities for adolescents. FMGs are a new model of multidisciplinary primary care (PC) based on principles of the medical home and implemented in Québec over a decade ago. Population-based retrospective cohort study linking province-wide health administrative data in Québec for adolescents 12-18 years of age between 2010-2013 (n=574,964). Multivariate regression analyses were performed to test associations between 4 PC models (FMGs, family physicians not part of FMGs, pediatricians, or no PC) and two outcomes: emergency department (ED) visits (main outcome; proxy for PC accessibility) and PC visits (secondary outcome). Models were adjusted for confounders: age, sex, co-morbidities, rurality, socioeconomic status (SES). Reasons for ED visits was examined through the ICD-9CA diagnostic codes on physician claims. Secondary analysis assessed for effect modification, testing the interaction between SES and PC model. The distribution of adolescents across PC models was the following: 19.7% in FMGs, 13.7% in pediatric care, 10.1% in non-FMGs, and 56.5% in no PC. Compared to adolescents receiving care from FMGs, fewer ED visits were made when receiving care from pediatricians (incidence rate ratio [IRR] 0.90, 95% CI 0.87-0.93) or with no PC (IRR 0.89, 95% CI 0.87-0.91). No significant differences in rates of ED use were found between FMGs and non-FMGs (IRR 0.98, 95% CI 0.95-1.02). Adolescents in pediatric (RR 1.29, 95% CI 1.28-1.31) and non-FMG models (RR 1.12, 95% CI 1.11-1.13) were more likely to receive a PC visit than those in FMGs. FMGs reduced inequality in PC visits between the lowest and highest SES groups compared to non-FMGs. The majority of adolescents did not utilize PC. FMGs were not associated with improved access for adolescents, but were associated with reduced inequalities in PC visits compared to non-FMGs. The current study identifies gaps in adolescent PC – future studies should ascertain and address the barriers and facilitators of PC accessibility.

Co-Author(s): Hyejee Ohm, Isabelle Vedel, Giuseppina Di Meglio, Elham Rahme, Patricia Li

F5: CHRONIC DISEASE MANAGEMENT | GESTION DES MALADIES CHRONIQUES

Implementation of Good Life with Osteoarthritis in Denmark (GLA:DTM): group education and exercise for hip and knee osteoarthritis is feasible in Canada

Presented by: **Aileen Davis**, Senior Scientist, Krembil Research Institute University Health Network

Current clinical practice does not reflect the use of evidence-based non-surgical management of hip and knee osteoarthritis (OA). We evaluated feasibility to implement a Danish group education and exercise program (GLA:DTM) in Canada, and outcomes for people with mild to severe hip/knee OA who were not surgical candidates. Patients triaged to non-surgical management participated in two 1.5 hour education sessions and supervised, neuromuscular exercise twice a week for six weeks. Patients completed surveys pre-program and at 3 months follow-up. The primary patient outcome was the numeric pain rating scale (0-10); secondary outcomes included physical function and quality of life measured by the Knee/Hip Osteoarthritis Outcome Score, self-efficacy and number of days per week of > 30 minutes of moderate physical activity. We evaluated program fidelity through observation and conducted semi-structured interviews with therapists post-program. Participant perceived benefit, frequency of information use, satisfaction and willingness to pay were collected. 58/58 patients provided follow-up data. Mean age was 67 years; 78% were female. 86% had >high school education and 52% had BMI >25. There was a 40% improvement in pain (average decrease from 5 to 3 points) and 60% achieved a clinically important improvement. Statistically significant improvement also occurred in function, quality of life, and self-efficacy (12, 19 and 10% respectively). 24% reported increased physical activity. Program fidelity was confirmed. Therapists emphasized that rolling recruitment allowed appropriate supervision of 6-8 people per class and resulted in participants encouraging each other. Patients asked for future refresher sessions. 99% of participants indicated they benefited from and were satisfied with the program and 89% reported using the knowledge daily. 53% were willing to pay >$200 for the program. GLA:DTM was successfully implemented in the Canadian context. The results for participants in this pilot mirror those reported from >5,000 participants in the Danish GLA:DTM registry for 2015. Implementation of GLA:DTM Canada is now occurring in Ontario and Alberta with expansion to British Columbia and the Maritimes in 2017.

Co-Author(s): Aileen Davis, Deborah Kennedy, Rosalind Wong, Soren T. Skou, Linda Li, Susan Robarts, Rhona McGlasson, Ewa Roos

The New Triple Threat: Scalable, Spreadable and Sustainable

Presented by: **I Sibbald**, Assistant Professor, Western University

Chronic Obstructive Pulmonary Disease(COPD) is a primary cause of hospitalizations. The INSPIRED COPD Outreach ProgramTM is spreading across Canada, showing patient care and system outcomes. This mixed-methods study analyzes the implementation efficacy of INSPIRED across Canada, building on the limited research on spread and scaling up programs and sustainability impact. Nineteen teams participated in a one-year (2014-2015) pan-Canadian spread collaborative launched via a public-private partnership. The collaborative aimed to support teams' adaption and adoption of an INSPIRED approach to care. Committed teams required interdisciplinary composition, connections across acute and community care, local leadership support, participation in the curriculum (covering evidence-based medicine and quality improvement), plus sharing of measurements and progress. The mixed-methods summative evaluation relied on post-collaborative team final reports, key informant interviews, focus groups and self-ratings of progress. At least one team/province participated (19 sites); and >1000 patients. Nineteen teams submitted final reports. Thirteen teams (n=38) participated in either a team interview (n=8 teams, n=31) or focus group (n= 5 teams; n=7).Teams reported quality of care gains: Greater self-confidence in symptom management; substantially fewer ED visits and hospitalizations for enrolled patients. 18/19 teams successfully adapted INSPIRED to local context. Context, leadership and existing collaboration were major factors in determining sustainability of local INSPIRED programs. Sustainability was maintained on different levels not limited to the program itself, but also through integration with existing programs, and by sustained (and improved) data collection. Teams contemplating scaling up indicated collaboration and coordination with existing programs as a means to achieving. The collaborative demonstrated that spread of innovation is achievable, even within short timeframes. Lessons learned through dissemination of the INSPIRED COPD program should be of value to senior policy and decision makers where better care, better outcomes and better value are priorities.

