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Poster Abstract Program
Programme des résumés d’affiches

TUESDAY 30 APRIL | MARDI 30 AVRIL

1. Maternal Adverse Childhood Experiences (ACEs) and child development at 5 years – Erin Hetherington

Co-authors: Sheila McDonald, Suzanne Tough

Introduction/background: Adverse childhood experiences (ACEs) can have an impact on the health and well-being of individuals throughout life. Adults with a history of ACEs who become parents may experience parenting difficulties and face challenges in building supportive environments. The objectives of this study were to examine the impact of maternal adversity on child development at five years, and what factors may promote resiliency.

Methods: Participants include 1992 mothers and children participating in a community-based longitudinal cohort in an urban setting in Canada. Mothers completed questionnaires regarding their own ACEs and their child's behaviour. Risk and protective factors for internalizing and externalizing behaviour among children at 5 years were estimated using multivariable logistic regression models. A resilience analysis examined protective factors among children whose mothers had four or more ACEs.

Results and analysis: Sixteen percent of children had internalizing behaviours. Maternal ACES were not associated with internalizing behaviours, however, risk factors included persistent maternal mental health symptoms (OR 1.80 95% CI 1.18, 2.74), maternal neuroticism (OR 2.23 95% CI 1.56, 3.18) and hostile parenting practices (OR 1.51 95% CI 1.08, 2.23). Children of women who worked or were students had reduced odds of internalizing behaviours. Eleven percent of children had externalizing behaviours. Maternal ACEs were associated with a 2.30 increased odds of externalizing behaviours (95% CI 1.50, 3.51). Additional risk factors included persistent maternal mental health symptoms and hostile parenting practices. Male children were also at an increased risk. Among children whose mothers had high ACEs, high levels of social support was protective against internalizing behaviours, but not externalizing behaviours.

Conclusions and implications for policy, practice or additional research: While maternal ACEs may impact certain aspects of child development, maternal psychosocial health has the potential to be a less stigmatizing indicator of risk. Strategies to support parents through targeting modifiable factors and supporting mental health wellbeing can help optimize child development in the next generation.

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2. Exploring relations between early experiences and children's competence across cognitive and social-emotional competence in Kindergarten - Gioia Stokovac

Co-authors: Barry Forer, Alisa Almas

Introduction/background: The impact of early experiences and development across childhood has been a topic of interest for developmental researchers for many years. Lately, however, debate on the value of certain areas of early experience on later development, namely language and cognitive experiences versus social and emotional experiences, has been of great interest, as many early learning and care programs tend to focus heavily on one or the other (e.g., Montessori programming, Play-Based programming). Examination of these early experience and their relations to later development is valuable to further inform the debate. In addition, it may help to inform health policy and intervention and further highlight the need for strategic initiatives to include content and programming across a range of developmental domains.

Methods: Data on children's early experiences across five domains of development was collected using the Childhood Experiences Questionnaire (CHEQ), a parent-report tool completed when children begin Kindergarten. Teachers reported on children's skills and competencies across five domains of development using the Early Development Instrument (EDI). Data was available for 447 children with ages 4-5 who live in rural and urban Canadian school districts in BC.

Results and analysis: Preliminary analyses revealed significant correlation between early language/cognitive experiences with an adult significantly correlated with later language/cognitive competence (r=.131, p=<.01) while having those types of experiences alone did not (r=.091, ns). Early language/cognitive experiences were unrelated to later physical well-being and emotional maturity. Early social/emotional experiences were significantly related to emotional maturity (r=.255, p=<.01), later language/cognitive competence (r=.167, p=<.01), and physical well-being (r=.185, p=<.01).

Conclusions and implications for policy, practice or additional research: Findings suggest positive relations between early social/emotional experiences and not only skills/competencies in that domain, but also later language/cognitive competence and physical well-being. This highlights the value of these early experiences on later development across multiple domains and the importance of including this type of content in early learning settings.

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3. Anxious behaviour among Canadian kindergarten children: Regional and temporal prevalence and association with concurrent development - Molly M. Pottruff

Co-authors: Caroline Reid-Westoby, Magdalena Janus, Marni Brownell, Morgan Dufour, Rob Coplan

Introduction/background: Anxiety is the most prevalent mental health problem in children and adults and can adversely affect the developmental trajectory of a child . However, very little data exist on the prevalence and impact of anxious behaviours in kindergarten children. This study aimed to examine this using population-level data in Canada.

Methods: Data from the Early Development Instrument (EDI), a teacher-completed, population-based measure of child development, were collected from 2004 to 2015 in 12 provinces/territories across Canada (n=990,502). Rates of anxious/fearful behaviours were examined across time and jurisdictions, as well as the relations between anxiety and indicators of child vulnerability (i.e. scoring below the 10th percentile cut-off) in four domains of development: physical, social, cognitive, and communication.

Results and analysis: The prevalence of anxious/fearful behaviours remained fairly consistent over time, ranging from 2.1% to 3.0% per year. The prevalence across Canada ranged from 1.2% (Prince Edward Island) to 5.0% (Northwest Territories). Compared to children that exhibited few to none of these behaviours, highly anxious children were significantly more likely to be male (2.8% vs 2.4%), have English/French as a second language (EFSL, 12.9% vs 11.9%), and have a special needs designation (11.1% vs 3.4%).

Controlling for gender, age, EFSL status, and special needs designation, binary logistic regressions were conducted to examine the association between kindergarten anxiety and vulnerability in the four developmental domains. Results demonstrated that highly anxious children were between 3.4 and 6.2 times more likely to be vulnerable in these domains, compared to their less anxious counterparts.

Conclusions and implications for policy, practice or additional research: Our findings demonstrate that anxious/fearful behaviours in kindergarten are associated with poorer concurrent development across domains, suggesting that these behaviours may influence children's overall health. These results also illustrate the consistency and prevalence of anxious/fearful behaviours among Canadian children nationally at a very young age, potentially predicting difficulties for those children over the course of their development.

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4. The Positive Mental Health Toolkit (revised): Bringing a comprehensive whole student, whole school approach to mental health promotion - Katherine Eberl Kelly

Co-author: Susan Hornby

Introduction/program need and objectives: Positive Mental Health (PMH) approaches have been correlated with enhanced student engagement and academic functioning, and to healthy and productive school workplaces. The application of Positive Mental Health perspectives and practices contributes to the development of environments where students, educators, and staff members can experience supportive connections, use and develop their strengths, and develop a greater sense of autonomy and self-determination.

Program methods, activities and evaluation: The toolkit is an eBook, available free in English and French. It has been developed by WMA Wellness Inc. of New Brunswick, assisted by an advisory committee of practice and policy experts from 7 provinces and territories and incorporating feedback from users throughout the country. The new PMH Toolkit aligns fully with the four components of the Comprehensive School Health Framework: Teaching and Learning, Social and Physical Environment, Partnerships and Services, and Policy. The JCSH is a partnership of 25 government ministries working to improve student well-being and achievement.

Program results or outcomes: The newly revised Positive Mental Health Toolkit developed by the Pan-Canadian Joint Consortium for School Health (JCSH) presents a whole of school approach to individual wellness and healthy relationships within the school environment. The toolkit frames student and staff connectedness, autonomy support, and competency within a comprehensive school approach, applying evidence-based research and theory in practical and useful formats.

Recommendations and implications for practice or additional research:

1. Recognize a comprehensive approach to positive mental health as a culture and practice that can enhance student well-being and healthy relationships;

2. Explore actionable messages and practical approaches to assist administrators, educators, students, and the school community in promoting positive mental health;

3. Discuss how provinces and territories across two sectors - Education and Health - can come together to define mutual pathways in optimizing student well-being and learning experiences.

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5. Mental well-being among children in foster care: The role of supportive adults - Carly Magee

Co-authors: Martin Guhn, Eva Oberle

Introduction/background: The majority of research examining the health and development of young people with foster care experience has focused on their risk of negative outcomes. Relatively few studies have examed predictors of positive development among children currently in foster care. In the current study, we examine the effect of perceived support from adults in three developmental contexts (home, school and neighbourhood) on the mental well-being (life satisfaction, self-concept, optimism) of grade four children living with foster parents in B.C.

Methods: We draw from a population sample of fourth graders in British Columbia (BC) who completed the Middle Years Development Instrument (MDI) between 2011 and 2016 in their schools. We examine a subset of the sample who reported living with a foster parent/guardian at the time of survey completion (N = 211). Children self-reported on their life satisfaction, self-concept, optimism, and the quality of support from adults in their home, school and neighbourhood.

Results and analysis: Hierarchical linear regression analysis was used to examine the independent effect of perceived support from adults at home, school and neighbourhood on each well-being indicator, controlling for gender, age and first language learned. Results showed that perceived support from adults at home and school positively predicted all three well-being indicators, while perceived support from adults in the neighbourhood was not significantly predictive of any well-being indicators.

Conclusions and implications for policy, practice or additional research: This study indicates that perceived support from adults at home and school may promote mental well-being among children in foster care during middle childhood. Moreover, these findings suggest that policy aimed at improving the well-being of children in care should be implemented both in child welfare and school systems.

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6. Comment prévenir les risques liés à la pratique du poker ? Le point de vue des joueurs - Adèle Morvannou

Co-authors: Annie-Claude Savard, Eva Monson, Magali Dufour, Sylvia Kairouz, Élise Roy

Introduction/Contexte : Les problèmes de jeu chez les joueurs de poker constituent un enjeu de santé publique. Alors que la prévention cible généralement l'ensemble des adeptes de jeux de hasard et d'argent (JHA) sans distinction, le point de vue des joueurs quant à la prévention des risques liés au poker est totalement méconnu. L'objectif de cette étude qualitative descriptive est d'explorer la perception des joueurs de poker quant à la prévention telle qu'elle existe actuellement.

Méthode : Un échantillon de convenance de 12 joueurs de poker a été recruté au Québec à partir d'une étude prospective en cours pour participer à une entrevue semi-structurée.

Résultats et analyse : Une analyse de contenu thématique a été réalisée en privilégiant la thématisation en continu. Parmi les participants, la majorité rapporte connaître les initiatives de prévention en JHA, mais les jugent inefficaces pour le poker. Les joueurs considèrent que les messages de prévention ne s'adressent pas à eux mais aux joueurs de machines à sous ou appareils de loterie vidéo. Quelques participants rapportent à cet effet que des messages délivrés par des joueurs reconnus seraient plus efficaces. Les joueurs de poker adoptent par ailleurs des stratégies d'arrêt ou préventives « auto-administrées » de différentes natures : financière, temporelle et introspection quant au poker dans leur vie.

Conclusions et répercussions concernant les politiques, la pratique ou les pistes de recherche : Les résultats mettent en lumière la nécessité de prendre en compte la spécificité du poker afin de développer des initiatives de prévention adaptées et susceptibles d'atteindre les joueurs. À ce sujet, des études empruntant des méthodes de recherche participatives permettraient de créer des messages de prévention mieux ancrés dans leurs réalités en impliquant des joueurs dès le début du processus de recherche.

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7. 'Generation touch screen': A population-level study investigating the longitudinal link between screen time and social-emotional well-being in early adolescence - Savithri Cooray

Co-authors: Alisa Almas, Barry Forer, Eva Oberle

Introduction/background: Electronic devices have become ubiquitous in households, and Canadian children and adolescents today are engaging in screen-based activities (e.g., browsing the internet, video games) more than ever before during their free time after school. Existing research suggests that high levels of screen-based activities are associated with a range of problems that jeopardize positive development, including an increased risk of obesity, sleep disturbances, and depressive symptoms in adolescent years. The present study was conducted at a population level; it investigates the longitudinal link between screen-based activities during after-school hours and social-emotional wellbeing and health in early adolescence.

Methods: We draw from data collected at a population level in BC with the Middle Years Development Instrument (MDI) between 2011 and 2017. More than 10,000 children in BC completed the MDI (i.e., a self-report survey) in grade 4 and in grade 7, allowing us to investigate their longitudinal changes in social-emotional wellbeing based on the amount of free after-school time spent early adolescents spend in playing video games, watching TV, and social media. Social-emotional wellbeing and health were assessed through self report items measuring optimism, self-esteem, satisfaction with life, peer belonging, anxiety, sadness, and perceived global health.

Results and analysis: We have now obtained access to more the MDI data set including than 10,000 early adolescents who participated in the survey in grades 4 and 7. Data will be analyzed using correlational designs and hierarchical regression analyses to predict changes in wellbeing and health between grades 4 and 7 from time per day spent in screen-based activities.

Conclusions and implications for policy, practice or additional research: - Findings reveal the role of screen-based activities in young people's health and wellbeing. Given that data were collected at a population level in school districts, these findings also provide an insight into a baseline for how much young people are actually spending in screen-based activities each day.

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8. Drowning in the Montreal Black Community, is there a problem? - Liane Fransblow

Co-authors: Tamara Gafoor, Debbie Friedman

Introduction/background: In the United States, African Americans have a significantly higher rate of drowning incidents compared to other races. In Canada, we do not track race. In September, 2017, the Montreal Children's Hospital PICU alerted the Injury Prevention Program that there appeared to be a higher rate of black children admitted for drownings compared to other races. The objective of this study was to understand the context of swimming ability within the Montreal Black Community.

Methods: Focus groups were conducted with members of the Montreal English Carribbean Community.

Results and analysis: Two Focus groups were completed in the Spring of 2018. Several themes emerged from these focus groups including culture, accessibility to swimming lessons, school based programs and immigrants. Culturally, carribbeans do not embrace the water and view it as dangerous. Many focus group members did not take swimming lessons themselves and do not enroll their children in lessons. Of those who were interested in lessons, many reported a lack of accessibility in local community pools. They needed to line up early in the morning to get a spot in affordable swimming lessons. Mandatory school based programs were discussed and while many participants felt this would be useful, some felt that they would not consent. Additionally, participants felt that newer immigrants to the community do not view swimming lessons as a priority.

Conclusions and implications for policy, practice or additional research: A combination of lack of accessibility to swimming lessons and a cultural fear of water appears to be limiting swimming uptake in the Montreal English Carribbean community. Future focus groups with other Montreal black communities is needed in order to understand their contexts. A campaign to promote swimming in the Carribbean community is currently being developed.

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9. Spirituality and resilience in the context of HIV/AIDS among African, Caribbean and Black (ACB) people in Ontario - Josephine Etowa

Co-authors: Zhaida Uddin, Akalewold Gebremeskel

Introduction/background: ACB community is disproportionately affected by HIV/AIDS epidemic. Whilst ACB people constitute 4.3% of the Ontario's total population, they account for 18.8% of people infected with HIV through heterosexual contact. Sprituality/Religion have long been shown to have a significant influence on how Black people deal with harsh realities. ACB people more likely to report a formal religious affiliation when compared to the other Canadians. Religious and spirituality influence on health beliefs and practices are multifaceted. However, this has been minimally explored in the context of HIV in the ACB community in Canada.

Methods: This paper will present the recent study that examined heterosexual ACB men's response to HIV/AIDS in Ontario. We used a multi-phase mixed method informed by community based research to engage straight Black men. Phase 1 was primarily qualitative and data sources were focus group discussions and individual in-depth interviews involving 170 participants.

Results and analysis: We will present the major themes of the study: spirituality, resilience, and community resources as strategies for coping with HIV. We will discuss community resources such as local ethno-cultural health and service organizations and faith-based organizations as resources for well-being.

Conclusions and implications for policy, practice or additional research: In the context of HIV/AIDS prevention and service utilization in the ACB community, spirituality helps people to cope with stigma and discrimination, and to facilitate access to care and support. Spirituality was identified as a source of strength, resilience and wellbeing. Thus, it is vital for health and social service organizations to meaningfully engage the ACB community and faith-based institutions. HIV combination prevention strategy is an innovative approach that employs a multi-sectoral integrated health equity and HIV strategies to target HIV vulnerabilities and those affected. Faith-based organizations could be appropriate entry points for combination HIV prevention interventions for ACB people. Strategic partnership involving ACB community faith-based and AIDS service organizations is necessary for better health outcomes

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10. Infant feeding experiences of Black mothers living with HIV: A community based participatory research - Josephine Etowa

Co-authors: Seye Babatunde, Jean Hannan, Craig Phillips, Egbe Etowa, Edidiong Ekanem, Haoua Inoua

Introduction/background: Globally, vertical transmission of HIV through breastfeeding is estimated to be 20%. However, given the association of infant mortality to malnutrition in HIV endemic countries, WHO recommends that HIV-positive women breastfeed their infants for up to 12 months provided they strictly adhere to their antiretroviral regime during that same period. These guidelines are implemented differently in various countries. Western countries like Canada and United States recommend exclusive formula feeding for HIV-positive women. This creates tension for Black women whose cultures promote breastfeeding as an integral part of mothering.

Methods: The study examined the infant feeding experiences of Black mothers living with HIV in Canada, United States and Nigeria. **Mixed-methods design** informed by the tenets of community based participatory research was used. Focused ethnography and Standardized questionnaires were used to collect data from over 700 participants. However, this paper will focus on qualitative interviews data of sixty-one women. Interviews were transcribed verbatim and interpreted through thematic analysis. Credibility of data was ensured through audit trail, peer/team debriefing and member checking.

Results and analysis: Stressors and mental health, as well as the resources and coping strategies employed by the women are major themes that would be the focus of this paper. We will present the challenges associated with infant feeding decisions and practices and the approaches utilized to manage these issues. Tensions associated with guidelines adherence while dealing with demands of family members influenced women's decisions and infant feeding choices. Coping strategies, such as resilience and spiritualty, were employed by women and will be shared.

Conclusions and implications for policy, practice or additional research: Understanding the stressors associated with infant feeding practices will facilitate the development of interventions tailored to the socio-cultural contexts of Black mothers living with HIV. Meaningfully engaging the women holds the potential to empower them and their communities to eliminate vertical HIV transmission and improve maternal and child wellbeing

11. Breastfeeding among Women with Physical Disabilities - Lesley Tarasoff

Introduction/background: Although women with physical disabilities are becoming pregnant at similar rates to women without disabilities, there is little information available about breastfeeding practices among women with physical disabilities. This study aimed to gain an understanding of the breastfeeding experiences of women with physical disabilities in Ontario.

Methods: Based on findings from a larger study focused on the pregnancy and mothering experiences of women with physical disabilities in Ontario, this study details the breastfeeding experience of women with physical disabilities, with an emphasis on decisions regarding breastfeeding and breastfeeding challenges. Interviews were conducted with 13 women with physical disabilities who had recently given birth. Data were analysed using a constructivist grounded theory approach.

Results and analysis: Most participants experienced breastfeeding challenges, related both to their physical limitations and a lack of knowledge and support among health care providers. Five themes were identified to describe women with physical disabilities' experiences of breastfeeding: 1) Nurturing bodies, 2) Working maternal bodies, 3) Disabled and breastfeeding bodies, 4) Ambivalent breastfeeding bodies, and 5) Subversive (non)breastfeeding bodies. Themes centred around what some participants’ decisions not to breastfeed might mean in a context where it is expected that mothers breastfeed, yet women with physical disabilities are not expected to be mothers and subsequently rarely imagined to be breastfeeding.

Conclusions and implications for policy, practice or additional research: Participants' experiences suggest that there is a need to better support women with physical disabilities during the postpartum period; in order to determine if breastfeeding will work for them and how it might work, more planning is needed during pregnancy. More research is needed on the breastfeeding experiences and outcomes of women with physical disabilities to determine what supports and interventions may best serve their needs and their infants' needs.

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12. Public Health Nurse Delivered Cognitive Behavioural Therapy for Postpartum Depression - Haley Layton

Co-authors: Ryan Van Lieshout, Andrea Feller, Mark Ferro, Peter Bieling

Introduction/background: Postpartum depression (PPD) is a significant public health problem affecting 20% of women, however, just 15% of women receive treatment. This may be due to a lack of time, stigma, and difficulties accessing treatments they prefer most (i.e., psychotherapy). Cognitive Behavioural Therapy (CBT), a first-line treatment for PPD, is well-suited for delivery by non-specialist personnel. If public health nurses (PHNs) could be trained to deliver CBT, more women could receive the care they want in settings they prefer.

Methods: Two PHNs completed two days of in-classroom training, observed the 9-week group CBT for PPD intervention, and then delivered two groups. Seven women who were over the age of 18 and had given birth in the past 12 months participated and provided data on depression, anxiety, healthcare utilization, mother-infant relations, and infant temperament pre-group, post-group, and 6 months later. Partners also reported on infant outcomes. Wilcoxon rank-sum tests assessed pre-post differences and effect sizes were expressed using Hedges.

Results and analysis: Clinically and statistically significant reductions were seen in depression and anxiety scores from pre to post group, and 6 months later. The number of visits to healthcare professionals decreased from 14 in the 9 weeks preceding the group to just three during the sessions. Improvements in mother-infant relations were seen in bonding, rejection/pathological anger, and infant-focused anxiety. More positive emotion in infants was reported by both mothers and fathers.

Conclusions and implications for policy, practice or additional research: These findings suggest that public health nurses without extensive prior mental health training, may be able to deliver effective group CBT for PPD in the public health setting. The provision of group CBT interventions for PPD in the public health setting has the potential to optimize the health and well-being of women and their children and reduce the burden of PPD on the traditional healthcare systems.

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13. Indigenous Approaches to FASD Prevention: Enacting the Truth and Reconciliation Commission's Call to Action 33 - Lindsay Wolfson

Co-authors: Nancy Poole, Carol Hopkins, Rose Schmidt, Kathy Unsworth

Introduction/program need and objectives: To bring attention to the opportunities for collaborative action on Canada's Truth and Reconciliation Commission's Call to Action #33, which highlights the need to develop culturally appropriate FASD preventive programs. This poster will describe the eight tenets for FASD Prevention developed in a meeting of experts in FASD prevention and Indigenous health held in May 2017 in Vancouver co-sponsored by the Centre of Excellence for Women's Health, the CanFASD Research Network and the Thunderbird Partnership Foundation and highlight ongoing action on Indigenous wellness and reconciliation in FASD prevention approaches.

Program methods, activities and evaluation: The Consensus Statement and its eight tenets for enacting Call to Action #33 were collaboratively developed during and following the initial national meeting. The tenets align with Indigenous knowledge and wellness models, including the First Nations Mental Wellness Continuum Framework. Following the meeting 5 booklets on Indigenous Approaches to FASD Prevention were created to support community-based work, including one entitled Reconciliation and Healing.

Program results or outcomes: This poster will visually capture the eight Consensus Statement tenets and a timeline of Indigenous Approaches to FASD prevention in Canada starting in the late 1970s ; highlight what decolonizing FASD prevention might look like; and offer reflective questions about FASD prevention and reconciliation. The Consensus Statement and subsequently created community booklets invite long overdue critical thinking and action on culturally-informed FASD prevention, and dedication to reconciliation as outlined by the Truth and Reconciliation Commission.

Recommendations and implications for practice or additional research: This poster will identify ongoing opportunities for action on FASD prevention by and with Indigenous communities and invite reflection as to how we can be a part of reconciliation work related to FASD prevention.

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14. Asthma Hospitalizations Among Children and Youth in Canada: Trends and Inequalities - Christina Catley

Co-authors: Sara Allin, Philippe Finès, Jean Harvey, Geoff Hynes, Noura Redding, Erin Pichora, Claudia Sanmartin

Introduction/background: Asthma is a chronic respiratory condition that affects approximately 15% of children and youth age 0-19. Children may be hospitalized when they experience a severe or life-threatening asthma exacerbation; however, many asthma hospitalizations are considered potentially avoidable through effective primary care. Examining trends over time, as well as differences by socio-economic status, can reveal opportunities for reducing hospitalizations in Canada.

Methods: To examine asthma hospitalization rates overall, by geographic location, and by neighbourhood income, we used the Hospital Morbidity Database housed at the Canadian Institute for Health Information for 2006-2015, and assigned neighbourhood income and urban and rural/remote status using Statistics Canada's Postal Code Conversion File (PCCF+). To stratify asthma hospitalization rates by household education and individual-level income, we used Statistics Canada linkage of the 2006 Census (long-form) to hospital data in the Discharge Abstract Database for 2006-2009. Age-standardized rates were analysed by sex/age group at the national/provincial/territorial levels. Inequalities were measured on both the absolute and relative scales, using rate differences and rate ratios, respectively.

Results and analysis: Over the past decade, asthma hospitalizations have declined by 50%. In spite of this improvement, rates of hospitalization remain 1.5 times higher among children and youth living in lower income neighbourhoods compared to those living in higher income neighbourhoods. These income-related inequalities are present across different age groups and for boys and girls. Large inequalities in asthma hospitalizations were also observed by household education.

Conclusions and implications for policy, practice or additional research: Results suggest that asthma management for children and youth can be further improved in Canada, particularly within lower education/income households. Opportunities for improvement include self-management planning, improved drug coverage, school and community based programs and targeted smoking cessation interventions.

15. Understanding the Journey to Care for Ugandan Children with Rare Surgical Diseases - Iris Liu

Co-authors: Arlene Nakanwagi, Bababunmi Fashola, Mary Ajiko, John Sekabira, Monica Langer, Eleanor Reimer, Damian Duffy, Geoffrey Blair

Introduction/background: Rare diseases by definition affect only a minor subset of the patient population. However, when taken as a collective, rare diseases represent a global health concern with an expansive reach that affects approximately 350 million people worldwide, with 50% being pediatric patients. Uganda has a greater proportion of children compared to Canada, however, Canada has over 70 pediatric surgeons whereas Uganda has three. Therefore, this study aims to describe and understand the current state of the referral system at two Ugandan referral hospitals for children diagnosed with rare surgical diseases.

Methods: This study was completed at two Ugandan hospitals: Mulago National Referral Hospital and Soroti Regional Referral Hospital from April to June 2017. The two arms of the study were: a patient questionnaire and a focus group discussion concerning referral and care for these children. The list of rare surgical diseases considered for this study have incidences of less than 5 per 10,000 live births and was compiled by pediatric surgeons experienced in the Uganda setting.

