Summer 2024 – MPH Epidemiology Practicums

A.A.
Institute for Work and Health

During my practicum placement with the Institute for Work and Health (IWH) under the supervision of Dr. Faraz Vahid Shahidi and Dr. Anne Fuller, I explored the impact of parental job quality on children's mental health. My time with IWH was divided into 3 tasks: 1. Writing a lay article, 2. Writing an annotated bibliography and 3. Creating my own study protocol.

The lay article I wrote with the guidance of Dr. Shahidi and Dr. Fuller was based on a manuscript which examined the relationship of parental job quality and its effect on children's emotional and behavioural problems as well as their school performance. This allowed me to focus on knowledge translation - taking scientific material and making it accessible to lay audiences, which I believe to be a vital skill as a public health professional.

Tasks 2 and 3 fed into each other as the annotated bibliography helped to supplement my study protocol. The annotated bibliography allowed me to critically analyze multiple research articles quickly and efficiently to understand the main points of each paper. This analysis helped in the creation of my study protocol which examined the effects of parental non-standard work schedules (i.e., evening, night, and weekend work) and its effect on anxiety/emotional disorders and conduct disorders in children. Data from the National Longitudinal Survey of Children and Youth (NLSCY) was used for the analysis which was conducted biennially from 1994 to 2008. Specifically, I examined cycles 5, 6, and 7 to determine parents non-standard work schedules and cycle 8 for child reported anxiety/emotional and conduct disorders.

With the guidance of Dr. Shahidi and Dr. Fuller, I was able to formulate my own research question, work with a new dataset, design and implement my own study, and write a brief scientific report on the findings. Overall, this experience with Dr. Shahidi and Dr. Fuller has been an enjoyable and enriching experience as I continue my academic and professional journey.

K.B.H.C.
Public Health Ontario

I had the pleasure of completing my practicum at Public Health Ontario in the Department of Health Promotion, Chronic Disease and Injury Prevention (HPCDIP). During this placement, I was tasked with a project that focused on examining the context of child maltreatment cases before and during the COVID-19 pandemic. A key project component was developing and applying a codebook to analyze narrative text fields in a dataset from the Canadian Hospital's Injury Reporting and Prevention Program (CHIRPP). The goal was to compare changes in the circumstances surrounding injuries before and during the pandemic. Using this data and R, descriptive statistics, epidemiological curves, and statistical tests were used to compare cases before and during the pandemic. I had the opportunity to compare findings between Ontario and British Columbia. The findings from this study will enhance our understanding of the context surrounding inflicted violence cases. This will help address gaps in resource allocation for violence prevention programs, services, and awareness efforts. Ultimately, the findings will identify and prevent the indirect effects of social isolation policies.

Throughout the practicum, I was given the opportunity to present my findings to both my department and the broader organization. I've also learned from this experience how crucial adaptability and flexibility are to public health research. During the analysis, I navigated unexpected challenges and frequently incorporated new data and components.

Furthermore, I gained knowledge of public health systems and how to evaluate data sources critically from this practicum. In the end, the practicum reinforced the practical application of epidemiological and biostatistical concepts learned in my MPH coursework.

E.C.
Can Path

My first practicum position was at the Canadian Partnership for Tomorrow's Health (CanPath), the largest population health cohort in Canada. Its primary objective involved conducting population health research, specifically investigating the association between ambient air pollution and cardiometabolic multimorbidity. Using environmental exposure data from the Canadian Urban Environmental Health Research Consortium (CANUE), I examined four pollutants: particulate matter with an aerodynamic diameter $\leq 2.5\mu m$ (PM2.5), ozone (O3), sulfur dioxide (SO2), and nitrogen dioxide (NO2). Self-reported health data from over 330,000 participants, collected between 2016 and 2019 across CanPath's ten regional cohorts, were analyzed to assess the presence of hyperlipidemia, hypertension, and cardiovascular diseases including myocardial infarction, stroke, and coronary heart disease. After cleaning, accounting for missing data, and recoding variables, exclusion criteria were applied to finalize the sample for this retrospective cohort study. Descriptive statistics were then calculated to summarize the characteristics of the study population. Multinomial logistic regression models were developed for each pollutant, adjusting for the remaining three pollutants and additional covariates identified through univariate analyses and a comprehensive literature review. Model building has not been completed at this point and remains underway. Beyond my research project, I gained a deeper understanding of CanPath's mission and the complexities involved in managing a large-scale population cohort study within a federalized healthcare system. Attending working group meetings allowed me to observe discussions on data access, infrastructure, harmonization, and future initiatives, highlighting the challenges posed by provincial health privacy laws in Canada. I look forward to continuing working with CanPath into the academic year, as I finalize my manuscript and prepare it for journal submission.

