

DLSPH Research and Practice Day 2019

Poster Abstracts

1. Allison Yeung – MPH Epidemiology

“Serotype replacement after the introduction of the 13-valent pneumococcal conjugate vaccine in Ontario, Canada, 2007-2018”

Introduction: Invasive pneumococcal disease (IPD) is a disease of public health significance in Ontario, Canada, where publicly funded pneumococcal vaccination programs target children, older adults, and people at high risk of disease. Since the implementation of pneumococcal conjugate vaccines (PCV), serotype replacement has been documented, where non-PCV serotypes replace the niche created by the reduction in vaccine-preventable serotypes. Our objective was to determine whether there has been serotype replacement or a change in IPD severity in Ontario since implementation of the childhood 13-valent (PCV13) program by assessing IPD burden over a 12-year period (2007-2018). **Methods:** We included all confirmed IPD cases reported in Ontario’s integrated Public Health Information System (iPHIS) and defined the pre-PCV13 era (January 2007-December 2010) and post-PCV13 era (January 2011-December 2018). We grouped IPD serotypes according to associated vaccine type: PCV13; 23-valent polysaccharide vaccine (unique PPV23); and non-vaccine-preventable (NVP). We used population data to calculate incidence and hospitalization rates (per 100,000 population) by age group, vaccine type, and era. **Results:** In the post-PCV13 era, PCV13-specific incidence and hospitalization rates decreased, while the incidence and hospitalizations due to unique PPV23 and NVP serotypes increased; this was consistent across all age groups. The greatest decrease in incidence (RR=0.4) and hospitalizations (RR=0.4) was observed in children <5 years with PCV13 serotypes. There were no distinct age-related trends observed for case fatality ratios; the highest CFR was observed in adults ≥65 years. **Conclusions:** A shift in serotype distribution was seen across all age groups; IPD incidence and hospitalization rates due to PCV13 serotypes decreased after PCV13 implementation, but this reduction was offset by the increasing burden and severity of unique PPV23 and NVP serotypes. As IPD continues to be a severe disease, continued surveillance is required to better understand the growing burden of these serotypes and emergence of non-vaccine-preventable serotypes.

2. Alysha Bartsch – MPH Epidemiology

“The association between growth trajectories and mental health in early- to mid-childhood”

With increasing recognition of mental health’s importance for overall health, public health professionals are seeking to better understand early risk factors for mental illness. A majority of mental health problems emerge during childhood; there is evidence of a particular association between increased childhood growth and poorer mental health. The current study sought to determine the association between growth trajectories during infancy and early childhood (birth to age 5) and mental health (behavioural and emotional difficulties) in early- to mid-childhood (age 3 to 8). The study was conducted among a subset (n=665) of participants from The Applied Research Group for Kids (TARGet Kids!), an ongoing longitudinal cohort study. Five growth trajectories were determined via repeated measures of age- and sex-standardized body mass index (BMI). Mental health was assessed using the Strengths & Difficulties Questionnaire (SDQ) total difficulties, externalizing problems, and internalizing problems scores. The sociodemographic and health characteristics of the sample were described by mental health status (per the SDQ). The sociodemographic and health characteristics of the sample were described by mental health status (per the SDQ). Regression analyses were run to determine the association between growth trajectories and SDQ scores. There was no statistically significant association

between increased growth (“rapidly accelerating” trajectory) and SDQ total difficulties ($b=1.49[-3.82,6.81],p=0.58$), externalizing problems ($b=0.31[-3.29,3.91],p=0.86$), or internalizing problems ($b=1.18[-1.73,4.09],p=0.43$). There was a significant association between decelerating growth and increased internalizing problems ($b=0.69[0.07,1.31],p=0.03$). Current results do not support an association between increased growth and poorer mental health overall in early- to mid-childhood; however, a pattern of decelerating growth may be associated with more internalizing problems. Understanding early risk factors for poor mental health may allow public health researchers to develop targeted interventions and ultimately improve mental health outcomes across the lifespan. Implications and future directions will be discussed.

3. Anindita Marwah – MPH Epidemiology

“Epidemic Keratoconjunctivitis Outbreak Investigation: A Case-Control Study”

Introduction: In June 2019, an epidemic keratoconjunctivitis (EKC) outbreak occurred in the eye clinic at St. Michael’s Hospital. This infection is caused by human adenovirus (HAdV), and symptoms include redness and itchiness in the eyes, swelling of the eyes, and/or discharge from the eyes. An immediate cause or an index case was not determined, hence, a formal outbreak investigation was conducted in the form of a case-control study.

Methods: The case-control study focused on 9 outbreak cases all from the same ophthalmologist’s clinic, and 18 controls were picked in total from the same clinic. Data was collected on all 27 participants on their gender, age, date and time of visit, details of staff that saw them during their visit, and the procedures done during their visit. Data analysis was then conducted using the software, R, to identify exposures that could have been associated with the cause of the outbreak. **Results:** It was found that all cases visited the eye clinic on two specific dates (May 29 and June 5), and that having a laser procedure done on May 29 was associated with higher odds of being a case [OR=42; 95% CI = 1.016-1622; $p\text{-value}<0.05$], possibly due to improper cleaning of the laser instrument. Two cases seen on May 29 also returned on June 5, and they could have possibly propagated the transmission on the second day. **Discussion:** A clear cause of the outbreak was not determined; however, the case-control study helped narrow down the cause and route of transmission. This outbreak also helped highlight the importance of proper hand hygiene and cleanliness of the patient environment to prevent similar outbreaks in the future.

4. Anthony McKnight – MPH Epidemiology

“Association between chronic medical conditions and severe perinatal mental illness among migrants: a population-based cohort study”

Background: Migrant women and women with a chronic medical condition (CMC) are at increased risk of perinatal mental illness, but the impact of CMC on perinatal mental health among migrants is unclear. We examined the relationship between CMC and severe perinatal mental illness among refugees, non-refugee immigrants, and long-term residents in Ontario, Canada. **Methods:** We conducted a population-based cohort study of all 15- to 49-year-old refugees ($N=29,189$), non-refugee immigrants ($N=187,430$), and long-term residents ($N=641,385$) with and without CMC in Ontario, Canada, with a singleton livebirth in 2005-2015, excluding those with mental illness in the 2 years before pregnancy. Modified Poisson regression was used to estimate the relative risk of mental health emergency department visits and hospitalizations in pregnancy or up to 1 year postpartum among women with CMC compared to those without CMC, stratified by migrant status. **Results:** The association between CMC and severe perinatal mental illness was stronger among refugees (adjusted relative risk [aRR] 1.87, 95% confidence interval [CI] 1.36-2.58) compared to long-term residents (aRR 1.39, 95% CI 1.30-1.48) (interaction $p\text{-value} = 0.047$). The strength of the association was no different in non-refugee immigrants (aRR 1.26, 95% CI 1.05-1.51) compared to long-term residents (interaction $p\text{-value} = 0.45$). **Interpretation:** Our study identifies refugee women with a CMC as a high-risk group for severe

perinatal mental illness. This finding will result in more efficient screening of perinatal mental illness and the development of more responsive care in the management of CMCs in pregnant refugee women.

5. Argie Gingoyan – MPH Epidemiology

“Undernutrition in Ethiopia: Determinants of Stunting in Children Under-5”

Background: Chronic malnutrition in infants and young children remains a global public health problem associated with poverty. Children who are stunted have about 6 times increased rate of mortality and morbidity, as well as experience suboptimal cognitive and motor development. Ethiopia has achieved substantial reductions in the prevalence of stunting beyond what the country's economic growth trajectory would have predicted. This study set out to conduct a systematic in-depth assessment of the determinants of stunting among children under 5 years of age in Ethiopia from 2000-2016. **Methods:** Systematic literature reviews assessed contextual factors both at the national and subnational level. Descriptive geospatial, equity and growth curve analyses examined the distribution of stunting across the country and assess regional or subgroup inequalities. Growth faltering trajectories by age was conducted to understand stunting risk at birth versus postnatal changes over time. Multivariable regression models assessed the determinants of under-5 child stunting based on 2016 Ethiopia Demographic Health Survey data. **Findings:** Hierarchical analyses links stunting to chronic, social and acute determinants. Looking at distal level factors, we can see that higher years of parental education result in higher HAZ scores. Those who practiced open defecation was significantly associated with a lower HAZ score. Stunting increase among under-5 children became worse when proximal indicators like maternal height and BMI were included. Among under-5 male children, those who are older have a higher likelihood of become stunted compared to their counterparts. **Interpretation:** To reduce stunting, Ethiopia should focus on reducing open defecation, improving maternal height, and focusing on a child's current age. Improvements in socioeconomic conditions, social safety nets, and early pre/postnatal nutritional interventions could be important factors. Remaining challenges should also target research areas in policy and implementation to help close the persistent inequity gaps seen across the country.

6. Bhavroop Riar –MPH Occupational and Environmental Health

“Characterization of injuries sustained by waste pickers in Estructural Open Dump, Brasilia.”

BACKGROUND: Waste pickers are a group of vulnerable individuals often subjected to dangerous working conditions including unsegregated and contaminated waste, sharp or broken objects, hazardous materials, and physically straining tasks. The objective of this study is to characterize workplace injuries in informal Brazilian waste pickers and the likelihood of seeking treatment. **METHODS:** Informal waste pickers who had worked for at least 6 months at the Estructural Open Dump in Brasilia, Brazil were recruited and conducted in-person interviews in Portuguese. Interview results were translated into English and included questions on demographics, work conditions and health characteristics. **RESULTS:** A total of 1012 eligible participants (average age = 40.7 years) were recruited for the study (~85% participation rate). Subjects tended to be female (67%), single (61%), of Pardo race (Brazilians of mixed ethnic identity – 62%), have children (92%) and reported being literate (80%); however, few had education above primary school (16%). Most subjects worked in open dumps (83%), collected waste using bags (76%), transported waste on foot (76%), work day-shift (59%), and had contact with animals in the past month (94%). Overall 67% of subject reported at least one injury over the course of their career; of these 43% reported more than two injuries. Hands (73%) and feet (63%) were the most common injured body parts. The most common type of injuries were cuts/punctures (90%) and bumps (18%). Of those injured, 47% sought treatment; however, the odds of seeking treatment was significantly influenced by race (white being the most likely), paying social security tax, receiving support from cooperatives, and the type and location of the injury sustained (bump/contusion and fracture). **CONCLUSION:** Controls are needed to

reduce the risk of injuries among waste pickers. Increased efforts and support are needed to ensure that waste pickers seek treatment for workplace injuries.

7. Camilla Michalski – MPH Epidemiology

“Association between maternal cannabis use and birth outcomes”

INTRODUCTION: Canada has one of the highest cannabis consumption rates in the world, and in 2018, the federal government legalized recreational use. Recent evidence suggests that cannabis use is increasing among pregnant women. Given that cannabinoids readily cross the placental barrier, there exists a critical need to understand the effects of cannabis on fetal development. This study aimed to determine 1) the factors associated with prenatal cannabis use, and 2) whether self-reported cannabis use is associated with the following outcomes: preterm birth, low birth weight, or small size for gestational age (SGA) infants.

METHODS: Maternal lifestyle questionnaire data and infant clinical data was gathered from 2229 participants in the Ontario Birth Study between 2013-2019. Women reported cannabis use at two time points: within three months of learning pregnancy status, and between 28-32 weeks of gestation. Multivariate linear and logistic regressions were conducted to 1) estimate factors associated with maternal cannabis use, and 2) determine the association between use and selected birth outcomes. **RESULTS:** Cannabis use has increased among pregnant women since 2013. Pregnant women who use cannabis (N=217) are younger, of lower socioeconomic status, and more likely to use alcohol and tobacco. These women had infants born at lower average birth weights, and had 2.1 times the odds of having an SGA infant (95%CI: 1.27, 3.32). Women also reporting use at 28-32 weeks of gestation exhibited 8.3 times the odds of having a preterm birth (95%CI: 1.1, 65.7). **CONCLUSION:** Our results point to a need for health care providers to counsel pregnant women regarding the risks of cannabis use. The social characteristics associated with prenatal cannabis use can inform targeted preventative messaging. For women unable to abstain from use during pregnancy, harm reduction strategies should be incorporated into clinical practice.