Co-Author(s): I Sibbald, Jennifer Verma, Graeme Rocker

Optimizing the health of older adults with multiple chronic conditions: The development of the KeepWell Tool

Presented by: **Monika Kastner**, Research Chair, North York General Hospital

To develop a patient-centered, web-based knowledge transation (KT) tool called "KeepWell" with the potential to optimize the self-management of older adults (age ? 65 years) with multimorbidity. KeepWell integrates risk assessment, and evidence-based, self-management recommendations from among 11 high-burden chronic diseases affecting older adults (e.g., diabetes, arthritis, dementia). We used an integrated KT strategy (involving older adults, e-health and KT experts and health care providers) and the Knowledge-to-Action framework to create KeepWell. The tool (including its name) was co-designed by a working group of 10 older adults with one or more chronic conditions. The features and design of the conceptual prototype was informed through seven "discovery" focus groups with our older adult working group. The prototype was iteratively created using input from: 1) older adults; 2) evidence-based clinical practice guidelines across 11 chronic conditions; 2) family physicians, geriatricians, KT researchers; 3) and literature on KT and behaviour change. KeepWell is a web-based application that can be used on any computer, tablet, or smartphone. An avatar navigates the user through the application, acting as their personal health coach. It begins by prompting older adults to identify their "wellness vision" (health goal) followed by a disease/lifestyle risk assessment questionnaire. This generates a summary of their risks, what they mean and their importance. Tool users are then led through a priority setting process to narrow their self-management recommendations. This generates an Action plan, which includes customized, evidence-based recommendations on what to do about their priority risks and how. This is supplemented by an innovative picture-based tracking system to monitor lifestyle habits (e.g., nutrition, exercise, smoking) designed to maximize sustained engagement with KeepWell, and to facilitate self-management. The KeepWell tool integrates the care of any combination of 11 high-burden chronic conditions affecting older adults, and responds to the complexities of disease concordance/discordance. Next steps involve usability testing KeepWell with older adults, and conducting an RCT to determine its impact for increasing healthy lifestyle behaviours and self-efficacy.

Co-Author(s): Monika Kastner, Leigh Hayden, Julie Makarski, Yonda Lai, Nate Gerber, Anu Jhajj, Joyce Chan, Victoria Treister, Sharon Straus

Comorbidity and healthcare service use in stroke survivors stratified by age and sex

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

Among stroke survivors, comorbidity burden is high and is linked to higher healthcare service use. However, little is known about age and sex differences in comorbidity in this population. This study reports on age and sex differences in comorbidity among stroke survivors and how these relate to healthcare service use. This retrospective cohort study identified community-dwelling individuals aged >65 years on April 1, 2008 who had experienced a stroke at least 6 months prior using administrative data from Ontario, Canada. The cohort was stratified by age and sex and the existence of 14 comorbid conditions was determined using algorithms validated for use with administrative data. The prevalence of comorbid conditions was determined for each age/sex stratum and level of comorbidity (measured by number of conditions), and was explored in relation to use of specific healthcare services (general practitioner and specialist visits, emergency department visits, and hospital admissions) over one year. The cohort consisted of 26,673 stroke survivors, with 50% being male. The age distribution was 32% under 75, 46% between 75 and 84 years old, and 22% above 85 years old. The sex distribution changed with age. The under 75 age group was 42% female, rising to 62% in the over 85 age group. The comorbidity burden was high, with 65% having 2-4 comorbidities and 30% having 5 or more. For both sexes, the number of comorbid conditions increased with age. Utilization of all services increased with number of comorbid conditions for both sexes. No significant differences in utilization were observed across the range of health care services when the sample was stratified by age and sex. While healthcare utilization is thought to increase with age, this relationship was reduced substantially when comorbidity burden was held constant. This pattern was similar across sexes. These results suggest that comorbidity burden is an important predictor of health service use, while age and sex play a lesser role.

Co-Author(s): Kathryn A. Fisher, David Kanters, Lauren Griffith, Dilzayn Panjwani, Christopher Patterson, Maureen Markle-Reid, Jenny Ploeg, Andrea Gruneir

11:30AM - 12:45PM CONCURRENT SESSIONS G

G1: HEALTH SYSTEM PERFORMANCE | RENDEMENT DU SYSTÈME DE SANTÉ

Post-acute rehabilitation and medical oversight of hip fracture patients

Presented by: **Kristen Pitzul**, PhD candidate, University of Toronto

To compare the intensity of post-acute rehabilitation and medical oversight (i.e., physician visits) received by matched hip fracture patients discharged to either inpatient rehabilitation or the community within 30 days of acute care discharge in Ontario, Canada. This study also describes re-hospitalizations associated with rehabilitation intensity and physician visits. Propensity-score matched retrospective cohort of older hip fracture patients who were discharged from acute care to either inpatient rehabilitation ((IPR) patients) or the community (community patients), within two health region groupings: HighIPR region (regions with relatively high number of IPR beds) and LowIPR region (regions with relatively low number of IPR beds). Outcomes are rehabilitation receipt and intensity (number of visits); physician visit or intensity; and re-hospitalization within 30 days of acute care discharge. Approximately 60% of community patients received post-acute rehabilitation. The intensity of rehabilitation and physician visits were substantially lower in community patients (median N=4 rehabilitation visits and N=7 physician visits) compared to matched IPR patients (median N=23 rehabilitation visits and median N=27-31 physician visits, depending on health region). Community patients also had substantially higher re-hospitalization rates (22%-36%, depending on health region) compared to matched IPR patients (8.9%-10%, depending on health region). Of those IPR and community patients with similar rehabilitation intensities (approximately 10 hours), this difference in proportion of patients who re-hospitalize is attenuated (i.e., between 15%-18% for IPR patients and 24%-27% for community patients, depending on health region). IPR patients have a substantially higher proportion with general practitioner visits and physiatrist visits. Rehabilitation intensity for these community patients should be increased to reduce re-hospitalization rates. However, medical oversight also appears to play a role. Future research should focus on the system resources required to provide these community patients increased rehabilitation intensity, and further investigate the role of medical oversight.

