**Winter 2018 Practicum Abstracts**

MPH Epidemiology students conduct placements at a variety of organizations and on a variety of topics. Below you will find a selection of practicum abstracts from Winter 2018 practica. Students have provided their consent to share these abstracts, which were submitted to the DLSPH as a part of their final practicum package. The structure of the abstract varies depending on the amount of information that could be shared by the student and the student’s preferences in format.

**J.J.**

Institute for Clinical Evaluative Sciences

My second and final practicum placement was held at the Institute for Clinical Evaluative Sciences (ICES). ICES is an independent, not-for-profit organization that receives core funding from the Ontario Ministry of Health and Long-Term Care to provide trusted, high quality health services research and evidence. The organization maintains a vast array of Ontario’s health-related data, such as population-based surveys, anonymous patient records, and clinical databases. Reinforced with data and clinical experts at ICES, the organization consistently conducts innovative research.

Specifically, I work under the Primary Care and Population Health Research department, which focuses on the accessibility and effectiveness of primary health care and issues in population health. As it will be discussed in further detail below, my work focuses on influenza vaccine effectiveness among older adults.

*Background:* Existing studies have suggested that influenza vaccine effectiveness (VE) tends to decline within the season. Our primary objective was to examine the effects of increasing time since vaccination on type-specific influenza VE in older adults aged over 65 years.

*Methods:* Using the test-negative design, we estimated VE using logistic regression for the 2010-2016 seasons among community-dwelling older adults aged over 65 years in Ontario, Canada. Laboratory and health administrative data were used to obtain lab-confirmed influenza infection, vaccination status, and other demographic variables. The time between specimen collection and vaccination (in days) served as the main predictor and was modeled using restricted cubic splines. Vaccine effectiveness was estimated at each time since vaccination from day 1 until the end of the influenza season.

*Results:* We included 10,595 individuals who tested positive for influenza and 43,515 individuals who tested negative for influenza. For type A(H1N1), the aVE peaked at 71% (95% CI: 50-86) at 25 days, and reached 0% by 170 days. For type A(H3N2), the aVE rose to 38% (95% CI: 27-48) at 32 days, and fell as low as 5% (95% CI: -11-19) at 112 days. For type B, the aVE peaked at 50% (95% CI: 10-75) at 29 days and declined to as low as 29% (95% CI: 13-43) at 89 days.

*Conclusion:* We identified a trend in waning immunity from the seasonal influenza vaccine. However, at this time we do not recommend any changes regarding when older adults should receive their seasonal influenza vaccination. **A.C.**

The Centre for Global Health Research, Li Ka Shing Knowledge Institute

I completed my 12-week practicum placement at the Centre for Global Health Research (CGHR) located in the Li Ka Shing Knowledge Institute of St. Michael’s Hospital. The CGHR is comprised of a multi-disciplinary team of talented researchers who aim to contribute to the field of global health by conducting epidemiological studies around the world. During my placement I had the privilege of working on data obtained from the Million Death Study (MDS), which examines premature mortality in India from 1998-2014. The MDS focuses on death arising from a number of causes, including non-communicable diseases such as cancer, communicable diseases such as malaria, or external causes such as snake bites. My particular project focused on the latter, involving the analysis of age- sex- and cause-specific trends in injury morality from 2001-2013. This project enabled me to assume the role of a primary data analyst and introduced me to the skills and competencies needed to work with big data. In this role, I was able to develop my skills in descriptive epidemiology by working with Stata software. This involved familiarizing myself with how to conduct demographic analyses by taking an online course, working with my supervisors and other professionals at CGHR to enhance my knowledge of Stata, and broadening my understanding of methods of data visualization by learning how to create two-way area plots and cycle plots. I also had the opportunity to apply skills from a previous practicum placement by creating and implementing a literature search strategy in collaboration with a health information specialist to inform the interpretation of my results. In summary, this placement has greatly enhanced my confidence as a public health professional. I have gained invaluable knowledge in the field of global health research and would highly recommend this position to students interested in this field who are seeking to broaden their knowledge of data analysis and graphing.