K.E.
Public Health Agency of Canada

Wastewater-based Surveillance has become increasingly important in the years following the emergence of SARS-CoV-2. A plethora of data is available, and methods for analyzing, interpreting, and visualizing this data are under development. The National Microbiology Laboratory (NML) team works to develop these methods and expand the Federal Wastewater surveillance toolset. My practicum was with the Risk Sciences Division at the NML, where I supported the wastewater modelling team in developing new tools and methods for working with wastewater data.

I completed two projects with the NML Risk Sciences Division: updating reporting methods and completing a statistical comparison of Provincial and federal Wastewater data. For the first project, I worked to automate reporting pipelines for internal and public-facing documents. This project used R, HTML, and Bash scripts to design a complete wastewater data analysis pipeline, including data retrieval from servers, data cleaning, analysis, plotting, and interpretation. These reports are used to convey meaningful information to stakeholders and identify early indicators of pathogen spreading. The second project involved a statistical analysis comparing wastewater pathogen measurements taken by the NML and the provincial labs. Briefly, wastewater samples are collected multiple times per week by NML and provincial labs. The samples from the same day are sent to the NML and provincial labs for testing; values from the same day and the same site should agree. My task was to obtain and clean data from the NML and Provincial level wastewater programs and use models to calculate the correlation between the two surveillance programs. The results from this project will inform the future expansion of federal wastewater projects.

My placement at PHAC NML greatly benefited my education and future as a public health employee; I advanced my understanding of data science and gained an understanding of public health surveillance at the Federal level.

S.F.
Blue Dot

I had the opportunity to lead 2 written reports that were sent out to industry clients. The first report had a research focus in which I conducted a critical appraisal of a new article outlining difference in severe outcomes between COVID and flu hospitalizations in the USA. Based on these findings, I was able to further explore trends in COVID and flu burden generally and by age, as well as vaccine hesitancy to illustrate the respiratory illness landscape in the US in terms relevant to BlueDot's industry clients. In this report, I also conducted ANOVA and pairwise t-test analysis to determine statistically significant differences between groups.

The second report I led was a data-driven report which included using a model developed by BlueDot called the LUTE (Linear Underlying Trend Estimation) model used to determine peaks in seasonal respiratory illness trends. Based on the model output, I conducted further analysis to compare how peak timings in the recent season compared to previous season, as well as generating figures for relevant trends. This report allowed me to develop my skills and proficiency in R significantly.

Outside of the reports I was able to lead, I had the opportunity to provide support to a multitude of projects and work closely with individual members of the team. I have generated figures, conducted data analysis using BlueDot's internal API database as well as external databases. I also had the opportunity to write the entirety of the skeleton code for an upcoming report for Pfizer, to be released on a bi-weekly basis. On a day-to-day basis, I regularly attended small team, one-on-one, large team, and a few full company meetings and was able to see how the work I do with the team contributes to meeting the company's goals.

A.I.