Results and analysis: A total of 70 patient families and 24 health care professionals participated in the study. The median time elapsed between the first symptom and the final diagnosis ranged from 0 to 120 days. Approximately 93% of diagnoses were delivered in person. Although both hospitals in this study are government hospitals and theoretically offer free treatment and tests, 70% of study respondents at both hospitals paid out of pocket for medical tests. The focus group responses at both hospitals suggest that the greatest challenges in referring patients with rare surgical diseases are in transportation and financial constraints whereas the greatest challenge in receiving referrals is lack of supportive manpower.

Conclusions and implications for policy, practice or additional research: While the majority of respondents received a well-delivered in-person diagnosis, financial barriers present significant hardships for patients and families within a government hospital care setting.

16. Association between beliefs and feeding practices of mothers of African and Caribbean descent and the weight status of their children - Cris-Carelle Kengneson

Co-authors: Rosanne Blanchet, Dia Sanou, Malek Batal, Isabelle Giroux

Introduction/background: Parents play a major role in the development of child eating habits. Parental beliefs and feeding practices such as concerns about child weight, pressure to eat and food restriction have been shown to influence children eating habits and weight status. Those beliefs and practices have been shown to differ by ethnic groups in other countries. Our objective was to examine the association between parental beliefs and feeding practices, and weight status of school-aged black children.

Methods: We recruited 203 black mothers of African and Caribbean descent and their 6-12 year old child living in Ottawa. The Child Feeding Questionnaire was used to assess mothers' concerns about child weight and mothers' use of restriction and pressure to eat. Weight status and BMI-for-age z-scores were defined using the International Obesity Task Force (IOTF) references. Children were classified as having excess weight (BMI ≥25.0 kg/m2) or normal weight (BMI ≤24.9 kg/m2). UNIANOVA tests and Spearman correlations were performed to assess associations between those maternal beliefs and feeding practices, and child weight.

Results and analysis: About 38% of children had excess weight. Mothers of children who had excess weight were more concerned about their child's weight than mothers of normal-weight children ($p<0.001$). Additionally, mothers of children who had excess weight scored significantly lower for pressure to eat than mothers of normal-weight children ($p<0.001$). No such difference was found for restrictive behaviors. Children's BMI-for-age z-scores were positively associated with maternal use of restrictive behaviors and with concerns about children weight, and negatively associated with maternal use of pressure to eat ($p<0.05$).

Conclusions and implications for policy, practice or additional research: These results suggest that maternal beliefs and feeding practices should be taken into consideration when promoting healthy eating habits among Black children. These study findings will eventually help develop obesity prevention programs and interventions culturally appropriate for Black children. (Funding: CNFS-Volet Université d'Ottawa)

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17. The importance of partnerships for public health interventions to promote children's health: evidence from the Healthy Kids Community Challenge - Rachel Laxer

Co-authors: Michelle Vine, Sunita Tanna, Daniel Harrington, Heather Manson

Introduction/background: The Healthy Kids Community Challenge (HKCC) is a community-based intervention to improve obesity-related behaviours in children across 45 Ontario communities. Engagement with multiple stakeholders and public/private partnerships are central to HKCC design and to the success of community-based interventions. The objective was to identify public and private partnerships formed during the first two (of four) themes of the HKCC, and explore associated successes and challenges.

Methods: Three data collection activities were undertaken: (1) communities tracked the involvement of existing and new partnerships through mandatory reporting tools; (2) surveys at two time periods (2016, 2018) on relationships with new organizations, strengthening existing partnerships, and challenges engaging community partners; and (3) telephone interviews at two time periods (2016, 2018) about leveraging existing partnerships and developing new partnerships.

Results and analysis: Communities engaged 1,577 and 1,817 partners to implement Themes 1 and 2, respectively. Successful partnerships were formed with municipalities, non-profit organizations, First Nations, local businesses, and public health, education, health care, and sport/recreation sectors . Most communities expanded their networks by strengthening existing partnerships, forming new partnerships, and leveraging existing local programs. Interview data highlighted that public partnership formation was relatively straightforward; however, developing private partnerships presented unique challenges.

Conclusions and implications for policy, practice or additional research: Mixed methods analyses at two time points provided a fulsome understanding of the importance of (and challenges to) partnership development and collaboration in the HKCC. Overall, communities reported improved communication with existing partners and many new partnerships, which helped to build HKCC program awareness and support implementation of initiatives by providing resources and support. Working with a range of partners, HKCC initiatives reportedly reached over one million children in the first theme, and more than 1.5 million in the second. Engaging with multiple stakeholders is essential for planning, implementation, and promotion of community-based interventions.

18. Examining Rates and Income-related Inequalities for Day Surgery for Early Childhood Caries Across Canada's Major Cities - Harshani Dabere

Co-authors: Sara Grimwood

Introduction/background: The development of cavities in early childhood presents significant social and financial burden at the population level through short-term and long-term impacts on health and well-being. This project examines rates of day surgery for early childhood caries (ECC) and how income inequalities in ECC vary across and within 14 major Canadian cities.

Methods: This study linked day surgery data for ECC (ages 1-5), pooled across five years (2011-2015), with neighbourhood income quintile and geography data using patient postal code and Statistics Canada's Postal Code Conversion File Plus. Age-standardized rates were calculated for 14 Canadian cities and summarized using rate ratios and differences. Results were reported at the Census Metropolitan Area (CMA) (e.g. Greater Toronto Area) and Census Subdivision (CSD) (e.g. City of Toronto) levels to enable comparisons within and across cities

Results and analysis: Rates by CMA range from 217 per 100,000 children in Edmonton to a high of 2334 per 100,000 children in Saskatoon. There is wide variation at the CSD level, with rates within the Edmonton CMA ranging from 75 per 100,000 people in Stony Plain CSD to 640 per 100,000 children in Bon Accord CSD. Across CMAs, an income gradient was observed between the lowest and highest neighbourhood income quintiles. Rate ratios ranged from a low 1.5 (rate difference 124 per 100,000) in London to a high of 6.4 (rate difference 1146 per 100,000) in Winnipeg.

Conclusions and implications for policy, practice or additional research: The results of this project show that income-related inequalities exist in the rates of day surgery for ECC and that they vary across and within Canada's major cities. Integrating these local level results with other local information, such as available public dental programming, may provide further insight to improve dental care for children The results also contribute to the momentum that is building around health inequalities measurement and surveillance at the local level across Canada.

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19. Transforming Evidence into Practice: Preschool Oral Health Strategy -Simone Kaptein

Co-author: Arshpreet Bedi

Introduction/program need and objectives: The newly released Ontario Public Health Standards requires public health units to collaborate and use a systematic process to plan and implement programs. There are limited details in the Ontario Public Health Standards and Oral Health Protocol, 2018 on what upstream services could be provided in the community to improve early growth and development outcomes in preschool children.

The purpose of this presentation is to (1) share the evidence-informed decision-making processes used to develop and implement the preschool oral health program; and (2) highlight the approach used to collaborate and develop formal partnerships to improve early growth and development outcomes.

By the end of this session, participants will be able to:

a) apply the evidence-informed practice approach in their own program planning and decision-making;

b) describe the approach to building internal and external partnerships to improve health outcomes;

c) identify the most effective interventions to prevent cavities and impact growth and development outcomes in preschool children.

Program methods, activities and evaluation: Multiple partners were engaged to develop and implement the preschool oral health strategy. The evidence-informed practice approach consists of six steps: defining the problem; options development; intervention identification; impact assessment; and decision-making. We will share the approach used to determine the most effective interventions for the program and how to develop new partnerships to reach more vulnerable families with young children.

Program results or outcomes:

- Increased the number of preschool children who received dental services in various settings.
- Developed new partnerships to reach more preschool children and their families.

Recommendations and implications for practice or additional research:

- Effective interventions included health promotion and education, supervised toothbrushing policies, fluoride varnish application and healthy eating policies.
- Program planning is challenging and time-consuming when collaborating across teams, public health divisions, and regional government.
- Oral health data is limited and developing a data acquisition plan will be part of the planning cycle.

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20. Natural Experiment on Trade and Investment Liberalization and Soft Drink Consumption - Yassen Tcholakov

Co-authors: Pepita Barlow, Martin McKee

Introduction/background: Globalization is recognized to as a contributing factor to a health harming environment through a variety of mechanisms including through changes in food systems and food availability. Sugar-sweetened beverage (SSB) consumption is linked to obesity and diabetes and its regulation is a key priority for public health. The Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) is an international trade agreement between 11 countries.

Methods: This project uses of natural experiment methods to predict the impact of the entry into force of the CPTPP on SSB consumption. These methods allow quantitative inferences to be drawn in the situations where the exposure is not randomly assigned. Soft drink consumption data was collected from the Euromonitor database for 80 countries from all regions. This data was used to estimate the effect of agreements similar to the TPP.

Results and analysis: Eleven country trade agreement pairs were identified. In 5 cases out of the 11, the exposed country had a higher soft drink consumption at five years after the trade agreement. The effect of the trade agreement exposure for an average country in the sample in a trade agreement was found to be 1.10 (95% CI: 1.01-1.18; p-value: 0.03) after adjusting for GDP and the involvement of the US. In 7 of the 11 member-countries soft drink consumption is expected to increase yielding an average increase of 9.0% in those countries; the changes did not yield statistically significant differences in others.

Conclusions and implications for policy, practice or additional research: This projected extended the use of synthetic methods to the projection of future effects of policy implementation. While it showed that there may be increasing trend of SSB consumption in certain scenarios, this could not be generalized to all cases. This illustrates the wide range of effects of international trade liberalization and highlights that national policy probably plays a strong modulating role on the impact that it has on local food environments.

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21. Food Insecurity & Nutrition Experience of College Students - Michelle Bishop

Co-authors: Jennifer Innis, Steve Boloudakis

Introduction/background: In North America, upwards of 50% of postsecondary students experience food insecurity. The goals of this mixed methods study were to find out the prevalence of food insecurity among students attending an urban community college in Canada that has a large international population, as well as students' experiences with food and nutrition while attending college

Methods: Students (N=824) were surveyed using questions from the USDA Food Security Survey Module and the Canadian Community Health Survey to find out their level of food insecurity and to measure intake of fruits and vegetables. Students were also asked about their diet and their concerns related to the availability of cultural foods at the college. Focus groups were used to determine student experiences with food and nutrition at the College. Results: 334 students participated in the survey (41% participation rate). The rate of food insecurity was found to be 77.2%. Being food insecure was associated with low intake of fruits and vegetables. Students who identified as vegetarian had decreased rates of being food insecure. 31 students participated in focus groups, where 3 themes arose: 1) desire for cultural and vegetarian options at the campus; 2) lack of time, and 3) physical effects of hunger.

Results and analysis: There is a need to address food insecurity among students attending community college to improve both nutritional status and mental health.

Conclusions and implications for policy, practice or additional research: The knowledge from this study will be used to develop strategies to meet the nutritional needs of students in the Biotechnology students. A larger study of food insecurity is being planned campus wide at Centennial College.

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22. **Understanding retail settings within local contexts: Results from qualitative interviews with retail operators in Northern British Columbia, Canada - Rebecca Hasdell**

Introduction/background: Retail food environments are popular settings for healthy public policy to increase access to, acceptability of, and availability of healthier foods. Grocery stores are intermediaries between global food systems and consumer purchases, and where most food expenditures are made. Public health and allied partners would benefit from understanding the enablers and barriers for retailers to create supportive environments for health. The purpose of this study to understand retailer practices within the context of smaller cities and rural regions. Specifically, this research asks (1) What are the business models and practices of food retail operators in smaller cities and rural regions; (2) What influences retail operators business operations and practices; and, (3) How are contextual factors accounted for and integrated into retail operations?

Methods: We conducted in-depth, semi-structured interviews were conducted with retail operators of smaller and medium-sized stores within a regional of Northern British Columbia, Canada. Seven retail operators were recruited. This exploratory study was part of a larger mixed-methods study to examine healthy public policy planning in smaller cities and rural regions. Results were analyzed using grounded theory.

Results and analysis: Retail operators discussed multiple contextual influences on their stores, including customer perceptions of their store, competition with larger format stores and regional travel. Businesses practices linked to these external factors include providing staple items and competitive pricing, and balancing choice, value and profitability. Retailers implement several solutions to remain viable, including product distinctions and a focus on customer service.

Conclusions and implications for policy, practice or additional research: The findings from this research indicate that smaller retailers fulfill an important role in smaller cities and rural regions. Retail operators adapt their business operations and use retailing strategies that respond to local contexts. Involving retailers in population intervention planning may help to ensure that interventions capitalize on strategies retailers already use to sell foods.

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23. Running a Health and Wellness Deficit: Understanding the cost of thriving in urban Alberta - Amanda Barberio

Co-authors: Angela Torry, Kienan Williams, Brian Ladd, Laura Paivalainen

Introduction/background: In our market-oriented economy, adequate income is necessary for survival. However, mere survival does not mean good health or well-being. Thriving, in contrast, implies having enough of everything that makes for good health and overall well-being. The purpose of this project was to determine what it costs to thrive in Calgary and Edmonton and to compare this with current minimum wage and income support levels in Alberta.

Methods: The Thriving in Urban Alberta Framework (Framework) used to direct the analysis is an adaptation of the Wellesley Institute's Thriving in the City Framework, adjusted for unique material features of daily life in Alberta’s two largest municipalities. Twenty-two interviews were conducted with Albertans aged 25-40 and living on their own in Calgary or Edmonton for validation. Cost estimates for each component in the analytical framework were sourced from market data, consumer surveys, cost estimator tools, local stores, or drawn from Statistics Canada’s Survey of Household Spending. The estimated Cost to Thrive was examined with reference to Alberta’s minimum wage, current Income Supports, and the new Official Poverty Line for Alberta.

Results and analysis: The Framework includes nine high-level components: Food, shelter, transportation, physical activity, personal care/hygiene, health-care, social participation/connection, professional/personal development and savings & debt. These are futher broken down into sub-components. The annual estimated cost to Thrive is $44,818-$59,196 in Edmonton and Calgary, almost twice the amount of the Alberta Official Poverty line for individuals ($20,389). Also, a substantial gaps exist between the Cost to Thrive and the annual take home pay for a full-time minimum wage job ($25,500) plus the annual amount collectable from Alberta's Income Support ($7,500).

Conclusions and implications for policy, practice or additional research: The Framework and estimated Cost to Thrive in Urban Alberta are tools for informing debate about the adequacy of income-related policies and services in Alberta in relation to the fundamental goal of good health for all.

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24. What motivates FitBit users? - Erin O'Loughlin

Co-authors: Catherine Sabiston, Lisa Kakinami, Tracie Barnett, Jennifer O'Loughlin

Introduction/background: Wearable technology to track physical activity (PA) is popular, but there is limited evidence these devices are associated with PA and PA motivation, which is a critical factor for PA participation. Based on self-determination theory tenets, PA motivation is on a continuum from no motivation (amotivation) to external and introjected motivation to intrinsic motivation. Contextual factors related to feedback and reinforcement, such as wearable technologies, may impact motivation yet the association between activity tracking, motivation, and PA has not been studied in young adults.

Methods: This cross-sectional study assessed participants (n=627, 55% female) from the Nicotine Dependence in Teens study. PA measures included the IPAQ (International Physical Activity Questionnaire). The BREQ-3 was used to assess PA motivation. Descriptive statistics explored differences in motivation and PA among activity trackers compared to non-trackers. The association between activity tracking, motives, and meeting PA guidelines was assessed using the PROCESS macro for multiple mediation.

Results and analysis: Of 627 participants, 33% (n=207) reported past-year tracking, with no difference by sex. Activity trackers did not walk more (255 vs. 269 min; p=0.603) or participate in more moderate-to-vigorous PA (248 vs. 268 min, p=0.94), and they were less likely to meet PA guidelines (40% vs. 60%, p=0.001). Activity tracking was significantly positively associated with external, introjected, and intrinsic motivation. The direct effect of activity tracking on PA behavior was significant (effect = .58, 95%CI = .17 to .99) as were the indirect effects mediated by external (-), introjected (-), and intrinsic (+) motivation.

Conclusions and implications for policy, practice or additional research: Wearable devices may support greater participation in PA by enhancing intrinsic motivation but also may reduce PA participation by enhancing external and introjected motivation which are in turn related to lower levels of PA. The function of activity trackers on motivation over time needs warrants investigation.

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25. Consumption of ultra-processed foods and drinks and its association with chronic diseases in the Canadian population: analysis of 2015 Canadian Community Health Survey - Milena Nardocci

Co-authors: Jane Polsky, Jean-Claude Moubarac

Introduction/background: Empirical studies have consistently shown that consumption of ultra-processed foods is associated with lower diet quality and increases the risk of a number of diet-related chronic diseases. The objective of this cross-sectional study was to assess how consumption of ultra-processed food relates to the following chronic diseases: obesity, diabetes, hypertension, and cardiovascular disease.

Methods: We used data from the 2015 Canadian Community Health Survey - Nutrition and included 13,608 participants aged 19 years or older. Dietary intake was assessed through one 24h-food recall, and all foods and drinks reported were classified using the NOVA classification according to the extent and purpose of industrial food processing.

We performed logistic regression models in order to assess the association between ultra-processed food consumption (expressed as % of total daily energy intake) and each chronic disease (obesity, diabetes, hypertension, cardiovascular disease), adjusting for potential confounders including socio-demographic factors, physical activity, smoking, immigrant status, urban/rural residence, and reporting status.

Results and analysis: Ultra-processed foods represented 48.8% of the total daily energy intake. A 10% increase in relative daily energy intake from ultra-processed food significantly increased the odds of having obesity (OR=1.07; 95% CI=1.03,1.11), diabetes (OR=1.07; 95% CI=1.01,1.13), and hypertension (OR=1.08; 95% CI=1.03,1.13). Association for cardiovascular disease was positive but not statistically significant.

Conclusions and implications for policy, practice or additional research: Consumption of ultra-processed foods increases the odds of having obesity, diabetes and hypertension in the Canadian population. This suggests that ultra-processed foods are associated with poorer physical health, which is consistent with evidence that these food products have multiple nutritional problems. Identifying risks associated with a high consumption of ultra-processed foods should become part of the public discourse in order to improve diet quality and reduce risk of diet-related disease.

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26. Exposure to fast food vs other restaurant types in relation to the development of diabetes and hypertension: a population-based retrospective cohort study – Jane Poslky

Co-author: Gillian Booth

Introduction/background: Retail food environments are increasingly recognized as important target settings for public health interventions to promote healthier eating and reduce the burden of diet-related disease. We aimed to assess whether residents living in areas with a high proportion of fast-food restaurants relative to total restaurants are more likely to develop diabetes or hypertension, and whether this risk varies by volume (i.e. number) of fast food restaurants.

Methods: We performed a population-based, retrospective cohort study in 2,940,804 adults aged 20+ who lived within walking distance (800 m) of at least one restaurant in five urban regions of southern Ontario. Encoded administrative databases were used to follow individuals from 2003 to 2013 for the development of diabetes and hypertension. Separate Cox proportional hazards models, adjusted for individual and area-level confounders, were used to estimate hazard ratios (HRs) for the incidence of each outcome associated with restaurant exposures.

Resultsand analysis: Incidence rates per 1,000 person-years in the overall sample were 9.86 for diabetes and 18.46 for hypertension. Among younger adults (aged 20-49, n=1,939,825 in the diabetes sample and n=1,830,873 in the hypertension sample), living near more restaurants of any type was associated with slightly lower risk of incident diabetes and hypertension. However, exposure to a greater proportion of fast-food relative to all restaurants was positively associated with both outcomes, particularly in areas with high volumes (5+) of fast-food restaurants (for diabetes incidence, HR=1.19, 95% CI: 1.15-1.22, across the interquartile range; for hypertension incidence, HR=1.25, 95% CI: 1.22-1.28, across the interquartile range). For both incident diabetes and hypertension, weaker associations were observed among adults aged 50-64, and few significant associations were seen among adults aged 65+.

Conclusions and implications for policy, practice or additional research: Areas with the double burden of high volume of fast-food outlets and few restaurant alternatives may represent an adverse environment for the development of diabetes and hypertension, particularly among younger adults.

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27. Foodservice manager perspectives on the feasibility of sustainable menu practices in Quebec healthcare institutions - Béatrice Dagenais

Co-authors: Geneviève Mercille, Annie Marquez, Josée Lavoie, Beth Hunter

Introduction/background: In many countries, there is increased organizational and governmental involvement towards sustainable food systems. Sustainability is only emerging in Canada, with Quebec offering minimal initiatives, making the province's participation long overdue. In healthcare institutions, food sustainability calls for exploring other qualities in food beyond its nutritional and therapeutic dimensions, namely its quality, its social value, its environmental impact, its economic dimension, and governance. Foodservices may take actions, termed sustainable menu practices (SMPs), to align themselves with these dimensions. This research aims to analyse the feasibility of adopting SMPs in healthcare institutions in Quebec.

Methods: This integrated knowledge-translation study is carried out in close partnership with NOURISH, a national initiative on the future of food in healthcare, to allow the production of a practical sustainability tool for foodservice managers. Using a qualitative phenomenological approach, 16 foodservice managers were recruited through purposeful sampling, to participate in a semi-structured interview. Main components of the Diffusion of Innovations theory are used as a conceptual framework for structuring data collection and analysis. This framework helps understand organizational readiness and willingness, as well as perceived barriers and facilitators in SMP adoption.

Results and analysis: Preliminary analysis shows variable perspectives on SMP feasibility, contingent on specific context. Key barriers include legal constraints, inadequate infrastructure, and tight budgets. Better food procurement logistics and employee involvement may facilitate SMP adoption. Motivations for adoption align with ecological values and desire for quality service. Enhanced directorial and political support is vital for proper implementation. Further data analysis will present the influence of organizational structure in SMP adoption.

Conclusions and implications for policy, practice or additional research: This research will contribute to in-depth understanding of managerial experience in SMP adoption in various regional and institutional settings. Results will offer strategies to orient the development of an online sustainable menu guide to support Canadian institutions in adopting SMPs, thereby providing benefits from changed practices.

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28. A systematic review and meta-regression of older adults' food safety knowledge and behaviours in the home setting - Abhinand Thaivalappil

Co-authors: Ian Young, Charles Paco, Apiramy Jeyapalan, Andrew Papadopoulos

Introduction/background: In 2017, seniors were estimated to have outnumbered children in Canada. Canada is considered an aging population, and the number of seniors is predicted to increase up to 25% of the nation's total population within the next 20 years. Older adults are considered a high-risk population for foodborne illness because they have unique food handling practices, weakened immune systems, and greater likelihood of complications (e.g. hospitalization, death) resulting from food poisoning.

Methods: A systematic review was undertaken to identify, characterize, and synthesize the published research on the knowledge, attitudes, and practices of older adults (60+) toward food handling in the domestic setting. The review consisted of a comprehensive search strategy, relevance screening, and article characterization, data extraction, and meta-analysis to synthesize all available studies in this area to determine (a) the prevalence of safe food handling knowledge, behaviours, and high-risk food consumption practices among the elderly living independently; and (b) the study-level factors affecting the difference in prevalence of these outcomes across studies.

Results and analysis: A total of 57 relevant studies were identified published from 1996-2018. Most studies used a cross-sectional design (86%), were conducted in the United States (58%), and contained self-reported food safety practices (77%). Results from the meta-analysis will include prevalence of knowledge, safe food handling practices, and food consumption behaviours of the independent-living elderly.

Conclusions and implications for policy, practice or additional research: The results will aim to identify key knowledge and practice gaps to provide recommendations for the improvement of future education programs in this population.

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29. Association Between Xerostomia And Frailty Syndrome: A Retrospective Analysis of 25583 Participants in Canadian Longitudinal Study On Aging - Yunlong Liang

Co-author: Carol Bassim

Introduction/background: More Canadians are living to advanced ages and frailty is becoming an increasingly important public health concern. Many long term illnesses are known indicators of frailty but the role of oral conditions remain poorly studied. Xerostomia (A.K.A. perceived dry mouth) is known to cause difficulties with tasting, chewing, and swallowing. This may in turn lead to poor nutrition intake, which is a well-established risk factor for frailty. This study aims to investigate the relationship between these two highly prevalent conditions in older Canadian adults.

Methods: A total of 25583 participants of the Canadian Longitudinal Study on Aging (CLSA) between 45 and 85 years of age and residing in 7 Canadian provinces and territories were included in the study. Frailty was measured using the cumulative deficit model and its relationships to Xerostomia in addition to known risk factors were modeled using multiple linear regression after adjustment for the complex sampling design.

Results and analysis: Participants had a mean age of 59.49 (SD=0.07). 14777 (49.64%) were men while 15320 (50.36%) were women. They had a mean frailty index (FI) of 0.0985 (SD=0.0004). 912 (2.42%) had an FI ≥ 0.25

and were classified as frail. Meanwhile, 5261 (15.96%) reported having Xerostomia. A model consisting of 12 covariates was created to predict FI ($R^2=0.59$). Xerostomia was a significant factor (Beta=0.0122, $p<0.0001$) independently associated with frailty after adjusting for age (beta=0.0004, $p<0.0001$), gender (beta=0.0058, $p<0.0001$), income (beta=0.0157, $p<0.0001$), BMI (beta=0.0011, $p<0.0001$), and burden of chronic conditions (beta=0.0245, $p<0.0001$).

Conclusions and implications for policy, practice or additional research: Xerostomia is a novel and significant indicator of frailty, warranting further investigation into underlying mechanisms. Dental coverage for older adults should also be considered a public health priority.

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30. Risk factors for elder abuse: Perceptions of older Chinese, Korean, Punjabi and Tamil immigrants - Sepali Guruge

Co-authors: Souraya Sidani, Ernest Leung

Introduction/background: A large proportion of older adults in Canada are immigrants. Little is known about the risk factors for elder abuse within immigrant communities. This study aimed to examine older adults' perception of factors increasing the risk for elder abuse in immigrant communities.

Methods: Older women and men ($N = 173$) completed a questionnaire on the frequency of occurrence and the importance (score range: 1-4, with 4 indicating high level) of factors found in the literature to contribute to elder abuse, within their respective Chinese, Korean, Punjabi and Sri Lankan Tamil community. Descriptive statistics were used to analyze the data within each community.