8. Candice Richardson – MPH Social and Behavioural Health Sciences

“Eating Disorder - Promotion, Prevention, Early Intervention (ED-PPEI)”

Approximately one million Canadians meet diagnostic criteria for an eating disorder (ED). EDs have the highest mortality rate of all mental illnesses and pose a significant economic burden, costing \$50 million annually in Canada. Suffering is often magnified by obstacles in accessing timely and appropriate treatment, including long wait times for the minority who are referred to specialized care. Since 1993, the Ontario Community Outreach Program for Eating Disorders (OCOPED) has provided practitioners with training in evidence-based treatment of EDs which contributed to the development of a coordinated network of specialized ED treatment programs across Ontario. In parallel, attention was given to the prevention of EDs, by way of a 20-year CIHR-funded program of public health intervention research carried out by McVey in Ontario and translated widely across the province. Beginning in 2018-19, OCOPED is leading a newly funded promotion, prevention, and early intervention of EDs initiative (ED-PPEI). This entails the development of a suite of evidence-based, implementation-sensitive interventions co-designed in partnership with public health and relevant regional stakeholders across Ontario to extend the existing continuum of ED care. The objectives of this policy-driven service delivery initiative are to: 1) reduce EDs through engaging in capacity building among professionals from different sectors to deliver ED-PPEI programming; and 2) expand the continuum of service delivery in EDs in Ontario by adding a new layer of prevention services to the existing specialized ED treatment services. The program consists of several key components that exist on a continuum from prevention to specialized Ministry of Health-funded ED treatment, including adult influencer training and personality-tailored screening with targeted prevention. Our treatment programs cannot keep up with the demand for services, and until now,

there have been no dedicated resources devoted to prevention efforts; the public health implications of this system change are unprecedented in Ontario.

9. Catherine Liang – MPH Epidemiology

“Premature Mortality in Canada: Trends over 1992-2015”

Introduction: Premature mortality (deaths before age 75) is a well-established metric of population health and health system performance. In Canada, underlying differences between provinces/territories present a need for stratified mortality trends. **Methods:** Using data from the Canadian Vital Statistics Database, a descriptive analysis of sex-specific adult premature deaths over 1992-2015 was conducted by province, census divisions (CD), socioeconomic status (SES), age, and underlying cause of death. Premature mortality rates were calculated as the number of deaths per 100,000 individuals aged 18 to 74, per 8-year era. SES was measured using the income quintile of the neighbourhood of residence. Absolute and relative inequalities were respectively summarized using slope and relative indices of inequality, produced via unadjusted linear regression of the mortality rate on income rank. **Results:** Premature mortality in Canada declined by 21% for males and 13% for females between 1992-1999 and 2008-2015. The greatest reductions were in Central Canada, while Newfoundland saw notable increases. CD-level improvements appeared mostly in the southern half of Canada. As of 2008-2015, Newfoundland, Nova Scotia, and Nunavut had the highest mortality rates. Low area-level income was associated with higher mortality. SES inequalities grew over time. Newfoundland’s between-quintile differences rose from 1292 to 2389 deaths per 100k males, or 1.33 to 2.12-fold, and 586 to 1586 per 100k females, or 1.24 to 1.74-fold. In 2008-2015, mortality rates of the bottom quintile in Manitoba and Saskatchewan were more than 2.5 times those of the top. Mortality increased with age, and varied regionally. Low mortality in Central Canada and BC, and high mortality in the Territories were consistent across eras and sexes. Cause of death distributions shifted with age and sex, with more external deaths in younger males. **Conclusion:** Improvements were seen in adult premature mortality rates over time, but were unequal across geographies. Evidence exists for growing socioeconomic disparities in mortality.

10. Catherine Moses – MPH Social and Behavioural Health Sciences

“Evaluation of the Indigenous Women’s Stress Study (IWSS): Reducing stress and improving mental health and wellness among Indigenous women with socio-economic insecurities, living with and without HIV”

Chronic stress among Indigenous women with socioeconomic insecurities may impact quality of life and increase the risk of acquisition and progression of health concerns, including HIV. The Indigenous Women’s Stress Study (IWSS) consisted of delivering a culturally-grounded stress-reducing intervention to 80 Indigenous women in Toronto and Thunder Bay, who were living with and without HIV, and experiencing socio-economic insecurity. The purpose of the intervention was to reduce the stress levels and improve the overall well-being of the participants in bi-weekly sessions over 6-months. Changes in stress were measured through: a questionnaire which contained scales on stress; biological samples which measured stress levels at multiple time-points over the course of the intervention; and focus group discussions which were held post-intervention. In this practicum, the student contributed to the evaluation of the intervention, which was based on the RE-AIM evaluation framework. She facilitated a focus group discussion with intervention facilitators in Thunder Bay, coded and conducted thematic analysis of five participant and one facilitator focus group discussions, and worked on four corresponding reports on the strengths and areas of improvement of the intervention. She also created both a facilitator and participant program guide based on the intervention, which will be used as a health promotion tool for organizations that wish to implement the program with Indigenous women. The guide documents the unique contributions of the IWSS, provides a detailed overview

of suggestions on how to ensure program effectiveness, and offers comprehensive ideas for culturally grounded, educational, and strength-based activities for program sessions. The student worked collaboratively with the IWSS research team on the required deliverables and presented the findings at a knowledge translation and exchange (KTE) meeting in Thunder Bay, and a KTE conference in Montreal.

11. Christy Wilson – MPH Epidemiology

“Zika Virus Resources Post-PHEIC at the World Health Organization”

The 2015-2016 outbreak of Zika virus (ZIKV) began in Brazil in March 2015, but as of July 2019, autochthonous ZIKV transmission had been found in 87 countries. Public attention was centred on the possible association of ZIKV infection with neurological complications. In response, the World Health Organization (WHO) declared the clusters of microcephaly and neurological disorders in Brazil a Public Health Emergency of International Concern (PHEIC) in February 2016. Significant resources were invested during the PHEIC to create and coordinate a research agenda investigating the potential relationship between ZIKV and these complications. WHO, its partners and the scientific community-at-large began to investigate topics such as ZIKV transmission, persistence of ZIKV in bodily fluids, and how ZIKV impacts pregnancy and fetal development. WHO and its experts produced several guidance documents during the outbreak to advise local health authorities of best practices known at the time to address ZIKV and its complications. The PHEIC officially ended in November 2016 as the outbreak dissipated, but research on many topics surrounding ZIKV continued. Consequently, WHO guidance documents produced during the 2015-2016 outbreak were in need of review in order to accurately reflect this large body of novel scientific research. As part of my internship, all ZIKV guidance documents were catalogued and the rigorous publishing process was started. To further the transformation of the ZIKV response at WHO from an emergency response to a long-term programmatic response, efforts were made to update the WHO ZIKV online presence, update key resources, and increase exposure to current ZIKV research. ZIKV remains an important area for sustained public health efforts as low level transmission continues. ZIKV monitoring, early detection and continued research will be crucial for country preparedness to minimize any future outbreaks and better care for those affected by ZIKV.

12. Crystal Narten – MPH Nutrition and Dietetics

“Using Social Media as a Platform to Promote Nutrition Messaging”

Social media is an ever growing and versatile medium that presents a novel avenue for health promotion and sharing health information. Despite the growth and popularity of social media, there is currently limited literature on how social media can be used for health promotion interventions, particularly related to food and nutrition. The Food Literacy Intervention Program (FLIP) is an evidence-based tailored program targeted at families with children between the ages of 3 and 5. FLIP was designed based on the results of a needs assessment to promote healthy eating in children and improve food knowledge and skills. In previous years, FLIP was primarily an in-person cooking class for families and children. Parents had expressed a desire for quick and easy access to credible online nutrition. Therefore, over the course of a 12 week MPH practicum, the online FLIP program was developed and implemented for 2019. The goal of the online program was to explore different forms of social media as a platform to reach a larger audience for the promotion of evidence-based nutrition content. Content was produced for Instagram, Facebook, and a blog, and varying strategies were used to tailor the content to each platform. Social media metrics, including reach and engagement, were captured and analysed to evaluate the effectiveness of the program. This project contributes to the knowledge and understanding of the role of social media for promoting health messages and provides a basis upon which future projects can be created.

13. Dani Jacobson – PhD Social and Behavioural Health Sciences

“From Abstract to Explicit: The Social Identity Map as a Tool for Practicing Positionality and Reflexivity”

Given the impact our social identity has on the health research we conduct, it is important to not only be aware of our social location along the research process, but to also be explicit about the ways that our social location shapes our work. The research topics we are interested in, what we value and how we approach our work, are all impacted by where we stand, in what society, and at which point in time. This has bearing on the types of questions we ask, how we relate to others (including participants), how we are perceived by others, and how we interpret the world around us. Indeed, this is no simple or straight-forward task. Therefore, to help novice qualitative health researchers better reflect on their social identity and the ways it impacts their work, we have developed the Social Identity Map. This is not a static or rigid tool, but rather, is a mutable outline for researchers to practice being reflexive about their positionality. There are three tiers to the map that allow the researcher to begin this reflection process in a tangible way. Tier 1 involves identifying facets of our immediate social identity. Tier 2 involves reflection on how these identities impact our lives, and Tier 3 involves identifying details tied to these identities and our research practice. We encourage researchers to use this map as a starting point and to tailor it to their own needs by focusing on what is most important to them and their work. The Social Identity Map is an exercise that allows for qualitative health researchers to better recognize the facets of their social identity and how their position may impact their research.

14. Disha Bhagat – MPH Epidemiology

“Drivers of Health in Low and Middle-Income Countries comparing Muslim-Majority Countries and non-Muslim Majority Countries”

Background: In light of global interest in Sustainable Development Goals (SDGs), this study examines current progress of these goals in Muslim-majority countries (MMCs). In order for these countries to achieve the SDGs, it is important to address possible structural and contextual factors such as governance, conflict, and women's empowerment and the role they play on health-related outcomes. **Methods:** In this country-level ecological study, a descriptive and quantitative analysis were conducted comparing low and middle income MMCs and non-MMCs. The descriptive component included a spatial component looking at the health-related SDG Index score for each MMC, time trends for various contextual factors, and the health-related SDG Index used as a proxy for health status. The quantitative analysis included building models stratified by MMC status. **Key Findings & Implications:** Results showed clustering of MMCs with better overall health in north Africa and western Asia. Time trend analysis of the health-related SDG Index indicated the progress of health in MMCs is plateauing compared to non-MMCs which gradually increase indicating that MMCs must put in more efforts to reach the SDGs. Furthermore, models imply a difference in predictors of health in MMC compared to non-MMC countries. This finding suggests that a targeted approach for improving health in MMCs can be employed to aid these countries in achieving the SDG goals regarding health.

15. Emin Nawaz – MPH Social and Behavioural Health Sciences

“Evaluating the Integration of ‘Gender and Equity’ in IDRC’s Food, Environment, and Health (FEH) Program”

For my Summer 2019 practicum, I completed a summative evaluation to provide evidence and recommendations on how to improve the effectiveness of the International Development Research Centre’s (IDRC) Food, Environment, and Health (FEH) program with Victoria-Sauveplane Stirling, Erica Di Ruggiero and Daniel Sellen. The goal of the FEH program is to improve the health of low- and middle-income country (LMIC) populations by generating evidence, innovations, and policies that reduce health and economic burdens across Latin America and the Caribbean, Africa, Asia, and the Middle East. The University of Toronto evaluation team applied a multiple-methods approach using qualitative and quantitative methods and diverse data sources. This

included a document review based on a sub-sample of 43 research projects, 33 key informant interviews, four stand-alone case studies, and a landscape assessment to set the context in which FEH operates. It was concluded that the FEH program is making good progress toward its overall goal of improving the health of LMIC populations, by generating evidence, innovations, and policies that reduce the health and economic burdens of preventable chronic and infectious diseases. It was recommended that the IDRC leverages established programming approaches by further integrating strategic issues, develop a formal partnership strategy that aligns with the FEH program goals, and harmonizes indicators to allow for more systematic program-level capture of research and policy findings. This evaluation study contributes to the field of public health by providing insights into: research sensitive to gender equity; research efforts to strengthen high-impact policy interventions; innovations targeting population health determinants; and coordinated partnership development between private, non-governmental and public sectors and the international funder community. This evaluation is important for public health as it not only guides future programming of the FEH area at IDRC, but also the efforts of other public and private organizations involved in foreign affairs and development, working towards reducing health inequities.