Public Health Agency of Canada

The Public Health Agency of Canada's (PHAC) Centre for Food-borne, Environmental, and Zoonotic Infectious Diseases is a crucial component for the surveillance, investigation and control of enteric illness outbreaks spread through contaminated food, water, contact with infected animals or the environment. Surveillance of enteric illness in Canada is a multi-branch effort and includes programs like FoodNet Canada, the National Enteric Surveillance Program, and PulseNet Canada, while leveraging partnerships with other Federal/Provincial/Territorial health authorities, and international stakeholders. With technological advancements and increased affordability of genomic surveillance, whole genome sequencing (WGS) was implemented to "fingerprint" enteric bacterial pathogens to identify geographic distribution, temporality and degree of relatedness amongst isolates. WGS-surveillance also spans the farm-to-fork continuum with non-human isolates sequenced, including environmental, animal, and food products. As a summer student within the Outbreak Management Division's (OMD) Assessment and Detection Team (ADT), my objectives for practicum included to analyze enteric illness WGS cluster data to develop cluster growth rates and cluster specific baseline levels, gain knowledge on historical enteric illness outbreak data, and bolster my communication skills. This project allowed me to develop a tool to support weekly surveillance activities by creating historical activity baselines, comparing observations against their historical values to flag significant differences, and assessing PHAC-OMD's follow-up. Outside of my project, I was included in routine ADT activities, including information sharing initiatives with partners, and weekly cluster assessments. This placement has allowed me to gain knowledge and skills in different software, like Stata, PowerBI, Tableau and internal data platforms. With the unwavering support of my supervisors and colleagues, I have sharpened my skills as an epidemiologist, my ability to troubleshoot problems in the day-to-day, and my communication skills. I am hopeful that my time with PHAC-OMD will impact the future of enteric illness surveillance to protect and promote the health of those in Canada.

K.I.
SickKids Centre for Global Child Health

During my practicum, I came up with a research topic for a secondary analysis of data from a low-resource setting in sub-Saharan Africa (sSA). Through a scoping review, I found a gap in literature in the association between neonatal infection and infant neurodevelopment outcomes. I then created a study proposal for my supervisor, and it was agreed that my research topic was feasible and warranted given our dataset and the gap in prevailing literature. As such, I aimed to estimate the eFect of neonatal infections and biopsychosocial risk factors on neurodevelopment outcomes at 12-months of life through a secondary analysis of data from two concurrent studies conducted in Kwale County, Kenya between 2014-2016. To derive the covariates that I thought confounded between this association, I conducted a formal literature review across PsycINFO and Medline databases. To assess which covariates were available for analysis, I cross-referenced the covariates identified by our literature search with questionaries and forms that were utilized to collect our primary data. I then created a data cleaning plan to formally define and structure how I would treat the data, derive covariates, and cross-validate self- reported responses. After cleaning the dataset in STATA in accordance with the data cleaning plan, I created a statistical analysis plan to outline apriori procedures I plan to follow when analyzing our association. I began preliminary missingness analysis and complete-case analyses for bivariate models in R. I ended my practicum with an internal presentation to the centre around these findings. Aside from my research, I had the opportunity of observing the infectious disease in-patient team, and IGNIT3's (Integrated Gains in Nutrition by Integration, Education, Evaluation, Empowerment) global capacity building projects; I was able to integrate many learning outcomes into my non-profit work by launching free monthly community-based workshops in Kenya around topics of health.

M.L.L.

Public Health Ontario

I completed my practicum with the Antibiotic Stewardship and Resistance Team at Public Health Ontario. My practicum project focused on comparing antibiograms obtained from Ontario hospitals and laboratories to those derived from data housed at the Ontario Laboratories Information System (OLIS). Antibiograms are a cumulative report of antibiotic susceptibility for organisms identified in a specific region or facility. These reports can be generated by healthcare facilities, laboratories, or through provincial initiatives based on voluntary surveys. They can also be created by OLIS, a centralized repository of microbiology data for antimicrobial resistance (AMR) surveillance and antibiogram development. The extent to which OLIS AMR data aligns with AMR data generated directly by hospitals and laboratories has not been well established.

To investigate this, I collated antibiograms from 28 hospitals and laboratories and linked them with corresponding AMR data from OLIS. The dataset included percent susceptibility and the number of isolates tested for various bug-drug combinations. I calculated differences between the OLIS and hospital/laboratory data for these variables, generating summary tables that reported the mean percent difference and standard deviations for each combination. Additionally, I created Bland-Altman plots to visually assess the agreement between the datasets.

My findings revealed discrepancies between OLIS and hospital/laboratory data, likely due to variability in how different hospitals and labs prepare and report their antibiograms. The results of this project will be disseminated through a manuscript submitted for peer-reviewed publication and will inform future AMR surveillance strategies in Ontario. Furthermore, the findings will guide recommendations to laboratories and stewardship programs aimed at standardizing antibiogram formatting and reporting.