Results and analysis: Older adults differed in the frequency rating of risk factors, with those viewed as most frequent being financial dependence ($\mu = 3.03$) for Chinese, social isolation ($\mu = 2.41$) for Korean, advanced age ($\mu = 3.11$) and social isolation ($\mu = 3.11$) for Punjabi, and lack of knowledge of English ($\mu = 3.44$) for Sri Lankan Tamil. Participants rated financial dependence ($\mu = 2.88$) as the most important risk factor, followed by physical dependence ($\mu = 3.20$) in the Chinese group, social isolation in the Korean group ($\mu = 2.71$) and Punjabi group ($\mu = 3.03$), and lack of knowledge of English ($\mu = 3.28$) in the Tamil group.

Conclusions and implications for policy, practice or additional research: Public health policies must address the financial dependence among older immigrants in order to reduce their dependency on their families and caregivers who are often their abusers. The findings also underscore the importance of offering language-specific services and designing strategies to address social isolation to prevent elder abuse among immigrants.

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31. Trust and safety: A systematic review studying the human interactions around interventions, practitioners and individuals who are homeless and vulnerably housed - Olivia Magwood

Co-authors: Vanessa Ymele Leki, Victoire Kpade, Ammar Saad, Qasem Alkhateeb, Akalewold Gebremeskel, Asia Rehman, Terry Hannigan, Nicole Pinto, Annie Sun, David Ponka, Kevin Pottie

Introduction/background: Individuals who are homeless and vulnerably housed have significantly worse health and social outcomes than people who are in safe and stable housing. A patient's perceptions can affect acceptance, participation, engagement, and retention in social and health interventions. Understanding these perceptions and experiences may help public health and other practitioners to tailor, enhance, and improve the implementation of interventions. Our objective was to understand the experiences and factors influencing the acceptability and accessibility of social and health interventions developed specifically for individuals who are homeless and vulnerably housed.

Methods: We conducted electronic searches of MEDLINE, EMBASE, PsycINFO, ERIC via Ovid, ProQuest Applied Social Sciences Index and Abstracts, Sociological Abstracts, Social Services Abstracts and Sociology Database for studies published from 1994 to 2018. We included articles on vulnerably housed populations in high income countries who engaged with housing, mental health, addiction, care coordination and income assistance interventions.

Results and analysis: Out of 8938 studies retrieved, 32 met inclusion criteria for qualitative synthesis. The evidence from over 820 service users shows that people experiencing homelessness highly value trust and safety. Often, a person's self-identity develops with long-term and integrated services, peer-support, and patient-centered engagement. Their lived experiences and reluctance to accept interventions is also affected by depression, stigma, and low self-esteem. Confidence in these findings, as assessed using the GRADE-CERQual approach, ranged from very low to moderate.

Conclusions and implications for policy, practice or additional research: Biomedical, behavioural, and structural factors impact the lived experience of individuals who are homeless and vulnerably housed towards health and social interventions. Identifying and overcoming these factors will improve the inclusiveness, equitability and effectiveness of primary care targeting this population. This review informs an ongoing project to develop Canadian evidence-based guidelines for providing social programs and healthcare services to people who are homeless and vulnerably housed.

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33. Increased prevalence of methamphetamine use: A call for improved safer inhalation and smoking resources in British Columbia -Brittany Graham

Co-authors: Kristi Papamihali, Alexis Crabtree, Christopher Mill, Mohammad Karamouzian, Margot Kuo, Sara Young, Jane A. Buxton

Background: Harm reduction efforts during the ongoing opioid overdose crisis in British Columbia (BC) have primarily focused on safer injection practices. This includes 31 observed consumption sites where smoking is prohibited; 16 million syringes were distributed in 2017, but limited safer smoking supplies. A regular harm reduction client survey found methamphetamine use consistently increased from 20% in 2012 to 47% in 2015, while crack and cocaine use decreased. Methamphetamine use is associated with poor health outcomes including overdose, dependency and psychosis. We aim to characterize patterns of stimulant use in BC and associated harms.

Methodology: Clients of harm reduction distribution sites across BC completed a survey during summer 2018, which assessed substance use trends. Quantitative survey data were analyzed using descriptive statistics. A urine screen panel was performed by a community laboratory company and linked to survey participant data.

Results: 486 surveys were completed and 316 urine samples analysed. Half (52%) of participants reported inhalation/smoking as preferred method of using drugs, 34% injection, and 6% snorting. Self-reported past-week substance use found 69% used methamphetamine, 26% used crack and 22% cocaine. Methamphetamine was detected in 72% of urine samples submitted. Stimulant overdose in past 6 months was reported by 14% of participants. Of 302 participants that used pipes from harm reduction sites to smoke drugs, 27% used a second-hand pipe and 20% injected when they couldn't find unused smoking equipment.

Conclusion: Smoking/inhalation was the preferred method of drug use for over half of participants. Methamphetamine use continues to increase - reported use in 2018 was three times higher than 2012, and is comparable to actual use as determined by urinalysis. Our findings support the need to enhance available inhalation and smoking supplies, and environments where smoking can be observed. This is relevant Canada-wide as other provinces begin to see similar trends in methamphetamine use.

34. Pan-Canadian Trends in the Prescribing of Opioids and Benzodiazepines, 2012 to 2017 - Michele Bender

Co-authors: Roger Cheng, Krista Louie

Introduction/background: Canada is in the midst of a worsening opioid crisis. The ongoing monitoring of opioid prescribing trends is needed to support urgent public health surveillance needs to address the crisis. Furthermore, the use of benzodiazepines and benzodiazepine-related drugs may be associated with issues such as dependence. The objective of this study is to characterize the pan-Canadian and provincial prescribing trends of opioids, benzodiazepines and benzodiazepine-related drugs from 2012 to 2017.

Methods: The analysis used aggregate prescription dispensed data to examine the number of defined daily doses (DDDs) and the number of prescriptions dispensed.

Results and analysis: The overall quantity of opioids dispensed in Canada, as measured by the number of DDDs per 1,000 population, declined by 10.1% between 2016 and 2017 -- from 6,269 DDDs per 1,000 population in 2016 to 5,633 DDDs per 1,000 population in 2017. The decline between 2016 and 2017 was more than twice that between 2015 and 2016, and it exceeded the overall decline between 2012 and 2016. 21.3 million prescriptions for opioids were dispensed in 2017, compared with 21.7 million in 2016. This is the first decline in overall prescription numbers between 2012 and 2017. The top 6 opioids -- codeine, hydromorphone, oxycodone, tramadol, morphine and fentanyl, accounted for 96% of all opioid prescriptions. From 2016 to 2017, fentanyl had the largest decrease in DDD among the top 6 opioids at almost 23%. The overall quantity of benzodiazepines and benzodiazepine-related drugs dispensed in Canada declined by 5.9% between 2016 and 2017 -- from 13,010 DDDs per 1,000 population to 12,248 DDDs per 1,000 population.

Conclusions and implications for policy, practice or additional research: The amount of opioids Canadians are prescribed is declining. The findings of this study highlight the importance of developing pan-Canadian strategies to reduce the harms associated with the use of prescription opioids, including evidence-based prescribing guidelines, prescription monitoring programs and electronic prescribing systems.

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35. Policy and Programming Responses to the Opioid Crisis at Canadian Post-Secondary Institutions - Layal Mounzer

Co-authors: Brieanne Olibris, Amir Attaran

Introduction/problem definition that demonstrates the need for a policy change: In 2016, the Public Health Agency of Canada attributed approximately 8 deaths/day and 16 hospitalizations/day to the emerging opioid crisis. Significant increases in overdose and death, spanning geopolitical boundaries and socioeconomic status, have resulted in a national public health crisis. The study aims to create a clear understanding of the scope of response to opioid use at Canadian post-secondary institutions.

Research Methods: An environmental scan of policy and programming decisions made in response to the opioid crisis at Canada's 96 universities was initiated with a review of publicly available documents and local and national media. Each of the 96 universities were invited to elaborate on their institution's decisions and response in an online survey. A qualitative content analysis and policy analysis of the document review and survey responses was conducted.

Results and analysis: The response to the opioid crisis by Canadian universities ranges from no response to the development and implementation of opioid-specific policies and harm reduction programming. Small, medium and large universities, as well as rural and urban universities, are compared in terms of the nature and timing of their response. A number of best practices - including explicit inclusion of opioid use and response in drugs and alcohol policies, extending the range of applicability of university policies to university-sanctioned or affiliated events (not just on-campus events), explicitly identifying who is responsible for delivering harm-reduction programming, and ensuring that students can access naloxone in a safe and judgement-free space - as well as areas for improvement have been identified.

Recommendations and implications for policy, practice or additional research: Identifying implemented best practices will inform and support the development of an effective response to the opioid crisis at Canadian and American post-secondary institutions. Post-secondary institutions are advised to adopt best practices in the development and implementation of policies in a timely manner.

36. Examining Nova Scotia medical examiner data to inform opioid-related death research - Krista Louie

Co-authors: Vera Grywacheski, Emily Schleihauf,

Introduction/background: Canada continues to experience an opioid crisis. There is a need to better understand the quality of medical examiner data for informing opioid-related death research, as well as the characteristics of persons who have died from opioids.

An analysis of opioid-related deaths was conducted in collaboration with the Nova Scotia Medical Examiner Service and the Canadian Institute for Health Information. Objectives were to assess the quality of data pertaining to contextual factors in opioid-related deaths and develop a profile of opioid-related deaths to highlight information that could be used for surveillance.

Methods: A chart abstraction was completed for acute opioid toxicity deaths occuring between January 1st, 2011 and June 30th, 2016 in Nova Scotia (n=321). Open text fields for co-morbidities were mapped to ICD-10-CA codes. Descriptive statistics were calculated.

Results and analysis: Accidental acute opioid toxicities accounted for the majority (81%) of deaths, while suicides and undetermined intent accounted for 18% and 1% respectively. Deaths among males were double the rate for females. At least 44% were seen in the emergency department and 14% were hospitalized within 6 months prior to death. Common co-morbidities included hypertensive diseases (21%), chronic lower respiratory diseases (16%), and diabetes (10%). At least 16% were prescribed hydromorphone within 6 months prior to their death while 2 out of every 5 deaths involved hydromorphone. Intervention was not possible for over half of the deaths as the person was alone and no one was aware they were intoxicated. There were gaps in information for some variables of interest including occupation, reported mental health conditions, drugs/paraphernalia at the death scene, likely route of administration of opioid, and others.

Conclusions and implications for policy, practice or additional research: The Nova Scotia Medical Examiner data is a rich source for opioid surveillance. Certain data fields of interest to inform interventions to reduce opioid-related harms could benefit from a more standardized data collection process.

37. Gaps in public preparedness to be a substitute decision maker: time for high school education on resuscitation and end-of-life care? - Michael Wong

Co-authors: Maria Cassandre Medor, Katerina Labre, Mengzhu Jiang, Jason R Frank, Lisa M Fischer, Warren Cheung

Introduction/background: When a patient is incapable of making medical decisions for themselves, choices are made according to the patient’s previously expressed, wishes, values, and beliefs by a substitute decision maker (SDM). While interventions to engage patients in their own advance care planning exist, little is known about public readiness to act as a SDM in Canada. This mixed-methods survey aimed to describe attitudes and factors associated with preparedness to act as a SDM, and support for a population-level curriculum on the role of an SDM in end-of-life and resuscitative care.

Methods: From November 2017 to June 2018, a mixed-methods street intercept survey was conducted in Ottawa, Canada. Descriptive statistics and logistic regression analysis were used to assess predictors of preparedness to be a SDM and determine support for a high school curriculum. Responses to open-ended questions were analyzed using inductive thematic analysis.

Results and analysis: The 430 respondents were mostly female (56.5%) with an average age of 33.9. Although 73.0% of respondents felt prepared to be a SDM, 48.1% reported having never had a meaningful conversation with their loved ones about their wishes in the event of critical illness. Thematic enablers and barriers to feeling prepared were identified. 71.9% of respondents believed that 16 year old students should learn about substitute decision making in the context of resuscitation and end-of-life care. Respondents endorsed age appropriateness, potential developmental and societal benefit, and improved decision making, while cautioning the need for a nuanced approach respectful of different maturity levels, cultures and individual experiences.

Conclusions and implications for policy, practice or additional research: This study reveals a gap between perceived and actual preparedness to be a SDM for a loved one suffering critical illness, and establishes the potential role for high school education. Future studies should further characterize this gap on the national level and inform development of a curriculum to address it.

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38. Evaluating the Skin Cancer Prevention Act (Tanning Beds): A Survey of Ontario Public Health Units - Jessica Reimann

Co-authors: Jennifer McWhirter, Andrew Papadopoulos, Cate Dewey

Introduction/background: Indoor tanning is a significant public health problem due to the risk of skin cancer and eye damage, and the popularity of the behaviour. In response, the Government of Ontario passed the Skin Cancer Prevention Act (Tanning Beds) in 2014. This legislation prohibits the sale of indoor tanning services to youth under 18 and requires warning signs be posted, among other regulations. The objective of this study was to collect information from Ontario Public Health Units to: understand legislation implementation; assess available evidence about compliance, inspection, and enforcement; and note barriers and facilitators related to inspection and enforcement of the Act.

Methods: An online questionnaire was circulated in Spring 2018 to all 36 Ontario Public Health Units. Twenty-four close- and open-ended questions covered complaints, inspection, and enforcement from 2014-2018. Descriptive statistics were generated and qualitative data was used to further understand quantitative findings.

Results and analysis: Twenty public health units responded (56% response rate), reporting 485 facilities with indoor tanning in their jurisdictions. 90% of responding health units conduct required complaints-based inspections of tanning facilities, while 65% also conduct optional routine inspections. Since 2014, there have been 242 infractions by tanning facility owner/operators related to the Act, with most being uncovered during routine inspections (n=234, 97%) relative to complaints-based inspections (n=8, 3%). Most infractions were related to warning signs (n=201, 83%). Providing education (n=90, 62%) and issuing warnings (n=33, 23%) were the most common enforcement follow-up strategies for infractions; no charges were issued.

Conclusions and implications for policy, practice or additional research: The Skin Cancer Prevention Act should be amended to include mandatory routine inspections and a corresponding inspection schedule. Inspectors should continue to provide education to indoor tanning facility operators, but should also issue fines, as enabled by the law, to encourage compliance. More provincial resources to facilitate inspection and enforcement of the Act are needed.

39. Alternative Facts & Artificial Rays: Health and Risk Information on Tanning Salons Websites - Jennifer McWhirter

Co-author: Alyssa Green

Introduction/background: Despite the health risks of indoor tanning, including skin cancer, many Canadians continue to engage in this behaviour. This decision may be related to information, or misinformation, about artificial UV exposure. There is no Canadian research about the messages the indoor tanning industry uses online, and whether it complies with provincial legislation. Our objectives was to characterize online health and risk communication from the indoor tanning industry in Ontario.

Methods: We conducted a directed content analysis of all 265 tanning salon websites in Ontario, Canada. To assess website content, we developed a 16-category, 316-variable codebook based on previous literature, indoor tanning legislation, and a sample of websites. Inter-coder reliability was assessed using percent agreement between two coders (91%) and Kappa (0.72). Descriptive statistics were calculated.

Results and analysis: Tanning salon websites frequently presented health (70.2%) and aesthetic (90.9%) benefits of indoor tanning, while fewer stated health (52.5%) and aesthetic (32.1%) risks. Websites mentioned base tans (50.9%) and vitamin D (46.4%) as health-related reasons to tan, while only a handful of websites indicated skin cancer as a possible health risk (6.4%). Over 70% of websites contained misleading health claims; these were more common on franchise websites (chi-square=40.985, df=1, p<.01). Less than 25% of websites stated minors under 18 are not permitted to indoor tan, and less than 2% mentioned Ontario's Skin Cancer Prevention Act, which mandates this age restriction. Free (39.2%) and unlimited (43.0%) tanning options were common.

Conclusions and implications for policy, practice or additional research: Our results demonstrate a misleading and non-compliant online information environment. Given the frequent presence of misleading health information and promotion of aesthetic benefits, coupled with a lack of risk information on tanning salon websites, the public may be misinformed about relevant dangers. Findings can be used to develop counter-communication strategies and to advocate for more stringent provincial legislation around the advertising and marketing of indoor tanning.

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40. "I think there should be photos": Indoor tanners' perceptions of health warning labels for tanning beds – Sydney Gosseling

Co-authors: Jennifer McWhirther

Introduction/background: Many Canadians report using indoor tanning equipment, a source of carcinogenic ultraviolet (UV) radiation. The current required federal health warning label (HWL) on tanning equipment uses text to warn users of the health risks of indoor tanning. Despite their proven utility in tobacco control, graphic images on tanning HWLs are very rarely used. We sought to investigate tanning equipment users' perceptions of the current federal HWL and evidence-informed, image-based alternatives.

Methods: We developed 10 new warning labels based on health communication theory and best practices, including graphic images and simplified language. These labels, plus the current federal HWL, were shown in four focus groups of two to six participants who were 18-34 years old and had indoor tanned in the past year. Participants in each 2-hour focus group completed an individual rating questionnaire for each label and discussed the labels as a group. Discussion topics included perceived effectiveness, ability to attract attention, believability, and comprehension. Transcripts were analyzed for themes using NVivo 11.

Results and analysis: Preliminary analyses indicate that while informative, the current federal HWL is small, text-heavy, and may not attract attention or be comrehensible. Several participants did not recognize the current federal HWL. Most participants agreed that images would increase the effectiveness of indoor tanning HWLs.

Labels with images conveying skin cancer treatment to the face, premature aging of the face, and eye damage were viewed as effective. Suggested modifications by participants included adding statistics and testimonials.

Conclusions and implications for policy, practice or additional research: This research provides valuable insight on indoor taners' perceptions of current and potential future HWLs. Results suggest revisitng current designs, particularly the lack of images and language complexity, in order to maximize the ability of HWLs to inform users of the known risks of indoor tanning and encourage UV avoidance.

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41. Maximizing research impacts on cancer prevention: an integrated knowledge translation (iKT) approach used by the Canadian Population Attributable Risk of Cancer (ComPARe) study - Elizabeth Holmes

Co-authors: Zeinab El-Masri, Leah Smith, Prithwish De, Robert Nuttall

Introduction/background: The Canadian Population Attributable Risk of Cancer (ComPARe) study quantified the current (2015) and future (2040) number and proportion of new cancer cases in Canada that could be prevented through changes in modifiable lifestyle, environment and infectious agent risk factors. The results are directly relevant for guiding future cancer prevention research, developing health promotion programs and advocating for and implementing new policies aimed at decreasing the cancer burden in Canada. To ensure relevant and ongoing uptake of the study results by a broad audience, ComPARe employed an integrated knowledge translation (iKT) approach that engaged knowleder users throughout the research process.

Methods: In ComPARe’s iKT approach, key knowledge users were integrated as research team members and others were members of a KT Advisory Committee. The integrated knowledge users took a lead role on the KT activities for the study. To guide the planning and implementation of KT activities, they developed a KT Blueprint consisting of four phases: planning, knowledge product development, dissemination and evaluation with Advisory Committee engagement across all phases.

Results and analysis: A logic model was developed to map the required inputs, activities, outputs and outcomes of the KT activities. The Advisory Committee was comprised of experts in cancer prevention from across Canada. They advised on the KT strategy, including discussing research results, dissemination methods and channels, evaluation plan and product development. Knowledge products in development include peer-reviewed publications, website, data visualization tool, accredited webinar and infographics. The team identified enablers and challenges to taking an iKT approach.

Conclusions and implications for policy, practice or additional research: The study’s iKT approach capitalized on both researchers’ and knowledge users’ expertise leading to findings that are contextually relevant; maximizing their potential impact on cancer prevention planning and decision-making in Canada. ComPARe's iKT approach contributes to iKT science research and could be used a model by others interested in collaborative research.

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42. A review of the impacts of energy efficiency initiatives on radon gas levels in residential settings - Lydia Ma

Co-authors: Anne-Marie Nicol, Avneet Brar

Introduction/background: Radon gas is a known human carcinogen that is estimated to cause over 3000 lung cancer deaths per year in Canada. Radon is a radioactive soil gas that is tasteless, odorless and invisible. The only way to know if radon is present in a home is to test. Radon concentrations in the earth underneath homes can influence radon levels indoor as the gas enters through cracks in the foundation. Building design and parameters such as heating sources, size of the foundation and air tightness also impact the amount of radon that is drawn out of the ground and into the home.

Methods: A literature review was undertaken on peer-reivewed, published research in the area of energy efficiency and radon levels in residential homes. The scope of the review included indices from health, engineering and building sciences and articles from around the world were included if the building type in question aligned with North American parameters.

Results and analysis: Few studies have been conducted in the area of energy efficiency impacts on radon exposure. More work has been conducted on other indoor air contaminants such as volatile organics. Of those studies that did examine radon, there is a clear trend of increasing radon levels with energy efficiency strategies, particularly window installations. Mechanical ventilation may play a key role in helping to mitigate radon problems when tigher, more efficient renovations are being undertaken.

Conclusions and implications for policy, practice or additional research: Energy efficiency programs and incentives may be inadvertantly increasing radon gas indoors and increasing occupants risk of developing lung cancer. Government programs that promote energy efficiency should also educate homeonwers about radon risk and strategies to reduce radon in the home.

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43. Screening of population level biomonitoring data from the Canadian Health Measures Survey in a risk-based context - Kate Werry

Co-authors: Sarah Faure, Subramanian Karthikeyan, Lesa Aylward, Nolwenn Noisel, Annie St-Amand

Introduction/background: Canada's nationally-representative Canadian Health Measures Survey (CHMS) has measured over 250 environmental chemicals in approximately 29,000 Canadians since 2007. Our capacity to interpret biomonitoring results in relation to the risks exposure levels pose to human health is improving with the development of biomonitoring screening value such as biomonitoring equivalents.

Methods: Biomonitoring data from the CHMS are compared with published or updated biomonitoring screening values. Hazard quotients (HQs) are calculated as the ratio of biomarker concentrations to chemical-specific biomonitoring screening values using at the geometric mean (GM) or the upper bound (95th percentile) of exposure. These calculations are done for a range of chemicals including metals and volatile organic compounds . An HQ near or exceeding a value of 1 indicates that exposure levels are near or exceeding the exposure guidance values on which the biomonitoring screening values are based.

Results and analysis: Of the 25 chemicals included in this study, the majority have HQs below 1 suggesting that exposures to these chemicals are not a current concern. However, HQs exceed 1 in smokers for cadmium, acrylamide, benzene, and xylene, as well as in the total population for inorganic arsenic and fluoride. These results provide an indication that exposure levels for these chemicals may be exceeding exposure guidance values, at least for a subset of the population. For example, cadmium in smokers aged 20-39 years, 40-59 years, and 60-79 years had HQ values ranging from 1.0 to 1.2 at the GM and from 2.9 to 3.2 at the 95th percentile. Cadmium concentrations in blood reflect recent exposure and concentrations at the GM and 95th percentile are considered representative of short-term exposures at typical and elevated levels, respectively.

Conclusions and implications for policy, practice or additional research: This screening exercise can help to prioritize chemicals for follow-up activities such as risk management actions and show the importance of continued biomonitoring to assess population exposures.

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44. Understanding Aamjiwnaang's environmental health journey - Jamal Sehar

Co-authors: Sara Plain, Heather Robertson, Paleah Black-Moher, Kristian Larsen, Alson Palmer, Amanda Seppard

Introduction/background: Aamjiwnaang First Nation is situated near the Sarnia-Lambton "Chemical Valley", an industrial complex of refining and chemical companies. This has resulted in poor air quality, chemical spills and other environmental events. Residents of Aamjiwnaang are concerned about the health impacts of these environmental exposures. In past decades, Aamjiwnaang has been involved in over 20 research studies, including air, water, animal and food analyses. The aim of this project was to consolidate these data to describe a more complete account.

Methods: This study included (a) assessment of air quality on risk of cancer, (b) systematic review of the impact of the environmental factors on the health of residents and (c) digital stories to portray community members' perspectives. Air quality assessment was done using publically available data from four monitoring stations near the Sarnia region. Various databases were searched for research studies examining environmental quality and human health outcome within the population in a 20km radius of Aamjiwnaang.

Results and analysis: The deliverables for the project were determined in collaboration with the Health Committee at Aamjiwnaang. The air risk assessment found 3-6 times higher concentrations of benzene than the provincial ambient air quality control target levels; however, there have been improvements in air quality over time (1995-2016). The systematic review found that there was evidence of exposure to environmental pollutants in this community, suggesting that further monitoring of health outcomes is warranted. The digital stories produced a collage of images that illustrate and describe the influences and realities of environment and health in the community, overlaid with the results from the risk assessment and systematic review.

Conclusions and implications for policy, practice or additional research: This work will contribute to an enhanced understanding of environmental impact on health among Aamjiwnaang residents. It highlights the importance of partnership to create actionable recommendations and products for First Nations communities.

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45. Shifting Perspectives - Knowledge Mobilization (KM) for TB Elimination in Indigenous Communities - Margaret Haworth-Brockman

Co-authors: Shivoan Balakumar, Donna Atkinson, Roberta Stout

Introduction/program need and objectives: In Canada, current TB elimination strategies have thus far been inneffective for Indigenous populations. To achieve TB elimination in Indigenous communities, Indigenous voices and perspectives must be placed at the centre of every TB policy and programming decision. With this in mind, a KM event focused on the elimination of TB in Indigenous populations living in northern communities was organized in 2018. With direction and guidance from the Assembly of First Nations, the Inuit Tapiriit Kanatami, and the Métis National Council, the National Collaborating Centres for Aboriginal Health, Infectious Diseases, Healthy Public Policy, and Determinants of Health hosted a multi-sector knowledge exchange forum on community-informed public health strategies for TB Elimination in Northern Indigenous Communities.

Program methods, activities and evaluation: The content and format of the forum was informed by consultations with Indigenous and non-Indigenous organizations and partners across Canada to assess knowledge gaps. Key objectives included: providing opportunities for strategic networking; sharing lessons learned and promising practicies; and exploring multi-sector approaches to TB elimination. Indigenous community members working on TB or affected by TB were key contributers to meeting presentations. As a way to expand the reach, the meeting was simultaneously recorded and live-streamed to allow virtual participation for those who could not attend in-person.