**C.L.**

Occupational Cancer Research Center (OCRC) and the Occupational Disease Surveillance System (ODSS)

Title: New Onset Adult Asthma (NOAA) Among Ontarian Workers: Results from the Occupational Disease Surveillance System (ODSS)

Objectives: Asthma is a common illness and attributing its onset to workplace exposures is difficult. Created by linking various administrative health databases, ODSS captures occupational information, presenting a unique opportunity to identify workers at high-risk for NOAA and other diseases.

Methods: Data from Workplace Safety and Insurance Board (WSIB) time-loss claimants was linked to OHIP eClaims data from 1999-2016. Workers at-risk of NOAA were followed from the date of their first WSIB claim to date of diagnosis, age 65, death, emigration out of province, or end of study period, whichever occurred first. NOAA was defined as having at least 2 OHIP eClaims (ICD-9 code 493) within a 1-year period following a worker’s first WSIB claim. A 3-year washout period prior to cohort entry was used to eliminate workers with pre-existing asthma. Using a 3-year follow-up period, age- and sex-adjusted Cox proportional hazard models were used to estimate disease risk by occupation and industry at the division, major and minor levels.

Preliminary Results: There were 31,873 cases of asthma identified among the 596,927 workers. Of these cases, 10,325 were NOAA, resulting in a prevalence of %0.053 in this study population. Significantly elevated or reduced risks were observed among many expected minor groups, including bakers, confectionery makers and related occupations (HR 1.60, 95% CI 1.22-2.09), metal shaping and forming occupations (HR 1.28, 95% CI 1.02-1.61), and certain farming industries (HR 0.54, 95% CI 0.31-0.96).

Next Steps: To examine the possibility of a healthy worker bias whereby pre-existing asthma precludes working in “blue-collar” jobs, analyses will be stratified by blue- and non-blue-collar worker groups. Sex-stratified analyses will also be generated. Finally, an asthma job-exposure matrix will be adapted to help identify potential workplace risks associated with NOAA.

**A.P.**

Sanofi Pasteur

At Sanofi Pasteur where vaccines are produced to save lives, everyone’s work is crucial in ensuring optimal quality in the products. Working in the global pharmacovigilance department gave insight into the role of public health on a global scale. As part of the risk-benefit group, we were tasked with ensuring the benefits of the vaccine always outweigh the risks. A crucial aspect of this was to select appropriate risk windows for assessing adverse events of special interest (AESI) post-vaccination in order to prevent biased estimates. An extensive literature review was conducted to extract risk window information on 10 AESIs studied in published articles in relation to specific vaccine products. A compilation of the research was visually summarized in graphs and a written report for future use by members of the pharmacovigilance department and its extended group of Global Safety Officers (GSOs). In doing so, any future cases brought to the department’s attention about possible vaccine-related AESIs can be quickly assessed using a more reliable and accurate risk window for that event.

**D.W.**

Peter Gilgan Centre for Research and Learning, The Hospital for Sick Children

I completed my practicum at the Peter Gilgan Centre for Research and Learning at Sick Kids in the Child Health and Evaluative Science Unit under the supervision of Dr. Linda Hiraki. My research project focused on the genetics of lupus nephritis (LN), a major renal complication of systemic lupus erythematosus (SLE). Specifically, I worked on a project that examined the association between the genetic burden derived from both HLA and non-HLA SLE-risk loci and LN in two pre-established multi-ethnic Toronto-based SLE cohorts. Among these genotyped individuals, cases and controls were defined in our two subsequent analyses as LN vs. no LN and proliferative LN (a more severe prognosis) vs no LN respectively. We computed genetic risk scores (GRS) to measure the cumulative burden of multiple genetic variants. Specifically, we computed a non-HLA GRS and two HLA GRSs (one with SLE-risk and protective alleles and one with only risk alleles). We examined the association between these GRSs and our outcome variables using marginal modelling followed by multivariate logistic regression adjusted for sex, age of SLE diagnosis, duration of follow-up and stratified by lupus clinic and inferred ancestry. We meta-analyzed the resultant effect estimates using the inverse-variance weighted average method. During my practicum I had the opportunity to present findings at group meetings and have prepared a draft manuscript intended for submission to a peer-reviewed journal. Overall, I learned a lot during my time at Sick Kids and it was a very rewarding experience.