Co-Author(s): Kristen Pitzul, Hans Kreder, Walter Wodchis, Michael Carter, Susan Jaglal

A Comparison of Administrative Data versus Surveillance Data for Hospital-Associated Methicillin-Resistant Staphylococcus aureus Infections in Canadian Hospitals

Presented by: **Farhat Farrokhi**, Project Lead, Canadian Institute for Health Information

Administrative data may complement surveillance programs by providing a standardized approach to reporting/monitoring antimicrobial resistant infections across Canadian hospitals and allowing for inter-facility comparability of risk-adjusted rates. This study assessed the accuracy of administrative data in capturing in-hospital infections due to methicillin-resistant Staphylococcus aureus (MRSA) in comparison to surveillance data. A retrospective study of all in-hospital MRSA infections was conducted for a 12-month period, for 217 acute Canadian hospitals (124 in Ontario, 93 in Alberta), using administrative data and compared against surveillance data . Hospital-associated cases for MRSA bloodstream infections in Ontario, and for all body site infections in Alberta were identified. Pearson correlation coefficients were used to compare the number of hospital-level MRSA cases between administrative versus surveillance datasets. The correlation of all body site infections versus MRSA bloodstream infections was also assessed within the Ontario administrative data. There was a strong correlation ($r=0.79$, $p < 0.0001$, 95% CI [0.72, 0.85]) between the administrative and surveillance databases for hospital-level MRSA bloodstream infections in Ontario. A stronger correlation ($r = 0.92$, $p=< 0.0001$, 95% CI [0.88, 0.94]) was observed for Alberta, between all body site MRSA infections in the administrative and surveillance data. Within the Ontario administrative data, a strong correlation ($r=0.95$, $p < 0.0001$, 95% CI [0.93, 0.96]) was observed between in-hospital MRSA bloodstream and all body site infections for the 124 Ontario hospitals. A total of 334 all body site MRSA infections were identified from the Ontario administrative data, representing an additional 166 infections when compared to MRSA bloodstream infections only. Administrative and surveillance datasets identify comparable hospital-level counts of MRSA infections. The “In-hospital Infections due to MRSA” indicator (developed using administrative data), will be publicly available in 2017 and will complement surveillance programs by creating a standardized definition for measuring these infections and monitoring/comparing standardized rates across Canadian hospitals.

Co-Author(s): Mary Elias, Farhat Farrokhi, Nick Daneman, Kathryn Bush, Chantal Couris, Kira Leeb

MRI wait times in Ontario – an evidence-based tool to assist allocating regional funding hours to improve decision making and patient wait times

Presented by: **Luciano Ieraci**, Senior Methodologist, Cancer Care Ontario

Access to Care and Strategic Analytics at CCO developed analyses to help Local Health Integration Network (LHIN) stakeholders examine MRI wait times in Ontario. The results were packaged in a final tool that predicts the optimal allocation of funding (in scan hours) within each LHIN incorporating hospital-level performance indicators. Analyses were developed using the Wait Time Information System (WTIS) with statistical methods embedded in an operations research design. MRI demand was predicted for the next three years for different priority queues using time series analysis at both the LHIN and hospital level. A mathematical model produced optimal allocation of funding to improve two MRI wait time performance indicators predicted through regression analysis: percent of scans completed within access target; and 90th percentile wait time. Policy-relevant parameters allowed users to customize growth in MRI demand; scan efficiency and throughput; P3 waitlist reduction; and equity by balancing indicator values across hospitals. LHIN stakeholders are able to use the tool to examine predicted MRI demand and the corresponding effect on 90th percentile wait times and percent completed within access target metrics. Different scenarios were analyzed showing the effect of specific policy changes: LHIN-level 90th percentile wait times for lower priority MRI scans decreased according to the recommended and optimized funding allocations. In addition, 90th percentile wait times also decreased based on improved MRI efficiency and throughput; and decreased by minimizing the discrepancy in performance indicator values across hospitals within the LHIN of interest. Certain scenarios demonstrated that existing allocation processes are already optimized with the ideal hospital allocations. LHINs requested a tool to assist in allocating funding for MRI scans in Ontario to improve access within their region. Feedback from the LHINs was integrated in the tool's development from the onset. The tool has shown stakeholders the value of modifying policy levers to reduce MRI wait times.

Co-Author(s): Luciano Ieraci, Saba Vahid, Brian Ho, Kala Studens, Penny Wang, Ali Vahit Esensoy, Jonathan Norton

Your Health System: Helping Sunnybrook Health Science Centre Focus on Key Quality of Care Initiatives

Presented by: **Joseph Amuah**, Senior Researcher, Canadian Institute for Health Information

The objective of this presentation is to demonstrate how an Ontario hospital used the Your Health System: In Depth tool to identify opportunities for improvement related to clinical and process outcomes. The aim was to decrease Surgical Catheter Associated Urinary Tract Infections from 2.5% to 1.7% by April 2016. After further analysis through chart reviews, it was discovered that the two greatest contributors to this hospital's in-hospital sepsis cases were ventilator associated pneumonia (VAP) and Urinary Tract Infections (UTI); with the greater opportunity for improvement being with UTI rates. The component pieces of the action plan were then focused on reducing UTI with a measureable goal. The interventions planned include reducing unnecessary catheter use; improving sterile technique upon insertion; earlier removal of Foley catheters; training and re-training all medical staff on proper catheter insertion techniques; and introducing a medical directive (for catheter removal by nurses) to surgical wards. Through the implementation of the urinary catheter insertion criteria in the operating room in May 2015 and the nurse-initiated urinary catheter removal medical directive in July 2015, the hospital had notably lowered their catheter days per patient days on surgical units. Prior to the implementation of these interventions, the quarterly average Surgical UTI Rate from October 2013 to June 2015 was 2.51% with a range of 1.2% to 3.3%. After the implementation, the quarterly average Surgical UTI Rate (from July 2015 - Sept 2016) was 1.48% with a range of 0.96% to 1.94%. This allowed successful achievement of this hospital's target Surgical UTI Rate of 1.7%. The Surgical UTI Rates are consistently monitored and results have shown continued and significant improvement as a result of successful UTI invention implementation. By using data provided from Canadian hospitals and other sources, Your Health System: In Depth provides performance measures on a broad range of quality metrics and health indicators, which allows health care providers such as this hospital to respond, action, and improve the quality of care for their patients.