Program results or outcomes: Over 100 in-person and virtual participants from 9 Canadian provinces/territories attended the forum. This included representation from different sectors, roles and levels of TB policy, programming and research. Oral stories, videos and live-streaming were included as part of the forum. Completed evaluations showed 100% of participants gained valuable knowledge, and 90% identified opportunities for new actions towards TB elimination. Outcomes from the meeting informed successive national discussions, and several instances of new connections or initiatives were captured following the meeting.

46. The Role of Health in Canadian Foreign Policy: the Sustainable Development Goals and Antimicrobial Resistance - Ronald Labonte

Co-author: Arne Ruckert

Introduction/background: Much has been written about the rise of health onto the foreign policy agenda amidst the globalization of health determinants. However, little is known about the specific driving forces behind the integration of health into Canadian foreign policy, and how health can be effectively positioned in foreign policy negotiations.

Methods: We conducted a series of semi-structured interviews with key informants (n=30) from a variety of backgrounds, including the civil service, NGOs, private industry, and academia. We imported all data into NVivo 10 for thematic and constant comparative analsysis.

Results and analysis: Our findings paint a rich picture of competing driving forces that motivate the Canadian government to integrate health into foreign policy. We organize the findings by distinguishing between contextual and immediate causes. The contextual factors include how health has increasingly been securitized (with health increasingly seen as a security issue by Global Affairs Canada), and deep cultural support by Canadians and their government for health issues. While such overarching driving forces can explain why health is now on the radar of foreign policy practitioners, they cannot account for specific instances of health issues entering foreign policy (as in our case, the rise of AMR and the framing of health within the SDG process). We show that how specific health issues (e.g. AMR) enter the foreign policy domain can be driven either by domestic factors or forces (interest groups, NGOs, bureaucratic politics, the Auditor General) or international pressures (global discourse, initiatives by international organizations, peer pressure); and that such driving forces often co-exist or mutually reinforce each other.

Conclusions and implications for policy, practice or additional research: This paper contributes a more nuanced understanding of how health enters foreign policy considerations. This will allow health practitioners to better target important drivers when aiming to place health onto the foreign policy agenda.

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47. Measuring it to manage it: Assessing evidence-informed decision-making competence in public health nursing - Emily Belita

Co-authors: Jennifer Yost, Janet E. Squires, Rebecca Ganann, Maureen Dobbins

Introduction/background: Despite professional expectations for public health nurses (PHNs) to engage in and develop competencies in evidence-informed decision-making (EIDM), EIDM remains undeveloped and low among nurses. Measures of EIDM competence have potential to encourage EIDM engagement through competence recognition and support assessment of strengths and competency gaps for individual nurses and public health organizations. This study aims to identify the state of evidence regarding nursing EIDM competence measures and establish a measure of EIDM competence for use among PHNs.

Methods: A three stage research project is proposed. Stage one includes a systematic review of measures assessing EIDM competence attributes (i.e., knowledge, skills, attitudes/values and/or behaviours) in nursing. Data on measures will be presented narratively on primary psychometric outcomes of acceptability, validity, and reliability. Stage two will include EIDM competence tool development or modification for use among PHNs, if a current one does not exist. Stage three includes psychometric testing (i.e., acceptability, reliability, validity) of the measure in a sample of Ontario-based PHNs, using an online survey.

Results and analysis: Stage one (systematic review) is currently underway. Title and abstract screening of 4,657 citations has been completed. Full-text screening has been conducted on 334 citations. One hundred and seven studies have been included in the final review. Data synthesis is in progress. For the 35 identified measures, findings will report on the health care setting (e.g., public health, acute care,) and nursing licensure groups in which the tool has been used or tested (e.g., registered nurses, advanced practice nurses), and psychometric properties.

Conclusions and implications for policy, practice or additional research: Integration of a standard EIDM competence measure in public health practice can assist PHNs and management with identifying competency gaps, facilitate professional development goals in EIDM, and assist with planning organizational interventions to support development of EIDM competency.

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48. Exploring Health Care Consumer Involvement in Clinical Practice Guideline Development - Adam Jordan

Introduction/background: Promoting the practice of involving healthcare consumers (HCCs) in clinical practice guideline (CPG) development will allow healthcare professionals to take advantage of its benefits. Involving HCCs in CPG development has a range of benefits and challenges, which vary with strategies used; however, no literature yet exists describing current practice in Canada. Research is needed to describe strategies of HCCs involvement in CPG development within Canada, so that they may be subsequently optimized.

Methods: Canadian CPGs for management of mood and anxiety disorders were identified, along with related material describing their development. This material was analyzed using qualitative content analysis to categorize HCCs involved in CPG development, strategies used and the purpose of HCC involvement. Interviews with CPG authors were conducted, which focused on why HCCs are involved or excluded in CPG development.

Results and analysis: Preliminary review of twelve CPGs revealed that only two contained clear indication of HCC involvement during their development. Analysis of interviews and related material, including documents describing development procedures, was performed to further explore the degree and character of HCC involvement. Interview participants were invited to comment on potential benefits and challenges of HCC involvement in CPG development. Preliminary results reveal a wide range of strategies and perspectives with respect to the practice.

Conclusions and implications for policy, practice or additional research: Although literature points to a general consensus that HCCs should be involved in development of CPGs, current results highlight that this remains an uncommon practice. This study provides insight into the decision making process regarding involving HCCs during development of CPGs, and effects of the challenges that professionals contend with to do so. Further research is needed to indicate how these challenges can be overcome to improve utilization of this practice.

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49. Identifying the Training Needs of Ontario's Public Health Workforce - Anya Archer

Co-authors: Erica Di Ruggiero, Robyn Kalda, Obadiah George, Uttam Bajwa

Introduction/program need and objectives: Public Health Training for Equitable Systems Change (PHESC) is a collaborative of 8 partners funded by the Ontario government. PHESC is integrating a health equity approach in the development of a comprehensive training plan to improve knowledge, skills, and performance of Ontario’s public health workforce.

Program methods, activities and evaluation: In June 2018, PHESC reviewed existing needs assessments to identify priority training needs in public health. From these assessments, the PHESC collaborative validated the list of training needs and aligned it with the Ontario Public Health Standards, particularly the first three Foundational Standards: Population Health Assessment, Health Equity and Effective Public Health Practice. From these results, a consultation paper was disseminated to all Public Health Units (PHUs) requesting their identified training needs, preferred modes of training delivery, and areas for further capacity building across PHUs. Respondents were instructed to consult a variety of staff members when answering the questions. These consultations also considered areas for collaboration within and beyond the broader health sector.

Program results or outcomes: PHESC received responses from 33 of 35 PHUs. Respondents generally agreed with and/or built upon the training themes identified in the consultation paper. PHUs want PHESC to plan for the sustainability of training materials, allow them to build on their existing knowledge and training resources, and to consider their sociocultural and geographical contexts.

Recommendations and implications for practice or additional research: PHESC is creating an evidence-based training plan, with the consultation results and the three Foundational Standards (with Health Equity incorporated into all areas) at its core. Trainings and resources will be launched and evaluated over the next 16 months. Ongoing feedback from PHUs will ensure that trainings align not only with their daily practice but also with skills and knowledge required to work equitably in their communities. By creating sustainable training tools for PHUs, PHESC is supporting public health professionals in driving organizational change for the public's health.

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50. A Comparative Case Study of Community Health Workers for the Provision of Mental Health Care in Canada: Lessons from Behvarz Program in Iran - Elmira Mirbahaeddin

Introduction/background: There is growing yet minimal integration of Community Health Workers in mental health care in Canada, largely as peer support workers. Looking to Iran for some promising practices could be considered as my research experience in Iran's health system and the literature have revealed impressive achievments about CHWs. This study aims to examine what roles CHWs play regarding MHC in Iran and how they compare with the roles of peer support workers in Canada. Specifically, to identify influencing facilitators and challenges to the roles they play in MHC.

Methods: A comparative case study approach was used utilizing multiple qualitative methods. Starting with a documentary data analysis about Iran augmented with published and grey literature, and an environmental scan of peer support workers in healthcare in Canada. Semi-structured interviews were conducted with the CHWs/peer support workers and the key Informants in both countries.

Results and analysis: Mental health services are integrated into an elaborate primary health care utilizing a unique workforce named Behvarz. They are continually trained and supervised to identify, manage and refer mental health cases.The successful integration of the CHW program in Iran for primary mental health services is because of a health system characterized by 1) an extensive Primary Health Care Network including rural and urban health centers and village health houses and 2) integration of health-related schools and institutions into the ministry of health allowing focused supervision and funding.

Conclusions and implications for policy, practice or additional research: This research imply the need for Canadian policies to strengthen ties between education and the health sector to provide scientific support, essential regulations and training for the peer support workers.

Recommendations and implications for practice or additional research: Transforming KT strategies to meet the needs of Indigenous communities affected by TB is necessary, achievable, and impactful.

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51. Dynamic yet Invisible: Health Experiences from the Deaf Community in the Dominican Republic - Shazia Siddiqi

Introduction/background: Deaf populations commonly experience health inequities when compared with their hearing counterparts. Globally, these inequities are more pronounced given general difficulties in distributions of resources and access to opportunities. Children with pre-lingual hearing loss are greatest risk for linguistic, social, and health-related adversity. The prevalence of disabling hearing loss in children of Latin America and Caribbean exceeds more than three times that of high-income countries globally. Deaf social determinants of health are poorly understood and little is known about the social and health issues facing the Deaf population in Dominican Republic.

Methods: We conducted community-engaged research to ascertain more about the health needs and experiences of Deaf Dominicans. Overall, 59 community members from Santo Domingo and Santiago participated in qualitative interviews, which ascertained language exposure, access to health care, and knowledge about health information.

Results and analysis: Emerging themes include lack of health knowledge among Deaf Dominicans due to language deprivation, and systemic barriers in accessing health resources, with hearing family members (especially mothers) facilitating health knowledge and care access. Deaf Dominicans often cite overdependence on hearing family members for information and a lack of autonomy in their own health care access. That said, Deaf Dominicans frequently mention positive family relationships while caring for one another's health. Deaf peers are main sources of information, but even peer assistance can be delayed due to late average language exposure (8 years old), well past the critical period of language acquisition.

Conclusions and implications for policy, practice, and research: Lack of health knowledge and autonomy, and systemic barriers warrant further analysis to address health inequities among Deaf Dominicans. Exploration of emotional availability between Deaf Dominicans and their health providers could help identify strategies to alleviate their struggles. Further attention is needed to support the strong maternal bond between mothers and their Deaf children to ensure healthy childhoods.

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52. Hospitalization related to Hepatitis B and C in recent immigrants in Canada - Jacklyn Quinlan

Co-authors: Edward Ng, George Giovinazzo, Maria Syoufi, Dominique Elien Massenat, Curtis Cooper, Rochelle Garner

Introduction/problem definition that demonstrates the need for a policy change: Viral hepatitis is a key public health concern leading to liver failure and liver cancer. Immigrants to Canada from hepatitis B and C virus (HBV and HCV) endemic countries are at higher risk of liver-related hospitalization than Canadian-born persons. To better inform screening policy, we assessed the burden of HBV and HCV to the Canadian health care system by "recent immigrants" (immigrants who arrived from 1980 to 2013) compared to long-term residents (Canadian-born and pre-1980 immigrants).

Research Methods: Based on the 2004/05-2013/14 Hospital Discharge Abstract Database (DAD) linked to the 1980-2013 longitudinal Immigrant Database (IMDB), this study examined the distribution of HBV- and HCV-related acute-care hospitalizations and the varying length of stay by selected characteristics, as well as the comparison of comorbidity, and sequalae between recent immigrants and long-term residents. The percentage of HBV- and HCV-related hospitalizations attributable to recent immigrants was calculated to measure the burden of hospital care.

Results and analysis: While recent immigrants represent 16% of the Canadian population, they incurred 37% (n=1,710) and 9% (n=1,770) of HBV- and HCV-related hospital events, respectively, even when health admissibility screening would have removed immigrants requiring high-cost treatment of medical conditions. By birth-country risk level, 22% and 20% of the HBV- and HCV-related hospital events were among recent immigrants from high-risk countries, respectively. Proportionally fewer recent immigrant patients had co-morbidities than long-term resident patients. However a higher proportions of the recent immigrant patients had liver-related sequelae.

Recommendations and implications for policy, practice or additional research: Recent immigrants posed an important burden on HBV- and HCV care in Canada. These results may be of value in informing policy related to viral hepatitis screening, education and medical care in the immigration context.

53. Pre-departure Medical Services for Canada-bound refugees: Health Support for Vulnerable Populations - Jacklyn Quinlan

Co-authors: Elaine Barrett-Cramer, Amina Demnati

Introduction/problem definition that demonstrates the need for a policy change: In recent years, Canada has helped to resettle more than 20,000 refugees annually. The Canadian Government aims to reduce risks to public health and safety and to support access to health care services for these vulnerable populations. To support these goals, Immigration, Refugees and Citizenship Canada's Interim Federal Health Program (IFHP), provides limited, temporary coverage of health-care benefits in Canada to protected persons, including resettled refugees. As of April 1, 2017, the IFHP also funds the costs of the Immigration Medical Examinations (IME), vaccinations aligned with Canadian immunization guidelines, services and products to manage outbreaks of communicable disease in refugee camps, and targeted medical support needed for travel to Canada for eligible Canada-bound refugees as part of the Pre-departure Medical Services (PDMS). An assessment of PDMS offered to Canada-bound refugees would be useful in determining the access and uptake of public health and medical support services.

Research Methods: Based on PDMS claims reimbursement data from April 1, 2017 through March 31, 2018, descriptive analyses were performed on the cohort of refugees offered pre-departure medical services, stratified by the type of service offered and age group.

Results and analysis: Out of all PDMS users, ~95% or more are insured for an IME service. The percentage of PDMS users being covered for vaccinations was ~60%. When the data were stratified by age, the 20-64 year age group had the highest number of PDMS users being vaccinated. Of these, the top vaccines were for Hepatitis B, Measles Mumps Rubella, and Tetanus-diphtheria. PDMS has proven to successfully manage outbreaks of communicable diseases in refugee camps, as well as provide medical support when travelling to Canada.

Recommendations and implications for policy, practice or additional research: A range of pre-departure medical services are being accessed by Canada-bound refugees. Further research is warranted into the impact of this program on public health and the facilitation of integration of refugees to Canada.

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54. Access to Primary Family Doctor among Linguistic and Visible Minority Women in Ottawa - Rosanne Blanchet

Co-authors: Dia Sanou, Malek Batal, Isabelle Giroux

Introduction/background: Newcomers and Francophone who are living in minority context face multiple barriers to accessing healthcare services in Canada. The objective of this study was to assess the proportion of women who had a family doctor (or general practitioner), and the language in which they communicated.

Methods: We recruited 259 women living in Ottawa who were born in sub-Saharan Africa (n = 128), the Caribbean (n = 62) or Canada (n = 69) and could speak French or English. Women were asked different questions to assess their linguistic status and preferences as well as their access to family doctors. Statistical analyses were performed using SPSS.

Results and analysis: 86% of participating women reported having a family doctor. A higher proportion of immigrant women than Canadian-born women did not have a family doctor (immigrant: 82.3%; non-immigrant: 98.5%, $p<0.001$). Among immigrant women, those who had been in Canada for <5 years were at higher risk of not having access to family doctors. Similarly, women who preferred speaking French were more likely to report not having a family doctor than women who preferred speaking English (French preference: 82.8%, English preference: 92.7%, $p<0.05$). With regard to services in French, more than a third of women who preferred speaking French usually spoke English when they consulted physicians (immigrant: 35.0% and non-immigrant:

35.8%, p = ns). Moreover, 20% of the women who did not feel that they could carry a conversation in English had to communicate in that language when they consulted physicians.

Conclusions and implications for policy, practice or additional research: These results are consistent with Ontarian and Canadian literature suggesting a lower access to family doctors among newcomers and Francophones living as minorities. Improving accessibility to healthcare services is critical to reducing health inequities currently affecting linguistic and immigrant minority groups in Canada.

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55. Impact of the Syilx-led Reintroduction of Okanagan Sockeye Salmon on Syilx Health and Wellbeing - Rosanne Blanchet

Co-authors: Suzanne Johnson, Pauline Terbasket, Malek Batal, Noreen Willows

Introduction/program need and objectives: Traditional foods can benefit Indigenous health and wellbeing through several routes: improved nutrition, food security and cultural connectedness. Indeed, beyond its nutritional health benefits, salmon is a cultural keystone species given its role in fundamental governing teachings of the Syilx of the interior of BC. Okanagan sockeye salmon is imperative for the maintenance of Syilx language and cultural teachings and its near extirpation by the 1980s contributed to the disruption of physical and social wellbeing of Syilx people and their Nation.

Program methods, activities and evaluation: Sockeye salmon was brought back to the Okanagan River Basin through a complex multi-level intervention integrating Traditional Syilx knowledge and Western science that was developed and implemented by the Syilx Okanagan Nation. Restoration efforts included the Syilx Nation leadership, community engagement, cultural revitalization through social gatherings, ceremony and Nsyilxcen language transmission; active participation in regional water management and flow decisions; design and development of fish passage over hydroelectric dams; and river habitat restoration. A multi-methods study is examining the determinants and outcomes of the reintroduction of Okanagan sockeye salmon on health and wellbeing of Syilx.

Program results or outcomes: Increased salmon returns have supported food, social and ceremonial needs and an anticipated transition to a participatory fishery, and economic pilot and recreation fisheries initiatives that respects a sustainable food sovereignty and food security model. Positive influences on social determinants of health including food security and cultural connectedness are examples of additional outcomes of the intervention.

Recommendations and implications for practice or additional research: Most nutrition inequities worldwide are situated within deep imbalances of political, economic and social power in the food system; yet, there is little research evaluating the effectiveness of food sovereignty interventions in fostering health equity. This study will help demonstrate that Indigenous food sovereignty initiatives can expand access to traditional foods and have positive sociocultural, economic, and health outcomes for Indigenous peoples.

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56. Psychosocial factors leading some municipalities to be active in the prevention of Lyme disease - Pierre Valois

Co-authors: Johann Jacob, Cécile Aenishaenslin, Catherine Bouchard, Sandie Briand, Magalie Canuel, Maxime Tessier

Introduction/background: The aim of this study is to examine the current state of health-related adaptation at the municipal level in the province of Quebec (Canada), especially interventions targeting Lyme disease. This study relies on the theory of planned behavior (TPB) and certain constructs from the health belief model to identify the factors leading municipal authorities to adopt Lyme disease prevention behaviors (LDPB).

Methods: Data were obtained from an online survey sent, during the summer of 2018, to municipal officers in 702 municipalities in Quebec, in all health regions where the population is at risk of contracting Lyme disease (response rate = 35%). The questionnaire measured the implementation of LDPB, the intention to adopt such behaviors, attitudes, perceived social pressure, perceived control (levers and barriers) over behaviors, perceived effectiveness of preventive measures, risk and perceived vulnerability.

Results and analysis: Results of structural equation analyses showed that attitudes had a significant effect on municipal authorities' intention to adopt LDPB, while behavioral intention was a significant predictor of the adoption of LDPB. Additional analysis showed that the perceived barriers added a moderating effect on the intention-adoption of LDPD behaviors relationship.

Conclusions and implications for policy, practice or additional research: The prediction of behaviors or practices that municipal staff could adopt to prevent Lyme disease will enable the evaluation over time of the evolution of Quebec municipalities' adaptation to Lyme disease. Moreover, examination of the effects of specific psychosocial factors revealed important implications for the design of effective behavior-change interventions, allowing health officials doing awareness work to create personalized interventions better suited to municipal officers and their specific contexts.

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57. Hot spots for mosquito-borne diseases from passive case surveillance: a case example with Malaria in a low-transmission setting in Zambia - Dolly Lin

Introduction/background: Risk for mosquito-borne diseases vary spatially based on the disease vector's ecological niche.
Reportable mosquito-borne diseases are investigated at local public health units, spatial data including address and travel are increasingly being collected. Environmental covariates that identify a disease vector's habitat are available at improving spatial and temporal resolutions. Using environmental covariates to predict mosquito-borne disease transmission risk will enable focused interventions consistent with best practice integrated vector management. This research examines how passive Malaria case surveillance can identify transmission hot spots, and uses environmental covariates to predict these transmission hot spots in a low-transmission setting in Zambia.

Methods: Hot spots of malaria are described with SatScan using case residential address and date of diagnosis. Hot spots were analyzed with logistic regression of demographic and behavioural risk factors for malaria, to determine if they represent different transmission risk. Environmental data, including digitized roadside ditches, household density, normalized difference vegetation index, elevation, and hydrological models, were used to predict hot spots with regression and spatial kriging. Internal validation of prediction model calibration and discrimination was performed with split sample and comparing prediction across two rainy seasons.

Results and analysis: 495 cases of malaria diagnosed between December 2015 and May 2017 at seven contiguous health centers, adjusted for season and spatial distribution of houses, produced 9 transmission hot spots. Cases inside hot spots had higher environmental risk with higher NDVI and proximity to order 4 and 5 streams, but no significant difference in behavioural risks or socioeconomic status. Environmental covariates predicted malaria hot spots.

Conclusions and implications for policy, practice or additional research: This research uses passive surveillance and satellite environmental data to detect spatial areas of elevated transmission risk for mosquito-borne diseases. This research on prediction of malaria transmission hot spots may be transferrable to West-Nile Virus in Canada.

58. Investigating the Potential for Importation of Zika Virus and Yellow Fever into Canada from Brazil - Tara Sadeghieh

Co-authors: Jan Sargeant, Amy Greer, Olaf Berke, Victoria Ng

Introduction/background: Travel-related cases of Zika virus (ZIKV) and yellow fever (YF) infections acquired in Brazil have been reported in locations outside Brazil where these viruses are not endemic. However, without locally established populations of Aedes albopictus and Aedes aegypti, urban mosquito vectors of these viruses, autochthonous transmission is not feasible. Under climate change, mosquito vectors, and thus, the pathogens that they carry, are expected to move outside their usual range. This will have implications for Canada as these species have been trapped in Southern Ontario, and their range will likely continue to expand northward as climatic conditions improve their survival in Canada.

Methods: We developed compartmental models to describe characteristics of the recent ZIKV (2015/2016) and YF (2016/2017) outbreaks in Brazil. Outputs include deriving the transmission rate and basic reproductive numbers (R0) of the outbreaks. Subsequent importation models were developed to model the importation of ZIKV and YF from Brazil to Canada during these outbreaks using the outputs from the models described above, in addition to information on historical air travel passenger volumes from Brazil to Canada, and the number of confirmed cases of ZIKV and YF diagnosed in Canada, were used to estimate the rate at which infectious individuals were entering Canada.

Results and analysis: These models showed importation rates for ZIKV and YF changed throughout the outbreaks, and varied for different parts of Canada. The importation rate of YF was much lower than ZIKV; possible explanations include population susceptibility, travel patterns and restrictions, seasonality, and epidemiological characteristics of the pathogens.

Conclusions and implications for policy, practice or additional research: The results will be used to determine Canadian provinces/regions at risk for local disease transmission under current and projected climate. With this knowledge, advance preparation or further research can be conducted in regions where there may be greater risk of travel-related cases and establishment.

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59. Considerations and Contextual Factors that Impact the Use of Hypothesis Generation Methods in Enteric Illness Outbreak Investigations: Results of a Scoping Review - Carla Ickert

Co-authors: Joyce Cheng, Danielle Reimer, Judy Greig, April Hexemer, Tanis Kershaw, Lisa Waddell, Mariola Mascarenhas

Introduction/background: Human enteric illness outbreaks are often complex events and outbreak investigators use many different hypothesis generation methods to identify the source, depending on the outbreak situation. The objective of this scoping review was to describe the considerations or contextual factors that might impact the use of various hypothesis generation methods during human enteric illness outbreak investigations.

Methods: A scoping review was conducted including development of a protocol, a reproducible search of five bibliographic databases (01/01/2000 to 25/05/2015), and a grey literature search. Relevance screening and study characterization tools were developed *a priori* and implemented on all citations and articles respectively by two independent reviewers. Within hypothesis generation method categories, open-ended text data was collected on the methods and strengths or limitations described by the authors. Text data was imported into NVivo and analyzed using qualitative content analysis.

Results and analysis: This presentation will highlight considerations identified for individual hypothesis generation methods. 903 outbreaks were included in this review. Outbreak setting was commonly described as an important consideration for the utility of many hypothesis generation methods. For example, analytic studies were feasible in single setting outbreaks with defined cohorts, such as weddings or conferences. Examining purchase records to generate hypotheses was useful with populations unable to recall exposures or are unaware of product details, such as those with cognitive impairment or those living in institutions. Menu or recipe analysis was useful in restaurant or institutional outbreaks with set menus and in some investigations, formed the basis for developing a focused questionnaire.

Conclusion and implications: Summarizing contextual features impacting the use of hypothesis generation methods is important to support informed decision-making for outbreak management teams. This information can be used to understand the utility of methods available. Future research should examine the effectiveness of individual methods in successfully identifying outbreak sources to further inform investigators' decisions.

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60. A systematic review of cigarette smoking trajectories in adolescents - Marilyn Ahun

Co-authors: Béatrice Lauzon, Marie-Pierre Sylvestre, Cassie Bergeron, Sherif Eltonsy, Jennifer O'Loughlin

Introduction/background: In the past 30 years, trajectory analyses have helped differentiate subgroups of adolescent smokers based on early patterns of cigarette smoking. Our objective was to systematically review this literature to assess its usefulness for identifying individuals at risk of sustained high levels of smoking.

Methods: PubMed and EMBASE were searched for articles published between January 1, 1980 and December 31, 2016. Studies which did not pertain to active cigarette smoking, had fewer than three data points for smoking between ages 12-18, which modeled a single overall trajectory, and in which trajectory groups were derived a priori rather than empirically were excluded. Data on trajectories and potential predictors and outcomes were extracted. Given trajectory shape heterogeneity across studies, we categorized trajectories as low-stable, increasing, or other.

Results and analysis: Of 955 studies screened for inclusion, 41 with data from 33 unique cohorts were retained. Only 2 studies investigated incident smoking. The most frequently reported number of trajectories was 4 (14 of 41 studies). The highest proportion of participants was categorized as low-stable (median % ranged from 39-72%), followed by increasing (11-21%) and finally by other (7-11%). Trajectory number and shape remained relatively consistent across studies, regardless of sample size, number of data points, cigarette smoking indicator, and smoker type (incident and/or prevalent). Sociodemographic indicators, mental health, substance use, and parent and peer smoking were associated with trajectories.