R.M.
Our Kids Network

For my practicum, I worked with a Halton-wide partnership of community organizations and researchers called Our Kids Network (OKN). The OKN team conducts and shares research with the goal of building the community's capacity to support children, youth, and families. My role was to support the team by developing a series of research briefs as part of a knowledge translation effort towards spreading awareness of key findings obtained from OKN's Kindergarten Parent Survey (KPS) following the COVID-19 pandemic. The KPS has been conducted every 3 years since 2003 by OKN in order to retrieve information from caregivers of children in senior kindergarten about their experiences with child care, child health, parenting, and community. The research briefs would focus on two indicators of interest from the KPS - neighbourhood cohesion and child care use. Neighborhood cohesion refers to the presence of trust and connectedness among residents within a neighbourhood. To develop the research briefs, I completed two main objectives: 1) perform data analysis to establish key findings for each indicator; and 2) conduct a literature review on each indicator to contextualize the key findings from the KPS. To determine the key messages and overall interpretation of the data, I held presentations with external stakeholders and facilitated discussion surrounding the key findings. The contents of the research briefs are intended to be shared with community partners that support children and families in Halton to promote healthy communities and family wellbeing.

C.G.M
University of Toronto Scarborough

I completed my first MPH practicum in the reproductive/perinatal epidemiology lab of Dr. Hilary Brown at the University of Toronto Scarborough. My research focused on analyzing data from the Canadian Community Health Survey (CCHS) to examine the relationship between disability and prescription opioid use and opioid use not as medically intended in reproductive-aged women. To start, I conducted a thorough literature review on the exposure, outcome, and potential confounders and mediators. This guided the development of a directed acyclic graph to conceptualize the relationship between variables. I performed the data analysis at the Toronto Research Data Center (RDC) within Robarts Library, a secure facility dedicated to analyzing Statistics Canada data. One of the most challenging yet rewarding aspects of my project was learning to code in SAS and STATA, platforms I had limited prior exposure to. I gained skills in data analysis, including creating composite variables, running cross-tabulations, applying bootstrap and survey weights to account for the CCHS's complex sampling design, and interpreting modified Poisson regression models. My practicum deliverables included giving two presentations to lab members and writing two academic manuscripts. The first manuscript covered the findings of the descriptive analysis and regression, while the second was a research letter describing the prevalence of prescription opioid use among different sub-groups of reproductive-aged women (e.g., pregnant, breastfeeding). I am looking forward to submitting these manuscripts to high-impact journals this fall and presenting my findings at the DLSPH research day and a major public health conference next spring. Moreover, I hope to be involved in developing knowledge translation products aimed at informing healthcare provider education on opioid prescribing for reproductive-aged women with disabilities. I want to thank Drs. Andi Camden and Hilary Brown for their support and guidance throughout my project and for making my first MPH practicum an enjoyable learning experience.

M.A.M.
Ontario Health, Occupational Cancer Research Centre

During my time at Ontario Health's Occupational Cancer Research Centre, I had the opportunity to contribute to the work of their epidemiology team's cohort study group. The two cohorts I had the chance to work with were an Ontario cohort of asbestos workers and an American cohort of autoworkers. My work was very quantitative in focus, requiring a lot of coding using R. Most of my work involved fitting regression models according to parameters provided to me by my supervisor, Dr. Nathan DeBono. I contributed models which were included in a paper that was then submitted to the American Journal of Epidemiology, on which I had the privilege of being listed as a co-author. My own independent research project was based on the asbestos workers cohort. For this I had the opportunity to develop a research question and research plan and carry these out myself. The results of this were developed into a manuscript for internal use, as this research question was also of interest to OCRC leadership, including my supervisor. My work on the autoworkers cohort involved generating descriptive statistics and other analyses which contributed to a grant proposal submitted by supervisor. Altogether, my practicum experience at OCRC was incredibly educational, and I am excited to be continuing with them as a research assistant throughout the second year of my MPH.

