

## Winter 2024 – MPH Epidemiology Practicums

**S.A.E.A.**

### **Public Health Agency of Canada**

During my practicum at the Surveillance Knowledge Synthesis unit within the Horizontal Surveillance operations division at the Public Health Agency of Canada, I contributed to the Health of People in Canada dashboard (HoPiC) initiative for Winter 2024. The main focus was on refreshing the conceptual framework and indicators underlying the HoPiC dashboard to address the question, 'how healthy are people in Canada?' My responsibilities included project planning, conducting literature reviews, environmental scanning, stakeholder engagement, data analysis, and report writing.

In addition to these tasks, I supported the advancement of immersive visualizations by creating a Miro board and collaborating with the communications team. Insights gleaned from discussions included identifying user personas based on their knowledge level, understanding user motivations, improving SEO to enhance discoverability, tailoring data interpretation for different audience segments, and strategizing social media engagement tactics.

Furthermore, I undertook a literature review on Inuit TB elimination frameworks and strategies, summarizing key takeaway points and conducting background research on TB in Inuit communities. This involved exploring current issues, developments, and media coverage surrounding TB in these communities.

Additionally, during my practicum, I had the opportunity to visit the Ontario Science Centre, where I took comprehensive notes and led the process of synthesizing findings into a presentation. This experience honed my ability to distill complex information into accessible formats for diverse audiences, further enhancing my communication and presentation skills.

Moreover, I researched global health entities implementing individualized dashboards, allowing users to input specific parameters such as postal code, sex, and age to access personalized health indicators relevant to their demographics. This exploration illuminated innovative approaches to health data dissemination and highlighted the importance of tailoring information to meet the diverse needs of communities, ultimately contributing to the broader discourse on equitable healthcare access and health promotion strategies.

Overall, my practicum experience provided valuable insights into public health surveillance methodologies, public health policy, stakeholder engagement strategies, and the unique challenges faced in addressing health disparities within specific communities, such as the Inuit population.

**K.S.E.**

**Public Health Ontario**

I worked at Public Health Ontario (PHO), the Ontario government's agency responsible for providing scientific and technical advice to clients working in government, public health, and health care. I worked in the Health Promotion, Chronic Disease and Injury Prevention department, which provides high quality, evidence-informed research, and scientific advice important to public health. The focus of my work was enhancing the PHO opioid surveillance dashboard.

I led several projects focused on novel sources of opioid data for Ontario. I surveyed 24 Ontario databases for indicators of opioid use, assessed the feasibility of using these databases for surveillance, and made recommendations to the opioid surveillance working group. I explored the opioid surveillance dashboards of all 34 public health units in Ontario and created summaries of all indicators collected, to facilitate future standardization for provincial reporting. I conducted a rapid review of risk and protective factors for opioid use and use disorder, including literature searching, screening, data extraction, and manuscript writing. This will inform the inclusion of Ontario-specific indicators of risk and protective factors for opioid use, which can be incorporated into the PHO opioid surveillance dashboard to track and target upstream factors of opioid use. I wrote a case report summarizing a recent opioid overdose crisis in Belleville, Ontario, which involved collaborating with local public health and emergency planning staff. I also created two data analysis plans and SAS code for descriptive statistical summaries of child and youth health surveys to assess the prevalence of early life risk indicators and youth opioid use. I presented my work in multiple working group meetings and a department wide meeting, and plan on publishing our rapid review in a peer-reviewed journal.

**K.A.K.**

**Lumerate - Zebricks Data Team**

For this second practicum experience, I was fortunate to work at Lumerate, a lean start up company developing software solutions for customers in the biotech, pharmaceutical, and clinical research industries. Specifically, I worked with their affiliate brand, Zebricks, focused on tracking patient advocacy group (PAG) activities across biotech, pharmaceutical, and life sciences sectors. My role as a Data Science Intern involved collecting, analyzing, and interpreting PAG data, contributing to the development of data pipelines, and generating research requests (i.e., landscape reports) for clients. Highlights of my accomplishments include assisting and launching data-related projects, developing new data scraping processes and databases, and creating user manuals to ensure accurate data collection and validation for other team members. Additionally, I engaged with clients and delivered landscape reports on PAG insights. Core competencies developed during the practicum include data organization, quality control, and leveraging various data scraping tools. I applied knowledge from coursework in machine learning, population health, and public health policy to enhance my understanding of patient communities and their impact on healthcare outcomes. Challenges encountered included ensuring data quality, and managing conflicting timelines with client requests. These challenges were addressed proactively using technical knowledge and effective communication with a vast array of data-centric team members.