Co-Author(s): Serina Nghiem, Kira Leeb, Darren Gerson, Joseph Amuah

G2: MENTAL HEALTH | SANTÉ MENTALE

The service journey of transitioning from child to adult mental health services: An analysis of underlying values from the perspectives of youth, family members and service providers

Presented by: **Ashleigh Miatello** , PhD Candidate, Health Policy, McMaster University

'Touch points' – crucial positive or negative moments that shape a service user's experience in care are based on values. This analysis sought to identify the underlying values associated with the service journey when transitioning from youth to adult mental health services from the perspectives of youth, families and providers. Using secondary interpretive phenomenological analysis of interview transcripts involving youth, family members and service providers across Ontario, we identified touch points that shaped experiences of youth transitioning from child to adult mental health services. Focus groups were then held with youth, family members and service providers from Hamilton to obtain their feedback on the touch points and to develop experience maps of prioritized touch points illustrating where they occurred along the journey from each perspective. Using qualitative thematic analysis, we identified the underlying values (deeply held beliefs) associated with touch points and compared these with Giacomini et al.'s values framework. Youth, family member and service provider descriptions of their experiences in the journey through mental health services were value-laden. Common values that emerged for youth and families included: feeling that crisis level need should not be a necessary precursor to gain access to care, that they had the right to be taken seriously and be treated with respect and dignity, to expect an orderly transition plan where a provider is held accountable, to have timely communication while transitioning between services, and for parents to be informed of aspects of their youth's care that influence safety. Service providers felt that youth should have access to continuity in care, but issues of turf and silos, geographic service boundaries, and adult service shortages were obstacles. This research identifies the underlying values that youth, family members and service providers hold that create emotive touch points along the journey from child to adult mental health services. Findings support the patient-centered approach to policymaking and facilitate prioritizing negative touch points as areas for quality improvement.

Co-Author(s): Ashleigh Miatello , Gillian Mulvale, Christina Roussakis

Implementing a work rehabilitation program in primary healthcare for workers on sick leave for a common mental disorder

Presented by: **Chantal Sylvain**, professeure, Université de Sherbrooke

Common mental disorders (CMDs) represent one of the main causes of absenteeism and a major occupational health issue. Yet mental health services rarely offer work rehabilitation. Our study sought to support and analyze the implementation and effects of a primary healthcare program designed to promote post-CMD return to work (RTW). A developmental evaluation approach (Patton, 2011) was retained. The evaluated program included group interventions, one-on-one interventions, and concerted actions with partners (attending physician, insurer, other). The implementation analysis involved four data collection strategies: dashboards of activities conducted with participants (n=41); questionnaires completed by attending physicians (n=18); interviews with program clinicians and managers (n=7); and participant observations. Effects analysis was based on telephone interviews with participants (n=26). Quantitative data underwent descriptive statistical analyses, while qualitative data underwent thematic analysis. Results were presented and discussed periodically with the clinical team to ensure their credibility. Implementation: Participants began the program after 28 weeks of sick leave on average, and participated for 10±2 weeks. Half began the gradual RTW before program completion. 80% of cases included concerted actions, usually with the insurer or the supervisor and rarely the attending physician. Virtually all the physicians saw the program as meeting needs and promoting RTW. Three categories of factors influenced the program: institutional constraints/resources, clinicians' values, and work rehabilitation scientific evidence. Effects: 69% of the participants returned to work. Upon program completion, 22 of 26 participants interviewed rated their work self-efficacy at 7/10 or more. The program's main benefit was participants' assimilation of concrete tools for increasing their margin of manoeuvre at work and in life in general (e.g. mindfulness meditation techniques). Better access to work rehabilitation is needed to prevent long-term disability and support health recovery after a CMD. By documenting the implementation and effects of a program adapted to the primary healthcare context, our results constitute a first step toward developing this essential offer of services.

Co-Author(s): Chantal Sylvain, Marie-José Durand, Astrid Velasquez-Sanchez, Nathalie Lessard, Pascale Maillette

Increasing Research Value with Sex-Specific Reporting of Data: the Cholinesterase Inhibitor Example

Presented by: **Nishila Mehta**, Student Researcher, Women's College Research Institute

To improve the value of research for older women and men, we examine the case of sex-specific reporting of data from drug trials for the management of dementia where these data may influence considerations ranging from the health of populations to shared decision-making by individual patient and caregiver. Randomized controlled trials of cholinesterase inhibitors (ie donepezil, rivastigmine or galantamine) with clinical outcomes were identified from searches of MEDLINE, EMBASE and the Cochrane Library. Sex-specific data were extracted from eight sections of each trial (title, abstract, introduction, methods, outcomes, results, limitations and conclusion). Among the donepezil trials, the mostly widely used cholinesterase inhibitor therapy, more detailed harms data were obtained. 33 randomized controlled trials were identified evaluating 15,971 participants, of which 9,103 (57%) were women. Trials were highly cited (median citations 158, interquartile range 62-441) and published in high impact journals (median impact factor 7.4, interquartile range 3.4-8.2). Sex was not mentioned in the title, introduction, limitations and conclusion section of any trial. Only three trials (9%) mentioned sex in the abstract (all as a demographic characteristic), and six (18%) in the methods. Almost all (32 [97%]) trials mentioned sex in the results, all in a table. One reported a sex difference as a secondary outcome. Among the 16 trials studying donepezil, adverse events were frequently reported and often dose-related. No trial provided sex-specific reporting of adverse events. There is an almost complete lack of sex-specific reporting of data in clinical trials for dementia therapies, and no sex-specific reporting of adverse events. Sex-specific reporting of data should be required in all trials, or these data made readily available, to increase research value.