**R.L.**

Child Health Evaluative Sciences program, The Hospital for Sick Children

My second practicum was completed at the Hospital for Sick Children (SickKids) in the Child Health Evaluative Sciences program. SickKids is a large academic hospital aimed to improve the health and quality of life of children. Their mission is achieved, directly through patient care and medical services or indirectly through furthering health research. The Child Health Evaluative Sciences (CHES) program is one of the many programs within the Research Institute at SickKids. It is made up of a multidisciplinary team of researchers who work to translate findings into practice and policy. My supervisors are Drs. Andrew Howard and Linda Rothman, and their research is on injury prevention among children. Together they seek to understand how the built environment impacts the risks of injuries in children.

During my practicum, I conducted an independent research study evaluating the safety of cycle tracks in Toronto in reducing the frequency of car-bike collisions. As part of this study, I was required to develop a protocol of how I would answer this research question. I conducted a literature review and formulated a research hypothesis, developed an appropriate methodology, and conducted quantitative analysis. These activities aided in my learning and further development of research skills. Additionally, I gained a wide range of skills in ArcGIS, such as mapping data, manipulating data tables, and performing spatial analysis. In order to learn these skills, my supervisors were able to provide me with resources to help me carry out this work. I also attended workshops offered at the Map and Data Library at the University of Toronto which furthered my skills. In March, I attended the Ontario Road Safety Forum and presented preliminary results of my research. I had also prepared and submitted an abstract to the World Safety Conference. Furthermore, I’ve supported in the coordination activities for two multi-center national observational study and case-crossover study.

**K.H.**

Cancer Care Ontario

My second practicum was completed at Cancer Care Ontario, working with the research and surveillance team in the Aboriginal Cancer Control Unit (ACCU). The ACCU aims to improve cancer care for Ontario’s First Nations, Inuit and Métis people. The unit strives to reduce inequities in care and access to cancer services to ultimately improve cancer outcomes. My primary responsibility during practicum was contributing to a systematic review of environmental health at a First Nations community in Ontario. The systematic review was part of a community-led initiative that aimed to consolidate past research to piece together a more complete picture to describe the potential connection between the impacts of environmental exposures and community health, specific to cancer outcomes. Through this project, I engaged with external stakeholders, and traveled to the community to present our findings. I also had the opportunity to create and present a research poster on commercial tobacco exposure in First Nations, Inuit and Métis people in Ontario and develop an Ontario Cancer Facts report, which is published on Cancer Care Ontario’s website. I attended monthly team meetings, where I learned about the diverse work being done by members of the ACCU across the province. Through working with the ACCU, I gained a rich understanding of Aboriginal health, and the challenges that exist in conducting this type of research.

**A.M.**

Peter Gilgan Centre for Research and Learning – The Hospital for Sick Children

My practicum took place at the Peter Gilgan Centre for Research and Learning (The Hospital for Sick Children) with the EnRICH Group (<http://www.enrich-network.org/>) in the Child Health Evaluative Sciences (CHES) program, which is a team of interdisciplinary staff that aim to improve pediatric health care and health research quality and delivery through knowledge translation, public health policy, and clinical research. The main component of my practicum work was writing the protocol for the development of a new reporting guideline, the Instrument for reporting Planned Endpoints in Clinical Trials (InsPECT). This task entailed planning the evaluative design of guideline development and consulting with stakeholders on the collaborative research team to ensure that the project adheres to reporting guideline development standards. One aspect of InsPECT is conducting a Delphi study and consensus meeting to refine the guideline to a minimally important set of items for outcome reporting in clinical trials. I was responsible for designing the Delphi study and the survey required to conduct the study. This survey was developed using REDCap data management programming. In addition to conducting a Delphi study for InsPECT development, this reporting guideline requires undergoing a reliability and validity study once the minimally important list is finalized. My role for this aspect of InsPECT development was to review the literature on reliability/validity testing and develop the analysis plan for this study. Throughout the entire development planning of InsPECT, I presented my progress regularly to the local research team and our international collaborators and submitted an abstract to a national conference to present the InsPECT project through a poster and oral presentation.