C.P.
Toronto Rehabilitation Institute University Health Network

During my summer practicum at the Mollayeva Lab, KITE-Toronto Rehabilitation Institute, I focused on updating a systematic review that previously examined the effects of gender and sex on brain health outcomes in patients with traumatic brain injury (TBI). The initial review did not yield definitive conclusions, leading the lab to expand the investigation to include additional equity-related parameters. My project specifically utilized the PROGRESS-Plus framework to explore functional outcomes and life satisfaction after TBI, with the overarching goal of promoting health equity. My responsibilities included conducting extensive literature searches, synthesizing clinical and real-world data, and contributing to systematic review updates. I screened 4,546 citations, conducted full-text reviews on 67 studies, and selected 10 studies for detailed quality appraisal using NIH tools. Additionally, I extracted data from both 10 newly identified studies and 19 studies included in the previous systematic review. I then performed a meta-analysis on the collected data and created visual representations using PRISM 10 software. Moreover, I had the opportunity to present my summer work at a monthly meeting with collaborators and community partners, where I shared my progress and received valuable feedback.

This practicum experience has significantly strengthened my skills in epidemiologic methods and public health, particularly in health equity outcomes. It also provided crucial insights into the challenges of conducting equity-focused research and performing meta-analysis in the context of TBI.

H.A.P.
St. Michael's Hospital - Infection Prevention and Control

During my practicum at St. Michael's Hospital as an Infection Prevention and Control (IPAC) student, I have had the opportunity to collaborate with a professional team of infection control specialists and engage in crucial IPAC activities and practices in the hospital. Some of these activities included conducting audits on environmental cleaning to analyze transmission risks associated with a patient's environment, modifying informational materials for patients' families regarding outbreak precautions, and participating in weekly team meetings about outbreaks and IPAC improvement in the hospital.

Furthermore, I have worked independently in analyzing quantitative IPAC data to understand the prevalence of nosocomial infections and antibiotic use in the hospital. I also developed a risk scoring system for tuberculosis (TB) cases to inform appropriate precaution measures, capture TB cases, and limit the risk of TB transmission alongside my supervisor. Some other highlights were engaging with an infectious disease intelligence team to understand transmission risks associated with hand hygiene practices, experiencing specialized outbreak procedures associated with two outbreaks in the hospital and seeing through the end of these outbreaks, and gaining experience working on-site in a professional setting with infectious disease experts. I am grateful for this enriching learning experience that I have had over my 16 weeks at St. Michael's hospital!

C.R.
Dalla Lana School of Public Health

I completed my practicum at the Epidemiology Department of Dalla Lana School of Public Health under the supervision of Dr. Brice Kuimi. During this time, I completed a project that analyzed the reliability, agreement, and consistency of two databases that collect the traffic volume data of road users in Toronto. Data was made available by the Transportation Services of the City of Toronto (open-source and data requests) and I was in constant communication with their data specialist to better understand the definition of the variables and the reasoning behind missing data. The collected data was reformatted, cleaned, filtered, and merged to only contain the relevant data for the analysis. During the analysis planning phase, I collaborated with Dr. Andrew Howard from the Hospital for Sick Children to compile to relevant tools (Bland-Altman Analysis and Intraclass Correlation (ICC)) and conduct literature searches to understand the methodology, assumptions, and interpretations. Results from my analysis were presented weekly with my internal collaborators and revisions were done as necessary. A secondary project assessing the relationship between the traffic volume of cars and pedestrians and the risk of collisions was started. Currently, the data has been retrieved, cleaned, merged, and filtered and an analysis plan has been made. Preliminary results have been presented to my internal collaborators and the discussions led us to realize major alternations had to be made, thus this project was not completed by the end of my 16-week practicum.

M.A.R.

Public Health Agency of Canada-Outbreak Management Division

During my summer practicum at the Public Health Agency of Canada (PHAC), I worked as a Public Health Analyst in the Outbreak Management Division, where I engaged in three key analyses using data from the Foodbook 2.0 study. This study, a comprehensive food consumption survey conducted across Canada from January 2023 to January 2024, provided updated data on food, water, and animal exposures, which are critical for understanding and preventing enteric illnesses.