Co-Author(s): Nishila Mehta, Craig Rodrigues, Wei Wu, Susan Bronskill, Paula Rochon

What a shame: The psychological impact of mistakes on health professionals

Presented by: **Diane Aubin**, Associate Director, Career Development, Strategy for Patient Oriented Research - Alberta

I will present my grounded theory on the psychosocial process health professionals go through when they make a mistake. Through an exploration of the emotion of shame, I explain why mistakes have great psychological impact on health professionals, and provide recommendations on how to help them cope with the trauma. This study was conducted using constructivist grounded theory. Central to this approach is the notion that participants play a key role in helping the researcher develop the grounded theory. The participants were health professionals working in two Canadian academic paediatric hospitals in nursing, medicine and pharmacy. The sample size was increased until saturation (21 participants including seven nurses, five pharmacists/pharmacy assistants, five residents and four physicians). The method for data collection was semi-structured one-on-one interviews using open-ended questions. Methods included initial purposive sampling, data collection, memo writing, constant comparison, coding, data analysis, theoretical sampling, diagramming and theory development. Five phases of the psychosocial process were identified: weighing the risk and making decisions; causing harm or potential harm; unmasking the self as a fallible professional; reinforcing the self against external exposure and internal erosion; and rebuilding the self as a professional after an error. The psychosocial process that health professionals undergo when they make a mistake is overwhelming and complex. It can have a significantly negative effect on their wellbeing and on their ability to care effectively for their patients. The process is mired in shame, confounded by social interactions with other team members and patients, and cluttered with the internal struggles with their identity as health professionals. This study provides a conceptual rendering of the process that challenges current ideas about how to manage errors in healthcare. Our theory suggests we should focus on the individual's emotional journey throughout the process, rather than solely on external/ system processes. It emphasizes the importance of developing a compassionate culture.

Co-Author(s): Diane Aubin, Sharla King

G3: DATA MINING/BIG DATA ANALYTICS | EXPLORATION DE DONNÉES/ANALYTIQUE DE GROS VOLUMES DE DONNÉES

What factors predict when antidepressants are prescribed for indications besides depression?

Presented by: **Jenna Wong**, PhD candidate, McGill University

Physicians commonly prescribe antidepressants for indications that are not evidence-based and need evaluation. Given that treatment indications for drugs are rarely documented, statistical models that can accurately predict when antidepressants are not prescribed for depression are important to monitor and assess non-evidence-based prescribing and identify factors associated with this practice. This study included antidepressant prescriptions between Jan 2003 and Dec 2012 from an e-prescribing system in Quebec that required primary care physicians to document indications at the time of prescribing. Prescriptions were linked to administrative data from the provincial health insurance agency to obtain information on over 350 potential predictors. Binomial logistic regression and a forward stepwise selection procedure were used to identify important predictors of antidepressant prescriptions for indications besides depression. The final prediction model was derived on 75% of the study dataset and its performance was evaluated on the remaining 25%. During the study period, 73,576 antidepressant prescriptions were written by 141 physicians for 16,262 patients. 44.0% of antidepressant prescriptions were for indications besides depression. Among 40 predictors in the final model, the most important predictor of whether an antidepressant was prescribed for an indication besides depression was the name of the specific antidepressant prescribed. Other important predictors included diagnostic codes for certain conditions and certain drugs prescribed in the past year, the patient's age and education level, the physician's workload, and the prescribed dose. In the test set, the final model had good discrimination (c-statistic: 0.8148, 95% CI 0.7874 to 0.8469) and good calibration (ratio of observed to expected events: 0.986, 95% CI 0.842 to 1.136). This study identified a set of variables from health services data that could accurately predict when antidepressants were prescribed for indications besides depression. In the absence of documented treatment indications for antidepressants, these findings are promising for researchers hoping to conduct database studies on antidepressant use by indication.

Co-Author(s): Jenna Wong, Robyn Tamblyn

DIABETES ACTION CANADA: Patient, Practice and Population Diabetes Risk Management System

Presented by: **Frank Sullivan**, Gordon F. Cheesbrough Chair, NYGH

Diabetes Action Canada is a CIHR Strategic Patient Oriented Research Network which aims to transform the health outcomes of people with diabetes and its related complications. It will facilitate important and meaningful connections between patients and professionals to improve health care and significant cost savings within the health system. Develop a platform for a national data management system to evaluate access to and implementation of effective methods for diagnosing and preventing diabetes complications for all Canadians. Design a mobile and web-based app that will assess risk for diabetes complications for individuals with T1D and T2D – the "Risk Calculator". Design a novel framework for collecting reported data through mobile or web-based apps that connect with clinical data and analytics to capture population level health data previously limited to small research studies and trials. Design a user-friendly Clinician Dashboard for researchers to manage their engagement in research. Develop a platform In the first year of the program a information architecture has been developed based on a national network of Electronic Medical Record(EMR) data known as the Canadian Primary Care Sentinel Surveillance Network. Administrative data record linkage and patient reported outcome measures are being added. Currently, three provinces from the CPCSSN network are participating in DAC (Ontario, Quebec and Alberta). 46 219 people with diabetes are contributing data to the Risk Management System. Baseline data comparing practices across the provinces are being used for a range of observational, quality improvement, system redesign and interventional studies. Early examples of baseline quality of care data across the provinces are that in the past 2 years 58% (34-66%) of patients have a HbA1c of < 7 % and 60%(30-68%) have had a BMI measured. Although Canada has been slow to adopt EMRs compared to other industrialised countries, recent improvements enable the data they contain linkable & available for a range of health services research- and other purposes. As has happened in other countries diabetes mellitus provides a suitable means of demonstrating proof of concept.