**J.A.**

World Health Organization, Geneva, Switzerland

I worked with the Country Health Emergency Preparedness and International Health Regulations department at the World Health Organization (WHO) Headquarters in Geneva, Switzerland. I was responsible for an independent project, conducting a return on investment analysis of early warning alert and response systems (EWARS), specifically conducting a case study using data from Pakistan. My department is part of WHO’s Emergencies Programme, the mandate of which is very broad, from ensuring prevention through preparedness to early warning, response, and early recovery. The International Health Regulations (IHR), which are a part of this mandate stipulate the need for countries to work together towards global health security by building their capacities to detect, assess and report public health events. One of the key areas of capacity building is the need for robust surveillance systems. This includes the development of EWARS, which are fundamental for communicable disease outbreak detection and management. The establishment and operationalization of EWARS in a country requires human, financial, and technical resources. Despite the costs of EWARS, the societal and public health benefits are manifold, and are hypothesized to outweigh the investment. I conducted a cost benefit analysis to establish the value of EWARS, in monetary terms. During my practicum, I got the opportunity to explore areas of WHO work outside of my project. I attended a joint external evaluation (JEE) team lead training event for the WHO Europe Office, where I learned about the new JEE tool, and interacted with interns, consultants and technical officers from other teams. This was a great experience especially in terms of building technical skills and learning more about the global health diplomacy milieu.

**A.A.**

Communicable Disease Surveillance Unit, Toronto Public Health (TPH)

I completed my second practicum as a Masters of Public Health student specializing in Epidemiology with Toronto Public Health (TPH). TPH is a local public health unit that reports to the Board of Health and is responsible for the health and well-being of the people of Toronto. At TPH, I was part of the Communicable Disease Surveillance Unit (CDSU), which is responsible for providing cross-cutting support to programs within the Communicable Disease Control Service (CDC) directorate. CDCs goal is to prevent and control the spread of communicable diseases in the city of Toronto by providing immunizations, health education and counselling, clinical services and responding to reports of communicable diseases and outbreaks in the community and institutions. CDC is composed of various programs, one of which is Integration, Information & Surveillance (IIS). The purpose of the IIS program is to provide leadership, expertise, support, and coordination to program teams across CDC with the use of the most current and robust information to inform their public health practice. One of the units within IIS is CDSU.

The majority of my time at TPH was spent working on an independent project on Hepatitis C transmission in Toronto, with a focus on men who have sex with men (MSM). This project was decided on as the Associate Medical Officer of Health (AMOH) for bloodborne infections noticed an increase in male HCV cases reporting sexual contact with men as a risk factor for the disease in 2016. The objective of my project was to investigate this increase to determine the most likely reason for this shift. The following project activities were outlined for me during my arrival at TPH: shadow/meet with the Bloodborne Division (BBD) team member(s) to understand process for HCV case investigation; review literature, generate hypotheses, establish appropriate analysis plan (given the availability of data sources and potential limitations) and conduct epidemiological analysis, exploring demographic and laboratory data; write final report summarizing practicum project, including a description of implications for public health programs and prepare/deliver presentation to CIDIC-BBD team; and if possible, investigate an outbreak of foodborne illness and generate an epidemiological summary of investigation. My learning objectives were to investigate possible reasons for HCV risk factor increases and the application of epidemiology to public health programs, gain practical experience working with public health surveillance data and other relevant data sources, and develop skills and gain experience related to the investigation of a communicable disease outbreak.