Conclusions and implications for policy, practice or additional research: Summarizing was challenged by varying smoking assessments and the use of subjective criteria in model selection. Three patterns of smoking behaviour were consistently identified across adolescence, namely low-stable and increasing trajectories. The third group was classified as “other” due to large trajectory shape heterogeneity. Sex, ethnicity, mental health, substance use, and parent and peer smoking may predict patterns of adolescent smoking. Smoking behaviour is also associated with educational attainment and substance use in adulthood.

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61. Exploring the bi-directional relationship between cigarette and e-cigarette use among youth in Canada - Sarah Aleyan

Co-authors: Mahmood Gohari, Adam Cole, Scott Leatherdale

Introduction/background: Various studies have demonstrated associations between youth e-cigarette use and subsequent use of cigarettes. However, few studies have examined whether reciprocal relationships may exist between e-cigarette and cigarette use. As such, the objective of this study was to examine the bi-directional relationship between cigarette and e-cigarette use among a large sample of Canadian youth over a three-year time period.

Methods: A longitudinal sample of secondary students (N=6729) attending 87 schools in Ontario and Alberta, Canada completed the COMPASS student questionnaire over three consecutive waves (W_1: 2014-2015, W_2: 2015-2016, W_3: 2016-2017). Auto-regressive cross-lagged models assessed potential bi-directional relationships between current (past 30-day) cigarette and current (past-30 day) e-cigarette use.

Results: Current e-cigarette use predicted subsequent use of cigarettes across all three waves (W_1-W_2: OR=2.0, 95%CI= 1.66-2.41; W_2-W_3: OR=1.19, 95%CI=1.08-1.32). In contrast, current cigarette use predicted subsequent use of e-cigarettes only in earlier waves of the study (W_1-W_2: OR=1.58, 95%CI =1.42-1.76). Our findings also demonstrated the presence of a consistent sub-group of dual users (i.e., users of e-cigarettes and cigarettes) that remained dual users across all three waves (W_1-W_2: 29.0 %; W_2-W_3: 34.9 %).

Conclusions and implications for policy, practice or additional research: This study extends prior work that has focused predominantly on the association between e-cigarette and cigarette use. Specifically, these findings suggest a more complex relationship, where e-cigarette use may both influence, and be influenced by, cigarette use. Given the recent changes in federal legislation that will now allow the sale of nicotine-containing e-cigarettes, additional surveillance is warranted to monitor the relationship between cigarette and e-cigarette use among youth.

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62. Smoking Cessation Pharmacotherapy Algorithm – A Practice Tool for Physicians to Treat Tobacco Dependence - Ingrid Tyler

Co-author: Ruth Hellerud-Brown

Introduction/program need and objectives: There's strong evidence that advice from a health care professional can more than double smoking cessation success rates. According to former US Surgeon General, Regina Benjamin, patients who have been advised to quit smoking by their doctors have a 66% higher rate of success. To assist physicians treat tobacco dependence among Fraser Health patients Population and Public Health has developed a Smoking Cessation Algorithm. The objective of the tool is to increase physician knowledge related to smoking cessation phamacotherapy and to encourage them to routinely treat tobacco use. Physicians are guided to 'ASK' about tobacco use then to 'ACT' by offering smoking cessation pharmacotherapy and follow up at discharge by referring to community cessation support services.

Program methods, activities and evaluation: A need for a physician tobacco treatment tool was recognized through hospital-based smoking cessation efforts led by Population and Public Health. While prescriber orders are required to successfully treat high tobacco dependence this is not routine practice in Fraser Health. A thorough search of Fraser Health physician resource materials, the literature and internet revealed limited physician tools for treating tobacco dependence. Population and Public Health is preparing to engage with physician on addressing tobacco use through use of this algorithm upon which the tool and engagement process will be evaluated.

Program results or outcomes: The proposed outcome of implementing the Smoking Cessation Algorithm is increased physician involvement in smoking cessation support to render an increase in cessation rates and overall reduction of tobacco use among Fraser Health residents.

Recommendations and implications for practice or additional research: Successful adoption of the algorithm among Fraser Health physicians will help patients abstain from smoking while in Fraser Health care and also serve to improve quit rates among people who want to quit smoking.

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63. School-based behavioral intervention to reduce the habit of smokeless tobacco and betel quid use in high-risk youth in Karachi: A randomized controlled trial - Azmina Hussain

Co-authors: Sidra Zaheer, Kashif Shafique

Introduction/Background: There have been recent surges in the use of smokeless tobacco (SLT) and betel quid (BQ) chew among adolescents in South East Asian countries, with an increase, on average, of 7% to 15% between 2004 and 2013, necessitating interventional investigations to modify this behavior. The current intervention was aimed towards changing adolescents' perceptions regarding the harmful effects of SLT and BQ use and encouraging them to quit.

Methods: This randomized control trial involved 2140 adolescents from 26 private and public-sector schools in Karachi, Pakistan. After randomization, 1185 individuals were placed in the intervention group and administered a behavior changing intervention (BCI), while 955 individuals constituted the control group. A generalized estimating equation was employed to measure differences in repeated measures for both groups. The beta coefficients were reported after adjusting the covariates with the 95% confidence interval, and the p-value was considered significant at <0.050. Cohen's d was employed to report the effect size of the intervention.

Results and Analysis: The BCI resulted in a 0.176-unit (95% CI 0.078-0.274, p-value <0.001) increase in knowledge scores regarding the health hazards of SLT and BQ, a 0.141-unit (95% CI 0.090-0.192, p-value <0.001) increase in use perception scores, and a 0.067-unit (95% CI 0.006-0.129, p-value 0.031) increase in quit perception scores in the intervention group compared with those in the control group.

Conclusions and Implications regarding policy, practice, or additional research: The role of BCI is promising in improving adolescents' knowledge and changing their perceptions in a positive manner regarding their harmful SLT and BQ use. Convincing results may be achieved if interventions are tailored, with an emphasis on the identification of the products that are used by adolescents in addition to highlighting their ill effects and how students may manage to quit them. If included in the schools' curricula, this BCI method may help in developing schools that are free of SLT and BQ use.

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64. Betel Quid Dependent high-risk youth and associated determinants: A beckon for attention - Azmina Hussain

Co-authors: Sidra Zaheer, Kashif Shafique

Introduction/Background: Betel Quid (BQ) is one of the four readily and commonly used substances worldwide. Although BQ has psycho-active ingredients, still evidence regarding dependency on it is scanty amongst adolescents. Hence, the current analysis was aimed to determine the adolescents' dependency on BQ along with individual, social and environmental determinants of dependency on it.

Methods: This study surveyed 2200 high-risk, school-going adolescents of Karachi-Pakistan. The outcome of the study was students' dependency on BQ. After employing univariate and multivariate logistic regression, both crude and adjusted odds ratios were used to estimate BQ dependency in its users (after adjusting for all individual, social and environmental determinants) with 95% confidence interval. The p-value was set to be significant at <0.05.

Results and Analysis: Amongst 2200 students, 874 (39.7%) used BQ. The dependent individuals on BQ were 69 (7.9%) out of 874. BQ with tobacco users were significantly dependent (OR=14.08, 95% CI 3.64–54.16) than users of only areca nut and BQ without tobacco. Students who chewed > 5 chews per day (OR=1.87, 95% CI 1.08–3.29) and also those who have been chewing BQ for more than a year (OR=2.02, 95% CI 1.09–3.74) were more likely to be dependent on it. Older students of >12 years of age (OR=2.12, 95% CI 1.06–4.23), and who were in government school set-up (OR=3.32, 95% CI 1.80–6.10) were more dependent on BQ compared with students of private schools.

Conclusions and Implications regarding policy, practice, or additional research: The conclusion can be based on identification of significant BQ dependency determinants like per day chews of > 5, its chronic use, BQ with tobacco additives use, older individuals, and adolescents studying in government schools. Future interventions may be formulated with focus on these determinants for positive outcome.

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65. The relationship between nicotine dependence and physical health among patients receiving injectable opioid agonist treatment in the SALOME clinical trial - Heather Palis

Co-authors: Kirsten Marchand, Daphne Guh, Kurt Lock, Scott Harrison, Scott MacDonald, David Marsh, Suzanne Brissette, Martin Schechter, Eugenia Oviedo-Joekes

Introduction/background: Chronic opioid-dependence is known to exact a number of harms on the individual and community. First-line treatments such as oral methadone are effective, however not for everyone and not all the time. Seven clinical trials have demonstrated that injectable opioid assisted treatment (iOAT), namely the daily provision of injectable pharmaceutical-grade opioids under the supervision of nurses offers a safe, effective, and cost-effective alternative treatment. Among iOAT patients, the most prevalent non-opioid substance reported is tobacco. Despite the known burden of tobacco smoking, treatment for nicotine dependence is often overlooked in iOAT and a significant unmet clinical need exists. The present study aimed to determine the relationship between nicotine dependence and physical health among participants of the Study to Assess Longer-term Opioid Medication Effectiveness (SALOME).

Methods: SALOME was a double-blind clinical trial involving long-term street opioid injectors (n=202) who were randomly assigned to receive injectable diacetylmorphine (active ingredient in heroin) or hydromorphone (licensed pain medication).

Results and analysis: Bivariate and multivariate analyses were used to determine the relationship between nicotine dependence and physical health at baseline and at six-months. A similar number of participants reported smoking at baseline (n=190) and at six-months (n=187). The baseline multivariable model revealed that nicotine dependence score, lifetime history of abuse, and prior month safe injection site access were significantly and independently associated with physical health score. At six-months nicotine dependence score was the only variable that remained significantly and independently associated with physical health

Conclusions and implications for policy, practice or additional research: Nicotine dependence has significant implications for the health of long-term opioid users, regardless of six-months of engagement in iOAT suggesting an urgent need for nicotine dependence to be treated in iOAT care

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66. Evaluation of Fraser Health's Community Based Overdose Response - Manal Masud

Co-author: Shannon Winters

Introduction/background: The opioid overdose crisis is expanding and unveiling the widespread illicit substance use in communities that Fraser Health Authority (FH) serves in BC. A number of community initiatives have begun as a response to the high number of overdoses in the region. The community based overdose response (CBODR) supports local solutions and partnerships to prevent overdoses in the FH region. An evaluation was needed to assess the extent to which CBODR elements are contributing to a coordinated and effective response.

Methods: A developmental evaluation approach was selected as it could be adapted to the emerging elements of the overdose response. Semi-structured interviews and focus groups were used to collect information from stakeholders including staff and community members involved in CBODR. Thematic content analysis was conducted and findings were reported via learning memos. Data analysis was ongoing and ran concurrently with the evaluation to report findings in a timely manner.

Results and analysis: Two of the emergent themes from preliminary analysis were: engaging the hidden population who are touched by overdose and exploring stigma related to substance use in the FH region. Hidden population was understood by stakeholders as those who are likely to overdose when using alone in private residences. Barriers to engage with hidden population for service provision were shared. Stigma in FH region was reported to be shaped by use of stigmatizing language, practices, and attitudes in health care settings, recovery and broader communities. Stakeholders shared recommendations for learning more about and better engaging the hidden population, and ways to further explore and address stigma.

Conclusions and implications for policy, practice or additional research: CBODR is heterogeneous across the region but there is a mutual desire to gather information on who is overdosing at a local level. Additional research is needed to explore what stigma looks in various communities across the region to inform service delivery.

67. “Harm reduction tends to be focused on a health mandate:” Exploring politics, practices, and discourses of harm reduction in the overdose crisis - Magnus Nowell

Co-author: Jeff Masuda

Introduction/background: Harm reduction, its aspirations, politics, and discourses, have changed dramatically since its origins as a grassroots, drug user-led movement in Canada. Public health played a critical role in helping implement harm reduction, but in doing so has aligned it in ways that have accommodated neoliberal priorities and technocratic discourses, thus contributing to its depoliticization as a social movement. By absconding from meaningfully attending to social determinants of health that underlie drug-related harm in favour of risk-mitigating individual approaches, public health’s implementation of harm reduction has fallen short in challenging social injustices and inequities at the root of Canada’s legacy of drug criminalization. The arrival of fentanyl and the overdose crisis in Vancouver’s Downtown Eastside (DTES) has proven to be a turning point in this history by leading marginalized tenants of privately-owned single room occupancy (SRO) hotels to organize overdose response for one another.

Methods: Through 15 months of participant observation and 15 key stakeholder interviews, this research explores a novel, peer-led overdose prevention program called the Tenant Overdose Response Organizers (TORO).

Results and analysis: I found that despite the hesitancy of TORO's public health funders to support housing advocacy as a critical component of harm reduction, the program has supported SRO tenants in their responses to oppressive physical, social, and structural environments. My analysis of the work of TORO demonstrates the limitations of framing harm reduction as an "apolitical" health intervention.

Conclusions and implications for policy, practice or additional research: The overdose crisis cannot be addressed by prioritizing increasingly technocratic solutions while failing to meaningfully attend to politicized determinants of health that underlie drug-related harms. TORO demonstrates the potential within a return to social justice oriented health promotion practice.

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68. Association between alcohol outlet access and alcohol-attributable emergency department visits in Ontario between 2013-2017 - Daniel Myran

Co-authors: Jarvis Chen, Norman Giesbrecht, Vaughan Rees

Introduction/background: Prior work has found that increased availability of acohol is associated with alcohol-related harms, and that alcohol harms disproporationately impact low sociecionmic status (SES) individuals. We investigated the association between alcohol availability, SES, and emergency department (ED) visits attributable to alcohol in the province of Ontario during a period of deregulation of controls on the number of alcohol outlets.

Methods: We used a retrospective time series analyses to examine rates of ED visits attributable to alcohol for two time periods: pre-deregulation (2013-2014) and post-deregulation (2016-2017), across 513 defined geographic areas in Ontario. We compiled a list of all alcohol retail outlets in Ontario during 2014 and 2017 and matched them to their corresponding area. We fit mixed-effects Poisson regression models to assess: (a) the association between SES, number of outlets, and hours of operation and ED visits; (b) the impact of deregulation on ED visits using a difference-in-difference analysis.

Results and analysis: Alcohol-attributed ED visits increased 17.8% over the study period; over twice the rate of increase for all ED visits. Low SES areas had higher rates of ED visits than higher SES areas. Increased hours of operation and number of alcohol outlets within an area were positively associated with increased rates of alcohol attributable ED visits. ED visits attributable to alcohol increased by 6% (IRR 1.06; 95% CI 1.04-1.08) in areas that introduced alcohol sales in grocery stores following deregulation compared to areas that did not introduce alcohol sales.

Conclusions and implications for policy, practice or additional research: Deregulation of alcohol sales was associated with increased ED visits attributable to alcohol. These ED visits likely represent a fraction of the overall alcohol related harms of deregulation. Policies to ameliorate alcohol harms and social inequities should consider limiting the number of alcohol outlets and hours of operation, particularly in marginalized areas.

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69. Blockchain Technology: A new era for EMR’s and public health surveillance - Dor Abelman

Co-authors: Josiah Marquis, Erik Elliott, Martyn Dahal

Introduction/background: Improving accessibility, quality of care, and efficiency of Canada’s health system is considered a national priority to support universal care and health equity across the country. CIHI announced "between 2007–2008 and 2016–2017, the rate of hospitalizations due to opioid poisoning increased by 53%” (40% increase in the last 3 years), and approximately 3.5 million doses of prescription drugs disappeared from Ontario pharmacies from 2013-2017.

Methods: We explore blockchain, a novel technology for data-sharing by means of a secure distributed ledger, as an innovative approach to support comprehensive electronic medical record (EMR) systems. Emphasis is place on improved surveillance capabilities and many contributing factors associated with the opioid epidemic. We evaluate effectiveness and challenges associated with adopting a blockchain-based EMR system via rigorous scoping review predominately using primary research literature and official government documentation within and outside of Canada.

Results and analysis: Case reviews of health-related blockchain projects from around the world in order to assess the feasibility of developing a national blockchain-based EMR system, including a comparative analysis on the blockchain EMR system found in Estonia. In context of the opioid crisis, major applications exist to improve how prescription tracking occurs, including the dispensing pharmacies and the overall pharmaceutical industry distribution of opioids throughout Canada.

Conclusions and implications for policy, practice or additional research: Integrating blockchain technology into the Canadian health system has the potential to improve our fragmented EMR system infrastructure, leading to improved information transfer for patients and health professionals, improved health surveillance, healthcare cost-savings, and enhanced quality of care overall - all of which pose advantages towards resolving the opioid epidemic. Policy implications include placing higher priority on funding the development of a national EMR infrastructure and utilizing novel technologies to enhance surveillance systems across Canada. More research must be done to evaluate the role and integration of blockchain technology in Canada's health system.

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70. Intérêts et Stratégies d’influence des partenaires et processus délibératif en santé publique : une étude de cas - Achille Dadly Borvil

Co-authors: Natalie Kishchuk, Louise Potvin

Contexte/Objectif : Les recherches sur la dynamique des partenaires dans un processus décisionnel sont considérables et mettent principalement l’accent sur les tensions entre les partenaires. Ces recherchent recommandent de tenir compte des intérêts des différents partenaires pour faciliter le processus. Il existe très peu d’études sur les stratégies des partenaires en santé publique. En nous basant sur le processus délibératif d’une intervention intersectorielle à Montréal : l’Initiative montréalaise, nous cherchons à reconstruire les intérêts et stratégies des partenaires à l’aide d’évènements critiques survenus au cours du processus. Cette présentation décrit comment les partenaires font des choix stratégiques dans un processus délibératif.

Méthode : Nous avons fait une recherche documentaire suivie de focus group pour identifier les évènements critiques survenus au cours du processus délibératif. Ensuite, nous avons effectué seize entrevues semi-structurées (30mns-2hres) auprès des partenaires impliqués. L'outil « Critical event card » nous a servi de cadre pour analyser les évènements critiques.

Résultats : Les résultats indiquent que les intérêts organisationnels et collectifs ainsi que les stratégies d'influence des partenaires évoluent dans les moments de grandes controverses et de recherche de solution. Les partenaires sont généralement prêts à modifier leurs intérêts organisationnels au profit de l'intérêt collectif quand les valeurs et mission de leur secteur d'appartenance ne sont pas menacées. Ils modifient leurs stratégies d'influence en fonction des risques associés aux controverses. Plus le risque pour le secteur d'appartenance est élevé, moins les partenaires recherchent des compromis, plus ils modifient leurs choix stratégiques dans l'intérêt de leur secteur. Aussi, les stratégies varient d'un secteur à l'autre.

Conclusion et conséquence : Cette étude apporte un nouvel éclairage sur la dynamique des partenaires dans un processus délibératif. Elle souligne l'influence des controverses et de l'appartenance sectorielle sur les stratégies des partenaires lors d'une prise de décision collective. Cette connaissance pourrait permettre de mieux gérer les divergences d'intérêts dans un processus délibératif.

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71. Ambulance Offload Delay: The Impact on Paramedics and Patient Care - Nicole Mfoafo-M'Carthy

Co-author: David Swann

Introduction/background: Ambulance offload delay (AOD) occurs when hospitals are congested and unable to relieve paramedics of their patients, thus, paramedics wait in the hallway with patients until the hospital can accommodate them. In 2016, Alberta paramedics spent 650,000 hours waiting in hallways and worked 135,000 hours in overtime. In 2016, Calgary experienced 35 red alerts per month. A red alert occurs when there are no city ambulance available to respond to calls, therefore, neighbouring communities must send their ambulances to respond to calls. These communities are left uncovered. AOD results in increased wait times for patients and hinders the quality of care paramedics are able to provide.

Methods: A survey was conducted on paramedics in the city of Calgary. The anonymous survey contained a total of 7 questions; including the following areas: demographics, impact of overtime, relationships with other healthcare providers, potential causes and solutions to AOD. A thematic content analysis was conducted on each question, also noting frequently occurring responses.

Results and analysis: 104 Paramedics responded to the survey. 57.3% believed that hallway wait times had increased in recent years. Over 88% of paramedics noted an increase in overtime. Paramedics cited overtime as detrimental to their mental and physical health, and interpersonal relationships. Paramedics noted concerns such as limited resources in the hallway and strained relationships with ER staff. Consequently, paramedics reported delayed responses to calls and treating chronically ill patients in the hallway. Participants identified causes to AOD including emergency department congestion and over-zealous policies.

Conclusions and implications for policy, practice or additional research: Additional research is necessary to assess the impact of AOD on all patient outcomes and the impact on sick time, and staff retention additionally, relations EMS staff and ER staff. Policy changes are necessary, based on best outcomes in other jurisidictions, including consideration of community paramedics, increased after hours medical services in the community, and transfer protocols.

72. Identifying adolescent co-morbidities: Patterns of co-morbid gambling and risk behaviours among a representative sample of youth in Ontario - Chantal Williams

Co-authors: Tara Elton-Marshall, Samantha Wells, Paul Tremblay

Introduction/background: Despite age restrictions and laws restricting gambling, many adolescents participate in gambling and approximately 4% of adolescents are low-to-moderate problem gamblers. Research conducted among adults has shown that problem gambling tends to co-occur with other substance use and mental health outcomes, however limited research has examined patterns of gambling and substance use/mental health issues among adolescents. This information would inform integration of treatment services and prevention programming. The aim of this study is therefore to identify clustering of problem gambling with other of risk behaviours (alcohol use, substance abusers, current smokers, cannabis use, problem internet users, and problem video gaming).

Methods: Data are from the 2017 Ontario Student Drug Use and Health Survey (OSDUHS), a representative sample of adolescents in Grades 9-12. Cross tabs were conducted to examine the association between gambling and other risk beahviours. Future analyses will also include a latent profile analyses to identify patterns of problem behaviors.

Results and analysis: Preliminary results indicate that overall 8.7% of adolescents in Ontario reported having low to high problem gambling, with a greater proportion of males experiencing problem gambling (6.1% males vs. 2.5% of females). Substance use problems were significantly associated with problem gambling (F(1,110)=17.33, p=0.00). Additionally, there was a significant association between tobacco use and problem gambling (F(4.91,540.01)=4.31, p=0.00). However, there was no significant associations between problem gambling and other risk behaviours, including alcohol use, cannabis use, problem internet use, and problem video gaming.

Conclusions and implications for policy, practice or additional research: Given the co-morbidities between gambling and substance use/tobacco use, prevention programming should address these multiple co-morbid factors rather than focusing on single interventions for each risk behaviour. Screening for adolescent gambling while also screening for substance use/tobacco use is also recommended.

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73. Responsible Gambling: A Scoping Review - Jennifer Reynolds

Co-authors: Samantha Ilacqua, Dr. Martin French, Dr. Sylvia Kairouz

Introduction/background: Gambling markets have drastically expanded over the past 35 years. Becoming a major source of income for national economies and recognized as a public health issue. With a rise in governmental control over gambling enterprises, intense pressure has been applied to state agencies and operators to protect citizens against gambling-related harms. In turn, responsible gambling (RG) frameworks have been developed to prevent and reduce potential harms associated with gambling. However, the burden of responsibility has largely been removed from the state/operators and remains in the hands of the individual. Within the academic literature surrounding RG, there is an ambiguity about the concept of RG, that limits understanding of gambling harms. A scoping review was a first step towards developing a better understanding of the nature and scope of the literature.

Methods: A scoping study was conducted using the framework set out by Arksey and O'Malley. Literature was identified from various academic databases using a combination of truncated base and search terms. Articles were independently reviewed by two researchers.

Results and analysis: Findings indicate 124 publications with a primary focus on RG. With a high volume of publications coming from databases such as Business Source Complete and PsychInfo, as opposed to databases that would include more literature focused on improving public health. The disciplinary backgrounds of the first authors represent the fields of psychology, business and psychiatric medicine, with the majority of publications coming out of Australia, Canada, England, and the United States. Finally, publication key themes reveal the majority of references address topics such as RG tools & interventions, CSR & accountability, RG concepts & descriptions, and a critical examination of RG.

Conclusions and implications for policy, practice or additional research: The scoping review of the RG literature suggests the need to foster research conditions to invite more critical, and interdisciplinary scholarship, in an effort to improving public health and consumer protection.

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74. Interventions for Homeless Youth: A Systematic Narrative Review - Jean Zhuo Wang

Co-authors: Sebastian Mott, Christine Matthew, Olivia Magwood, Andrew McLellan, Nicole Pinto, Kevin Pottie, Anne Andermann

Introduction/background: Twenty percent of Canadians who experience homelessness are youth between the ages of 13 and 24. Youth are especially susceptible to many dangers on the street such as victimization, human trafficking, and crime. Furthermore, youth have unique pathways to homelessness, such as family conflict and abuse, that differ from the general homeless population, requiring specific interventions to address their needs. Currently, research on homeless populations largely focuses on adults, with a gap in synthesized evidence regarding the effects of youth-specific interventions on a broad range of outcomes. This review aims to synthesize evidence on interventions for homeless and vulnerably housed youth and their impacts on health, social, and equity outcomes.

Methods: We systematically searched Medline, Embase, CINAHL, PsychoINFO, Epistemonikos, HTA database, NHSEED, DARE, and Cochrane Central until February 2018 for relevant systematic reviews and randomized controlled trials on youth-specific interventions conducted in high income countries. Title and abstract screening, full text inclusion, and data extraction were completed in duplicate. We also performed a health equity analysis using the PROGRESS+ framework.

Results and analysis: Our search identified 11936 records and 24 articles met our inclusion criteria, of which, five were systematic reviews and 19 were randomized controlled trials. The articles reported on a variety of interventions including cognitive behavioural therapy, family based therapy, motivational interviewing, and housing programs. Reported outcomes included housing, mental health, addictions, violence, service use, social/personal, family cohesion and sexual health.

Conclusions and implications for policy, practice or additional research: This review identified a variety of youth-specific interventions tailored to address the unique needs of homeless youth and may have an impact on health, social and equity outcomes. Given the diverse pathways to youth homelessness, health care policy-makers, practitioners and other stakeholders should consider the specific needs of youth when providing care. This review is part of an ongoing national collaboration to inform the development of evidence-based guidelines for homeless populations.