16. Evelyn Ascencio – MPH Social and Behavioural Health Sciences

“Combining Systems Advocacy and Capacity Building for the St. James Town Neighbourhood Improvement Area Petition”

The Master of Public Health practicum at Fred Victor focused on assisting populations experiencing precarious housing, poverty, and health concerns in Toronto. This work entailed sitting on the St. James Town Service Providers' Network (SJTSPN), a network of agencies that collaborate on community development projects in the St. James Town neighbourhood in Toronto. Recently, St. James Town has experienced critical infrastructure emergencies at several residential sites. These events reinforced the neighbourhood's health disparities as St. James Town has a high concentration of immigrants, a significant proportion of low-income residents, and high rates of hospitalizations (1, 2). Subsequently, this practicum entailed supporting the SJTSPN in the Neighbourhood Improvement Area (NIA) Petition asking Toronto City Council to designate St. James Town as a NIA. This would provide the community with an assigned Community Development Officer and access to the Neighbourhood Grants program to address health inequities. Therefore, this practicum focused on navigating high-level advocacy and capacity building strategies for City Councillors and residents to address public health issues. The role as practicum student involved engaging with community service providers to create knowledge translation materials that best-informed residents of the petition and its benefits. This included developing an infographic given to residents during canvassing events. Additionally, this work built upon systems advocacy skills as letters of support were drafted on behalf of SJTSPN agencies and signed by their Executive Directors. In July of 2019, the petition was submitted to Toronto City Council as Members' Motion 9.26 along with 857 signatures from the community and 18 letters of support from SJTSPN agencies. It was passed unanimously by Toronto City Council, where it will be further reviewed at the Economic and Community Development Committee for future inclusion as a NIA.

17. Graham O'Hanlon – MPH Epidemiology

“The association between sleep duration and height-for-age z-score in early childhood”

Intro: Height is an important indicator of children's growth. Linear bone growth is regulated by growth hormone which is secreted primarily at night. We examined whether total daily sleep duration was associated with childhood height. **Methods:** A prospective cohort study was conducted using data from TARGet Kids!, the largest children's cohort study in Canada. Healthy children were recruited during the first 5 years of life during a routine well child appointment at a primary care pediatric or family medicine practice. The primary exposure was 24-hour child sleep duration and the primary outcome was height-for-age z-score. For the

primary analysis, a linear mixed effects model was used, adjusting for covariates identified a priori. The secondary analysis examined whether this relationship was modified by age and whether there were non-linear effects of sleep by fitting a spline. **Results:** 7345 children were included in this study. Mean age at baseline was 42.11 (23.76) months, 3868 were male (52.7%), mean height-for-age z-score was 0.18 (1.14) units and mean sleep duration was 11.41 (1.69) hours. Each one-hour increase in sleep duration was associated with a 0.02-unit increase in height-for-age z-score (95% CI: 0.01 – 0.03, $p < 0.001$). For example, for a 39-month old child, each 1 hour longer sleep duration was associated with 0.08 cm greater height. The association between sleep duration and height was modified by age ($p = <0.001$), such that longer sleep was most strongly associated with greater height in younger children. Non-linear effects were detected in sleep duration and were strongest among older children. **Interpretation:** In this study, longer sleep duration in early childhood was associated with greater height and this association was strongest in younger children. Findings from this study are in agreement with current AAP sleep recommendations and add to the growing body of literature regarding the importance of sleep in early childhood.

18. Gulrukh Kizilbash – MSsCH Health Practitioner Teacher Education

“The role of a Balint Group in improving the emotional intelligence of health practitioner educators”

Background: Some of the challenges faced by the health practitioner educators can be:

- Lack of, or limited professional teacher training
- Limited teaching experience
- Heightened cognitive load and risk of burnout
- Low self-efficacy in teaching practices
- Low intra-departmental/ collegial collaboration
- Departmental silos
- Poor teacher learner relationships
- Ethical dilemmas
- Professionalism issues

Objectives: To support the personal and professional development of health practitioner educators and to overcome the teaching challenges, through a Balint Group approach. **Application:** A Balint Group will enhance the educators’ ability to connect, self-reflect and deliver learner-centered education. Some potential application benefits include:

- Integrative thinking
- Encouragement to think outside the box
- Encouragement to think from a learner perspective
- Reflection and self-evaluation
- Increase in sensitivity and skill development in dealing with psychological aspects of learners
- To be able to learn, to hear and respond empathetically even in the most difficult teaching moments

Relevance to Public Health: The implementation of Balint Groups will empower health practitioner educators. Effective delivery of healthcare education is critical to train future healthcare professionals who will be looking at the population health needs and the structural organization of the healthcare system.

19. Gurpreet Toor Mand - MSsCH Health Practitioner Teacher Education

“Is the Common Cold Making the Health Care System Sick?”

Most primary care providers in North America would agree that they see a significant number of pediatric patients in their clinics with simple upper respiratory tract infections (URI) or the common cold. Current guidelines recommend that viral upper respiratory tract infections are best managed symptomatically. Furthermore, the AAP has issued repeated position statements recommending against the use of antibiotics

for simple URI's. In 2013, the Medical Council of Canada found that for patients under the age of 18, URI was the top reason for visits to the ER and it was the second most common reason for visits to ambulatory clinics. Children with respiratory infections have become major consumers of healthcare, resulting in a significant economic burden on the health systems, school absenteeism, and an increase in viral dissemination. Health Quality Ontario (2018) data suggests that only about 43% of patients in Ontario can see a doctor on the same day or the next day suggesting that there is a need to improve access to primary care. This raises the important question about what types of illnesses need to be seen by a primary care provider and what illnesses can safely be managed at home. To be able to better understand this phenomenon, we are exploring the actual incidence of these non-essential visits in a typical suburban family practice in Ontario. The importance of this issue is essential to public health from two perspectives: 1) minimizing spread of infection and 2) access to health care in a timely manner. We would like to argue that if some of these visits are not essential, and evidence suggests they could safely be managed at home, primary care providers would be able to see sicker patients in their day and as a net result, decrease congestion in ERs and hospitals.

20. Hannah Chan – MPH Nutrition and Dietetics

“The Case for Traditional and Indigenous Foods in Kenya”

Agriculture is the dominant sector in the Kenyan economy, with 75-80% of the population deriving their livelihoods from agriculture. Currently, the major threats to agricultural productivity are climate-related changes (increasing temperatures, irregular/unpredictable rainfall, increased incidence of extreme weather events including drought). Additionally, according to the Food and Agriculture Organization of the United Nations, 46% of the population live on less than 1 USD a day, 36.5% of the population is food insecure, and 35% of children under five are chronically malnourished. Indigenous and traditional Kenyan crops originate in Kenya, are culturally acceptable and adapted to the local climate, and have been consumed historically by these inhabitants rather than having been introduced from other areas of the world. However, one of the legacies of colonialism is the loss of these indigenous knowledge and practices related to food and nutrition. For example, the staple food is maize, first cultivated by the British colonial government through forced land appropriations and other exploitative means. As a result, majority of people in Kenya do not know that maize is not indigenous, and are not knowledgeable about more nutritionally dense and “climate-smart” indigenous crops. Because of their production suitability to the region, it is important to identify indigenous and traditional crops that have the potential to improve food security, reduce micronutrient deficiencies, enhance smallholder farmer adaptation to climate-related changes, and protect traditional knowledge that is integral to the country's cultural framework. This knowledge was obtained through key informant interviews to identify traditional or indigenous crops, how to grow them, and provide recipes for cooking and storage. This cookbook is a health promotion tool relevant to indigenous communities that are struggling to cope with a rapidly changing climate and other land use issues to adapt and better integrate indigenous and traditional food sources into their diets.

21. Harsh Naik – MPH Epidemiology

“Assessing the Effectiveness of CALM (Managing Cancer and Living Meaningfully) Therapy between Canadians and Immigrants with Advanced Cancer”

Purpose: Individuals with advanced cancer experience substantial distress in response to disease burden and impending mortality. Managing Cancer And Living Meaningfully (CALM) is a novel psychotherapeutic intervention that has shown to be effective at alleviating depressive symptoms in this population; however, certain populations may benefit more. Immigrant and visible minority communities respond to death and dying, advanced care planning, and end-of-life care differently across cultures. The objective of this study is to assess whether the effect of CALM differs based on whether patients are born in Canada (Canadians) or

outside (Immigrants). **Methods:** Primary data was collected between 2012 and 2016 for initial CALM clinical trial. The primary outcome is depression symptom severity determined by the Patient Health Questionnaire-9 (PHQ-9) depression score, assessed at baseline, 3 months and 6 months. Difference of mean PHQ-9 scores were compared between the two groups. Demographic information was also analyzed to better understand possible associations. **Results:** Canadians and Immigrants showed no significant differences in PHQ-9 depression scores at baseline (7.89 vs. 7.29, $p=0.5135$), at 3 months (6.49 vs. 5.59, $p=0.3435$), or at 6 months (5.69 vs. 5.24, $p=0.6493$). Demographic analysis of the patient cohorts found that nearly 60% of Immigrants were White, nearly 2/3 had an income over \$60,000, over 85% had completed some post-secondary education, and English was the primary language for over 78%. **Conclusion:** Superficial findings suggest that CALM is as effective for Canadians as it is for Immigrants in providing a strategy to alleviate depressive symptoms with advanced cancer. However, after demographic analysis of the population, evidence may show signs of culturalization and high socioeconomic status in the Immigrant population, limiting the generalizability of these results. More data is needed to determine the true effect of country of birth and ethnicity on the association between CALM and depression scores.

22. Hayley Pelletier – MPH Social and Behavioural Health Sciences

“Smokers’ Experiences with Vaping to Quit: A Concept Mapping Study”

Background: E-cigarettes are increasingly being used by smokers as a cessation aid. This study aimed to identify the full spectrum of experiences—positive and negative—of smokers who have tried e-cigarettes/vaping to quit. **Methods:** Current or recent adult cigarette smokers who have tried vaping to quit were recruited in Ontario, Canada to complete a survey and three online concept mapping tasks: brainstorming, sorting and rating. Participants ($n=98$) generated statements by responding to a prompt: “A specific experience I’ve had while vaping to quit—either positive or negative—is ...”. Participants then sorted and rated (how true each statement was for them using a 7-point scale) each of the 92 unique statements. Using Concept Mapping software to conduct hierarchical cluster analysis and scaling, a cluster map was generated to reflect the range of experiences of smokers who have tried vaping to quit. The mean cluster ratings were compared overall and by perceived success in quitting. **Results:** Seven clusters of experiences were identified: Positive Outcomes, Positive Attributes, Positive Relationships, Social Challenges, Health Concerns, Limitations to Vaping and Vaping Devices. Mean cluster ratings ranged from a high of 4.81 ($SD = 0.64$) for Positive Attributes to a low of 3.31 ($SD = 0.78$) for Health Concerns. An analysis comparing clusters based on perceived quit success found that while both groups rated the Positive Attributes cluster the highest, participants who self-reported successfully quitting by vaping rated statements in all three positive experience clusters as being more true for them. Those who did not succeed had more negative experiences and greater health concerns about vaping. **Conclusions:** Along with the vaping device and cessation outcomes, the social environment, personal relationships, and knowledge are important aspects of vaping to quit. These experiences shed light on the facets of effective and comprehensive programming to help smokers quit by vaping.