**E.B.**

Dalla Lana School of Public Health

My practicum placement took place within the Dalla Lana School of Public Health, supervised by Dr. Laura Rosella. I worked with the Population Health Analytics Laboratory as part of the OPTIMISE research program, a multidisciplinary effort to investigate trends in Ontario mortality and inform health system decision-making. This practicum term was the 2nd placement of my Capstone project investigating geographic patterns of mortality in Ontario. The goal of my practicum project was to conduct a spatial analysis of adult premature mortality in Ontario’s Local Health Integration Networks (LHIN) sub-regions. I used a Bayesian hierarchical spatial modelling approach to characterize premature mortality patterns at the LHIN sub-region level between 2011 and 2015. I then used population-level demographic and behavioural data to determine to what extent the geographic disparities in premature mortality can be explained by underlying population characteristics. This analysis is the first of its kind in Ontario.

**A.R.**

Occupational Cancer Research Centre

The Occupational Cancer Research Centre has provided an opportunity for me to learn more about the biological effects of ionizing radiation in a large and diverse occupational cohort. I conducted an independent research project using an established cohort file to assess the risk of developing lung cancer, leukemia, and cardiovascular disease as a result of exposure to chronic, low-level gamma radiation over a career as a uranium miner in Ontario. This project first involved reconstruction of gamma exposures using predictive modeling methods, and then estimating the risk of the outcomes of interest using Cox proportional hazard models. The OCRC team has been very welcoming, and has provided the expertise to advance my statistical software repertoire and database management skills. Overall, this practicum has allowed me to refine the epidemiologic techniques learned in the MPH program, and apply them to research in the field of occupational health.

**G.K.**

World Health Organization in Geneva, Switzerland

From January to April 2017, I completed my second global health practicum at the World Health Organization in Geneva, Switzerland. As a student in the Reproductive Health and Research Programme, my major responsibilities within the practicum focused on sexual and reproductive health (SRH) research in adolescent and at-risk populations. I worked as a peer reviewer for a systematic review on SRH events and mental health outcomes in adolescents. This systematic review was an excellent opportunity to advance the analytic and technical skills acquired throughout my graduate studies at the Dalla Lana School of Public Health, as I was able to develop and execute the necessary protocol and search strategy documents required in a systematic review process. While the review is currently in the title and abstract screening stage, exposure to the review process has provided invaluable insight into WHO research and its impact at the global level. In addition, I completed background research on sexual practices that later informed the development of a concept note for a novel global sexual practices survey. Finally, I was able to support the sexual health portfolio through my participation in multiple high-level meetings, such as the Policy and Coordination Committee and Gender Advisory Panel meetings. The breadth and depth of these opportunities, in addition to my engagement with the internship working groups and departmental seminars, were integral to the success of this practicum and to the achievement of my learning objectives.

**S.T.**

Public Health Ontario

I worked at Public Health Ontario (PHO) for my second practicum. PHO is responsible for the health of Ontarians; this agency aids in the prevention and control of chronic and infectious diseases, conducts relevant research and responds to public health emergencies. I worked with the Enteric, Zoonotic and Vector-borne Disease (EZVBD) team, with the majority of my responsibilities focused on a project aimed at improving Campylobacter aberration detection in Ontario. During this practicum I worked with data from the integrated Public Health Information System (iPHIS), which is a provincial database that collects information on all reportable diseases in Ontario.

PHO utilizes a CUSUM algorithm to detect aberrations of infectious diseases; each enteric aberration is flagged and an alert is sent to the EZVBD team. Throughout my practicum I investigated various aberrations to determine if clustering by age, gender, location or risk factor exposure was present and thus, if further epidemiological analysis was necessary. This experience allowed me to achieve my learning objective of interpreting infectious disease data. In addition, I was able to attend meetings that discussed on-going outbreak investigations. Together, these experiences also allowed me to achieve my learning objective and core competency of identifying and investigating disease clusters.