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75. Addressing gaps to innovative STBBI testing strategies in Canada - Jami Neufeld

Introduction/program need and objectives: Sexually transmitted and blood borne infections (STBBI) continue to be significant public health threats in Canada despite being preventable, treatable, and frequently curable. Canada has endorsed measurable global targets to reduce STBBI by the years 2020 and 2030. Early detection through testing will be necessary along with connection to treatment and management to prevent onward transmission. Technologies that simplify testing or increase accessibility by expanding testing settings can contribute to early identification of STBBI beyond the reach of traditional laboratories or clinics and have greater ability to reach targeted populations. Despite successful and significant use of innovative testing in the United States, Europe, and internationally, innovative strategies are not widely used in Canada.

Program methods, activities and evaluation: The National Collaborating Centre for Infectious Diseases (NCCID) is working to translate and broker knowledge regarding implementing innovative testing strategies for maximum reach and impact. NCCID conducted a scoping review of new technologies and has partnered with key organizations to identify gaps through three testing innovation sessions, participation in a National Task Force for STBBI Testing, and a webinar series in partnership with CATIE and REACH 2.0 to explore STBBI testing innovations in non-traditional settings.

Program results or outcomes: Program results have progressed from gap analysis to identification of knowledge needs and stakeholders and is now moving in partnership towards action plans and solutions to implement innovative STBBI testing strategies. Gaps identified at programmatic, regulatory, and policy levels will be presented. Evaluations of sessions and webinars have been positive and drive future collaborations.

Recommendations and implications for practice or additional research: Next steps will include working with governments and organizations to pursue action plans for the implementation of innovative testing approaches as one of the strategies for increasing access to STBBI testing to reach global elimination targets.

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76. Pilot randomized controlled trial of an interconception intervention provided by public health nurses - Hilary Brown

Co-authors: Saranyah Ravindran, Shaira Yoganathan, Zoe Cairncross, Joanne Enders, Lisa Graves, Catriona Mill, Deanna Telner, Cindy-Lee Dennis

Introduction/background: Preconception health impacts perinatal outcomes, but the difficulty in engaging reproductive-aged individuals in health promotion activities is a barrier to the effective implementation of preconception interventions. Since most Canadian women have more than one pregnancy and many risk factors repeat across pregnancies, the time between pregnancies (the interconception period), when many women are already engaged in public health programs, may represent an important opportunity to improve health. We examined the feasibility and acceptability of an interconception intervention delivered by public health nurses.

Methods: We conducted a pilot randomized controlled trial, in three Ontario public health units, of women who were >18 years and 2-12 months postpartum following a first pregnancy. Women randomly allocated to the intervention group received a risk assessment, tailored health education, and referral for clinical follow-up as needed; those in the control group received usual care. Primary outcomes were feasibility, acceptability, and adherence. We also measured improvement in preconception health knowledge at 1- and 3-months post-intervention. Data were analyzed using descriptive statistics and analysis of variance.

Results and analysis: Of 66 eligible women, 60.6% agreed to participate and were randomized to intervention (n=16) or control (n=24). The follow-up rate was 75.0% at 1 month and 62.5% at 3 months. Overall, women were satisfied with the intervention (83.0%), including the number and length of sessions. Most (75.0%) thought the recommendations were easy to understand and would positively impact their health. There were no differences in knowledge scores at follow-up, likely due to the small sample size.

Conclusions and implications for policy, practice or additional research: An interconception intervention delivered in a public health setting may be feasible. Its short- and long-term impact on knowledge and health should be tested in a larger sample.

77. Improving the Condom Ordering Process at Toronto Public Health to Promote Safer Sexual Practices – Melissa Kim

Introduction/program need and objectives: The Condom Distribution Program at Toronto Public Health provides condoms and lubricants to over 360 community agencies that deliver services to vulnerable populations in Toronto, Ontario. The program goal is to prevent the spread of sexually transmitted and blood borne infections, and unintended pregnancies. The condom request process by agencies was occupying a lot of program time and many inefficiencies were identified. A quality improvement (QI) project was done to reduce the time spent (in days) processing condom order forms by 30% by April 12, 2018.

Program methods, activities and evaluation: Process maps, a value stream map, a fishbone diagram, and surveys were created with the project team to define the current state and identify improvements. Multiple change ideas were tested. Proposed solutions included: 1) reduce the number of questions on the condom order form to 16 (a 24% reduction from the baseline) and optimize the layout to fit on one page, single-sided; 2) adapt into an online version using CheckMarket software; and 3) conduct a post-feedback survey to agencies to inform future implementation.

Program results or outcomes: The time spent processing condom order forms was reduced by 15% by eliminating manual entry of order form details into a spreadsheet. 89% of customers were satisfied with the new online form and 100% preferred to use the online form again next year. Staff didn't spend any additional hours performing other tasks related to processing orders.

Recommendations and implications for practice or additional research: The program will implement the online form to all agencies as part of the new ordering process and phase out the paper form. Another survey will be administered in April 2019 to reassess if all customers are satisfied. QI in public health practice has a positive impact in promoting healthy sexuality and safer sexual practices for priority populations, and strengthens public health units to build a culture of quality and continuous organizational self-improvement.

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78. Social Capital and Pregnancy Attitudes among Youth Experiencing Homelessness - Stephanie Begun

Co-authors: Anamika Barman-Adhikari, Kimberly Bender, Eric Rice

Introduction/background: Homeless youth demonstrate high rates of pregnancy and pregnancy involvement. Many youth view pregnancy positively; some extant research has depicted homeless youths’ pro-pregnancy attitudes as a function of youth being in desperate need of resources, such as money, food, clothing, housing, and healthcare. However, knowledge of the association between youths’ receipt of specific sources and types of social support and their pregnancy attitudes is limited.

Methods: Social network data were collected from 1,010 homeless youth (ages 15-24). Logistic regressions assessed how specific forms of social support (informational, instrumental, emotional), provided by youths’ social network members (street-based peers, home-based peers, family members, service providers, serious partners), were associated with youths’ pro-pregnancy attitude endorsements.

Results and analysis: Multivariate results demonstrated one significant association; youth who reported receipt of instrumental support (e.g., monetary resources) from a serious partner were significantly more likely to endorse pro-pregnancy attitudes compared to their peers who did not receive such form of support ($OR=1.46$, $p<.05$).

Conclusions and implications for policy, practice or additional research: Several studies report that female homeless youth, in particular, feel “trapped” by their need for monetary resources. Their lack of economic capital thus sometimes causes them to go to great lengths, including becoming pregnant, merely to maintain access to supports, especially when pregnancy is perceived as desired by a male partner who provides such benefits. Findings suggest a need for creating dyadic communication and prevention activities that facilitate homeless youths' conversations about their economic resource needs, as part of discussions about their pregnancy motivations and relationship goals, in ways that foster informed, self-determined reproductive health decision-making.

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79. Prématurité et risque de fracture traumatique - Jonathan Michaud

Co-authors: Nathalie Auger, Aimina Ayoub, Jessica Healy-Profitós

Introduction/Contexte : Beaucoup d'études ont démontré que les prématurés ont plusieurs problèmes de santé chronique durant l'enfance. Cependant, le risque de fracture chez les enfants prématurés a été peu investigué. L'objectif de cette étude est de déterminer le lien entre la prématurité et le risque de fracture, et d'identifier l'âge au moment de la fracture.

Méthode : Cette étude longitudinale est basée sur une cohorte de 747 371 enfants nés entre 2006 et 2016 au Québec, Canada. Les enfants prématurés (> 37 semaines) et nés à terme (< 37 semaines) ont été suivis jusqu'en 2017, soit jusqu'à un âge maximum de 11 ans. Toutes les hospitalisations pour une fracture ont été identifiées durant le suivi. Le taux d'incidence par 10 000 personnes-années a été calculé. Des régressions de Cox, ajustées pour les caractéristiques à la naissance, ont été utilisées pour estimer le risque de fracture selon l'âge.

Résultats et analyse : L'incidence de fracture est de 17.4 par 10 000 personnes-années chez les prématurés et de 15.5 chez les enfants nés à terme. Une interaction entre la prématurité et l'âge au moment de la fracture est présente (p = 0.001), et l'association entre la prématurité et les fractures du fémur avant l'âge de 5 ans est significative. Comparativement à 40 semaines, un âge gestationnel de 32 semaines est associé à un risque relatif de fracture du fémur de 1.59 (IC 95% 1.02-2.38).

Conclusions et répercussions concernant les politiques, la pratique ou les pistes de recherche : Les résultats suggèrent que la prématurité est associée au risque de fracture du fémur avant l'âge de 5 ans. Les fractures du fémur chez les enfants de moins de 5 ans sont souvent liées à la maltraitance parentale. Cette étude suggère donc que les enfants prématurés sont plus à risque de subir de la violence parentale. Les enfants prématurés et leurs familles pourraient bénéficier de services sociaux et d'aide pour prévenir la maltraitance pendant l'enfance.

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80. Epidemiology of adolescent pregnancy in a developing area: A six-year population-based cross-sectional study - Fernando Nampo

Co-authors: Camila Meireles Fernandes, Suzana de Souza, Pamela Aracely Ayala Fernández

Introduction/background: Adolescent childbearing is related to higher rates of maternal-fetal morbimortality and contributes to social disadvantage perpetuation, but has been poorly managed in developing countries. We present the first part of a research that will propose a population-based intervention to reduce adolescent pregnancy in developing countries; this sub-project aimed to reveal the epidemiology of adolescent pregnancy in a developing area.

Methods: In this cross-sectional study we analyzed all births occurred in Foz do Iguassu (Brazil) from 2012 to 2017. Birth data were extracted from a national governmental database. After data cleaning, we splitted the cases between adolescent mothers (<20 years of age) and non-adolescents.We compared maternal (age, race, marital status), pregnancy (prenatal appointments, gestational weeks, parity and delivery method) and newborn (birth weight, first-minute Apgar score) characteristics. Mann-Whitney U with Bonferroni post-hoc correction or Chi-square tests were performed.

Results and analysis: Adolescent mothers responded for 15.2% of the 30,791 births. Maternal age was 18 years (interquartile range, IQR: 16-19) among adolescents and 28 years (IQR: 24-32) among non-adolescents.

Adolescent mothers were more frequently single (67.7% vs 45.9%) and brown (43.2% vs 32.3%). The adolescent pregnancies had fewer prenatal appointments (7; IQR: 5-9 vs 8; IQR:6-10), lower incidence of twins (1.5% vs 2.5%) and more vaginal deliveries (66.6% vs 40.6%). Newborns from adolescent mothers were lighter (3,170 g; IQR: 2,860-3,465 vs 3,250 g; IQR: 2,940-3,565), and more frequently presented prematurity (15.4% vs 11.5%) and low (< 7) first-minute Apgar score (7.0% vs 5.4%).

Conclusions and implications for policy, practice or additional research: Adolescent mothers in Foz do Iguassu receive inferior prenatal care and conceive babies more prone to morbimortality when compared to non-adolescents. Additionaly, the noticeable difference in delivery methods may indicate a source of health inequity. Health managers should be aware and encourage adolescents to attain adequate prenatal care. Further research should investigate the causes of health-care discrepancies (i.e. prenatal appointments and delivery methods).

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81. Why so many neonates die in the largest international border of Brazil? A case control study - Fernando Nampo

Co-authors: Suzana de Souza, Etienne Duim

Introduction/background: Neonatal mortality is an important public health indicator that reflects care during pregnancy and childbirth. In foz do Iguassu, municipality located in the most populous international border of the Brazil, the neonatal mortality (15.3 / 1,000 live births) is higher than the Brazil's average (13.8 / 1,000 live births) and corresponds to 61% of all deaths in children under five. The municipality has an important role in the public health of the region because it also provides medical assistance to foreigners. Despite the high prevalence of neonatal mortality in the region, the causes remain unclear, making it difficult to manage the problem. The aim of the current study was to identify the determinants of neonatal mortality in Foz do Iguassu.

Methods: A case control study was conducted with all neonatal deaths occurred in Foz do Iguassu from 2012 to 2016. Birth and mortality data were extracted from two national governmental databases. We extracted data on maternal sociodemographic characteristics, pregnancy care and newborn characteristics. A multiple logistic regression with hierarchical conceptual model was applied to examine the factors associated with neonatal mortality.

Results and analysis: The factors associated with neonatal death were fetal congenital anomaly (OR 22.4; CI 95% 7.41- 67.76; $p < 0.001$); low birth weight (OR 17.4; CI 95% 8.70-35.17; p = <0.001); first minute Apgar score under 7 (OR 15.4; CI 95% 8.11- 29.24; $p < 0.001$); zero to 3 prenatal appointments (OR 3.3; CI 95% 1.28-8.70; $p = 0.014$); and prematurity (OR 3.5; CI 95% 1.79-6.92; $p < 0.001$).

Conclusions and implications for policy, practice or additional research: The characteristics of the newborn are strongly associated with neonatal deaths in Foz do Iguaçu. Thus, the health services in the Brazilian side of this international borders should be aware to the quality of the prenatal care and childbirth attention provided, which may include the adequate management of cross-border patients.

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82. Trends and determinants of Contraceptive use among Unmarried Adolescents in Nigeria: A multivariate analysis - Franklin Onukwugha

Co-authors: Monica Magadi, Mark Hayter

Introduction/background: Despite the development of the Nigeria Family Planning Blueprint (NFPB), the contraceptive prevalence rate among adolescents remains unacceptably low. Previous studies have focused on the predicators of contraceptives use among married women. Dearth of information still exist on the determinants of contraceptive use among unmarried adolescents. Hence, the reason for the present study that examines the trends and determinants of contraceptive use among unmarried adolescents in Nigeria.

Methods: A multilevel modelling was carried out using pooled data from the 2003-2013 Nigeria Demographic Health Survey (NDHS) among unmarried adolescents age 15-19. The sample used in the analysis was drawn from 904 clusters across the country. During the analysis, three-level multivariate logistic regression was fitted to examine the individual, community and state level factors that influence contraceptive use.

Results and analysis: The results show that contraceptive knowledge is higher among adolescent boys (83.7%) than girls (74.8%) (p<0.001). Against expectation, only 7.6% of unmarried adolescents use contraceptives. The use of contraceptives is higher among females (8.0%) than their male counterparts (6.9%) (p<0.01). Using a three-level Multilevel Modelling, the results show that 8.9% of the total unexplained variations in the odds of using contraceptives is attributable to unobserved community and state level effects. While 91.9% are attributable to individual and family level factors. The strongest determinants of contraceptive use were: age, gender, ethnicity, employment, region, comprehensive knowledge of HIV, age of household head and educational years in the State.

Conclusions and implications for policy, practice or additional research: The findings show the need to design intervention that would focus on translation of knowledge into proper and equitable sexual health practices, and also investment in education across the state more especially among adolescent girls should be prioritised by the relevant ministries across the states.

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83. No! I won't offer it: A qualitative study of the attitudes of service providers to adolescents use of Sexual health services in Nigeria - Franklin Onukwugha

Co-authors: Monica Magadi, Mark Hayter

Introduction/background: Despite the attention adolescents sexual and reproductive health (SRH) has garnered in sub-Sahara Africa, especially in Nigeria, adolescents are still disproportionately affected by sexual ill health. Previous evidence has linked adolescents none access to SRH services to service providers' attitude. This study examines the views and perceptions of service providers on adolescents use of SRH services in Nigeria.

Methods: Sixteen service providers in this study were purposively selected from four area councils in Abuja Nigeria and interviewed. Trancribed interview was analysed following an inductive analysis technique framework with the help of NVIVO version 11.

Results and analysis: This study found that service providers are unwilling and not in support of providing contraceptives to adolescents. Some providers firmly reported that they won't offer contraceptives to young people; rather they would scold and discourage them from accessing contraceptives. Unfortunately, service providers did not see this negative attitude to be a hinderance to adolescents use of services. The results also show that significant number of service providers are not in support of sexuality education. They believe sexuality education encourages early sex and makes young girls to be promiscuous. This was mainly influenced by their belief system and cultural values.

Conclusions and implications for policy, practice or additional research: These findings have strong policy implication in meeting the National Reproductive Health Policy goal of increasing access to SRH services for young people by 50% by 2021 in Nigeria. Therefore, there is need to train providers to be more responsive to the needs of adolescents, allocate more resources on building the capacity of service providers, and develop a monitoring and evaluation system to track adherence to service delivery guidelines

84. Perceived barriers and facilitators to accessing primary healthcare services for adults with disabilities in low and middle income countries - Goli Hashemi

Co-authors: Hannah Kuper, Mary Wickenden

Introduction/background: Everyone, regardless of their status and abilities, needs general healthcare services, often provided at or through the primary care level. An estimated 400 million people worldwide lack access to healthcare services. Access is particularly low among vulnerable populations, including people with disabilities. An estimated 1 billion people worldwide live with disabilities. Evidence shows that people with disabilities not only experience poorer access to health, but even when they do access it, may receive poorer quality services, and are more likely to have chronic conditions in addition to their disability. While the presence of a health condition is the original cause of impairment, there are many reasons why people with disabilities may experience worse health than others. This study aims to explore perceived barriers and facilitators to accessing primary healthcare services for adults with disabilities in low and middle countries, specifically Guatemala.

Methods: A mixed methods approach, including a systematic review of the literature and in-depth qualitative research based on semi structured interviews with both adults with disabilities and healthcare stakeholders in Guatemala were used.

Results and analysis: Preliminary findings indicate that the while some barriers are commonly recognized and understood such as physical access, transportation, communication, and stigma, many are more complex. The complexities are a result of the interaction between underlying impairments, structural barriers, socio-economic status, and the various intersectionalities that may influence an individual with a disability.

Conclusions and implications for policy, practice or additional research: The results highlight the need for more detailed investigations to identify the nuances in health seeking behaviours and decision making of adults with disabilities. A proactive approach towards removing barriers and adapting services is required, including more participatory approaches for improving access to primary healthcare services for people with disabilities. It will be very difficult to achieve health for all without specific strategies focusing on the one billion people with disabilities.

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85. A gendered perspective on healthy equity: Protective health practices and equitable access to local built environments - Keely Stenberg

Co-author: Jennifer Dean

Introduction/background: The prevalence of chronic disease in Canada is a growing concern. Individual engagement in protective health practices (e.g., physical activity, healthy eating, medical screenings, etc.) can help to prevent the onset of chronic diseases. Adult engagement in protective health practices, however, is relatively low in Canada and may be moderated by factors outside of individuals' control, such as the built environment. Further, structural issues have created environments that disproportionately limit women's opportunities to fully participate in a range of protective health practices. Women, particularly, can experience health inequities due to socialized gender norms such as household and care-taking responsibilities.

Methods: From a critical feminist perspective, this proposed doctoral research aims to understand gendered experiences in the built environment related to protective health practices. A multi-method approach will be utilized to gather data on the perceptions and lived experience of adult women, as well as an assessment of the economic, physical, political, and social aspects of their local environment.

Results and analysis: This presentation will provide an outline of the proposed research including a hypothesis, timeline, and budget.

Conclusions and implications for policy, practice or additional research: This research intends to contribute to the limited literature that focuses on gendered experiences that impact health practices in the built environment. Specifically, it is anticipated that the findings will be used to draw attention to women's opportunities to engage in protective health practices and highlight aspects of the built environment that dictate these experiences. Recommendations will be made to both research and practice communities to assist in remediating health inequalities women face due to the features or characteristics of the built environments in which they live.

86. Effect of Corruption on the Accessibility of Health Services for Women - Emily Sirotich

Co-author: Erika Chab Majdalani

Introduction/problem definition that demonstrates the need for a policy change: There has been an increasing recognition on the gender-differential impacts of corruption on the well-being and accessibility of services to women. Corruption acts as a barrier to accessing health services, further impacting health outcomes, and affecting involvement or participation in education, work and civil society. Whether petty or grand, corruption can affect women's service delivery more severely, and consequently, impact them at greater magnitude. Furthermore, women are frequent users of public health services. Hence, having more encounters with health providers and services results in greater exposure to corrupt acts and demands. This review aims to identify and examine the existing evidence on the disparities and barriers in accessing health services, and outline how corruption can play an additional role.

Research Methods: Studies included women of all ages of any social context, socio-demographic, ethnicity/race, educational background, and health status. Both forms of corruption including bribes and demands, as well as systematic corruption, were examined. Studies were published between September 2000 and December 2017.

Results and analysis: Of the 267 results, 68 studies were extracted in the preliminary selection based on inclusion/exclusion criteria. Types of corruption encountered in the studies include informal payments, sexual harassment, disrespectful and abusive care, out-of-pocket payments for 'free' services. Results of the analysis will be completed by March 2018.

Recommendations and implications for policy, practice, or additional research:

In order for corruption to be addressed, indicators to measure the presence and extent of corruption are required to efficiently develop and monitor the efficacy of anti-corruption strategies. This review aims to identify the existing evidence on the disparities and barriers in accessing health services for women in order to outline specific targets to decrease the gender gap and promote health equality in vulnerable population groups such as women.

87. Pratiques d'équité en santé chez des infirmières francophones travaillant en santé communautaire - Geneviève McCready

Co-author: Hélène Laperrière

Introduction/Contexte : Les inégalités sociales en matière de santé s'accroissent et nuisent à la santé des populations. Compte tenu de cette situation, quelles sont les pratiques des infirmières en santé communautaire pour assurer une plus grande équité en santé?

Méthode : Mon projet de recherche doctorale combinait histoire orale (12 entrevues) et une ethnographie collaborative (420 heures de terrain) avec les infirmières de la clinique communautaire de Pointe-Saint-Charles. 21 infirmières et 11 ex-infirmières de la clinique ont participé à cette recherche, de 2016 à 2018.

Résultats et analyse : Les résultats mettent en évidence la contribution des infirmières aux pratiques d'équité en matière de santé. Lorsqu'elles sont confrontées aux conditions de vie des personnes et lors d'échanges avec les citoyens, les infirmières élargissent leur champ d'évaluation aux problèmes de l'environnement physique et social, ainsi qu'à la prise en compte de leur parcours de vie. Elles transforment également le paradigme de l'intervention, passant d'un processus de soins contrôlé et prévisible à un processus qui tient compte de l'imprévisibilité, tout en se rendant disponible dans le temps, le lieu et l'approche. Les infirmières adaptent ensuite les interventions génériques en fonction de la réalité des gens. Puisque des besoins urgents demeurent non répondus, les infirmières prennent souvent des mesures immédiates pour remédier à la pénurie de ressources matérielles et défendent de l'accès aux soins de santé pour leurs usagers. Au niveau collectif, les infirmières mettent en place des actions portant sur les déterminants sociaux de la santé.

Conclusions et répercussions concernant les politiques, la pratique ou les pistes de recherche : À travers cette présentation, j'entends restaurer la place du savoir infirmier historiquement dévalué dans le champ de l'action communautaire. Travaillant au cœur d'un système de santé libéral, agir selon des valeurs d'équité, d'inclusion, de non-jugement et de respect du droit à l'autodétermination représentent des gestes politiques en faveur de la justice sociale.

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88. Pharmacien et Santé publique : Au-delà du médicament… un plus pour la santé de la population - Dania Sakr

Co-author : Madame Michelle Normandeau

Introduction/Contexte : Plusieurs caractéristiques de la pharmacie de quartier sont favorables à la contribution des pharmaciens à la santé publique: milieu de proximité, accessible sans rendez-vous, fréquence de contact avec la population et collaboration interdisciplinaire, etc. Au Québec, avec la restructuration majeure du système de santé depuis 2015 et avec les nouvelles responsabilités octroyées aux pharmaciens à travers le Canada au cours des dernières années, il est plus pertinent que jamais de recenser l'ensemble des activités du pharmacien qui contribuent au domaine de la santé publique. Le principal objectif est donc de sensibiliser les décideurs à l'apport actuel et potentiel du pharmacien.

Méthode : Nous avons effectué une recherche ciblée dans la littérature grise et scientifique à l'aide de bases de données électroniques (Pubmed, Google Scholar, Cochrane, etc.). Ensuite, nous avons analysé les articles pertinents sur les interventions en santé publique et les pratiques exemplaires mises en place dans des pays comparables au Canada. Pour enrichir la réflexion, nous avons également discuté avec des médecins, des pharmaciens et des professionnels de santé publique qui ont développé des expertises aux confluences de la santé publique et de la pharmacie.

Résultats et analyse : Afin de contribuer optimalement à l'amélioration de la santé de la population, les décideurs ont intérêt à mieux soutenir les activités de santé publique des pharmaciens et à en évaluer les impacts. De plus, des interventions d'immunisation et de cessation tabagique favorisent déjà le déploiement plus complet de leurs champs de pratique et responsabilités déontologiques (préserver et promouvoir la santé du public).

Conclusions et répercussions concernant les politiques, la pratique ou les pistes de recherche : Il est primordial d'implanter des services de santé publique qui répondent aux besoins de la population. Nos travaux indiquent que les pharmaciens au Canada pourraient contribuer de façon significative à l'amélioration de la santé de leurs patients et de la population tout en aidant à réduire les inégalités sociales de santé.

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89. The fight against poverty led in rural municipalities of the Quebec Network of Healthy Cities and Towns: an exploration of winning conditions - Lucie Gélineau

Co-authors: Sophie Dupéré, Lorraine Gaudreau, Paule Simard, Marie-Hélène Deshaies, Marc-André Bonneau

Introduction/background: Healthy Cities is a health promotion strategy that supports local action on the determinants of health among which poverty is highly significant. As part of a research project funded by CIHR-

FQRS, we sought to understand how rural municipalities members of the Quebec Network of Healthy Cities and small towns (RQVVS) address poverty and lead social initiatives on this issue.

Methods: We conducted a two phases data collection in 2015 and 2016. The first consisted of 19 semi-directed individual interviews with key informants regarding social responses towards poverty in a rural area. The second consisted of four case studies of poverty-reduction initiatives conducted by 4 RQVVS member municipalities, documented through 29 individual interviews and seven collective interviews (55 people: initiative leaders, municipal councilors, stakeholders, users of services). Diversified qualitative analysis strategies were used, including thematic case and cross-case analysis and joint analysis sessions.

Results and analysis: We identified five salient dimensions as both challenges or winning conditions likely to enhance or restrain the fight against poverty in rural municipalities.