23. Heather Abela –MPH Social and Behavioural Health Sciences

“Disparities in Prostate Cancer Awareness: Results from a National Survey of Canadians”

There are significant disparities in the demographics of Canadian men affected by prostate cancer. Men of African descent and men with a family history of prostate cancer both have a higher risk of developing prostate cancer. It is imperative that these higher risk groups are aware of their risk to help in the prevention and early detection of the disease. However, little research has been done in the Canadian context on prostate cancer awareness among Canadians. Prostate Cancer Canada conducted an online survey on Canadians’ awareness, knowledge, and experiences relating to prostate cancer. The quantitative data was analyzed by comparing frequencies and conducting the chi-square test using SPSS and Excel, and the qualitative data was coded by theme using Excel. The survey received $n=4,691$ completed responses from Canadians. Canadians had

overall accurate knowledge and awareness of prostate cancer, with the exception of race as a risk factor. A minority of Canadians know that Black men have a higher risk for developing prostate cancer. For Black Canadians, they were more likely to be aware of their increased risk compared to non-Black Canadians. However, it was still a minority that knew that Black men were at high risk. This is the first online survey to compare Canadian demographic groups' awareness of prostate cancer. The public health implications of these findings are significant. They reveal opportunities to promote awareness of prostate cancer among the higher risk groups, particular for Black men. Prostate Cancer Canada plans to use these findings to develop programs and resources targeted to Black Canadians to help reduce the significant impact that prostate cancer has on Black men.

24. James Rebello – MPH Social and Behavioural Health Sciences

“Experiential Learning at Hospice Palliative Care Ontario”

This poster would demonstrate my practicum working at Hospice Palliative Care Ontario (HPCO) as a Program Coordinator for their Compassionate Communities Community of Practice Division (CC CoP). The term Compassionate Community refers to a group of people that provide compassion, care and practical supports to patients who are seriously ill or frail, and their families. The idea being, that living in a community will help increase happiness while subverting loneliness and isolation. Through my work with HPCO I was able to conduct an environmental scan of all the CC's registered across Ontario with HPCO. The goal of this scan was to collect and analyze information for a summary and communications report. From the information collected HPCO would be hoping to use the formal reports created to inform grant applications and launch discussions with policy makers in the future. Specifically, they would be looking to target conversations regarding Advanced Care Planning and Palliative Care services. Compassionate Communities are shown to be needed, especially with a stark increase in the elderly in recent years. The current health care system is shown to be unable to cope with the strain and the burden as well as cost only increases. Overall, HPCO is also adapting the information collected through the environmental scan for their website so people are readily able to gain access to information on how to start a compassionate community. The end goal is having more CC's register across Ontario and share information with one another.

25. Janani Kodeeswaran – MPH Social and Behavioural Health Sciences

“Indigenous Women from the Sixties Scoop Healing through the Full Moon Ceremony and Storytelling at Winona's Place.”

The Sixties Scoop refers to the policies and practices in Canada from the 1950s to 1980s of forcibly removing Indigenous children from their birth families and communities. Cultural disconnection, loss of identity, and lower social connectedness were outcomes for Sixties Scoop survivors. My project focused on establishing a healing environment at the YWCA Toronto Winona's Place for Indigenous women who were Sixties Scoop survivors and interested in learning more about the Sixties Scoop. Community-Based Research principles were followed and included working with Indigenous community members. Our project consisted of 8 weekly two-hour healing circles culminating in a Full Moon Ceremony. Through feedback forms and two-hour focus groups, data was collected on the project's strengths, areas for improvement, and information on resources needed by the women to create a healing environment. Thematic analysis was used to analyze the data. The healing circles and Full Moon Ceremony allowed the women to engage with a Knowledge Carrier and Winona community members, learn about Indigenous teachings and cultures, and work through painful experiences with community members. Although many of the women experienced hardships and trauma, they remained interested in healing and reconnecting to Indigenous cultures. The women shared what they had learned through teachings, how the sessions positively impacted their well-being, how they would apply cultural knowledge into their healing journeys, and offered recommendations on how Winona's Place could better

support them. We demonstrated the significance of Indigenous healing approaches for improving health and well-being among our participants, who have experienced trauma. Cultural connection to Indigeneity is rarely considered, or offered, in mainstream health services. Indigenous healing models and perspectives are important in creating and implementing Indigenous-specific health services and promotion programs. My project hopes to emphasize the importance of decolonizing public health systems and addressing the Calls to Action related to health.

26. Jayson (Seung Gwan) Ryoo – MPH Epidemiology

“Social Determinants of Health Affecting Priority Populations Living with HIV/AIDS: Data-driven Knowledge Synthesis and Translation”

The Ontario HIV Treatment Network (OHTN) serves to improve the health of people living with and at risk of HIV/AIDS in Ontario. The OHTN collects and analyzes data; conducts high-impact research; and supports the use of the best available data and evidence to improve HIV prevention, treatment, and care in Ontario. As part of the Data and Applied Science Impact team, which primarily oversees data collection and analysis, I conducted a qualitative analysis of the social drivers affecting priority populations living with HIV in Ontario: at-risk women; African-Caribbean, and Black communities; gay, bisexual, and other men who have sex with men; and Indigenous communities. I thematically clustered the issues and produced knowledge translation products depicting a snapshot of the key issues and their broad overlapping connections. I analyzed and interpreted the social drivers that are common across all priority populations and that are specific to each priority population. I also conducted a thorough review of the OHTN Cohort Study Scientific Protocol to update clinical research evidence with more recent literature and to streamline aims and objectives with emphasis on structural vulnerability. Throughout the practicum, I had a chance to interact with an interdisciplinary team of colleagues: epidemiologists, biostatisticians, anthropologists, graphic designers, and software developers. The practicum has significantly expanded my understanding of social determinants of health, which is an essential knowledge base for epidemiologists and for anyone interested in working or pursuing further studies in global health. Undertaking the practicum at the OHTN allowed me to adopt a health equity lens to consider a broad spectrum of causes and consequences of diseases of poverty. By addressing the social, economic, political, and cultural root causes of the disparities in health across Ontario, I contributed to improving the quality of life for marginalized populations living with HIV in Ontario.

27. Jennifer Lee – MPH Nutrition and Dietetics

“Relation of Change or Substitution of Artificially Sweetened Beverages on Cardiometabolic Outcomes: A Systematic Review and Meta-analysis of Prospective Cohort Studies using GRADE”

Background: Artificially sweetened beverages (ASBs) are associated with risk of cardiometabolic outcomes. This association is likely due to reverse causality. We conducted a systematic review and meta-analysis on ASBs and cardiometabolic health using change and substitution results that can overcome this limitation. **Methods:** MEDLINE, EMBASE, and the Cochrane Library were searched for prospective cohort studies (≥ 1 -year follow-up) that assessed change in ASB intake or substitution of ASB for another sugary-beverage on cardiometabolic outcomes in adults. Independent reviewers extracted data and assessed study quality (Newcastle-Ottawa Scale). Data were pooled using the random-effects model and expressed as mean differences (MDs) or risk ratios (RRs) with 95% CIs. Heterogeneity was assessed (Cochran Q statistic) and quantified (I^2 statistic). Certainty of evidence was assessed using GRADE. **Results:** Nine studies (395,731 individuals) were included. Increasing 1-serving of ASBs was associated with reduced body weight (MD: -0.07 kg [-0.10 to -0.04]) and waist circumference (MD: -1.35 cm [-2.60 to -0.05]). Substitution of ASBs for SSBs was associated with reduced body weight (MD: -0.47 kg [-0.55 to -0.39]), risk of diabetes (RR: 0.94 [0.90 to 0.98]), cardiovascular mortality (RR: 0.95 [0.90 to 0.99]) and total mortality (RR: 0.96 [0.94 to 0.98]). Substitution of ASBs for 100% fruit juice was

associated with reduced body weight (MD: -0.47 kg [-0.53 to -0.41]) and risk of type 2 diabetes (RR: 0.91 [0.83 to 0.99]). However, substitution of ASBs for water was not associated with body weight or incidence of obesity. The overall certainty of the evidence by the GRADE System was “very low” for all outcomes due to downgrades for indirectness and/or imprecision. **Conclusions:** The use of ASBs to substitute excess calories from free sugars may offer relative benefits for cardiometabolic health; however, more studies with robust statistical methods are warranted for evidence-informed public health recommendations.

28. Jessica Wong – PhD Epidemiology

“Non-pharmacological Management of Soft Tissue Disorders of the Shoulder: A Clinical Practice Guideline from the Ontario Protocol for Traffic Injury Management (OPTIMA) Collaboration”

Objective: To develop an evidence-based clinical practice guideline for the non-pharmacological management of soft tissue disorders of the shoulder (shoulder pain). **Methods:** This guideline is based on seven systematic reviews. A multidisciplinary expert panel formulated recommendations based on evidence of effectiveness, safety, and cost-effectiveness, societal and ethical values, and patient experiences (through qualitative research). Target audience includes clinicians; target population is adults with shoulder pain (e.g., sprains, strains, tendinopathies). **Recommendations:** When managing shoulder pain, clinicians should rule out major pathologies, assess prognostic factors for delayed recovery, offer education and reassurance, and provide care in partnership with the patient. For shoulder pain ≤ 3 months’ duration, clinicians may consider cervicothoracic manipulation and mobilization as adjunct to usual care, thoracic manipulation, multimodal care (heat/cold, joint mobilization, exercise), or low-level laser therapy. For shoulder pain > 3 months’ duration, clinicians may consider exercise, laser acupuncture, low-level laser therapy, general practitioner (GP) care, thoracic manipulation, cervicothoracic manipulation and mobilization combined with usual care, or multimodal care (combining heat/cold, joint mobilization, exercise). Clinicians should not offer cervical mobilization as adjunct to multimodal care, cervicothoracic manipulation and mobilization as adjunct to exercise, multimodal care (combining exercise, mobilization, taping, psychological intervention, massage), shockwave therapy, ultrasound, taping, interferential current therapy, diacutaneous fibrolysis, or massage. For calcific tendinitis, clinicians may consider shockwave therapy. Clinicians should reassess at every visit and determine whether discharge or a referral is indicated. **Public health impact and implications:** Our evidence-based guideline provides recommendations intended to optimize patient care and improve health outcomes related to shoulder pain. Our guideline aims to guide clinical decision-making, bridge the gap between research and practice, and reduce variation in care for clinicians and patients. Moreover, our guideline identifies interventions that may provide some benefit, little effect, potential harm, or are costly to assist policy makers with decision-making at the population level.

29. Jeyasakthi Venugopal – MPH Epidemiology

“Community-based participatory research (CBPR) in a First Nation community in Southwest Ontario: An epidemiology student’s perspective”

Project description. The historical and ongoing legacy of colonization has left a lasting impact on Indigenous communities in Canada, resulting in widespread social and health inequities. Relative to non-Indigenous Canadians, Indigenous peoples are met with a disproportionate burden of mental health challenges, which is often coupled with co-occurring substance use and violence-related issues. The Centre for Addiction and Mental Health has partnered with five First Nation communities in Southwest Ontario to work towards the collection of local community data on mental health, substance use and violence within a community-based participatory action research (CBPAR) framework. **Key Activities.** As a practicum student, I contributed to the latter phases of the project with respect to one First Nation community. Some of my contributions are as follows: 1. Knowledge translation and exchange – revised a research report based on suggestions from the

community and communicated findings to the community based on exploratory quantitative analyses (and interpreted statistical outputs) 2. Conducted a scoping review on Indigenous community-wide mental wellness strategies that have been evaluated, and prepared an initial draft manuscript for journal submission 3. Statistical analyses – performed multivariate logistic regression analyses on survey data from the community to elucidate relationships between substance use and relevant variables using SPSS

Lessons Learned. I gained an invaluable opportunity to assist in the facilitation of CBPAR in a First Nation community, and learned first-hand about the importance of mutual learning and effective knowledge translation. Specifically, there is a need to decolonize analytic approaches – that is, quantitative work should be performed in close consultation with Indigenous community members and efforts should be made to communicate the range of possibilities in terms of analysis. This would ensure that the historical offsetting of Indigenous cultural knowledge and inclusion within the research process is not repeated. And subsequently, this would augment Indigenous self-determination and availability of reliable population-based health outcomes and assessment data for Indigenous peoples in Canada.