**S.B.K.**

**Public Health Agency of Canada, Risk Assessment Division**

**Introduction:** Accurate risk assessment in public health relies heavily on up-to-date evidence, yet literature search and review processes are often time-consuming and resource-intensive. Emerging AI tools like Elicit offer promising solutions by aiding researchers in locating relevant papers and systematically extracting data based on predefined criteria. Elicit allows users to ask direct questions or upload PDFs for extraction, customize screening and extraction columns, and use high-accuracy mode for enhanced data extraction.

**Methods:** To assess Elicit's efficacy in data extraction and paper retrieval, we selected two systematic reviews as gold standards for our study. The first review focused on epidemiological parameters related to COVID-19, while the second centered on outbreaks of Marburg virus disease. For the COVID-19 review, PDFs of the included studies were uploaded to Elicit for data extraction and search queries were refined based on experimental results. Regarding the Marburg virus disease review, we developed specific questions to replicate the paper list and summary from the original review. Elicit's outputs were then compared including study lists, summaries, and extracted tables, with those of the selected systematic reviews to evaluate accuracy.

**Results:** Our analysis revealed varying degrees of accuracy in identifying key epidemiological parameters with certain parameters presenting greater challenges due to the existence of variants of parameters. However, improvements were noted in high-accuracy modes despite the tool's inability to read non-English texts and image-based presentations, as well as the inability to extract data from the results section. In the Marburg virus disease review, Elicit missed two studies from the systematic review and exhibited discrepancies in summarizing findings. Although Elicit accurately reported the overall total case fatality ratios, its summaries lacked specific estimates and significant risk factors.

**Discussion/Conclusion:** Our analysis underscores the importance of precise queries and careful consideration of search parameters when utilizing Elicit for data extraction.

**K.L.**

**Public Health Agency of Canada National Microbiology Laboratory**

Introduction: The effect of climate change on infectious diseases is a growing concern. Previously, a risk modeling framework was developed to evaluate the impact of climate change on the foodborne pathogen *Vibrio parahaemolyticus* in oysters (1). The framework and model were built in 2015 in the software Analytica. The objective of my practicum is to A) recreate the model in R, a more contemporary and flexible software, and B) search for new literature that could inform model updates.

Activities: For objective A, I used published guides and prior knowledge of R processes such as functions and packages to code the model in R. I compared numbers with the original model at each step for validation. For objective B, I developed a search strategy with collections of keywords in collaboration with a PHAC librarian. I applied the search to multiple databases and screened the results for relevant articles using Covidence.

Outcomes: For objective A, the model was successfully recreated in R. There are minor discrepancies in the results when comparing with the original model; however, the model is also useful for informing methodology for future similar models. For objective A, 1301 results for Canada were found and 10 were relevant. None of the articles implied a need to change the original model. For the worldwide search, 2218 results were found and screening is ongoing.

References: Smith, B. A., Ruthman, T., Sparling, E., Auld, H., Comer, N., Young, I., Lammerding, A. M., & Fazil, A. (2015). A risk modeling framework to evaluate the impacts of climate change and adaptation on food and water safety. *Food Research International*, 68, 78-85.  
<https://doi.org/10.1016/j.foodres.2014.07.006>

**T.M.**

**Centre for Addiction and Mental Health**

Ischemic heart disease (IHD) constitutes a substantial health burden in the United Kingdom (UK), where it ranks as a leading cause of mortality and morbidity. While alcohol consumption has been linked to IHD, the relationship is complex, exhibiting a 'J-shaped' or 'inverse' risk pattern, where some moderate drinking confers protective effects while heavy consumption increases risk. Furthermore, socioeconomic status (SES) is recognized as a potential effect modifier of this association. This study investigates the interplay between alcohol use, SES, and IHD outcomes using data from the UK Biobank.