My primary analysis focused on comparing the demographic characteristics and exposure patterns of respondents across different survey modes (mail and telephone). This work aimed to ensure the representativeness of the survey sample, which is crucial for accurate public health assessments. I also performed a comparative analysis between the first and second iterations of the Foodbook survey, using R for statistical analysis and Tableau for visualizing key findings. This analysis highlighted significant changes in the consumption of high-risk foods and meat, which could inform future public health interventions.

In addition to data analysis, I contributed to public health communications by drafting a survey report for the Canada Communicable Disease Report (CCDR) and writing an abstract for the Federal Food Safety and Nutrition Forum. These tasks honed my ability to convey complex data in a clear and impactful manner.

Throughout my practicum, I developed critical skills in data cleaning, statistical analysis, and data visualization using tools like R, Stata, and Tableau. I also gained practical experience in outbreak investigation methods, enhancing my understanding of how theoretical knowledge is applied in real-world public health settings. This experience has solidified my interest in epidemiology and equipped me with the technical and analytical skills necessary for a future career in this field.

M.V.S.

Public Health Agency of Canada - Risk Assessment Division

I completed my summer practicum at the Public Health Agency of Canada (PHAC) in the Centre for Surveillance, Integrated Insights and Risk Assessment (CIIRA), specifically in the Risk Assessment Division (RAD). The Risk Assessment Division conducts and develops risk assessments for emerging public health events that are infectious, non infectious or one health related that are of concern to Canada. They often produce risk products such as rapid risk assessments and scenario analysis. My main practicum project was to develop an epidemic scenario analysis on Candida auris (C. auris) which is an emerging multidrug resistant antifungal. I was able to accomplish this through an in depth literature review, identification of data sources and meetings with other PHAC stakeholders in order to gather more information on the epidemiology of C. auris as well as its potential impacts both globally and in Canada. This process led to me to create scenarios about potential endemicity in C. auris in the Canadian healthcare system. I was able to create a report as well as present my scenario analysis at the divisional meeting. Another project that I worked on was evidence gathering and data analysis in order to assist with potential scenario analysis for the upcoming respiratory season. I was able to analyze administrative data from the Discharge Abstract Database (DAD) and the National Ambulatory Care Reporting System (NACRS) in order to look at healthcare usage and respiratory viruses (COVID, Influenza and RSV). Lastly, I was able to help in other smaller projects such as looking over impact scales as well as compiling triggers that may signal the need for a rapid risk assessment. Overall, this practicum was a great learning experience that allowed me to develop more analysis and epidemiological skills and learn more about risk assessments and public health.

A.A.S.
Health Canada - Climate Change and Health Office

This summer, I completed my practicum with Health Canada's Climate Change and Health Office. Specifically, I worked with the International Team. This relatively new team was formed in April 2024 with the goal of working with other countries and international organizations to combat and protect people worldwide from the detrimental effects of climate change. We cooperate and work with numerous global health organizations, such as the Pan-American Health Organization (PAHO) and the World Health Organization (WHO), as well as key bilateral partners like the United States, United Kingdom, and Australia. One of my main responsibilities was to analyze a PAHO policy on equity in climate action strategies. This policy ensures that while developing their suggested climate action plans, PAHO regions give the needs of the people most impacted by climate change top priority. As the International Team for Health and Climate Change, we also represent Canada in these kinds of policy analyses. For this reason, this task required us to collaborate with multiple government departments, such as Indigenous Services Canada, Global Affairs Canada, and the Office of International Affairs Canada of the Public Health Agency of Canada, to get their views on this policy. It also meant that we had to synthesize all of their divergent priorities and points of view when offering comments and suggestions for the policy. Furthermore, our office is a part of a WHO Collaborating Centre, which means that we work with WHO on initiatives pertaining to health and climate change. I was also in charge of creating and carrying out an evaluation report for this collaborative centre and making suggestions to our office's director regarding its future. Other tasks that I worked on included helping with the COP29 preparations, whereby our office will be participating in the conference in November 2024