Co-Author(s): Frank Sullivan, Michelle Greiver, Babak Aliarzadeh

Using machine learning methods to create chronic disease case definitions in a primary care electronic medical record

Presented by: **Cord Lethebe**, Graduate Student, University of Calgary

The emergence of electronic medical records (EMRs) in primary care in Canada provides a unique opportunity for chronic disease surveillance. However, the utility of the chronic disease surveillance information is dependent on the quality of the EMR data, and the quality of the case identification algorithms. Data were obtained from the Canadian Primary Care Sentinel Surveillance Network, an organization that houses primary care EMR information from across Canada. A chart review was conducted for the presence of 8 chronic conditions in a sample of 1920 primary care patients. The results of this validation study will be used as training data for developing machine learning and regression-based classification models capable of creating interpretable case definitions. Features will be selected from billing codes, medication prescriptions, laboratory values, encounter diagnoses and health-problem lists. A comparison of the accuracy (sensitivity, specificity, PPV, NPV) will be performed across algorithms. Classification and Regression Tree (CaRT) methods, C5.0 decision tree methods, logistic regression using a lasso (or L1) penalty, and forward stepwise logistic regression will be used for variable selection and case definition development. Complexity parameter values will be determined using k-fold cross validation methods to minimize error. New case definitions will be developed and estimates of sensitivity, specificity, PPV, NPV will be estimated using bootstrap methods. Preliminary results show that decision tree methods (C5.0 and CaRT) are capable of creating case definitions that outperform committee-created case definitions in terms of classification accuracy and simplicity. These definitions can also be created much quicker than committee-created case definitions. More results to follow. By developing a methodology to create case definitions in an automated fashion, we can quickly develop and validate case definitions and improve surveillance. Improving overall surveillance quality will also allow for a more accurate assessment of chronic disease burden in populations and improve efficiency in terms of resource allocation.

Co-Author(s): Cord Lethebe, Paul Ronksley, Hude Quan, Tolulope Sajobi, Tyler Williamson

Contribution of Prescribed Medications to High Cost Healthcare User Status in Ontario

Presented by: **Justin Lee**, Clinical Scholar, McMaster University

To determine the contribution of prescription drug expenditures to high cost healthcare user (HCU) status amongst older adults in Ontario. We conducted a retrospective population-based matched cohort analysis of incident senior HCUs defined as Ontarians age ? 66 years in the top 5% of total healthcare cost users in fiscal year 2013 (FY2013). Person-level healthcare and prescription drug utilization data for the index year and year prior to HCU status was obtained from Ontario's linked health administrative databases. Total health system and prescription drug costs were determined by using validated costing macros developed at the Institute for Clinical Evaluative Sciences (ICES). The primary study outcomes were the drug-to-total healthcare expenditure ratio and the annual total prescription drug expenditures per patient. In FY2013, senior HCUs (n=176,604) accounted for $4.9 billion in total healthcare expenditures and $433 million in medication costs. Compared to non-HCUs (n=529,812) on a per patient basis, HCUs incurred higher mean annual medication costs ($2453 vs. $842, p < 0 .0001) and polypharmacy (>10 medications) was more prevalent (55.1% vs. 14.5%, p < 0 .0001). Although drug expenditures increased 1.7-fold among HCUs relative to the preceding year, the ratio of drug-to-total health expenditures decreased from 40.2% to 8.9% during their HCU year primarily due to a relative increase in hospitalizations. HCU claims for higher-cost medications increased dramatically. For example, compared to the year preceding HCU status, the number of prescription claims for ranibizumab, biologic response modifying agents and monoclonal antibodies increased 9-fold, 60-fold and 120-fold, respectively (all p < 0 .0001). Medications are important contributors to HCU expenditures, but their magnitude of contribution is underestimated due to incomplete cost capture associated with outpatient chemotherapy and drugs dispensed in hospital. In a HCU subgroup, use of higher-cost drugs themselves may trigger HCU status. Careful investigation of medication appropriateness and cost-effectiveness is warranted.

Co-Author(s): Justin Lee, Sergei Muratov, Jean-Eric Tarride, Michael Paterson, Kednapa Thavorn, Lawrence Mbuagbaw, Tara Gomes, Wayne Khuu, Anne Holbrook

G4: PRIMARY HEALTH CARE | SOINS DE PREMIÈRE LIGNE

Defining and describing high system use in primary care

Presented by: **Tyler Williamson**, Assistant Professor, University of Calgary

With 5% of patients consuming over 60% of health care resources, a tailored approach to managing high system users may improve patient care and outcomes, while reducing health spending. We aim to better understand the clinical, social, and demographic characteristics of high primary care users. We performed an observational study to identify patients with a health care encounter between 2010-2015 from electronic medical record data housed by the Canadian Primary Care Sentinel Surveillance Network (CPCSSN). CPCSSN is a nationally representative sample of primary care practices from 8 provinces/territories including more than 1,500,000 patients. We defined high primary care system users as those in the top 10% of in-person encounters over a one-year period. Characteristics of interest include: 1) health care utilization, 2) patient demographic factors, and 3) medical complexity, defined as the presence of three or more chronic conditions in three or more body systems. On average, the top 10% of primary care users had 10 or more encounters per year. In the fiscal year 2014-2015, most provinces had a high-use definition close to the national average of 10 encounters per year. Of the total primary care encounters during the study period, 33.6% were attributable to high users in 2010 and 35.4% were attributable to high users by 2015. Characteristics of high primary care users will be described, and compared to those without high primary care use. We will also determine the prevalence of and examine the characteristics associated with persistent high primary care use across multiple years. High primary care use can be defined as ?10 encounters in a year. This analysis will provide details about the sociodemographic and clinical characteristics of patients with use of primary care. It will also guide interventions to improve health system efficiency and identify strategies for better management of complex patients.

Co-Author(s): Tyler Williamson, Kerry McBrien, Gabriel Fabreau, Sylvia Aponte-Hao, Neil Drummond, Alicia Polachek, Amanda Cheung, Stephanie Garies, Paul Ronksley

Ontario Pharmacy Smoking Cessation Program: More Pharmacies Need to Participate

Presented by: **Lindsay Wong**, MSc student, Leslie Dan Faculty of Pharmacy, University of Toronto