Utilizing Cox Proportional Hazard models, we analyzed data from 419,606 participants, examining interactions between educational attainment and alcohol consumption categories on IHD mortality and morbidity. Our findings revealed no significant interactions between education and alcohol consumption in men or women. However, among women, drinking (0, 30] g/day without heavy episodic drinking (HED) was associated with reduced IHD mortality compared to lifetime abstainers.

Sensitivity analyses supported these results, with the association between moderate alcohol consumption and reduced IHD mortality persisting in women across various scenarios. Notably, using the Index of Multiple Deprivation as an indicator of SES yielded interesting insights, showing a significant interaction between deprivation and moderate alcohol consumption among females, suggesting a stronger protective effect in the most deprived group.

These findings underscore the importance of considering SES when examining the relationship between alcohol use and IHD outcomes. By elucidating how SES modifies this association, we can better understand the drivers of health disparities and inform targeted interventions to mitigate the burden of IHD, particularly among socioeconomically disadvantaged populations.

**M.P.**

**Krembil Research Institute, UHN**

**Introduction:** Osteoarthritis is one of the most common degenerative joint diseases that lead to pain and disability in the adult population. Low back pain has been considered a major health problem where, more than 80% of the adult population has affected by this condition at some point in their life. There is a lack of studies examining the association between OA and back problems individually and in combination and health outcomes in Canada.

**Objective:** To investigate whether individuals who report both osteoarthritis and back problems report poorer health outcomes than those who have either condition alone.

**Methods:** Data used in this study includes a sample of participants from the Canadian Longitudinal Study on Aging (CLSA). This cross-sectional study includes participants who responded to questions related to various health outcomes, their OA status and presence of back problems in the maintaining contact questionnaire. The main exposure of interest in this study is OA/back problem status. Participants who reported having rheumatoid arthritis and/or any other type of arthritis were excluded from this study. Multinomial logistic regression models were fit to assess the association between OA/back problem status (reference none) and each health outcome.

**Results:** From a total of 17,166 participants (mean age 62.51 years) included in this study, there is an increased impact of having both OA and back problems in combination on a variety of different health outcomes compared to having these conditions individually.

**Conclusions:** These findings demonstrate that patients with OA and back problems may be at risk of experiencing other health problems and have a poorer quality of life compared to those who have only OA, only back problems or none of these conditions.

**A.P.R.**

**Public Health Agency of Canada - Centre for Biosecurity**

In this practicum, I worked as a Junior Scientific Evaluator in the Office of Biosafety Programs and Planning (OBPP) within the Centre for Biosecurity at the Public Health Agency of Canada, which is responsible for developing programs to protect against risks and establishing biosafety risk assessments and biocontainment directives, all to enforce various acts and regulations involving human/animal pathogens and toxins. My main project with OBPP was to produce pathogen risk assessment reports to classify pathogens by risk group of 1 to 4, with 1 being of the lowest risk. To complete each report, I conducted literature reviews on multiple databases such as Scopus, PubMed, and Google Scholar to collect relevant publications. The risk assessments consider the pathogens' characteristics, incidence and prevalence, pathogenicity, communicability, and pre/post exposure measures. I read through the publications, appraising them for their quality, and extracted the information to be used in my assessment. I analyzed all the information documented, produced a report, and provided a risk group rating. These results inform the decisions made by the Centre for Biosecurity in regulating the handling of pathogens in Canada, determining operational practice and containment requirements, and promotes safer work practices in laboratory environments. Additionally, I worked on a side project to complete a few Pathogen Safety Data Sheets, which are technical documents that describe hazardous properties of a pathogen and provides recommendations on handling the pathogen in a laboratory, meant for use by laboratory personnel. Although the research process for these was similar to the risk assessment reports, this side project allowed me to develop my writing skills for a different type of audience.