T.J.T.
Dalla Lana School of Public Health, CanPath

As the largest population health cohort in Canada, the Canadian Partnership for Tomorrow's Health (CanPath) aims to deepen our understanding of the complex interactions that drive chronic disease and cancer by fuelling innovative research with biological, behavioural and environmental data collected from over 330,000 participants. As a practicum student, I designed a nested case-control study to explore the association between early-onset type II diabetes mellitus (T2DM) and exposure to ambient air pollution using the CanPath questionnaires linked to Canadian Urban Environmental Health Research Consortium (CANUE) environmental data. I developed and executed an analytic plan detailing my conceptual model, study population, and methodology for case-control matching, model building, data manipulation, cleaning, analysis and visualization. I also conducted exploratory data analysis to understand T2DM and air pollution exposure trends in the regional and overall CanPath cohorts. At CanPath, I was immersed in the day-to-day activities of a national research organization where I learned of several administrative and legal considerations necessary to take action and the responsibilities of the interdisciplinary team that keeps the study running smoothly. Participating in Working Groups and Access Office meetings at CanPath opened my eyes to the complexities of navigating intra- and inter-provincial data access, harmonization and privacy legislation. At CanPath, I also had the opportunity to engage with researchers from the regional cohorts to strengthen my understanding of how equity, diversity, inclusion and accessibility can influence research focuses and objectives in population health research. These interactions prepared me to incorporate intersectional approaches into my future projects. Overall, my time at CanPath provided invaluable hands-on experience in data-wrangling and research design. I am eager to expand upon these skills as I continue working with CanPath to draft a manuscript for publication and address the gaps in our understanding of ambient air pollution and cardiometabolic conditions.

C.W.
Health Canada Controlled Substances and Cannabis Branch

My summer practicum was with Health Canada, specifically within the Office of Drug Research and Surveillance. I was apart of the National Surveillance Team tasked with monitoring the patterns and trends of substance use on a national level. As a Junior Epidemiologist with the team, my practicum project revolved around doing a secondary analysis on one of the alcohol drug use surveys the Canadian Postsecondary Education Alcohol and Drug Use survey (CPADS). The goal of this analysis was to look at variables not previously mentioned in the primary analysis of CPADS. In order to guide what specific psychoactive pharmaceutical we were going to look at, I conducted a literature scan. From the literature scan, we found opioids to be a topic of interest. I then took the survey data, imported it to RStudio, cleaned it, and conducted a descriptive analysis. The analysis of the data gave way for a publication, where I was involved in drafting up the manuscript. Aside from my primary duties with the manuscript, I was involved with other tasks in the team. These included scanning other substance use surveys around the world to help inform the Canadian Student Tobacco, Alcohol and Drugs survey (CSADS), providing feedback on CSADS for the next cycle of CSADS, and pilot testing the online survey of CPADS for the upcoming cycle.

N.J.W.
CanPath

For my epidemiology practicum, I worked at The Canadian Partnership for Tomorrow's Health (CanPath) which is run out of DLSPH. CanPath is a large prospective cohort study that encompasses health data from over 300,000 Canadian participants. Through partnership with the Canadian Urban Environmental Health Research Consortium (CANUE), environmental exposure data matched to each participant's postal code is available for the study. My practicum study uses CanPath survey data and CANUE environmental data to assess the relationship between inflammatory bowel diseases (IBDs) and air pollution. Inflammatory bowel diseases including Crohn's Disease (CD) and Ulcerative Colitis (UC) are characterized by chronic inflammation in the gastrointestinal tract. Cases of IBDs have been rising globally in recent years, with a prevalence of 825 cases per 100,000 Canadians reported in 2023. Genetic factors account for a portion of disease risk, but environmental factors also play a role. It is important to study environmental factors that increase IBD risk to improve disease prevention and treatment efforts. Increasing industrialization, urbanization, and climate change can lead to increased exposure to air pollutants. Previously, a limited number of studies assessing the relationship between air pollution and IBDs have generated mixed results. My practicum study addresses the question: what effect does a high level of air pollution exposure have on the prevalence of inflammatory bowel diseases in the CanPath cohort? To test this question, two nested case-control samples were used to compare cases of either CD or UC to healthy controls. Controls were matched at a 1:4 ratio of cases to controls using exact matching on sex and year of birth. Descriptive statistics were computed for both the CD and UC matched samples and a logistic regression model was built to analyze the data. Ultimately, the work from this practicum will be submitted for publication.