**R.L.**

Centre for Urban Health Solutions at St. Michael’s Hospital in Toronto

I completed my practicum with the Well Living House (WLH), located at the Centre for Urban Health Solutions at St. Michael’s Hospital in Toronto. The WHL is an action research centre that focuses on Indigenous infant, child and family health and well-being, and works to assess and respond to health inequities and barriers to care for Indigenous peoples in Ontario. The WHL is unique in its dual accountability routes: one to St. Michael’s Hospital and the other to the Indigenous communities through the Counsel of Grandparents. It builds on similarities and synergies between Indigenous and Western science and uses both community-based and mainstream academic knowledge and expertise to inform their work. Throughout my practicum I worked on three main projects; compiling a preliminary survey question bank for Our Health Counts studies in Kenora and Thunder Bay, drafting a “Summary Report of an International Indigenous Cohort Expert Consensus Panel” identifying wise practices for community engagement in Indigenous cohort studies, and completing a manuscript on mobility and access to healthcare for urban Indigenous adults in Toronto, base on Our Health Counts Toronto data, which utilizes innovative respondent driven sampling methodology for analysis. I further had the opportunity to assist with completion of factsheets and the final report for the OHC Toronto study, event planning for a diverse group of attendees at the OHC Ontario launch meeting, the chance to participate in a workshop addressing Indigenous maternal health service provision in Toronto and assisting with commercial tobacco reduction knowledge translation pieces and evaluation processes. Overall my experience at the WLH exposed me to a broad range of work in Indigenous health and gave me the opportunity to expand my knowledge about Indigenous health research methods and community engagement.

**A.S.**

Dalla Lana School of Public Health

My practicum placement was with DLSPH Professor Dr. David Fisman, whose research interests lie in the epidemiology of infectious diseases including community- and hospital-acquired pneumonia, enteric infections, and the impact of seasonality, environment, and climate change. Dr. Fisman also does significant work with mathematical modeling and simulation of infectious diseases.

The objectives of my practicum were to examine Invasive meningococcal disease (IMD), a life-threatening illness that traditionally displays wintertime seasonality. The mechanisms driving seasonal oscillations are poorly understood and may be influenced by both environmental conditions or co-occurring respiratory virus activity. My research investigated the impact of influenza and environmental determinants on risk and seasonality of IMD. This was done throughevaluation of IMD cases from ten regions across Australia, Canada, and France between January 2000 and December 2011, reported through population-based surveillance or obtained from large hospital laboratories. Associations between environmental exposures (i.e. temperature, absolute humidity, ultraviolet [UV] radiation) and normalized weekly influenza activity on IMD occurrence were evaluated using a 2:1 matched-period case-crossover design with random directionality of control selection. In this practicum, I utilized novel statistical methods to analyze public-health and environment-related information derived from both publicly available and population-level surveillance sources.

**D.F.**

Public Health Ontario

The environmental burden of disease (EBD) has previously been estimated to range from 3% to 23%. Public Health Ontario is undertaking a project to estimate the burden of ‘non-cancer’ health outcomes attributable to 11 environmental hazards, such as food and water-borne illness, air pollution, aeroallergens, and temperature. As part of my practicum, I estimated the environmental burden of asthma and rhinitis due to aeroallergens. I conducted a literature review to identify Ontario-relevant population attributable fractions, and then multiplied these values the number of deaths and healthcare utilizations (including hospitalizations, emergency department visits, and physician office visits) in Ontario, 2012. Probabilistic risk analysis was utilized to calculate a range of plausible burden estimates. The environmental burden of asthma was determined to be much higher than for rhinitis (e.g. 3,700 [plausible range: 2,100–5,500] asthma hospitalizations vs. 17 [plausible range: 8-28] rhinitis hospitalizations). During my practicum, other responsibilities included the composition of a literature search strategy to identify project inputs (e.g. concentration-response functions, population attributable fractions), which has been included in the project’s standard operating procedures. I also began exploration of the temperature hazard and outcomes such as excess mortality and hot and coldrelated illness. Finally, I reviewed methods to combine outcome measures, such as economic unit costs and quality-adjusted life years. Altogether, the EBD project hopes to compare the relative burdens across environmental hazards in order to inform public health and environmental action and decision making.