**D.U.R.**

**King Faisal Hospital, Rwanda**

During my practicum, I worked under the supervision of Dr. Richard Nduwayezu and Dr. Kara Neil in the Education, Training and Research Department of King Faisal Hospital in Rwanda. At the beginning of the practicum, I led a research publication and manuscript writing workshop for physicians who were interested in conducting their own research. This experience allowed me to apply my leadership and teaching skills. The physicians I worked with were very appreciative of the presentation that I was able to give them. Furthermore, I had one-on-one consultations with physicians about their research topics with the aim of pushing their projects forward and preparing them for publication. During my time in Rwanda, I was allowed to work on several different projects at different stages. I had the time to work on a total of six projects. The projects that I worked on were Residency Programs in Rwanda, Oncology Mortality Outcomes at King Faisal Hospital, Patterns of Medical Referrals Abroad from Rwanda, Early Detection of Urological Cancers in Rwanda, Female Representation in Anesthesiology in Africa (A Scoping Review), and The Teaching and Learning Environment at King Faisal Hospital. All these projects aimed for the findings from their study to be used to propose interventions and ways to improve medicine and the learning environment at King Faisal Hospital and across Rwanda. The findings will also be used to propose further areas of study and the final manuscripts will be shared with all relevant stakeholders, including hospital leadership and policy makers.

**M.V.C.S.**

**Ontario Health, Evidence and Evaluation, Cancer Control & Evidence Integration Division**

Ontario Health, a crown agency of the government of Ontario, functions as an integrated network unifying various healthcare services in the province to lead in the promotion of health and wellness of individuals in the province. During my practicum, I contributed to the Evidence and Evaluation team, focusing on developing high-quality evidence to enhance health outcomes and experiences for people in Ontario. More specifically, I led a rapid scoping review on the use of liquid biopsy and multi-cancer early detection tests for the purpose of cancer screening, wherein I developed a scoping review protocol and subsequently presented this to the Provincial Medical Director for Cancer Control. We retrieved 6,197 records from Medline and identified 1,018 records for full-text screening. Currently, the review team is in the process of completing full-text screening and proceeding to data extraction shortly thereafter. Additionally, I served as a second reviewer on other evidence products led by other team members, including a rapid review on the risk of neovaginal cancer and pre-cancer following a vaginoplasty and an evidence inventory on screening guidelines following a vaginoplasty. Specifically, I supported the review of both project protocols, verified citation screening, and critical appraisal decisions. Further, I have also supported the development of the Ontario Cancer Screening Scorecard 2023-2024 by preparing data visualizations and interpretations for more than 20 key performance indicators of the four organized cancer screening programs in Ontario. Through my practicum experience at Ontario Health, I have developed a wide range of core competencies in public health, which I believe are highly valuable for my future career as a public health professional.

**A.S.**

**The Regional Municipality of York**

For my second practicum in the MPH Epidemiology program, I had the privilege of working as a Student Epidemiologist in the Infectious Diseases Control Division (IDCD) at York Region Public Health. I worked with the Surveillance, Evaluation, and Continuous Quality Improvement (SEC) Team and had the opportunity to contribute to a variety of projects while learning of the role of an epidemiologist at the local public health unit level. I led weekly surveillance updates on infectious disease trends across our region and beyond, which are shared with stakeholders across the organization. In response to the provincial surge in invasive Group A Streptococcal (iGAS) disease cases, I completed a signal investigation of local iGAS trends over the past 5 years. Furthermore, I worked on a data quality assessment of two ministry COVID-19 surveillance systems (CCM and COVax). Lastly, I supported the response to the rise in measles cases, collaborating to track case data and generate predictive models of future cases in Canada and the USA.

In these various projects, I developed analytical skills through my work in SQL, Stata, R and Excel and by working with a variety of datasets. I learned the importance of data interpretation and knowledge translation when communicating health information to a variety of audiences. Throughout my practicum, I had the pleasure of working with an interdisciplinary team of public health professionals, including public health nurses, health educators, health promoters, data analysts, GIS technologists, administrative clerks, and other epidemiologists. I am incredibly grateful for the breadth of knowledge and skills I gained during my practicum at York Region and for the opportunity to serve and advocate for the health of the community.