- The recognition by elected officials and the population of the presence of poverty within their municipality
- The recognition by rural towns of their "social" role concerning poverty
- The presence of leaders in the community and citizen participation
- The presence of sustainable structures that encourage the participation and commitment of individuals and organizations
- The capacity of rural municipalities to put in place the conditions allowing stakeholders to work "together" on their local realities.

Conclusions and implications for policy, practice or additional research: RECOGNIZE: To empower rural municipalities to recognize the presence of poverty in their environment and open dialogue on this issue

INCLUDE: Increase the participation of people living in poverty in the implementation of initiatives and decisions to improve their conditions and quality of life.

ACT: Act locally while paying attention to national public policies that can significantly reduce poverty.

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90. Powerplays: a playbook for developing powerful Community Advisory Committees - Janina Krabbe

Introduction/program need and objectives: Community Advisories create the potential for researchers and community members to collaborate towards sustainable, positive social change as a group embedded within the community under study guides the research done in that context. While many public health researchers have acknowledged the importance and need of such groups, less is known about how to move from an idealized potential into actualizing Community Advisories which function as powerful partners in the research process.

Program methods, activities and evaluation: Using the STRENGTH Project as a case study for how-to develop powerful Community Advisory Committees, the presentation will unpack lessons learned from ethnographic observations and meeting minute analysis. A community-based research project, STRENGTH seeks to address equitable and essential service access for women affected by structural and interpersonal violence who are regularly disconnected from these supports through a women-led, trauma-and-violence-informed outreach intervention model. Given the nature of the STRENGTH Project and in collaboration with the community partner organization, a population-specific advisory was created to be representative of women with lived experience in the community.

Program results or outcomes: The STRENGTH Project Community Advisory is now powerful research partner. This dynamic group of women was instrumental in establishing a study protocol and instruments that are safe for participants and effective in collecting data. They named and branded the project as "Sisters Together Reaching Every New Goal Towards Healing" (aka STRENGTH). The intentionality that formed the Community Advisory enabled a true partnership to develop.

Recommendations and implications for practice or additional research: Full of practical tips, real world examples and lessons learned, this presentation is for those interested in establishing a powerful Community Advisory, one that operates with power in practice, not just in theory. Recommendations include working closely with a community partner, being cognizant of power dynamics, waiting to be invited, knowing when to get out of the way, not being a control freak and acting with intention.

91. Carnegie Community-Engagement Designation and U.S. County Health Rankings - Emma Apatu

Co-authors: Sericea Stallings-Smith, Elizabeth Alvarez, Laura Anderson, Aaron Spaulding

Introduction/background: Community engagement is a concept that is commonly incorporated into the educational goals of higher education institutions across North America. Since 2006, the Carnegie Foundation, a United States based organization whose mission is to support education, offers an optional designation for which U.S. colleges and universities may apply. The purpose of the designation is to facilitate better educational outcomes through the institutionalization of community engagement. Given the growing interest in the designation, we conducted one of the first preliminary investigations to examine the relationship between the Carnegie community engaged status and community health outcomes.

Methods: Ordinal logistic regression was conducted to investigate the association between the presence of a community engaged institution and county health outcomes, including health behaviors, clinical care relating to access and quality, social and economic factors, and physical environment from the County Health Rankings Model. Data from the 2016 Robert Wood Johnson County Health Rankings and 2015 New England Resource Center for Higher Education Community engaged list were extracted. We examined 820 U.S. counties containing a university or college, 240 of which had a community engaged designation.

Results and analysis: Findings indicated that the presence of a community-engaged institution was positively associated with Clinical Care (OR = 1.99; 95% CI: 1.09, 3.64). Other factors such Length of Life (OR = 1.12, 95%CI: 0.60, 2.11), Quality of Life (OR = 0.72, 95% CI: 0.40, 1.31), Health Behaviors (OR = 1.30, 95%CI: 0.71, 2.38), Social & Economic Environment (OR = 0.75,95% CI:0.40,1.42), or Physical Environment (OR = 1.25, 95% CI:0.76, 2.05) were not similarly associated.

Conclusions and implications for policy, practice or additional research: Our findings suggest that community engagement status may be most relevant for achieving better access and quality of clinical care. More research is needed to explore this association in the U.S. and internationally.

92. The Value of Population Cohorts and Biobank Resources to Address Public Health Issues: the CARTaGENE Platform - Nolwenn Noisel

Co-authors: Cathernine Labbé, Yves Payette, Sébastien Jacquemont, Philippe Broet,

Introduction/background: Chronic diseases result from a combination of multiple factors including genetic predisposition and environmental exposure. The joint assessment of various risk factors and health outcomes is the key to accelerate breakthroughs in public health research. This can be translated into public policies, prevention programs and interventions. The selection of reliable indicators are necessary to carry out high quality public health research, yet this remains a big challenge.

Methods: Large population cohorts and biobanks can provide high quality data for the assessment of both risk factors and health outcomes. The CARTaGENE (CaG) cohort is the largest prospective health study in Québec. Since 2007, CaG recruited 43,000 participants, aged 40-69 years at baseline.

Results and analysis: CaG collected a wealth of data on each participant: health questionnaire (lifestyle, mental health, etc.), physical measures (blood pressure, spirometry, electrocardiogram, etc.), food frequency questionnaire, residential and occupational histories, biochemical measures (eg. lipids, glycated hemoglobin, creatinine), and genotyping data. The CaG biobank contains biosamples (blood, plasma, urine, etc,) for more than 30,000 participants. These biosamples allow for the measurements of additional biomarkers for specific purposes. CaG databases are linked to administrative health databases, which are of great value to inform about health care use. Moreover, this resource via prospective health follow-ups enable to collect data on a continuous manner to identify temporal variations or trajectories. CaG is fully integrated in the Canadian Partnership for Tomorrow Project, which represents 300,000 participants and more than 150,000 biological samples available for health research.

Conclusions and implications for policy, practice or additional research: CaG was created to support the scientific community in studying the determinants of chronic diseases and the associated outcomes on the healthcare system. CaG is a public resource available to researchers worldwide and offers powerful tools for public health research.

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93. Health professionals and climate change communication: An exploratory study in Northern Ontario - Robert Sanderson

Co-author: Lindsay Galway

Introduction/background: Health professionals are recognizing and experiencing the impacts of climate change in their work, and understand the need to communicate this information to their clients. Improved climate change communication utilizing health professionals' trusted position in society has been highlighted as a means to effectively create engagement and empower support for climate action. While effective methods of communicating climate change have been identified, there is little literature to show how health professionals are taking up the communication in their work. This qualitative study investigates how health professionals who identify as climate change leaders perceive and communicate the health impacts of climate change and the health co-benefits of climate change mitigation in Northern Ontario.

Methods: 20 key-informant interviews were conducted with health professionals engaged as climate change leaders in Northern Ontario. Information on communication techniques, knowledge trends, and perceived opportunities for strengthening the role of health professionals in climate change action was collected.

Results and analysis: Using a thematic analysis approach, interview transcriptions will be coded using the qualitative software package NVivo to build an understanding and extract meaning from participants' thoughts, experiences, and actions. Patterns and themes consistently identified within the interviews will be connected to build a foundation for how health professionals perceive and communicate the health impacts of climate change.

Conclusions and implications for policy, practice or additional research: This research will be integrated with existing knowledge in the field of climate change communication to develop practical recommendations to improve understanding and communication methods among health professionals. The improved communication of the health impacts of climate change and the health co-benefits of climate change mitigation by health professionals will translate to increased client understanding of and engagement in climate change action.

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94. The Alberta Healthy Communities Approach: building community capacity for sustained and equitable action on the environments that shape our health and wellbeing - Lisa Allen Scott

Co-authors: Stephanie Patterson, Laura Gougeon, Omenaa Boakye, Nahum Arguera, Lori Meckelborg, Laura McDougall

Introduction/program need and objectives: The Healthy Communities (HC) movement originated in Canada in the 1980s, becoming a way of working with communities worldwide. The HC movement has been pioneered by

British Columbia, Ontario, Quebec and New Brunswick. To contextualize the HC approach to Alberta, we collaborated with 16 rural communities (2015 - 2019) who piloted what became the "Alberta Healthy Communities Approach" (AHCA). The AHCA is, therefore, a community-centric intervention designed to support sustained and equitable action on the environments that shape our health and wellbeing.

Program methods, activities and evaluation: The AHCA uses a 5-step community development process in which communities: (1) create multi-sectoral connections; (2) assess supportive environments and assets; (3) prioritize and build an action plan; (4) implement and evaluate evidence-based strategies; and (5) sustain, improve, and share. Communities received in-person support, funding and access to online resources through the "Alberta Healthy Communities Hub." The RE-AIM model guided AHCA evaluation (process and impact). A "Healthy Places Action Tool" (HPAT) was developed to measure changes in community environments (physical, social, economic and policy) across risk factors and multiple settings and to guide communities' priority setting. Scores from the PHAC Community Capacity Assessment Tool measured changes in community capacity. Focus group data was also collected.

Program results or outcomes: Currently, five communities have completed AHCA. All showed increased community capacity scores and positive changes in the supportive environments they prioritized. Four communities reported improvements to their nutrition environments, three reported improvements to physical activity environments and two reported improved ultraviolet radiation environments. Community members reported the AHCA process supported them in taking local action. Results from all 16 communities will be available March 2019.

Recommendations and implications for practice or additional research: AHCA is a feasible community-driven strategy that can enhance community capacity and supportive community environments. An expansion project will start in 2019 to explore efficiency and sustainability of AHCA through support models that strengthen system and community partnerships.

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95. Support and use of protected bicycle facilities: Baseline results from INTERACT Victoria - Melissa Tobin

Co-authors: Jaimy Fischer, Karen Laberee, Yan Kestens, Meghan Winters, Daniel Fuller

Introduction/background: Implementing infrastructure that supports active transportation is an important intervention to increase population physical activity levels. Part of the INTErventions, Research and Action in Cities Team (INTERACT) is examining the impact of the All Ages and Abilities (AAA) Bike Network on cycling, this research aims to address the support for and use of the new two kilometer Pandora protected bike lane, in Victoria, BC.

Methods: We recruited 281 people who bicycle at least once per month in Victoria, BC, with data collection over May 19, 2017 to November 30, 2017. All participants completed online surveys and 149 participants wore a SenseDoc, an accelerometer and global positioning system (GPS), for 10 days to collect physical activity and spatial location data.

Results and analysis: Participants were 51% female and the average age was 44.9 years (SD = 13.6). Survey data suggests 87% of participants think the AAA network is a very good idea, and 79% of participants will cycle more once it is built. On routes with physical separation such as the design along Pandora, 68% of participants would feel very comfortable. In contrast, only 17% said they would be comfortable (somewhat or very) on a major urban street with no cycle track. The presentation will include analyses of GPS and physical activity data, including specific use of the corridor.

Conclusions and implications for policy, practice or additional research: Preliminary analyses suggest the AAA network will promote cycling in the City of Victoria. Subsequent analyses will look at use of the facilities, including spatial and social equity considerations. Active transportation infrastructure is an important public health intervention to increase physical activity levels of the entire population.

96. From CIHI's hospital databases: Quality morbidity data at your fingertips - Michelle Policarpio

Co-authors: Kenny Wong, Nicholas Gnidziejko

Introduction/background: Morbidity data is important in measuring the evolving needs of Canadians/target populations and determining appropriate public health actions.

The Canadian Institute for Health Information (CIHI) collects, processes, analyzes and disseminates administrative, clinical and demographic data Canada-wide. Information on hospitalizations, emergency departments, day surgeries and ambulatory care are available in the following databases:
- Discharge Abstract Database (DAD)
- Hospital Morbidity Database (HMDB)
- National Ambulatory Care Reporting System (NACRS)

Rigorous data quality assurance processes are implemented to ensure high quality information. This data is then used in CIHI’s analytical products which are shared to inform decision-making in our health care system and government, including public health. The objective of this presentation is to demonstrate the value of CIHI's morbidity data in supporting public health policy and practice.

Methods: CIHI achieves high quality data by preventing, monitoring and reporting issues. A series of “edits” (error checks) are performed upon data submission to ensure the data conforms to specifications. Reports are also disseminated to facilities on suspect data quality issues for investigation and/or correction.

The cleaned data are analyzed and displayed in static/interactive tables accessible via Quick Stats, which are publicly available in CIHI’s website. These routine reports include emergency department visits and hospitalizations indicators. Volume, rates and wait times by provinces/territories are displayed to show trends over time and magnitude of the change.

Results and analysis: DAD/NACRS employ more than 800 edits. Additionally, there are several open-year data quality tests routinely analyzed and disseminated to facilities. From this data, CIHI produces publicly-available Quick Stats information annually for:
- Emergency Departments (14 data tables)
- Inpatient Hospitalizations, Surgeries and Newborn Indicators (7 data tables)
- Injury and Trauma (10 data tables)

Conclusions and implications for policy, practice or additional research: CIHI has rigorous data quality assurance processes, resulting to high quality data. This information may be used by public health professionals to understand health status and inform prioritization and planning.

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97. Concretizing Gender-Based Analysis Plus (GBA+) in Policy Making - Bronwyn Rodd

Co-author: Linda MacLean

Introduction/problem definition that demonstrates the need for a policy change: The Government of Canada has recently renewed its commitment to integrate GBA+ within every stage of policy development, thereby increasing the need for tools, information, data sets, and analysis that appropriately inform policy makers. Addressing intersectionality, access and potential impacts are among the necessary considerations in the GBA+ process embedded in policy design.

Research Methods: Analysts from Veterans Affairs Canada’s Policy and Research Division used data from Life After Service Studies (LASS) 2010, 2013, and 2016 surveys to disaggregate demographic, service, and well-being characteristics by sex. Over 40 indicators were examined across the Department’s seven domains of well-being (informed by the social determinants of health): health, purpose, finances, life skills, social integration, housing and physical environment, and culture and social environment.

Results and analysis: The resulting 2018 technical report, "Veterans in Canada released since 1998: A Sex-disaggregated Profile," found that female Veterans differed from male Veterans in the domains of health, purpose, and finances: e.g., female Veterans were more like to report an activity limitation, and more likely to experience low income. This Profile is an example of the type of information needed to advance GBA+ in the development of evidence-informed policies.

Recommendations and implications for policy, practice or additional research: As both a Government of Canada-wide priority and an area that can be misunderstood and overlooked in the development of policy, GBA+ requires concrete tools to facilitate its use and inform policy outcomes. Veterans Affairs Canada's Profile is a primary and fundamental piece of information in the Department's GBA+ toolbox, which will help to recognize patterns as they pertain to gender equality, identify gaps in data collection, and guide policy objectives to align with the Government of Canada's Gender Results Framework. As such, the Profile helps to facilitate the GBA+ process for analysts as it simultaneously suggests future GBA+ research and policy directions.

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98. Impact of physician-based palliative care delivery models on end-of-life outcomes: A population-based retrospective cohort study - Catherine Brown

Co-authors: Amy Hsu, Glenys Smith, Michelle Howard, Mengzhu Jiang, Peter Tanuseputro

Introduction/background: In order to maximize healthcare resources and to provide care for our aging population, healthcare systems must be knowledgeable about the types of palliative care (PC) delivery models available and their effectiveness. This study describes physician models of PC and their association with end-of-life outcomes.

Methods: We conducted a population-based retrospective cohort study of decedents in Ontario, Canada using linked healthcare administrative data. We included all adults who died between April 1, 2012 and March 31, 2017. We sorted decedents into four physician-based delivery models: (1) low engagement (i.e., received no physician-based PC); (2) received only generalist PC; (3) consultation PC (both generalist and specialist involvement); and (4) received only specialist PC. Then, we described the associations between the physician-based PC models and initiation and intensity of PC; emergency room (ER) visits, hospitalizations, and intensive care unit (ICU) admissions in last month of life; and, location of death.

Results and analysis: Of the 469,179 decedents: 50.5% received low PC engagement; 20.6 % generalist PC; 16.4% consultation PC; and 12.5% specialist PC. Decedents who received consultation PC had earlier initiation and more encounters in the last year of life compared to the generalist and specialist PC models. Decedents with low PC engagement were more likely to have an ICU admission in the last month of life, but had similar number of ER visits and fewer acute hospitalizations than decedents receiving any PC. Decedents who received consultation PC were most likely to die at home.

Conclusions and implications for policy, practice or additional research: Consultation PC was associated with earlier and more intense PC and fewer hospital deaths. Shifting towards a public health approach in PC that emphasizes the importance of primary care – supported by consultation with PC specialists – likely will be needed to increase the reach of services. Further research is needed to evaluate how different models impact health care costs and system capacity.

99. Preventiblity of Dementia in Canadian Primary Care - Anh Pham

Co-authors: Cliff Lindeman, Boglarka Soos, Don Voaklander, Adrian Wagg, Neil Drummond

Introduction/background: Dementia is a long-term, chronic failure caused by a progressing physical damage in the brain. Evidence suggests that heart disease risk factors may also contribute to the onset of dementia. However, the current literature on this association is inconsistent and may be ungeneralizable. To our understanding, there is no study that explores the occurrence of potential cardiovascular risk factors prior to a diagnosis of dementia using primary care data in Canada.

Methods: We used electronic medical records from Southern Alberta to conduct a retrospective cohort to (1) determine the number of new diagnosis of dementia in primary care among community-dwelling seniors in Southern Alberta; (2) compare the risk of developing dementia in seniors with and without hypertension, diabetes, obesity, and dyslipidemia.

Results and analysis: Our analysis focused on 5,146 patients who did not have a dementia diagnosis in 2008. During the follow-up period, 591 individuals developed dementia.The numbers of patients with dementia or heart disease risk factors increased slightly but steadily over the ten-year follow-up period. The number of new cases of dementia has increased from 0.6% in 2009 to 2.6% in 2016. 89.1% of the studied cohort have at least one risk factor. Every 1-year increase in age was associated with a 10% increase in the risk of dementia onset. Both single and multivariate Cox model showed that non-hypertensive patients were 1.5 times more likely to develop dementia after the age of 65 than hypertensive people ($p < 0.001$).

Conclusions and implications for policy, practice or additional research: Except for hypertension, which tend to decrease in a few years before diagnosis of dementia, late-life cardiovascular disease risk factors seem to NOT be associated with the incidence of dementia. NEXT STEP: A more comprehensive analysis using national data will be performed.

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100. Through Their Eyes: Exploring older adults' experiences with an intergenerational project - Tia Rogers-Jarrell

Co-author: Paula Gardner

Introduction/background: Canada's aging population and intergenerational programs' ability to encourage active aging point to the need for further support and encouragement for these programs.

Methods: A critical qualitative case study methodology was employed to explore and understand the lived experiences of six older adults who participated in an intergenerational project – Through Their Eyes (TTE).

Results and analysis: Findings illustrate that the TTE project encouraged active aging and enhanced quality of life and health for participants by encouraging social participation and remaining active and engaged, core principles of active aging (WHO, 2002). The TTE project fostered social participation by establishing connections between generations, addressing social isolation, and breaking down stereotypes and age barriers. The TTE project allowed older adults to remain active and engaged citizens by providing a space for them to be listened to and an opportunity for reciprocity. These findings will be discussed in more detail utilizing thick description and direct quotes from participants.

Conclusions and implications for policy, practice or additional research: In the active aging framework, programs that promote social connections are just as important as those that improve physical health status (WHO, 2002). While enhancing physical health, we also need to care for the social health of older adults. We also know older adults want to age in place (Lin, 2005). I would argue, based on the findings from this study, intergenerational programs encourage active aging and play an important role in creating age-friendly communities. We are looking for ways to support our population. Providing opportunities for community-dwelling older adults to participate in intergenerational programs is a public health approach to encouraging active aging and enhancing the quality of like of our aging population.

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101. Farmers’ health and wellbeing in the context of changing farming practice: a qualitative study - Madeleine Bondy

Co-author: Donald Cole

Introduction/background: Farming continues to change, with steady industrialization, globalization and climate change and ongoing reports of stress and suicides. We aimed to understand how farmers understand their stressors and experience their health in the midst of ongoing change.

Methods: We recruited 16 small-medium scale, diversified farmers through farm organizations in Ontario's Grey-Bruce counties. We interviewed them face-to-face or virtually about their perception of changes in farming, associated stressors, mental health and well-being, and community supports. Using a constructivist theoretical paradigm, we coded each interview, iteratively discussed results, and formulated emergent themes using thematic analysis.

Results and analysis: Farmers’ relationship to change was complex with both benefits and challenges of changing farm practices, technology and weather for health and well-being – a “double-edged sword”. Farmers also described the resilience associated with diversified farming which connects them to the land “essentially being at one with place”. Farmers' work required them to be active and moving, an asset for keeping them healthy, but also a challenge if their mobility became restricted. Farmers’ noted examples of overwhelming stress but noted “…the last thing most farmers want to do is admit that they are stressed or have a mental health issue.” Yet “…if you don't have strong mental health then you can't really be resilient and cope with the stresses of climate change and all the random things that will happen day to day on a farm.” They voiced a perceived lack of support from governments – dealing with bureaucracy, community – experience of isolation or stigma for being open about dealing with stressors, and health services – an over-stretched, often distant system.

Conclusions and implications for policy, practice or additional research: Farmers' understandings can inform public health programs promoting mental health in rural communities, advocacy for government supports to diversified farmers and evaluation of intervention programs.

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102. Patterns of Depression Prevalence across Socioeconomic Factors in British Columbia (BC), 2009-2013 - Drona Rasali

Co-authors: Diana Kao, Crystal Li, Daniel Fong

Introduction/background: In 2012, about 3.2 million Canadians (11.3%) had depression, which accounted for the majority of the cases of mood disorder. It is a chronic illness with frequent relapses and is associated with considerable utilization of health services. Monitoring the prevalence of depression using equity lens across the province will help identify patterns of depression prevalence and inform the strategies for reducing the economic burden of the disease.

Methods: The Chronic Disease Registry data for 2009-2013 from British Columbia's Ministry of Health were analyzed using SAS 9.4. The 2011 CensusPlus was used to derive Social and Material Deprivation Indices quintile at the Census Dissemination Area (DA)-level. Direct age-standardized depression prevalence rates by geographic areas, sex, social and material deprivation indices, education, employment, and income were calculated and standardized to 2011 Canadian Census population.

Results and analysis: Overall depression prevalence rate in BC was 23.41 per 100 population. Females had a significantly higher prevalence rate (29.19 per 100 population; 95% CI: 29.12, 29.25) than males (17.46 per 100 population; 95% CI: 17.4, 17.51), with a disparity ratio of 1.7. Depression prevalence for most socially deprived people (25.59 per 100 population; 95% CI: 25.5, 25.69) was 1.2 times higher than that of least socially deprived (21.21 per 100 population; 95% CI: 21.12, 21.31). Depression prevalence was 1.1 times higher among most materially deprived people (25.5 per 100 population; 95% CI: 25.34, 25.56), compared to least materially deprived people (22.5 per 100 population; 95% CI: 22.44, 22.63). Depression prevalence in population of lowest incomes (26.4 per 100 population; 95% CI: 26.32, 26.54) was 1.2 times higher than those with highest incomes (21.67 per 100 population; 95% CI: 21.57, 21.76). Disease prevalence for people with less than high school education (24.81 per 100 population; 95% CI: 24.74, 24.88) was 20% higher than those with completed post-secondary education (21.44 per 100 population; 95% CI: 21.38, 21.51).

Conclusions and implications for policy, practice or additional research: Prevalence of depression decreased with an increase in income and education but increased with social deprivation and material deprivation. This study informs health policies aiming to reduce depression prevalence rate in the most vulnerable populations.

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103. Health Equity in Cancer Screening in Calgary – Using a Geographic Approach to Assess Sociodemographic Factors and Cancer Screening Rates - Harmony McRae

Co-authors: Anna Thind, Huiming Yang, Vineet Saini

Introduction/background: Despite efforts to increase cancer screening, participation rates are sub-optimal for Alberta Health Services' (AHS) Screening Programs. In order to reach provincial targets, there is a need to better understand sociodemographic and spatial barriers to cancer screening. The purpose of this analysis was to determine how breast, cervical, and colorectal cancer screening participation varies by socioeconomic status within local geographic areas (LGAs) in the city of Calgary.

Methods: A partnership with AHS Research and Innovation was established. Neighbourhood-level Pampalon Deprivation Index was used to determine the relationship between material and social deprivation factors and cancer screening rates. A Bayesian multilevel regression model with a spatial component was used to estimate Standardized Incidence Rates (SIR) at the local geographic area (LGA) level. Bivariate spatial clustering analyses between screening rates at the Dissemination Area level and Pampalon material and social deprivation index was performed to better understand spatial structures of low and high screening rates compared to high and low material and social deprivation scores within LGAs.

Results and analysis: The effect of material (income, education and employment) and social (living alone, separated, and divorced or windowed) deprivation on lower screening rates was stronger for breast screening, compared to cervical and colorectal screening. Estimated likelihood of screening significantly decreased from the least deprived to the most deprived (9% for the material component and 18% for the social component for breast cancer; 8% for the material component and 10% for the social component for cervical cancer screening). Clusters of lower screening rates and higher social and material deprivation were identified in the northeastern and central areas of Calgary.

Conclusions and implications for policy, practice or additional research: A relationship between material and social deprivation, and cancer screening was observed in LGAs in Calgary. This approach provides additional evidence for reducing inequities for screening through targeted interventions and policy changes.

104. Inuusinni Aqqusaaqtara: An Inuit Cancer Project - Savanah Ashton

Co-authors: Tracy Torchetti, Sipporah Enuaraq

Introduction/program need and objectives: Cancer is a leading cause of death among Inuit populations. Compared to the general population of Canada, Inuit have a higher incidence of lung, liver, oesophageal, nasopharyngeal, and salivary cancer. Pauktuutit Inuit Women of Canada is developing culturally appropriate cancerawareness tools and a toolkit to support community health representatives, health care providers and Inuit cancer patients.

Program methods, activities and evaluation: Pauktuutit Inuit Women of Canada and the Canadian Cancer Society are working in collaboration to develop meaningful ways to support better health, reduce cancer incidence, and increase prevention and early detection in the Inuit population. Inuusinni Aqqusaaqtara - My Journey – is a suite of cancer resources developed for Inuit patients, caregivers, and health care professionals with the aim of helping increase patient's health literacy and understanding of the disease, their diagnosis and treatment.