**M.M.**

Centre for Food-borne, Environmental and Zoonotic Infectious Diseases, Public Health Agency of Canada

Prior to 1999, West Nile Virus (WNV) had not been detected in the Western Hemisphere. The introduction of West Nile Virus in North America was followed by progressive spread through Canada and the United States with periodic outbreaks leading to high rates of disease in humans. Despite some of the well-established climatic conditions that contribute to increased activity, the future epidemiology of WNV remains uncertain. In order to better predict and prepare for future potential spread and outbreaks, it is prudent to determine geographic regions that could become suitable for transmission as a result of climate change. Human cases reported by public health units and counties between 2002 and 2016 were collapsed into a WNV presence dataset. Maximum entropy (MaxEnt) algorithm, which incorporates known relationships between species’ distribution and environmental covariates, was used to create baseline models. These baseline models were used to develop projections under the representative concentration pathway (RCP) 4.5 and 8.5 climate change scenarios to determine future climatic suitability for WNV.

**M.P.**

Urology Division, Hospital for Sick Children (SickKids)

Context: Clinically inappropriate referrals may contribute to reduced health outcomes for patients and their families, and lead to inefficient use of physician time and increased healthcare costs. Since the division of Urology at SickKids oversees 12,000 patients annually and performs up to 2,000 surgical procedures per year, it is imperative to re-evaluate its current referral system in order to improve the triage of clinics for maximum patient and provider benefit. The aim of this project is to investigate the clinical appropriateness of referrals brought forth to the department of urology. We will do this by: (i) evaluating the number of appropriate referrals per specialist, (ii) examining the underlying trends in the types of referrals to the urology division (iii) determining specialists’ perspectives regarding the appropriateness of the referrals they receive from generalists, and (iv) implementing an intervention based on referral pattern findings.

Responsibilities: As a practicum student, my main responsibilities consisted of submitting a study proposal to the SickKids Quality Improvement committee, collecting data using self-designed surveys from patients and hospital staff, and entering all collected information into secure data capturing software. I then analyzed data intermittently throughout the patient accrual process and began to draft components of a manuscript suitable for publication in a scholarly journal.

**D.D.**

The Hospital for Sick Children

A second-year epidemiology practicum was obtained at the Centre for Global Child Health at SickKids, within the International Program Evaluation Unit (IPE-U). This unit provides technical assistance to international NGOs, governments and funders related to the design, implementation and evaluation of international health programs. For this practicum, the student worked on the Amref Project that is part of an initiative to reduce maternal/infant mortality in East Africa. The student assisted with planning, coordinating and monitoring data collection for annual health facility assessments and antenatal care client exit interviews. The student programmed the tools into Open Data Kit (ODK) Collect for data collectors in the field to utilize on their tablets. Training materials were designed for the conduct of the ANC client exit interviews, and training sessions with program officers were facilitated by the student. Analysis of findings was based on the performance measurement framework (PMF) indicators of the project. Descriptive analysis was conducted using SAS, and findings were reported narratively for the program officers. This practicum allowed the student to develop skills in global health program evaluation and project coordination, while pursuing a general interest in maternal and child health.

**K.N.**

Population Health Solutions Lab, Sinai Health System

At the Population Health Solutions Lab, I completed a practicum involving the design of an innovative solution to the opioid overdose deaths in Toronto. The solution involves an app that connects people who use drugs to a network of responders trained in overdose reversal that carry naloxone. At the lab I worked closely with the project coordinator on the planning of community engagement sessions, as the project is rooted in the principles of co-design. I exercised and developed skills in communication and community engagement in this process. In addition, I was responsible for documentation of the process past, present and future with the purpose of creating a guide that could be used to implement a similar solution in another jurisdiction. Through this work I developed skills in knowledge translation. Overall this was an exciting opportunity at a start-up lab working on an innovative solution for a population I am passionate about. I would prefer if this abstract was not used for the purpose of promoting the practicum program.