30. Jiamin (Jessica) Shi – MPH Epidemiology

“A concerning probiotic market -evidence on the programming effects of probiotic Lacidofil® on growth in a healthy mice model”

Introduction: Malnutrition is a widespread public health issue. For example, in Malawi, 37% of children under 5 years old experience chronic undernutrition. In Canada, 1 in 8 households are struggling with food insecurity, which is associated with poor diets. Unfortunately, both can lead to growth impediment. Probiotics, microorganisms occurred in fermented food, can act as a dietary approach to support growth through sustaining a health-compatible gut microbiome in early life. Despite the rapid growth in probiotic market, limited studies demonstrate beneficial effects of probiotics on growth in a healthy context. Thus, this study aims to shed light on effects of maternal and postnatal probiotic intake (Lacidofil®) on growth, using a healthy mice model. **Methods and Results:** Mice received Lacidofil® in their drinking water (probiotics) or sterile water (controls) during pregnancy and lactation; at 21 days of age, the weaned pups continued either on their respective mothers' treatments or were switched to the other. At 2 months of age, mice were sacrificed to measure growth indicators, including concentrations of liver, blood growth hormone (GH) and Insulin-like growth factor-1 (IGF-1). Surprisingly, there is no difference regarding the above measures between control and probiotic groups in both sexes, except for decreased liver GH concentration in females with postnatal probiotic supplementation. **Implications:** These findings show that there may be an optimal threshold of microbiota in healthy animals, and it is important for future studies to investigate whether GH or IGF-1 is a key mediator of bone growth. Through a public health lens, it is unclear whether probiotic supplementation should be recommended to population at risk of malnutrition for growth promotion. As probiotic marketing is outpacing science, it is essential for consumers to be critical about news media, scientists to focus more on knowledge translation, and policy makers to design programs based on evidence.

31. Jing Zhang – MPH Epidemiology

“Validation of the PROMIS Preference scoring system (PROPr) in patients on dialysis and kidney transplant recipients (KTR)”

Background: PROPr is a preference-based health state summary score within the Patient-Reported-Outcomes Measurement Information System (PROMIS). It could potentially be used in cost-effectiveness analyses. We assessed the validity of PROPr among patients with end stage kidney disease (ESKD) using EuroQol_5-Domain (EQ5D5L) and short-form 6-domain (SF6D) as “legacy” instruments. **Methods:** A cross-sectional sample of

adults on dialysis and kidney transplant recipients (KTR) completed questionnaires including PROMIS57, Patient Health Questionnaire-9, Edmonton Symptom Assessment Scale-revised, Kidney Disease Quality of Life-36 (KDQOL36), and EQ5D5L. SF6D was generated from the Short-Form 12 (part of KDQOL36). PROPr is estimated from PROMIS57 domain-scores. PROPr score ranges from -0.022 (all-worst state) to 1.0 (full health). Known-group validity was assessed using “health-condition impact-estimates” modeling age, gender, and a single health condition on a non-parametric linear-regression model. Convergent validity was assessed with Pearson correlation. **Results:** Mean (Standard deviation) age of the 318 participants was 57 (17) years, 57% were male and 51% Caucasian. Median (Interquartile range) scores were 0.38 (0.22-0.61), 0.71 (0.58-0.86) and 0.85 (0.67-0.91) for PROPr, SF6D and EQ5D5L, respectively. PROPr and SF6D scores were less subject to ceiling-effects compared to EQ5D5L. The age and sex adjusted condition impact was larger for PROPr for all conditions tested compared to the other two scores. Condition impact for PROPr was: kidney transplant recipients (KTR) vs. dialysis (-0.21, $P < 0.001$), low vs. high comorbidity (-0.10, $P < 0.001$), and low vs. high depression (-0.31, $P < 0.001$). Strong correlations were observed between PROPr and EQ5D5L ($\rho = 0.67$) and SF6D ($\rho = 0.74$). **Conclusions:** These results demonstrate the validity of PROPr among patients with ESKD. The validity of PROPr score in measuring health status in patients with ESKD can allow for monitoring cost-effective interventions. Future directions can aim to validate the tool in the general Canadian population to monitor the health of the population by implementing PROPr into the census.

32. Joseph Friedman Burley – MPH Social and Behavioural Health Sciences

“Initial Stages of Development for an Intersectoral Network on Trans-Affirming Practice to Better Support Sexual Assault Survivors in Ontario”

Background: Sexual violence against transgender (trans) persons is a complex public health issue that requires the coordinated effort of multiple sectors to address. A 2017 survey of Sexual Assault Nurse Examiners (SANEs) working within Ontario’s 36 Sexual Assault/Domestic Violence Treatment Centres (SA/DVTCs) revealed a need for training in the provision of trans-affirming care and highlighted a gap in knowledge related to local trans-positive organizations. In response, the successful design, pilot, and evaluation of a curriculum on trans-affirming care for SANEs was completed in 2018. However, there remains a pressing need to connect SANEs with trans-positive service providers across sectors to enhance the provision of care to trans survivors throughout Ontario. **Goals and Objectives:** To initiate the development a provincial intersectoral network on trans-affirming practice to better support sexual assault survivors by mobilizing knowledge on the new curriculum and connecting SA/DVTCs with local trans-positive organizations. **Approach:** Guided by the Lifecycle Evolutionary Model of Network Development, seven regional meetings across the province were facilitated. Leaders from SA/DVTCs and local trans-positive organizations were invited in June 2019 to attend one of the seven meetings. Key insights from meeting activities were transcribed and analyzed. **Results:** 106 representatives from 96 SA/DVTCs and trans-positive organizations attended a meeting between 7 June and 11 July 2019. 93 organizations expressed interest in being a part of the ongoing development of the network, in addition to 31 organizations unable to attend the meetings. Analysis generated 18 themes related to regional and provincial intersectoral collaboration to address sexual violence against trans communities. **Implications:** As indicated by high meeting attendance and ongoing interest in the trans-LINK project, sexual violence against trans persons is a timely issue relevant to the enhancement of public health policy and practice across sectors. Informed by themes gathered across the meetings, we aim to further consolidate the network, including working toward its maturation and sustainability.

33. Joyce Zhang – MPH Occupational and Environmental Health

“Association between cannabis and work-related injuries: a cross sectional analysis of the Canadian Community Health Survey”

Background: The effects of cannabis related impairments have been well studied in the setting of automobile safety, but its impact in the workplace is much more poorly documented. The purpose of the study is to examine the relationship between cannabis use and work-related injury. **Methods:** We performed a cross-sectional analysis of the Canadian Community Health Survey (2013-2016) of working people. We compared demographic, socioeconomic, clinical, and occupational factors among people who reported having experienced a work-related injury in the last 12 months, and those who did not. We used multiple logistic regression to calculate odds ratios relating for having work-related injuries. **Preliminary Results:** Among the 136,936 people identified as having worked in a 12-month period, 17,660 and 2,216 reported having experienced any injury and a work-related injury respectively. People who experienced a work-related injury were more likely to be male, non-white, with lower income, and work in manufacturing, services, and trades sectors. We did not find an association between reported cannabis use and a reported work-related injury in the corresponding 12 months (OR 1.10, 95% CI 0.40-3.04). However, we did find that cannabis use is associated with an increase in rate of overall injuries in the same time period (OR 1.95, 95% CI 1.23-3.10). **Discussion:** We found an association of increased overall injuries with cannabis use but not with work-related injuries. Reporting bias may be an important consideration, with reluctance of participants disclosing cannabis use while it was still illegal. The study results may be used to benchmark reporting rates preceding legalization, track concerns of stigma and reporting bias, and help identify areas of future research.

34. Kahiye Warsame – MPH Social and Behavioural Health Sciences

“Perioperative Continuous Positive Airway Pressure Compliance and Postoperative Nocturnal Hypoxemia in Obstructive Sleep Apnea Patients: a Prospective Cohort Study”

Background: Obstructive sleep apnea (OSA) is highly prevalent in the surgical patient population. Continuous positive airway pressure (CPAP) is the first line treatment for OSA patients. The objective of this study was to determine the perioperative compliance rate of patients with OSA with a CPAP prescription. As well, we investigated the effect of CPAP compliance on perioperative oxygen saturation. **Methods:** This prospective cohort study included adult surgical patients with a diagnosis of OSA with or without a CPAP prescription undergoing non-cardiac surgery. Postoperative CPAP compliance was determined each night and defined as use ≥ 4 h/night. Overnight oximetry was performed preoperatively and postoperatively night 1 and 2. The primary parameters were mean SpO₂, lowest SpO₂, oxygen desaturation index (ODI) and cumulative time percentage with SpO₂ < 90% (CT90). **Results:** We enrolled 129 patients with OSA with a preexisting CPAP prescription in the preoperative clinic. 86 were compliant with CPAP, and 54 were non-compliant. Preoperative compliance was 60.5%; whereas compliance on postoperative night 1 was 57.8%; night 2: 66.2%, and night 3: 38.5%. One hundred twenty-four patients completed preoperative overnight oximetry (75 compliant, 49 non-compliant). The non-compliant group had significantly lower preoperative lowest SpO₂ (79 vs 83%) and higher ODI (10.8 vs 4.3 events/h) and CT90 (3.4 vs 0.5) compared to the compliant group. On postoperative night 1, lowest SpO₂ (79 vs 83%) were significantly decreased in the CPAP non-compliant vs compliant groups. No significant differences were observed in other parameters such as ODI, CT90 or for any oximetry parameter on postoperative night 2. **Discussion:** Among patients with a preoperative CPAP prescription, compliance was 60.5% preoperatively, and on postoperative night 1: 57.8%; night 2: 66.2%. CPAP non-compliance was associated with a greater degree of oxygen desaturation during the preoperative period, while only modest differences were detected on postoperative night 1.

35. Karima Joy – PhD Social and Behavioural Health Sciences

“Bereavement accommodation for workers in precarious employment”

The current Canadian social context offers minimal space to honour bereavement as a part of the human condition, compelling some workers to suppress their grief and prematurely resume former levels of

productivity. As previous efforts to conceptualize a bereavement care agenda have not considered precarious employment, I intend to address this gap in the literature by doing formative work that focuses on the intersection of bereavement and precarious employment for Canadian workers. The focus on workers in precarious employment is important because such workers are vulnerable to loss of employment, financial security, and/or the exacerbation of mental distress. The objective of my research is to generate multi-scalar knowledge on the everyday experiences of bereavement in precarious employment in Canada, accounting for larger socio-political forces. I propose using a multi-scalar approach employing critical qualitative research in conjunction with feminist ethics, interviews, and policy analysis to address the following questions: 1) How is bereavement constructed in Canadian systems and labour policies for bereaved workers in precarious employment?; and 2) What are the implications for how workers in precarious employment experience bereavement? Given the persistence of precarious employment, Canada's aging population, and the impending death boom, generating knowledge on bereavement experiences in the context of precarious employment can aid in the development of bereavement legislation and public health strategies that reflect the experiences and needs of bereaved workers in Canada's changing socio-economic landscape. Preliminary findings will be discussed.

36. Kristina McDavid – MPH Social and Behavioural Health Sciences

“Integrating Wellness Promotion into Special Olympics Programs: The co-creation of a Principles-Focused Evaluation Framework”

Special Olympics (SO) is a global organization, focused on bringing community programs and competition opportunities to children, youth and adults with intellectual disabilities (ID). Previous research has shown that participation in sports and Special Olympics programs contributes to multiple dimensions of wellness. We used these wellness domains to develop an evaluation framework that Special Olympics can utilize to evaluate and articulate how each program and resource they provide furthers their mission to enrich the lives of Canadians with an intellectual disability. The purpose of this work was to co-create a Principles-Focused Evaluation (P-FE) framework for SO to use to increase their focus on wellness and to foster a greater understanding of how to support athletes with ID. There were three main steps taken to ensure the co-creation of the P-FE: knowledge gathering, knowledge synthesis and framework creation. P-FE is a novel evaluation framework that makes principles the evaluand of focus. Principles are deeply held values that translate into behaviours and for complex organizations this type of evaluation helps to ensure that principles drive every aspect of the organization. This work is at the forefront of integrating and embedding wellness research into Special Olympics programming as it takes us beyond knowledge creation to “knowledge in action”. It transforms the focus of childhood disability research and services from a deficit approach to a strengths-based promotion approach. By using P-FE to help make seemingly complex research about “abstract” ideas like wellness actionable, organizations like Special Olympics can promise that clients will receive the treatment, programming and respect that is deserved. The “knowledge in action” that comes with principles-focused evaluation provides a way to ensure that research is put back into the hands of those it was done for, presenting a radical departure from which research has historically operated and making this evaluation style a new frontier for public health evaluation methods.