The Ontario Pharmacy Smoking Cessation Program introduced in September 2011 reimburses pharmacies for smoking cessation counselling services for Ontario Drug Benefit eligible individuals. Prescription smoking cessation medications were reimbursed since August 2011. We described use of pharmacy smoking cessation services over time, and measured compliance with prescription smoking cessation medication. We analyzed medical and pharmacy claims data to identify the number of patients and pharmacies participating; compare patient characteristics over time (2011/09-2013/08 vs. 2013/09-2015/03); and estimate prescription smoking cessation medication compliance (proportion of days covered over 90 days ?80%). Analyses were stratified by drug plan group (seniors ?65 years; or social assistance < 6 5 years), sex and region. Forty percent (n=1,710) of Ontario pharmacies participated, with 26% being new providers from 2013/09-2015/12. We identified 12,819 patients; patient characteristics remained similar over the two time periods, with 29% seniors (mean age=70, SD=4.7; 53% male) and 71% social assistance (mean age=46, SD=11.7; 49% male). In the year prior to smoking cessation service, almost half received another professional pharmacy service such as MedsCheck (18% at enrolment), and 89% had a physician smoking cessation service. Regional differences in use were identified. Among patients with one-year follow-up data, 58% received follow-up smoking cessation services and 74% received prescription smoking cessation medication. More patients starting prescription smoking cessation medication at enrolment were compliant (37%), compared to patients starting before (25%), or after (12%) enrolment. More pharmacies offering smoking cessation services may improve patient access to smoking cessation services, particularly in areas with limited access to physicians.

Co-Author(s): Lindsay Wong, Giulia Consiglio, Lisa Dolovich, Zahava Rosenberg-Yunger, Beth Sproule, Michael Chaiton, Sara Guilcher, Suzanne Cadarette

Bridging the information gaps during patient encounters across care settings

Presented by: **Sukirtha Tharmalingam**, MANAGER, EVALUATION METHODS, CANADA HEALTH INFOWAY

Primary care (PC) and Long-term care (LTC) are vital to the health care of many Canadians. But do clinicians in these settings have the patient information they need when providing care. What are the information needs, gaps, and impact of digital assets such as the interoperable electronic health record. A cross-sectional study of PC physicians and LTC clinicians was conducted in 2016 to understand the impact of access to clinical information that make up the iEHR, focusing on information that are mainly from outside of a provider's own practice. PC physicians (N=100) were grouped as connected (n=50) and unconnected (n=50) based on level of iEHR access. A total of 5000 patient encounters (Connected, n=2500) (unconnected, n=2500) in PC were studied. In the LTC, nurses and physicians (N=21) in an unconnected practice setting documented information gaps patient encounters (N=1050). Descriptive analysis was conducted to understand the extent of information gaps. Missing information impacted over 22% of all patient encounters in PC. Connected patient encounters were 20-33% less likely to be missing necessary clinical information (i.e. hospital visit/discharge, specialist notes, diagnostic imaging, lab tests) relative to unconnected encounters. Specific consequences information gaps in PC (i.e. seeking information from a secondary source, providing care with incomplete information, physician and patient time wasted) will be discussed. In LTC, 34% of patient encounters were missing at least one item of information that was needed (i.e. hospital discharge, specialist/outpatient report, diagnostic imaging, immunization, lab test results, care plans). Information gaps in LTC had an adverse consequence for nearly 3 out of every 10 encounters. Majority of the missing information was ordered or documented by someone external to the organization. Not having relevant clinical information during patient encounters impacts clinicians' ability to provide care, patient safety, patient experience and costs the health system. Reduced information gaps and negative impacts due to availability of iEHR information in connected PC settings shows the need for continued effort towards increasing information availability.

Co-Author(s): Sukirtha Tharmalingam, Simon Hagens

Establishing the representativeness of physician and patient respondents in the Ontario QUALICOPC study using administrative data

Presented by: **Allanah Li**, Master's Student, Institute for Health Policy, Management, and Evaluation, University of Toronto

QUALICOPC is an international survey of primary care performance. QUALICOPC data have been used in several primary care studies, yet the representativeness of the Canadian QUALICOPC survey is unclear. This study examined the representativeness of QUALICOPC physician and patient respondents in Ontario using administrative data. This representativeness study linked QUALICOPC physician and patient respondents in Ontario to administrative databases at the Institute for Clinical Evaluative Sciences. Physician respondents were compared to other physicians in their practice group and all Ontario primary care physicians on demographic variables and practice characteristics. Patient respondents were compared to other patients rostered to their primary care physicians, patients rostered to their physicians' practice groups, and a random sample of Ontario residents on sociodemographic characteristics, morbidity, and health care utilization. Standardized differences were calculated to compare the distribution of characteristics across cohorts. The QUALICOPC physician respondents had a higher proportion of younger, female physicians and Canadian medical graduates compared to the other physicians in their practice groups and the rest of Ontario. The survey included an overrepresentation of physicians in Family Health Team practice models, compared to the provincial proportion for primary care physicians. QUALICOPC patient respondents were more likely to be older and female, with higher levels of morbidity and health care utilization, compared with the other patients in their physicians' and physicians' practice groups' rosters and the population of Ontario. However, when looking at the QUALICOPC physicians' whole rosters, rather than just patient survey respondents, the patient characteristics were similar to the rosters of the other physicians in their practice groups and Ontario patients in general. Despite differences in demographic and practice characteristics, Ontario QUALICOPC physician respondents had similar rosters overall compared to their practice groups and primary care colleagues. Visit-based sampling led to a biased patient respondent sample. These results have implications for studies using QUALICOPC data and other physician surveys concerned with nonresponse bias.

Co-Author(s): Allanah Li, Shawna Cronin, Sabrina Wong, William Hogg, Mehdi Ammi, Walter Wodchis

G5: EMERGING METHODS | NOUVELLES MÉTHODES

Leveraging Diverse Knowledge Networks to Improve Perinatal Health Inequities in Canada

Presented by: **Anna Dion**, Doctoral Student, Dept of Family Medicine, McGill University

To introduce a method that grounds published evidence with lived experience to address perinatal health inequities in Canada. Combining stakeholder perspectives with evidence from published literature will provide a more comprehensive understanding of how to improve outcomes. This pilot focuses on unmet postpartum care needs among immigrant and refugee women. Three family physicians with obstetrics practices that include immigrant and refugee women in Montreal were asked to map the causes of unmet postpartum care needs. The physicians were asked to merge their ideas with a literature-based map and subsequently quantify causal relationships. Using a mathematical algorithm, we identified priority areas and the most effective pathways through the map to address unmet needs. Published evidence was updated with physician knowledge using Bayesian statistics, resulting in an aggregate knowledge network. We again identified priority areas and the most effective pathways through the combined knowledge network. The literature-based and physician knowledge networks independently identified being a migrant, not having enough information, low social support and postpartum depression as having important influence on women experiencing unmet postpartum care needs. Health care provider attitudes and behaviours and the lack of multi-disciplinary teams were additional priority factors identified by physicians. The pathway between being a migrant, having low social support and not having enough information was identified within the physician map as the most important pathway contributing to unmet postpartum care needs. Bayesian updating highlighted synergies between published literature and physician perspectives, as well as where they diverge, shifting some priority areas and indicating where greater emphasis on practice-based evidence may be beneficial. This method offers a rigorous and transparent approach to building stakeholder voices into the evaluation and improvement of service delivery. Expanding this work by genuinely engaging stakeholders with diverse roles and experiences within the health system, including marginalized women, will better inform the development of recommendations to improve perinatal care.