Program results or outcomes: The goal is to increase knowledge about cancer, to improve communication between Inuitcancer patients and non-Inuit health care providers, helps to dispel fear of cancer, enhance support services, promote mental wellness for newly diagnosed Inuit cancer patients, and improve overall quality of life of Inuit communities.

Recommendations and implications for practice or additional research: Pauktuutit's cancer resources are working to build cancer literacy, increase screening rates, encourage lifestyle changes to reduce cancer incidence and develop platforms for support at every stage of the cancer journey for cancer patients, caregivers and health practitioners. They will have a lasting impact on Inuit today and for generations to come.

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106. Evaluation of current provincial/federal Chest X-ray (CXR) screening policy for Tuberculosis in Long-Term Care Facility (LTCFs) - Mariana Herrera

Co-authors: Yoav Keynan, Margaret Haworth-Brockman

Introduction/background: In Canada tuberculosis (TB) is more common among people aged > 75 years than in any other age group. Individuals residing in LTCFs are at a greater risk for TB. Recommendations for screening the new residents include a CXR within 90 days prior to or within 14 days after admission to LTC.

The objective was to evaluate the benefits of the current provincial/federal CXR screening policy for LTCFs outweigh the risks and/or costs.

Methods: We conducted a search for articles published until September 2018, in PubMed and WorlCat databases. We reviewed publications related to active TB screening in people who enter or reside in LTCFs, published until 2018. We reviewed the country where the study was conducted, the incidence of tuberculosis according to the WHO classification, the diagnostic strategies that CXR was compared to, the results of cost effectiveness analysis and the recommendations of the authors.

Results and analysis: The search yielded three cost-effectiveness studies (2/3 conducted in countries with low incidence), one systematic review, two recommendation/editorial and three cohort study. We found that in Tuberculosis low-incidence countries the CXR cost per identified case is $672298 CAD. Enacting a more targeted screening program, perhaps one that tests only those who previously had TB, a TST or IGRAs positive, or other high-risk medical conditions can enhance the cost-effectiveness.

Conclusions and implications for policy, practice or additional research: We suggest reviewing the screening policy for active TB in people entering LTCFs which is based on a CXR. The results indicate that targeted search for active TB in people with symptoms or other high-risk medical conditions may be more cost-effective.

107. Modelling spatialtemporal patterns of Lyme disease emergence in Quebec - Marc-Antoine Tutt-Guérette

Co-authors: Yan Kestens, Kate Zinszer

Introduction/background: Lyme disease is an emerging issue in Canada and has been a cause of growing concern over the last decade. Quebec now has one of the highest incidence rates in the country. Caused by the bacterium Borrelia burgdorferi, it is mainly transmitted by an infected Ixodes scapularis tick and, if left untreated, can lead to a wide range of serious health complications. Few epidemiological studies have directly explored the spatiotemporal patterns of Lyme disease spread. The purpose of this research is to fill this gap in knowledge by (1) estimating the speed and direction of the emergence of Lyme disease in the province of Quebec, (2) modelling the changes in human case rates at a municipal level, and (3) identifying the determinants of the spatial variation in incidence.

Methods: (1) A surface trend analysis will be used to estimate the velocity of disease spread on a continuous scale. Coordinates will be geocoded to aggregate case data at a municipal level to estimate a regression of time as a function of these coordinates. (2) A spatiotemporal cluster analysis will identify aggregates of high and low case rates with LISA, to estimate Local Moran's I statistics and define hotspots. (3) We will then use a hierarchical Bayesian Poisson regression to estimate spatial variation of risk by first computing a Poisson regression between incidence rates and selected covariables, followed by two Bayesian adjusted hierarchical models to visualize this variation.

Results and analysis: Results are anticipated by April 2019. We expect to find that cases have been spreading northward at increasing speeds and that hotspots have consistently been observed in the regions of Estrie and Montérégie. We expect environmental determinants to be the most causative in explaining these findings.

Conclusions and implications for policy, practice or additional research: These innovating approaches for predicting disease spread will strengthen our prevention systems in order to tackle this emerging issue.

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108. Legionella outbreak source identification in the absence of a cooling tower registry: lessons learned from a recent outbreak - Christina Fung

Co-authors: Mark McCabe, Inderjeet Gill, Jason Stone, Aamir Bharmal, Martin Lavoie, Linda Hoang, Loretta Bogert-O'Brien, Amelie Nguyen, Alain Malo, Philippe Barneoud, Nils Ek, Shovita Padhi

Introduction/program need and objectives: In August 2018, Fraser Health detected a cluster of legionellosis cases in Surrey, BC. After assessing possible sources, cooling towers were suspected. Registries of cooling tower locations and maintenance are nonexistent in BC. Despite this challenge, we identified specific cooling towers as the sources of the outbreak through geographic mapping and meteorological modelling combined with fieldwork and laboratory testing.

Program methods, activities and evaluation: Geographic information system (GIS) tools were used to identify suspect areas by visualizing the distribution of cases and travel histories. Environment Canada employed meteorological modelling to predict atmospheric dispersion of Legionella from suspect sources in order to assess whether dispersion patterns matched the geographical distribution of cases. Building operators in the area were surveyed to identify cooling tower locations and construct an improvised cooling tower registry. This registry was used to assess the possibility of additional sources and facilitate distribution of recommendations for preventive cooling tower cleaning. Towers were confirmed as sources by culture and molecular testing.

Program results or outcomes: Geographic visualization of cases indicated that the source was likely located in one Surrey neighbourhood and within a 1km radius zone. Cooling towers in the area were located, leading to sampling of 11 cooling towers and eventual identification of three as possible sources. Molecular typing further demonstrated matching subtypes between three cases and one of the towers. Meteorological modelling reinforced the likelihood of suspected sources. Implicated towers were remediated, and no further cases were linked to the outbreak. There were 13 outbreak-related cases in total.

Recommendations and implications for practice or additional research: The rising annual incidence of legionellosis underscores the importance of cooling tower registries for facilitating investigation. In the absence of a registry, GIS tools and meteorological modelling approaches are valuable for identifying potential source areas and facilitating preventive control measures. Public Health teams should consider incorporating infrastructure for such tools to inform timely and evidence-based outbreak management when needed.

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109. Contributions of social capital to community resilience in Walkerton, Ontario: Sixteen years post-outbreak - Konrad Lisnyj

Co-author: Sarah Dickson-Anderson

Introduction/background: The implications of a public health emergency on a community may be devastating and long-term. However, the long-term implications are often excluded from emergency management research making it difficult to determine whether and how communities are truly able to achieve and maintain resilience post-crisis. This study examines the social capital dimension of community resilience in the context of a public health emergency under post-crisis conditions.

Methods: The rural community of Walkerton, Ontario was selected as a case study to identify elements of social capital that facilitate and/or hinder community resilience 16 years after the Escherichia coli outbreak occurred, under post-crisis conditions. A qualitative approach was employed; specifically, semi-structured interviews and focus groups were conducted with a purposeful sample of 29 Walkerton community members. The data were transcribed verbatim and coded using conventional content analysis to identify themes inductively.

Results and analysis: The study's findings reveal the importance of various elements of the social capital dimension in facilitating (e.g., capacity building and having a positive perspective) and hindering (i.e., ongoing physical and psychological health effects) the community's collective resilience status 16 years post-outbreak both directly and indirectly. Some elements, including the local economy, local government, rural community characteristics, preparedness, and reputation act as both facilitators and barriers to the social capital component of community resilience.

Conclusions and implications for policy, practice or additional research: This non-crisis understanding is important for designing emergency preparedness and recovery programs, particularly in rural communities. Additionally, this work suggests emergency management program plans and strategies should encompass a proactive, long-term, community-centered approach integrating elements of social capital.

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110. Boite à outils pour la surveillance post-sinistre des impacts sur la santé mentale – Magalie Canuel

Co-authors: Pierre Gosselin, Arnaud Duhoux, Alain Brunet, Alain Lesage

Introduction/Contexte : Un sinistre, qu'il soit naturel (comme une inondation) ou de toute autre nature (comme une explosion), peut avoir des effets sur la santé mentale à moyen et à long terme. Il y a encore peu d'études qui estiment les effets à long terme suivant un sinistre et, parmi celles réalisées, les instruments standardisés utilisés diffèrent considérablement entre les études.

Méthode : Le but de ce projet est de développer une boîte à outils (BàO) pour aider les intervenants à effectuer adéquatement la surveillance des impacts sur la santé mentale après un sinistre. Les impacts recherchés sont les symptômes de dépression, d'anxiété, de détresse psychologique, de stress post-traumatique, les réactions péritraumatiques, le bien-être, la qualité de vie, le soutien social, la consommation d'alcool, de drogues et de médicaments ainsi que l'utilisation de services en santé mentale.

Résultats et analyse : La boîte identifie en premier les systèmes de surveillance québécois qui mesurent au moins un des impacts sur la santé mentale. On y retrouve notamment le SISMACQ et la Banque de données communes des urgences. Ensuite, la BàO présente les enquêtes populationnelles de grande envergure qui mesurent des impacts sur la santé mentale, notamment l'ESCC. En troisième lieu, la BàO présente des études réalisées après un sinistre au Québec ou en France, et elle résume notamment les instruments standardisés utilisés. En dernier lieu, les recommandations d'un comité d'experts sur les instruments standardisés qui devraient être utilisés pour mesurer, par enquête, les impacts post-sinistres sont présentées. Les instruments recommandés doivent notamment être libres de droits et validés en français. Une fiche précise les conditions d'utilisation et l'interprétation des scores pour chaque instrument recommandé.

Conclusions et répercussions concernant les politiques, la pratique ou les pistes de recherche : Cette BàO permettra de faciliter la surveillance des impacts post-sinistre, d'harmoniser les pratiques de surveillance ainsi que de faciliter l'échange d'information. Elle a été développée en français et ensuite adaptée et traduite en anglais.

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111. Multi-pathogen infection prevention policy in a child care facility - Monica G. Cojocaru

Co-authors: Michael Glazer, Weihong Wu, Guelph Valerie Trew, Jason, K. H. Lee, Miggi Tomovici, Edward W. Thommes, Dion Neame, Ayman Chit

Introduction/background: Population health modelling is a wide area of research dominated by several model types: compartmental, individual-based and statistical models, all of which are applied broadly to large populations. In contrast, we use an agent-based model (ABM) for a small population of children and adults interacting in a day care center to track viral outbreaks and to study policy implications of infection preventing measures.

Methods: We developed an ABM of the center of University of Guelph for assessing different outbreak control strategies: vaccination for some pathogens and nonmedical measures (i.e., santizing, decreasing outside visitors, etc.). We model children, staff, environment, and their interactions (person-to-person and person-to-environment) during a 6 months interval. Our simulated environment consists of abstract rooms with zones signifying toy boxes, doors, washrooms, etc. Multiple pathogens (e.g. influenza, RSV) are simulated concurrently, and surfaces carry a viral load. We account for vaccinated vs. nonvacinated individuals, and for actively-infected children/adults being removed from the environment if certain symptoms develop. The probability of pathogen transfer is dependent on pathogen type, the extent of transfer by direct contact or aerosols and efficacy of surface sanitation (temporal and routine).

Results and analysis: We present sensitivity analyses to establish a confidence interval for probabilities of transmission of two co-existing pathogens (flu, RSV), depending on vaccination rates, vaccine efficacies, and nonmedical practices implemented in the facility. Data on direct contacts between agents was collected from the campus day care, together with data on outbreaks types, frequency and magnitude.

Conclusions and implications for policy, practice or additional research: This research specifically targets improvement on the lives of all children and staff present in a childcare center, together with the health of primary caregivers. The model tests implementation of prophylactic practices and treatments that may decrease the number and/or frequency of viral infections. The model tests vaccination policies in a small population for potential vaccines against known pathogens.

112. Surveillance of laboratory exposure to human pathogens and toxins in Canada - Dalia Choucrallah

Co-author: Florence Tanguay

Introduction/program need and objectives: The Public Health Agency of Canada established one of the first comprehensive and standardized surveillance systems of laboratory incidents involving human pathogens and toxins at the national level, known as Laboratory Incident Notification Canada (LINC). LINC is an online surveillance and reporting system that supports a timely and effective response to laboratory incidents.

Program methods, activities and evaluation: This poster is describing laboratory exposure and laboratory-acquired infection (LAI) incidents that occurred between January 1, 2017 and December 31, 2017. Incidents were self-reported by federally-regulated laboratories in Canada through LINC using a standardized form.

Program results or outcomes: A total of 44 exposure and laboratory-acquired infection incidents were reported to the LINC in 2017. Compared to their respective shares of licences, the number of incidents was highest in the academic and hospital sectors and lower in government laboratories and private industry. Altogether 118 people were exposed and six laboratory-acquired infections were reported. Most incidents (52%) involved pathogens classified as risk group 2 level. Problems with standard operating procedures and human errors were the two most common causes identified.

Recommendations and implications for practice or additional research: Overall, the incidence of laboratory exposure incidents in Canada was relatively low in 2017. Since LINC is a new surveillance system, baseline estimates are still being established to assess emerging trends and patterns. LINC provides timely response to laboratory-reported incidents and evidence for recommendations to strengthen laboratory reporting requirements. Over time, data gathered by LINC will help identify risk factors, seasonal or temporal patterns, clusters of incidents, and emerging issues for enhanced evidence-based policies regarding biosafety and biosecurity at the national level.

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113. Analysis of Available Training Options for Canadian Professionals in Public Health Emergency Response - Tabitha Williams

Co-authors: André La Prairie, Jeff Wingeat, Lisa Jensen

Introduction/program need and objectives: Training is a well-identified necessary component in public health event response, enabling the transfer of technical knowledge into action. Yet the availability and degree of compressive training in this field is limited or unknown. Our analysis seeks to review available courses and training options to determine the depth and gaps in available public health emergency preparedness and response training and identify opportunities to improve and make resources available to Canadian practitioners. We also seek to determine if available training supports the spectrum of competencies of preparedness and response as it pertains to Canadian practice.

Program methods, activities and evaluation: Training can be classroom based, online (including podcasts, webinars), and can be either facilitated or self-directed. Training offerings were identified through a series of online search terms. We also reviewed known sources such as the World Health Organization's OpenWHO platform, various public health preparedness bulletins, and available online and internal datasources. For inclusion, training must be publicly available—that is, open to anyone, not internal training for members of a particular agency or institution. Relevance to public health emergency preparedness and response must be explicitly stated by the source. In addition to availability, we tracked official languages, cost, duration, delivery type, and source.

Program results or outcomes: We were able to identify a significant number (349) of available training options relevant to Canadian practice. Almost 90% of training offerings were online (elearning, podcasts and recorded webinars). The majority (62.6%) of learning offerings covered the ECDC competency topic of Policy

Development/Adaptation/Implementation. The smallest competency offering was external emergency risk communications (2.8%), followed by health services (3.4%). Our difficulty of finding and cataloguing these offerings is an important observed challenge. Additionally, the number of training offerings from Canadian sources (and presumably relevant to Canadian practice) were limited (20.9%).

Recommendations and implications for practice or additional research: To improve the awareness and access of training to support Canadian professionals consideration should be given to develop and distribute a database or mobile app with available course offerings. Consideration should also be given to the development of a set of Canadian competencies that could be applied to this dataset. Strategies are needed to address the significant lack of available training in French. Further study is needed to determine which competency topics are best delivered with Canadian content and which topics are appropriate for universal training offerings.

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114. Canada’s Joint External Evaluation 2018: measuring national capacity to protect global health - Dory Cameron

Introduction/program need and objectives: The International Health Regulations (IHR) is designed to ensure and improve the capacity of all countries to prevent, detect and respond to health threats and emergencies. Following the Ebola outbreak (2014–2016), several UN commissions concluded that the IHR was "fit for purpose" but that, for a variety of reasons, countries had not implemented the regulations adequately. In an effort to address the findings, the WHO developed the IHR Monitoring and Evaluation Framework, which includes the Joint External Evaluation (JEE)—a voluntary process that helps countries identify gaps in their preparedness and health systems, prioritize areas for improvement, and engage donors and partners in targeting resources effectively to advance global IHR implementation. Canada’s first Joint External Evaluation took place in June 2018 and was an opportunity to:

- bring together Canadian organizations with shared responsibility for health security to describe and assess Canada’s overall IHR capacity
- assess the extent to which Canada’s systems incorporate One Health principles and practices
- identify gaps and areas for improvement in health security systems
- identify Canadian best practices that might be shared with other countries to build international capacity

Program methods, activities and evaluation: Canada’s JEE was a collaborative, two-year process that involved more than 150 federal and provincial and territorial stakeholders over three main stages:

1. Stakeholder engagement
2. Self-assessment
3. External evaluation

Program results or outcomes: The Joint External Evaluation final report found that Canada meets its IHR obligations. Moreover, the process brought stakeholders together, established baseline metrics for Canada, identified strengths and weaknesses and helped further raise awareness of the IHR within Canada’s public health community.

Recommendations and implications for practice or additional research: The JEE process highlighted some key challenges involved in accurately assessing national capacity in a federated context where there is significant variation across jurisdictions and sectors. These have fueled the creation of a national action plan aimed at addressing gaps and building capacity.

115. New Directions for an Interactive Multimedia Resource Website Dedicated to Communicating about Public Health in Canada - Iwona Bielska

Co-authors: Robert Nartowski, Julia Lukewich, Mackenzie Moir, Ashley Drobot, Manasi Parikh, Donika Jones, Tishya Parikh

Introduction/program need and objectives: In Canada, there was a lack of a central, publicly available website that collated information about the delivery, organization, and history of public health, as well as described the key professionals involved in this area. In response to this shortcoming, we created an interactive resource website (www.whatispublichealth.ca) following work exploring Canadian-based public health information. Attendees will learn about the second iteration of the interactive resource website, which will be launched at Public Health 2019.

Program methods, activities and evaluation: The interactive resource website synthesizes Canadian-based public health information in one central location. In order to cater to various learning styles, the website houses information in print and video format. The key stakeholders for the interactive resource website include students and educators across a variety of disciplines (e.g., nursing, community health, public health, medicine), early career professionals, members of the media, and the public at-large.

Program results or outcomes: The launched interactive resource website will include information in Canada's two official languages, an overview of public health accessible to the general public (hence answering, "what is public health?"), an Aboriginal perspective on public health, a detailed overview of public health professionals and information on their training requirements and career options, and links to downloadable resources. Two animated videos on public health professionals and career paths will be introduced.

Recommendations and implications for practice or additional research: The launched interactive resource website will allow individuals to learn about public health in Canada and access resources in downloadable PDF format for self-learning and teaching. The website will be the first bilingual, central, and publicly available repository of information about all aspects of public health in Canada. The developed interactive resource website will play a role in educating students, early career professionals, the media, and the public at-large about public health delivery, organization, and history in Canada. It may be incorporated in teaching sessions or used on an individual basis.

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116. Immunization Resources – Are they meeting the practical needs of immunization program managers? - Chandni Sondagar

Co-author: Ruotian Xu

Introduction/background: A significant body of multifaceted research and resources are being developed to better understand the underlying causes of and interventions for achieving optimal vaccine acceptance and uptake (VAU). To assess the number of resources that are available to support and inform immunization program/promotional managers (IPM) towards improving VAU, the Canadian Public Health Association conducted an environmental scan for resources relevant to the Canadian context. Findings from the scan identified a number of information and resource gaps, bringing attention to areas where further research and development is needed. Results of the environmental scan will additionally be used to guide the development of the 'Canadian Vaccination Evidence Resource and Exchange Centre' (CANVax), a national bilingual online immunization resource centre that aims to offer access to the latest evidence-based products, resources and tools to support VAU in Canada.

Methods: An environmental scan of grey literature using the search engine Google and a search of known Canadian and international websites were conducted to identify resources relevant to the Canadian context. The search strategy combined relevant immunization topics and keyword searches focused on VAU. Search results were collected and summarized for review based on set inclusion and exclusion criteria.

Results and analysis: A total of 793 resources were identified with 553 resources meeting inclusion criteria. Review of resources highlighted a number of gaps and areas where further resource development is needed. Major areas included strategies and tools to support and operationalize evidence to action, evaluations for VAU interventions and campaign, and engagement strategies, especially for working with specific populations.

Conclusions and implications for policy, practice or additional research: Despite the wealth of resources that are available, not all are relevant or meet the practical needs of IPM. Findings from the environmental scan bring attention to information and resource gaps where further focus and development are needed to support IPM in facing the growing challenges to improving VAU.

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117. Public health impact in Quebec of human papillomavirus vaccination program changes from a nonavalent vaccine two-dose schedule to a mixed vaccination schedule - Alexandra Goyette

Co-authors: Glorian P. Yen, Vimalanand Prabhu, Andrew Pavelyev, Matthew Pillsbury, Smita Kothari, Craig Roberts

Introduction/background: Publicly funded Human papillomavirus (HPV) vaccination in Quebec was extended from girls only in 2008 to boys in 2016. That same year, the nonavalent vaccine (9vHPV), which protects against five additional HPV types (31/33/45/52/58) associated with cancer, replaced the quadrivalent vaccine. In April 2018, the Comité sur l'immunisation du Québec recommended a new mixed vaccination schedule of one dose of 9vHPV followed by one dose of bivalent vaccine. The evidence for a mixed vaccination schedule is not supported by robust clinical trial efficacy data at this time. Our objective was to assess the impact on public health of the new HPV vaccination program in Quebec.

Methods: A transmission dynamic model assessed the public health impact of vaccinating 9-10-year-old girls and boys. The model was calibrated with Quebec-specific epidemiologic data and US proxy data when unavailable. The basecase assumed: 77% coverage in girls and 74% in boys; lifetime protection for HPV types 16/18 for both vaccination schedules; for HPV types 6/11/31/33/45/52/58, lifetime protection for 9vHPV two-dose schedule and 10 years protection for mixed vaccination schedule. Sensitivity analyses included varying duration of protection of 5 to 20 years.

Results and analysis: Basecase results suggest that moving from 9vHPV two-dose schedule to a mixed vaccination schedule will result in an additional 1,315 [557-2,220] cases of cervical cancer, 418 [182-699] cervical cancer deaths, 9,145 [3,531-15,818] cases of CIN 2/3 and 543,710 [329,194-743,601] cases of genital warts in Quebec over 100 years.

Conclusions and implications for policy, practice or additional research: The recent change in HPV public vaccination to a mixed calendar program is likely to result in diminished public health benefit and in additional HPV-related cases of cancers and genital warts in Quebec that could have been prevented by maintaining the two-dose 9vHPV program.

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118. Seasonal Influenza Preparedness: A Scoping Review and Best Practices Framework for Seasonal Influenza Surge Preparedness in Ontario - Alexa Caturay

Co-authors: Kieran Moore, Maximilien Boulet

Introduction/background: Seasonal influenza surge has predictable and significant impact on Canada's healthcare system. Ontario's hospitals routinely operate near or at full capacity, limiting the ability of the sector to respond to a spike in demand. Surges contribute to further overcrowding, extended wait times, and ultimately decreased quality of care. This review and framework summarize best practices to respond to seasonal influenza surges from a systems perspective with actions corresponding to the phases of the emergency management cycle.

Methods: A scoping review of relevant literature was conducted using electronic databases Scopus, PubMed, and EBSCO. We reviewed English-language articles published between 2000 and 2015. This search was supplemented by additional internet and grey literature searches, as well as reviews of the references of each result from our initial search. Overall, the search yielded 9 guideline documents and 32 published articles. Data was extracted from each article and guideline including the article type, research methodology, and relevant recommendations. Results were grouped by theme and aspect of the emergency management cycle and summarized.

Results and analysis: We found seven key areas of consideration in the extracted data from our search: surges in emergency departments, surges in critical care, infection prevention and control, occupational health and safety, resources, communication, and surveillance. We then formulated a framework of best practices and further divided them into the “prevent”, “prepare”, “respond”, and “recover” phases of the emergency preparedness cycle to demonstrate optimal timing of implementation of evidence based interventions.

Conclusions and implications for policy, practice or additional research: We propose a framework to address seasonal influenza preparedness that focuses on seven key components. In particular, we would recommend prioritizing surveillance efforts, written plans, and immunization strategies. Our analysis of the available literature demonstrates that while further implementation research is needed, benchmarking to these practices may be a good first step in managing seasonal influenza surge in Ontario.

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119. The Decision of Whether to Receive the Influenza Vaccine: An Integrative Review of Nurses’ Moral Reasoning - Caitlin Chalmers

Co-authors: Diane Kunyk, Shannon MacDonald

Introduction/background: Hospital-acquired influenza occurs at a rate of three to eight per 1,000 admissions, with a case fatality rate of ~7-16%. While the Public Health Agency of Canada recommends annual influenza immunization for all health care providers in order to protect vulnerable patients, immunization rates among nurses consistently remain suboptimal. When deciding whether to receive the vaccine, nurses may consider, amongst other factors, their moral obligations to their Code of Ethics, their value of altruism in regards to public safety, and respect for their individual autonomy. The purpose of this integrative review was to systematically review the current literature on the moral contemplations underlying nurses' decision making regarding receiving the seasonal influenza vaccine.

Methods: We searched various health, psychology, and philosophy bibliographic databases, and the ProQuest Dissertations and Theses database, with no publication date or language limits applied. We screened abstracts, followed by full-texts. Articles were included if they were original research and addressed all of the following: exclusive or stratified data on nurses, seasonal influenza vaccine, and moral/ethical decision-making. We extracted data on the reasoning for nurses accepting or refusing influenza vaccine, and synthesized findings narratively using a relational ethics approach.

Results and analysis: Of 1,338 articles retrieved, 30 met inclusion criteria. Most were peer-reviewed journal articles (n=28) published in the past 10 years (n=25) in moderate/high-income countries (n=27). The most common reason identified for accepting the influenza vaccine was "protecting self", while the most commonly identified reasons for refusal were "not at risk" and "fear of adverse reactions".

Conclusions and implications for policy, practice or additional research: This review suggests that when determining whether to receive the influenza vaccine, nurses often base this decision on the vaccine’s value to themselves rather than their duty to protect their patients from harm. It is imperative that future efforts to address low immunization rates consider the moral agency enacted within nurses.