37. Maham Qureshi – MPH Nutrition and Dietetics

“Nutrition Care Through the Healthcare Journey”

The Sinai Health System comprises of two hospitals including Bridgepoint Active Healthcare, a rehabilitation and complex care hospital. Here, I worked as a dietetic student in inpatient medical rehab, transitional care, renal (kidney) and palliative care units for 8-weeks. In addition, I was placed at Bridgepoint Family Health Team (FHT) for 4-weeks, where I worked with the Diabetes Education Program (DEP) team, which consisted of a

registered dietitian and advanced practice nurse. At the hospital, we supported patients to adequately meet their nutrition needs throughout rehabilitation and improve their overall nutritional status for a smooth transition back into community after discharge. By providing nutritional support and nutrition education, patients may be better equipped to take care of their health leading to better possible health outcomes, a reduced number of future hospital visits and therefore a reduced burden on the healthcare system. Additionally, we helped complex care patients to maintain their nutritional status during their long-term stays. Of particular mention are patients in the renal unit living with diabetes as it connected to my FHT rotation. At the FHT, the DEPT team saw adults at risk, recently diagnosed or living with diabetes to help prevent or manage their condition through diet counselling, education and encouraging healthy behaviours. The goal was to help prevent further complications associated with poorly managed diabetes, such as renal disease. This, represents the point of intersection of clinical practice and public health, where the bridge between preventative and curative healthcare can be observed. Ultimately, nutrition care throughout the various stages of the healthcare journey is important to public health and its mission - to decrease the prevalence of chronic disease, such as diabetes, and maintain and promote healthier communities through effective healthcare.

38. Maiesha Rahman – MPH Social and Behavioural Health Sciences

“Green Access Evaluation”

Access Alliance’s Green Access Program originated in 2011 with an aim to address social determinants of health—particularly food accessibility, physical environments, health literacy, and newcomer integration and empowerment. One innovative way the Program addresses these social determinants is by engaging members of the Taylor Massey and Oakridge communities in ecological food production on a 6000 square foot rooftop garden, located at AccessPoint on Danforth. A retrospective multi-year evaluation was conducted to investigate the effectiveness of the Green Access Rooftop on participant knowledge, awareness, and practice pertaining to healthy eating, growing food, and green living, in addition to empowerment and health. The analysis included 110 survey responses across four years (i.e. 2014-2017). The respondents had an average age of 38 years and were all residents of the Taylor Massey/Oakridge neighbourhood; and the majority identified as female, were English-speaking, and of South-Asian descent. The results demonstrate that after participating in rooftop activities, respondents experienced improved self-confidence and feelings of pride in their skills. In terms of physical and mental wellbeing, participants reported increased physical activity levels and reduced feelings of stress. Knowledge, awareness, and practice related to healthy eating and culturally familiar foods improved; and a majority of respondents were able to save money from harvested food from the garden. Participants also expressed increased knowledge and practice around growing food and were more confident in starting and maintaining their own gardens. Lastly, participants reported ameliorated awareness of environmental and green living issues and were more likely to transfer their newly acquired skills to other contexts. The findings of this evaluation study broadly illuminate the effectiveness of community rooftop gardens as a critical health promotion tool for newcomer refugee and immigrant populations; and moreover, the increased need for pertinent programs, plans, and policies that support urban agriculture in the City of Toronto.

39. Marian Kelly – MPH Social and Behavioural Health Sciences

“Examining the implementation of the Healthy Kids Community Challenge: A thematic analysis of the Local Steering Committee Survey (2018)”

Introduction: The Healthy Kids Community Challenge (HKCC) was a community-based, multi-stakeholder obesity prevention program aimed at children and youth in Ontario, which was funded and coordinated by the Ministry of Health and Long-term Care from 2015-2018. This project contributed to the process evaluation of the HKCC, which is being carried out by Public Health Ontario. The objective of my research was to identify and

understand the barriers and facilitators to implementation of the HKCC, from the perspective of members of the Local Steering Committees (LSCs), who were directly involved in implementation. **Methods:** 10 questions from the 2018 LSC Survey were coded and thematically analyzed, using NVivo 11.0 software, according to the themes presented within Durlak and Dupre's Ecological Framework for Effective Implementation. Themes were summarized according to barriers, challenges, factors associated with implementation, strategies communities used to engage partners and reach vulnerable populations, as well as positive experiences. The findings were presented in a report which featured a rich, qualitative account, accompanied by direct quotations and code frequency charts. **Results:** A number of perceived barriers to implementation were identified, including program structure (i.e., tight timelines, short duration), low SES (i.e., barriers related to lack of time, transportation and access to childcare, as well as difficulty accessing HKCC information) and geography and transportation (i.e., to access programming). Some important perceived facilitators of implementation included: funding, partnerships, HKCC messaging, and an inclusive, accessible approach to planning events. Participants expressed interest in sustaining programs and partnerships beyond the HKCC funding period, although the loss of provincial funding was identified as a challenge. Participants also noted potential for sustainability, particularly related to increased cross-sectoral collaboration and increased capacity for community-based health promotion. **Implications:** The results could be used to improve implementation of future community-based, multi-stakeholder health promotion programs. They might also offer insight into how to tailor the implementation process of large-scale community-based health promotion programs to local contexts.

40. Marium Jamil – MPH Social and Behavioural Health Sciences

“A Scoping Review on the Association Between Early Life Exposures and Human Capital Development Across the Life Course”

The Centre for Global Child Health (C-GCH) is the dedicated hub for global child health-focused activities at SickKids Hospital. The Centre supports the global agenda for neonatal, child and adolescent health through collaborative research, capacity building, and advocacy for improved health for children. My practicum at the C-GCH involved working as part of Dr. Zulfiqar Bhutta's research team. My project involved conducting a scoping review on the longitudinal associations between early life exposures and human capital development across the life course, using birth cohort data from high-income countries. Human capital refers to the aggregate levels of education, cognition, training, and health in a population. One of the goals of this exploratory review was to examine which early life risk factors exist in the healthiest populations and to compare significant associations found in high-income birth cohorts with findings from low and middle-income birth cohorts. Birth cohort studies were selected as they provide the opportunity to link early exposures to later health, developmental, or behavioural outcomes, since they typically follow children across the life course. Given the evidence on the long-term benefits of early childhood intervention, it is crucial to identify early risk factors that can be targeted for intervention in low and high-resource settings. The implications of this project in public health are profound as the early childhood years present an important window of opportunity for future development. Education, employment and income are some of the key social determinants of health, therefore it is important to invest in children from an early age to maximize their future well-being and human capital outcomes. This scoping review complements the larger body of work that will comprise the 2020 Lancet Transforming Child and Adolescent Health Series. The series aims to synthesize evidence on the effectiveness of a variety of interventions supporting child and adolescent health and development.

41. Mavra Qamar – MPH Epidemiology

“The Association between Child Marriage and Intimate Partner Violence in Afghanistan”

Child marriage and intimate partner violence have been globally recognized as human rights violations. Both indicators can derail an individual's future and have various public health implications. For instance, child marriage has been linked to unplanned pregnancies, maternal mortality, infant mortality, STIs, and increased risk of HIV/AIDs. While, intimate partner violence has been associated with functional impairment, self-harm, suicide, rape, disability and psychological trauma. Previous studies have shown an association between child marriage and intimate partner violence in low- and middle-income countries; however, data in Afghanistan are not known. This study aimed to assess the association between child marriage and intimate partner violence in Afghanistan. We used nationally representative data collected by the Demographic and Health Survey to conduct logistic regression analyses. Child marriage was operationalized into three separate categories, very early marriage (>15), early marriage (15-17) and adult marriage (≥ 18) which were treated as the explanatory variable and domestic violence as the response variable. Other indicators that we examined and included in the study design included, current age, place of residence and socioeconomic status which were treated as confounders. Of the sample (n =21,324), 15% of the respondents were married before the age of 15; 35% were married between the ages of 15 and 17 and 50% were married as adults. The odds of sexual violence were 22% higher among women who married before age 15 compared to those married as adults (OR: 1.22, 95%CI: 1.05,1.40; p=0.005). However, women who married as children had the same odds of reporting any, physical and emotional violence as those who married as adults. This may be due to a shift in traditional norms or underreporting in Afghanistan. This study adds to the body of research on child marriage and intimate partner violence, and specifically provides novel information on this association in Afghanistan.

42. Melissa Perri – MPH Social and Behavioural Health Sciences

“Millennial Young Adults with Rheumatoid Disease in the Workplace: A Process for Developing a Knowledge Transfer and Exchange Output”

Developing programs and policies in public health is dependent on the dissemination and implementation of knowledge. Integrated knowledge transfer and exchange (IKTE) processes allow for the dissemination of information to knowledge users with the continual involvement of stakeholders.¹ Documented challenges to engaging in IKTE include ‘adapting research to real-world timelines and building relationships with stakeholders.’² The Institute for Work and Health (IWH), has developed strategic plans that encompass stakeholder engagement in the research process which emphasizes the importance IKTE has in research in an attempt to maximize related health impacts. Rheumatic diseases (e.g. rheumatoid arthritis) are among the most commonly reported chronic conditions and one of the most frequently reported causes of work disability. Literature explains that navigating workplace challenges and gaining access to accommodations promotes labour market engagement while also improving health.¹ However, there currently exists a gap between knowledge and practice surrounding younger populations experiencing rheumatic diseases and work disability. Utilizing IKTE, methods can improve knowledge mobilization for these populations, which will assist in maintaining employment and improving health. Through my work at the IWH, a product was developed in an attempt to improve the experiences of young adults with rheumatic conditions navigating workplaces throughout Canada, utilizing key findings from an ongoing longitudinal survey of young adults with rheumatic disease. Through consultations with knowledge users and individuals with lived experiences, key messages were developed into a plan for the creation of a narrative and illustrated toolkit. This product was identified by knowledge users as being an effective method of widely disseminating study findings. Through this presentation insight will be provided on how to utilize an IKTE approach in research and an emphasis will be placed on the potential societal impacts, such as the development of effective programs and policies, utilizing IKTE has in the field of health research.

43. Michelle Zerdin – MPH Epidemiology

“Recreational Cannabis use on Rivermead Post-Concussion Symptom Questionnaire Scores and Pain Severity in Patients with a History of a Mild Traumatic Brain Injury”

Background: Concussion is a serious medical condition which can cause lifelong physical and mental impairment and are caused by a bump or blow to the head causing the brain to swell. Concussions can present with a wide range of symptoms potentially making treatment difficult. The legalization of recreational Cannabis products in Ontario means patients have greater access to non-medical products for pain relief. This increased accessibility could compromise patient safety as the effects of Cannabis use post concussion are unknown. With a better understanding of the effects of Cannabis on concussion recovery, public health officials can correctly inform policy makers about the facts and how to properly regulate open products.

Objective: To examine the relationship between recreational Cannabis use and post concussion symptom scores and pain severity. **Methods:** Patients with a history of concussion completed a baseline questionnaire at their first tertiary care clinic visit. Descriptive statistics and linear regression models were used to determine the association between Cannabis use and symptom severity and pain. **Results:** There was no association between Rivermead scores and Cannabis use. Pain severity scores were reduced by 0.711 points when users reported Cannabis use while controlling for covariates. **Conclusion:** These findings suggest that recreational Cannabis use may play a role in reducing pain severity in people with a history of concussion but may not be a clinically meaningful difference for clinicians to inform patients that Cannabis will reduce their pain. These findings contribute statistical evidence against the effectiveness of Cannabis. Public Health campaigns for concussion awareness can implement these findings for patients seeking out treatment on their own. This also suggests that access to recreational Cannabis products may need to be further restricted to protect the health of the public who are seeking out their own treatment for concussion symptoms.