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A Digital Health Advisor for High-Need, High-Cost Patients

Presented by: **Onil Bhattacharyya**, Clinician Researcher, Women's College Hospital

A Digital Health Advisor (DHA) that can access personal health information, health services, and medical evidence could provide answers, connect with providers, and empower patients to achieve their health goals. This study explored the use of design methods to understand how high-need, high-cost (HNHC) individuals could benefit from a DHA. Our team used human-centred design to understand the latent needs of HNHC patients. This technique is widely used in service and software development but only more recently in healthcare. We interviewed 8 patients who had multiple chronic conditions or were frail elderly, and their caregivers. Then we conducted interactive sessions testing prototype DHA functions with on-going feedback from participants. We carried out market scans, workflow mapping with care coordinators, and interviews with experts in healthcare, informatics, and venture capital. We used qualitative analysis, brainstorming sessions, and interactive stakeholder workshops to generate personas of potential users and key use cases. We identified a broad set of needs and goals of HNHC patients. These fell along 2 dimensions, ranging from functional needs and emotional needs, and medical and personal needs. This included the themes “live my life” (manage day to day tasks), “love my life” (preserve dignity and connections), “manage my health” (empower to make smart decisions), “feel understood” (communicate how conditions affect physical and emotional state). These needs informed the creation of 8 personas of potential DHA users, and scenarios describing use cases for the different personas. We then developed a DHA prototype with the following key functions: providing advice on health-related questions, tracking health indicators, creating a holistic picture to share with practitioners, and providing coordination and communication assistance with their care team. Human-centred design provides a useful method to understanding complex patients and scenarios often encountered in healthcare. This approach can inform design of relevant health services and technologies to meet patients' needs, and help health system leaders consider the potential of patient-facing digital tools to assist their highest cost patients.

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A novel mixed methodological approach to capture the evolving self-assessment of risk among patients

Presented by: **Catherine Kreatsoulas**, Instructor, Harvard TH Chan School of Public Health

How patients perceive personal cardiovascular risk as they navigate through the healthcare system is unknown; however, this knowledge can help inform decision-making across multiple stakeholders. The objective of this study is to develop a comprehensive framework that captures the healthcare experiences of patients as it influences their perception of risk. Thirty-one interviews of patients prior to coronary angiography were analyzed using coding conventions consistent with gender-centered modified grounded theory approach. Five raters used constant comparison to establish analytic categories and open coding continued until theoretical saturation was reached. Interviews were multi-coded to ensure trustworthiness and credibility, which was further supported by additional patient information and triangulation was reached. To help visualize theoretical codes, an Ishikawa framework was adapted to illustrate the relationship between axial and focused codes. A qualitative assessment of the visual theory inspired layering a phase analysis adapted from methods from statistical process control (SPC). Three distinct methodologies were combined in a novel way to capture non-overlapping aspects of how patients assess their cardiovascular risk. Using modified grounded theory approach, a theory emerged from four main themes and their accompanying sub-themes. An Ishikawa diagram was introduced to help visualize the emergent theory, challenging the interrelationships between the theoretical codes. Theoretical codes were refined into more focused codes, revealing the inherent chronology of patients’ evolving risk perception. Patients’ self-assessment of risk evolves as they proceed through the healthcare system in four distinct and sequential phases. A qualitative adaptation of SPC was overlaid to the Ishikawa to visually capture the phases of risk perception. A new theory integrating three interdisciplinary methodological approaches captures a patient’s evolving perception of cardiovascular risk as they progress through the healthcare system. Future studies should apply this novel theory to other populations and illnesses to test transferability, which may have applications for multiple stakeholders in healthcare.

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Identification and Reliability of Hospital Chart Quality Indicators

Presented by: **Cathy Eastwood**, Senior Research Associate, University of Calgary

There is no standardized measure to assess quality of documentation in hospital charts, yet hospital data is reported and compared locally, nationally, and internationally. Documentation quality affects the quality of data used for research or administrative data coding. The objective was to test indicators for scoring hospital chart quality. A literature review revealed research-based indicators that addressed both specific and general aspects of hospital chart data. We identified six quality indicators: chart completeness, organization, legibility, clearly recorded chief complaint, thoroughness of discharge summary, and overall chart quality. Two descriptive indicators (percent of variables found in electronic data, and the time to review the chart) were included. As part of an ethically approved study involving 3000 randomly selected Calgary hospital admissions in 2015, six nurses scored chart quality on a scale from 1-100 for 8 indicators, with poor and high quality defined. 1780 charts were reviewed; 49 were scored by three reviewers for inter-rater reliability. Of the chart quality indicators, legibility was scored lowest (80%, IQR=16), and the indicator for clearly recorded complaints scored the highest (94%, IQR=10). Comparison of overall chart quality between hospitals revealed a slightly lower overall score for one hospital (85%, IQR=13), while two other hospitals had similar scores (89%, IQR=10 and 89%, IQR=13). Using the proportion of agreement to assess reliability, we found that 14.3-26.5% of the charts were assigned to the same quality category by all three reviewers, and 40.4-51.1% were assigned to the same quality category by two reviewers. A comprehensive method for measuring hospital chart data quality is needed. The instrument tested in this study produced low reliability scores indicating variation between reviewers and requires further refinement. Future research will include concrete criteria for scoring each indicator to improve reliability.

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