44. Myriam Haddad – MPH Epidemiology

“When Density Becomes too Much to Bear: exploring the association between housing density and community burden of tuberculosis in First Nations communities”

Introduction The incidence of tuberculosis (TB) has been gradually decreasing in Canada for the last 30 years, but certain sub-populations, such as the Indigenous population, continue to show higher rates of TB. The TB incidence rate in First Nations people living on-reserve in 2017 was 21.7 cases per 100,000 population. An association between overcrowded housing and TB incidence has been previously established in First Nations communities. The Communicable Disease Control Division (CDCD) joined forces with the Environmental Public Health Division (EPH) in an effort to further explore the relationship between poor housing conditions and high TB incidence. **Methods** Multiple imputations were conducted on the final dataset to deal with missing data. Binary analysis and multivariate logistic analysis were performed to assess the significance of the relationship between housing density and TB burden. Stata SE15 and Excel were used for the analysis. **Results** Four regions were included in the analysis from 2013 to 2017. Within 2013-2017, there were a total of 46 high incidence communities. The average TB rate amongst all four regions was 56 cases per 100,000 population, ranging between 0 and 2,658 cases per 100,000 population. Furthermore, it was demonstrated that communities with high housing density have approximately 5.5 times the odds of being designated as high incidence TB communities than communities with low density levels. **Conclusion** There is a significant association seen between high housing density and burden of TB in First Nations communities. A community housing density of 6 or more people per household is likely to put a whole community at high risk of tuberculosis. This project contributes to advancing Canada’s commitment to closing the gap in health outcomes between Indigenous and non-Indigenous populations. It also emphasizes the importance of collaborative action of multiple stakeholders in improving the social determinants of health associated with TB transmission.

45. Natasha Sheikhan – MPH Social and Behavioural Health Sciences

“Centre for Addiction and Mental Health (CAMH): Provincial System Support Program”

The Provincial System Support Program (PSSP) at the Centre for Addiction and Mental Health (CAMH) works with key stakeholders around the province to establish and sustain system improvements. During my practicum at the PSSP, I worked with implementation specialists and evaluators on both provincial and municipal projects to address needs in the mental health and addictions sector. I worked on three main projects: Thrive Toronto, Continuing Care Project, and Youth Wellness Hubs Ontario. I completed various tasks to support project implementation, such as conducting literature reviews, analyzing data for evaluation, assessing project risk, collaborating with stakeholders, and developing evidence-informed approaches to change. Aside from these projects, other deliverables included a qualitative analysis on the implementation of stage screening and assessment (transcribing, coding, and thematic analysis), two reports for the ministry and Ontario Health Teams (OHTs), and a collaborative project with the Margaret and Wallace McCain Centre at CAMH which included manuscript writing and both qualitative and quantitative data analysis. Overall, my experience at the PSSP provided me with systems-level perspective on mental health and addictions, while allowing me to apply core health promotion competencies into my daily tasks. In doing so, this practicum allowed me to contribute to innovative population health projects in the field of mental health and addictions.

46. Penelope Gorton – MPH Epidemiology

“West Nile virus in Canada: An analysis of human cases from 2002-2018”

Background West Nile virus (WNV) is the most common mosquito-borne disease in Canada. Clinical cases present as an influenza-like illness, with 1/150 developing neurological complications. Despite recurring epidemics in Canada since 2002, a national multiyear picture of human WNV cases has yet to be elucidated.

Objective This report summarizes the epidemiology of human WNV cases from 2002-2018, focusing on temporal and spatial trends, and demographic and clinical characteristics. **Methods** The Canadian WNV surveillance system is a passive case-based system that collates data voluntarily submitted by provincial and territorial health authorities to the Public Health Agency of Canada. Descriptive statistics were applied, and a logistic regression used to explore the effects of case characteristics on the odds of a neurological outcome. **Results** A total of 6,326 cases were reported, of which 1,550 (24.5%) were classified as neurological syndrome. No cases were reported in Newfoundland and Labrador, Nunavut, or the Northwest Territories. The national mean annual incidence was 1.08 cases per 100,000 population (range 0.01 to 7.30). Saskatchewan experienced the highest average incidence, at 13.9 cases per 100,000 population. A total of 80% of cases reported an episode date between early August and early September. WNV incidence and the odds of neurological syndrome increased with age. The overall case fatality risk was 2.1%, and highest in neurological cases under 20 and over 50 years of age. **Conclusion** WNV has had a significant impact on public health in Canada, with over 6,000 clinical cases reported to date. Fluctuations in incidence may be explained by complex interactions between environmental conditions, avian host and vector dynamics, human behaviour, and heterogeneity in reporting practices. Ongoing surveillance is crucial for assessing risk, targeting prevention strategies, and informing disease forecasting. Public health messaging should focus on older individuals, who are at greater risk for neurological syndrome and complications.

47. Rachel Strauss – MPH Epidemiology

“Mood Disorders in Late-Life: A Population-Based Analysis of Prevalence, Risk Factors and Consequences in Community-Dwelling Older Adults in Ontario”

Background: Mental health concerns in late-life is a growing public health challenge as the population aged 65 and older rapidly increases locally and worldwide. An updated understanding of the causes of mood disorders in late-life and their consequences could guide interventions for this underrecognized and undertreated problem. We undertook a population-based analysis to quantify the prevalence of mood disorders in late-life in

Ontario, Canada and to identify potential risk factors, and consequences. **Methods:** Individuals aged 65 or older participating in 4 cycles of a nationally-representative survey were included. A self-reported diagnosis of a mood disorder was used to classify individuals with mood disorders. Using linked administrative data, we quantified associations between potential risk factors, such as demographic/socioeconomic factors, substance use, and morbidity, and mood disorder. We also determined associations between mood disorders and outcomes (health service utilization and mortality) 5 years after the index interview date. **Findings:** The overall prevalence of mood disorders was 6.1% (4.9% among males, 7.1% among females). The proportion of individuals with a mood disorder was higher among females for all potential risk factors. Statistically significant associations with mood disorder included age, sex, food insecurity, chronic opioid use, smoking, and morbidity. Individuals with mood disorders had increased odds of all long-term consequences, including hospitalization (adjusted OR [odds ratio]=1.55 95% CI [confidence interval]: 1.31-1.83); admission to long-term care (adjusted OR=2.28 95% CI: 1.71-3.02); and death (adjusted OR=1.35 95% CI: 1.13-1.63). **Interpretation:** Mood disorders in late-life were strongly correlated with demographic and social/behavioural factors as well as long-term health utilization outcomes. The understanding of correlations between potential risk factors for mood disorders in late-life provides a basis for potential interventions to reduce their occurrence and consequences. Interventions that target females, younger age groups, those with food insecurity or substance use, and individuals with co-morbidities may be promising.

48. Samantha Lee – MPH Epidemiology

“Postnatal cytomegalovirus (CMV) infection and children’s neurocognitive development”

OBJECTIVE: To comprehensively assess whether children with postnatal cytomegalovirus (CMV) infection develop long-term neurologic and/or cognitive sequelae in later childhood. **METHODS:** Using population-based longitudinal data from the Avon Longitudinal Study of Parents and Children (ALSPAC) cohort, we employed modified Poisson regression to assess the relationship between postnatal CMV infection and adverse neurocognitive outcomes in children. Serological measurements of CMV infection were obtained at 7 years (n=4,988) children were classified as either 'positive' or 'negative' for CMV based on a predetermined cut-off. Subsequent suboptimal neurocognitive developmental outcomes were compared between CMV-positive and CMV-negative children using various cognitive scales from 8 to 15 years of age. Children were evaluated on the cognitive domains of language, reading, memory, and general intelligence; with a suboptimal score being one that is ≥ 2 SD from the median score. **RESULTS:** With adjustment for confounding variables, it was found that postnatal CMV infection was associated with: impairment in total IQ (measured by the Wechsler Intelligence Scale for Children (WISC) at 8 years) (IRR=2.50, 95% CI 1.35-4.62); selective attention, ability to divide attention, and attentional control (measured by the Test of Everyday Attention for Children (TEA-Ch) at 8 years) (IRR=1.48, 95% CI 1.01-2.15; IRR=1.74, 95% CI 1.09-2.77; IRR=1.71, 95% CI 1.15-2.55, respectively); as well as reading comprehension (measured by the Neale Analysis of Reading Ability (NARA) at 9 years) (IRR=1.93, 95% CI 1.12-3.33). A secondary sex-stratified analysis also revealed a differential effect of CMV infection on the various neurocognitive outcomes between males and females. **CONCLUSIONS:** In this large-scale prospective cohort, our results provide evidence for adverse neurocognitive effects of postnatal CMV infection, particularly within the cognitive domains of intelligence, attention, and reading. We also found evidence suggesting that sex has influence on this relationship. If confirmed, these results support the implementation of preventative measures to combat postnatal CMV infection.

49. Samantha White – PhD Epidemiology

“Heroin Abuse among IDU and Local PO Dispensing Levels in Ontario Cities”

Background: Amid Ontario’s growing opioid crisis, heroin abuse remains widespread in select urban areas and contributes to a large proportion of opioid overdoses provincially. Compared to prescription opioids (POs), heroin is especially hazardous to abuse since it is illicitly manufactured and frequently consumed by injection.

PO abuse can also transition to heroin if access to preferred POs is impacted via diversion, dispensing or prescribing. However, the dynamics between preferences for heroin and local PO saturation (in this case, dispensing) are not well understood. **Methods:** Heroin abuse data were gathered from PHAC's I-Track surveillance system while PO dispensing data were from the Ontario Drug Benefit (ODB) claims database. Using an unmatched repeated cross-sectional design, datasets spanning 2003 to 2011 were merged. The hierarchical structure consisted of individual-level I-Track responses nested within year and again within five city-level (Kingston, London, Sudbury, Thunder Bay and Toronto) dispensing rates. Mixed-effects multilevel logistic regressions were used to examine relationships. **Results:** Almost one third (30.5%) of I-Track respondents abused heroin in the previous six months with marked variation by city, from roughly half of Toronto participants (51.0%) to about one in twenty (5.2%) in Thunder Bay. The final multivariate model for heroin abuse contained morphine dispensing (OR=1.04, p=0.011), present age (OR=0.99, p=0.045) and age of first injection (OR=0.97, p≤0.001). That is, considering age and age of first injection, heroin abuse was 4.4% more likely among IDU with each increase in annual morphine dispensing rates in their respective cities. **Implications:** The connection between heroin abuse and dispensing rates of chemically similar morphine, but not other POs, reflects a substitution effect for specific opioid types regardless of whether illicit or prescription. Precautions should be taken to prevent heroin abuse and establish harm reduction strategies before expected interference to local dispensing levels of any chemically analogous POs (particularly morphine).

50. Smit Mistry – MPH Social and Behavioural Health Sciences

“Examining the effects of cessation and reinstatement of active surveillance and contact precaution for Vancomycin-resistant Enterococci-positive patients at the University Health Network between 2010 to 2019.”

Background: Vancomycin-resistant Enterococcus (VRE)-positive patients were screened and placed on contact precaution (CP) at all hospitals in Ontario. Universal active surveillance and isolation on contact precaution for VRE was stopped at some hospitals including the University Health Network (UHN) on July 1, 2012. Active surveillance and CP was reinstated for VRE-positive cases on the Medical Surgical Intensive Care Unit (MSICU) and Multi-organ Transplant (MOT) programs at Toronto General Hospital (TGH) on May 31, 2017. We investigated the impact of discontinuing CP at Toronto General Hospital (TGH), Princess Margaret Cancer Centre (PMCC), and Toronto Western Hospital (TWH). Additionally, we assessed the impact of risk-based reinstatement of CP at TGH. **Methods:** We conducted an interrupted time-series analysis of VRE clinical isolate, infection and bacteremia incidence rates between January 2010 to April 2019. UHN's centralized VRE line lists were used to assemble a database of VRE cases and further calculate VRE incidence rates. **Results:** There was an overall rise in VRE clinical isolate, infection and bacteremia incidence rates in the cessation and reinstatement periods for all hospital sites under investigation. There was a drop in VRE clinical isolate, infection, and bacteremia incidence after reinstatement in the ICU and Transplant programs at TGH. **Conclusions:** Risk-based VRE active surveillance and CP seems to be effective at controlling VRE incidence. There needs to be strong horizontal infection prevention and control measures in place before hospitals discontinue VRE active surveillance and CP. A risk-based approach to VRE infection prevention and control would prove to be more effective and allow health systems to redirect their resources to more threatening multi-drug resistant organisms.

51. Steven Buckrell – MPH Epidemiology

“Sources of exposure for viral respiratory infections in Canadian acute care hospital healthcare workers.”

Background: Acute respiratory tract infections are among the most commonly experienced illnesses worldwide. Upper respiratory tract infections are almost exclusively caused by viruses, and healthcare workers (HCWs) may be exposed to these viral pathogens from a number of workplace and community sources. **Objective:** To investigate the association between laboratory-confirmed viral respiratory infections and potential sources of exposure during the previous 7 days. Participants: HCWs from 9 Canadian acute care hospitals. **Methods:** Participants who developed acute respiratory illnesses during the winters of 2010/11-2013/14 submitted swabs that were tested for viral pathogens. Associated illness diaries and non-ill participants' weekly diaries provided information on close contact with people displaying symptoms of acute respiratory illness in the previous week. Conditional logistic regression was used to assess associations. **Results:** There were 814 laboratory-confirmed viral respiratory illnesses (121 influenza). The adjusted odds ratio (aOR) of a HCW with a viral illness reporting exposure to a household member (7.0, 95% CI 5.3, 9.1), co-worker (3.4, 95% CI 2.4, 4.7) or other social contact (5.1, 95% CI 3.6, 7.1) with an respiratory illness were significantly higher than for unexposed participants. Exposures to patients with respiratory illness were not associated with infection (aOR 0.9, 95% CI 0.7, 1.2). **Conclusion:** Community and co-worker contacts are important potential sources of viral respiratory illness in healthcare workers. The comparatively low risk associated with recognized exposure to acutely ill patients may be related to the use of protective equipment, but could also reflect challenges in identifying infected patients. Minimizing infection transmission to HCWs is important to protect HCWs themselves as well as to limit further transmission to their coworkers and potentially vulnerable patients.

52. Tanzima Islam – MScCH Family and Community Medicine

“Suicide in Muslim Women; Breaking the Silence”

Background: Conventional wisdom and the literature suggests that religious affiliation is a protective factor against suicide and suicidal behaviour. Islam has clear prohibition against suicide in the Quran. This prohibition combined with negative attitudes toward suicide have been cited to explain low reported rates in the Muslim world. However, this requires critical examination -First, because of the strict religious and legal prohibition against suicide in Muslim majority countries (MMC), many deaths may not be reported or are misclassified. Second, stigma against suicidal behaviour and mental illness may contribute to low frequency of help-seeking. Finally, recent survey data showed suicidal behaviour and suicide rate may be higher among Muslims, particularly youth, than previously reported. Pilot data from our group has shown that young first- and second-generation immigrant women from MMCs may have higher- than-average rates of suicidal behaviour than their age- and sex- matched group. **OBJECTIVE:** To explore the rates and risk factors for suicide and suicidal behaviour in young Muslim women (18- 45 years old) globally through a systematic literature review. **METHODS:** A Systematic literature review was done. Research papers with data were available from Muslim majority countries (i.e. Bangladesh, India, Pakistan, Egypt, Syria, Sudan, Turkey, Iraq, Iran, Jordan, Kuwait, Azerbaijan, Indonesia, Saudi Arabia, Lebanon, Tunisia) and from Muslim populations in non-Muslim majority countries. **RESULTS:** Preliminary findings indicate higher- than-expected rates of suicide or attempted suicide among young Muslim women. In young Muslim women relational stress and trauma, including physical, emotional or sexual abuse and gender role expectations, are identified as a risk factor for suicidal behaviour. **CONCLUSION:** Rates of suicide and suicidal behaviour in young Muslim women are underreported and vary by country of origin. Further investigation is urgently needed to develop culturally- congruent screening, and targeted interventions to identify and support women at risk.

53. Tenzin Butsang – MPH Indigenous Health

“Kijibashik: Turn it Around – Stories About Motherhood from Previously Incarcerated Indigenous Mothers in Ontario”

Over the last decade, there has been a dramatic increase in the number of incarcerated Indigenous women within Canada's federal prisons. More than half of these women also identify as single mothers of multiple children, extending the scope of incarceration's impact across generations. While maternal incarceration has been shown to contribute to a myriad of issues in children, including mental illness and increased mortality, there are few qualitative studies where previously incarcerated Indigenous women have been asked directly about the impact of incarceration on their wellbeing and mothering. This project will utilize a community-based research methodology that centers the voices of previously incarcerated Indigenous mothers by examining the commonalities and distinctions in their lived experiences. We will (1) identify the mental, emotional, spiritual, physical, and relational implications of incarceration for Indigenous mothers, (2) explore Indigenous concepts of motherhood and kinship, (3) identify the unique needs of this population in the criminal justice system, and (4) inform new and existing programs and services directed towards Indigenous mothers involved in the criminal justice system. Semi-structured individual interviews with previously incarcerated Indigenous mothers and Sharing Circles (focus groups) with key stakeholders, including Elders, Healers, and community partners involved in the criminal justice field will form the core knowledge for the project. This project will address a critical gap in public health research concerning the wellbeing of marginalized and incarcerated individuals and contribute significantly to our understanding of the experiences of Indigenous women in the criminal justice system. Through a collaborative partnership with several key Indigenous-centred organizations, the knowledge generated will be used to inform and develop decarceration programming and supports for previously incarcerated Indigenous mothers, establishing concrete measures to reduce the overrepresentation of Indigenous women in the Canadian criminal justice system, now and into the future.

54. Tiffany Fitzpatrick – PhD Epidemiology

“Community-based antibiotic prescribing attributable to respiratory syncytial virus and other common respiratory viruses: a population-based study of Scottish children, 2009-2017”

Background: Recent research suggests inappropriate antibiotic prescribing, such as that for viral illness, is common in primary care. This is of growing interest given concerns around antimicrobial resistance and harms associated with unnecessary treatment. The objective of this study was to estimate the proportion of antibiotics prescribed in the community to children (under five years) attributable to common respiratory viruses, including respiratory syncytial virus (RSV), influenza, human metapneumovirus (HuMPV) and parainfluenza. **Methods:** We fitted time series negative binomial models to predict weekly antibiotic prescribing rates from positive viral pathogen tests rates for the period April 1st, 2009 through Dec 27th, 2017 using comprehensive, population-based administrative health data for all Scottish children (<5 years). We used these models to estimate the proportion of antibiotics prescriptions explained by virus circulation according to type of virus (RSV, influenza, HuMPV and parainfluenza). We further stratified our analysis to investigate potential differences according to age group, presence of high-risk chronic medical conditions, and antibiotic class. **Results:** We included data on over 6 million antibiotic prescriptions among nearly 800,000 children. An estimated 6.92% (95% CI 5.59, 8.25), 2.38% (1.67, 3.09), and 2.34% (0.77, 3.91) of prescribed antibiotics were attributable to RSV, influenza and HuMPV, respectively. RSV was consistently associated with the highest proportion of antibiotics prescribed across all analyses, but particularly among children without chronic conditions and for amoxicillin and macrolide prescriptions. **Conclusions:** Nearly 14% of antibiotics prescribed to Scottish children in this study were estimated to be attributable to common viral pathogens for which antibiotics are not recommended, such as RSV. **Impact:** This work highlights readable targets for antibiotic stewardship programs which could substantially reduce inappropriate and unnecessary antibiotic prescribing. Further, these findings suggest that antibiotic prescribing could be considerably reduced among young children once an RSV vaccine is introduced in the coming years.

55. Umayangga Yogalingam – MPH Social and Behavioural Health Sciences

“Conducting an Impact Evaluation of the Growing Healthy Bodies Module”

The Growing Healthy Bodies (GHB) module is a part of the Canadian Institute for Child Health (CIHC) profile, an online compendium that evaluates and summarizes data on the health and well-being of Canadian children and youth. It aims to be a network of up-to-date information with the purpose of raising awareness of the poor health outcomes of Canadian children and youth and spurring health behaviour changes. As the CIHC ceased its operations in 2018, an evaluation of the GHB module was proposed to determine if it was worth investing further resources into the upkeep and modification of the GHB module. An evaluability assessment was conducted which found that the GHB module was not evaluable in its current state for many reasons. Recommendations for evaluability and a preliminary impact evaluation plan were put forth. The difficulty in evaluating the GHB module has shown that the real-world application of public health skills and knowledge is not as tidy as the application of skills in an academic setting. One of the biggest challenges when trying to evaluate the GHB module is that the CIHC, the host organization of the module, had shut down therefore obtaining background documents and information from individuals involved in the development and implementation of the GHB module were difficult. Furthermore, there was no agreed upon goal, purpose and target audience for the module making it difficult to determine if the GHB module had an impact on its users. The evaluation of the GHB module is important to public health as it can determine whether it is a resource that can lead to positive health change among Canadian children and youth, and whether resource allocation is beneficial or wasteful. The inability to evaluate the GHB module speaks to the importance of accounting for evaluation in program planning and development.

56. Yulika Yoshida-Montezuma – MPH Epidemiology

“Don’t Take it With a Grain of Salt: The Effect of Global Sodium Reduction Strategies on the Sodium Intake of Canadians.”

Background: Currently, sodium consumption of Canadians (2760 mg/day) exceeds the 2300 mg/day tolerable upper level putting Canadians at risk for hypertension and cardiovascular disease. Voluntary sodium reformulation strategies have been implemented in Canada, the United Kingdom (UK), United States (US) to reduce sodium intake from processed foods. The potential for sodium reformulation to reduce sodium intake across socioeconomic position (SEP) is not well understood. The objective of this study was to evaluate the extent to which fully achieving sodium reformulation targets for processed foods outlined in the Canada, UK, US strategies would decrease population and social inequities in sodium intake in Canadian adults. Design: A cross-sectional study was conducted using the 2015 Canadian Community Health Survey–Nutrition (n=13,519 participants aged ≥19 years, 53% females). Foods from the 24-hour dietary recall were matched to each country’s sodium reduction categories and target sodium levels were applied. Multivariable linear regressions were used to estimate mean sodium intake for the population and across SEP indicators (educational attainment, household food security, and household income adequacy quintiles). **Results:** Achieving Canada’s targets would reduce average sodium intake by 279 mg/day (95%CI: 307,251) compared to baseline. UK’s sodium targets would achieve greater reductions, decreasing average sodium intake by 342 mg/day (95%CI: 371,313). The US sodium targets would increase average sodium intake by 115 mg/day (95%CI: 53,178). Achieving sodium reformulation targets resulted in greater reductions in sodium intake in men, and in lower SEP groups. For example, educational inequalities in sodium intake observed at baseline were reduced in men [Canada: 154 mg/day (95%CI: -104,413); UK: 186 mg/day (95%CI: -72,443)] and eliminated in women. **Conclusion:** Achieving targets outlined in Canada and UK’s voluntary sodium reformulation strategies would significantly reduce mean sodium intake in Canadians. This study demonstrated the potential for reducing social inequities in sodium intake and health.

57. Zahra Hussain – MPH Epidemiology

“SickKids Centre for Global Child Health - Chronic Child Malnutrition Project Placement”

Introduction: Globally, 52 million children under 5 years of age are wasted, 17 million are severely wasted and 155 million are stunted. Linear growth stunting is a visible and easily measurable physical manifestation of chronic malnutrition. Wasting is a form of acute malnutrition. Around 45% of deaths among children under 5 years of age are linked to forms of undernutrition. **Methods:** I completed a 16-week practicum at the SickKids Centre for Global Child Health where I was a part of the stunting team led by Dr. Nadia Akseer under the research portfolio of Dr. Zulfiqar A. Bhutta. At the time of my placement, one of the team's main projects was a mixed-methods study involving an in-depth evaluation of policies, programs, and factors that have contributed to the decline of under-5 stunting in Ethiopia from 2000-2016. I worked on a variety of components of the manuscript for this study. These included narratives for country demographics, background statistics as well as migration and remittance trends. I also contributed to literature review examining factors related to child stunting reduction decline in Ethiopia from 1990-2019. In addition to the manuscript, I conducted a multivariable analysis of the 2016 determinants of under-5 wasting in Ethiopia. I applied a hierarchical analysis to wasting indicators such as disease, household wealth, maternal education and access to health services. I used Ethiopia's 2016 Demographic and Health Survey data and additional data sources provided through various Ethiopian government ministries. **Outcomes:** My hierarchical analysis found asset index, maternal education, household crowding, maternal BMI, and diarrhea to be associated with under-5 wasting. The literature review concluded that many distal, immediate, and proximal factors contributed to the decline in stunting from 2000 to 2016. I learned about the determinants of malnutrition while developing qualitative and quantitative research skills. I also gained a deeper understanding of global health research process and the multi-sectoral nature of combating child malnutrition.