**K.C.S.**

**Occupational Cancer Research Centre, Ontario Health**

Work-related exposures continue to be studied for their association with leukemia incidence. While sufficient evidence exists for the effects of ionizing radiation and 1,3-butadiene, there remains a need for further research into additional hazards with limited or unclear evidence. Our study aimed to identify occupations and industries associated with leukemia among a cohort of workers from Ontario, Canada. Utilizing data from Ontario's Occupational Disease Surveillance System (ODSS), a total of 2,363,818 workers were followed for incident cancer diagnoses. A Cox proportional-hazards model was used to estimate the incidence of leukemia among occupation groups. After adjusting for age and birth year, males in protective services, metal machining, transport equipment operating, and mining occupations had elevated risks of leukemia compared to all other workers in the ODSS. Moreover, a non-significant positive trend was observed for females in sales occupations. We hypothesize that exposure to combustion engine exhaust, metalworking fluids, and ionizing radiation may contribute to the higher incidence of leukemia in these settings. As the first study from a Canadian context to comprehensively investigate the relationship between occupation and leukemia, our findings build upon prior observational research and identify opportunities for further investigation.

**P.S.**

**BlueDot, Epidemic Intelligence**

In this practicum, I led the delivery of 2 Infectious-like Illness (ILI) reports: The reports required me to do literature review to provide context about the topic, and then a critical appraisal of 2 selected articles. These are the abstracts/summaries of the reports:

Title: ILI23: What does the latest evidence say highlight about the association between COVID-19 and RSV infection?

Summary: There has been large disruptions in seasonal Respiratory Syncytial Virus (RSV) activity during and after the acute phase of the COVID-19 pandemic. Children face the highest burden of RSV. The COVID-19 pandemic may have exacerbated the impact of RSV with suggestions from literature pointing to waning population immunity from COVID-19 infections and population level susceptibility developed from the few years of limited RSV exposure during the COVID-19 pandemic. This report will focus on reviewing two articles that explore the association between COVID-19 and RSV infection severity. The findings from these reports included the overall risk for first-time medically attended RSV infection during the 2022 season was 40% higher among children 0-5 years who had a prior documentation of a COVID-19 infection compared to those without a documented history of COVID-19 infection. This evidence suggests that a precautionary approach to disease mitigation would help to reduce the risk of RSV and COVID-19 infections in children.

Title: ILI26: What does recent research highlight about the effectiveness of the updated XBB.1.5-variant targeted COVID-19 vaccine?

Summary: In September 2023, CDC's Advisory Committee on Immunization Practices recommended the updated 2023-24 COVID-19 vaccination (monovalent XBB.1.5) for individuals 6 months or older. An updated vaccination was recommended as the XBB lineage became globally dominant throughout 2023. The continual evolution and emergence of immune invasive SARS-CoV-2 variants illustrates the importance of assessing vaccine effectiveness (VE) against all circulating variants. This report highlights the findings from a study on VE against hospitalizations and ICU admissions related to COVID-19 by Link-Gelles et al. (2024) and VE against symptomatic individuals by van Werkhoven et al. (2024). The findings suggest that there was an overall 70.7% reduction in the risk of being hospitalized due to COVID-19 and 73.3% reduced risk of ICU admission among those who were vaccinated in the 2023 vaccination campaign compared to those who were not. Additionally, among ages 18 years and older who received the updated vaccine, there was an overall 54% reduction in the risk of developing symptomatic COVID-19 compared to those who did not receive the updated vaccine. Ongoing research is required to evaluate the added benefit of the current vaccine against severe disease in different demographic populations and against emerging variants.

**S.S.**

**Durham Region Health Department**

I completed my practicum as a Student Epidemiologist for the Health Analytics and Research Team at Durham Region Health Department. My project aimed at analyzing mental health indicators from the Canadian Community Health Survey (CCHS) and conducting trend analysis of these indicators over a five-year period.

**Mental Health Report:** I conducted descriptive statistics on 11 mental health indicators from CCHS survey cycles using survey specific parameters. I created tabulations of each indicator restricting to Durham Region and the overall Ontario population. Using the coefficient of variations and 95% confidence intervals, I determined statistically significant differences within Durham Region, Ontario, and between the two regions. Furthermore, I also conducted cross-tabulations by sociodemographic variables (i.e. age, sex, income, education, time since immigration, and ethnicity) to evaluate how social determinants of health influence mental health. I developed graphs and interpreted the results in lay language to produce a report for knowledge translation. This project involved advanced coding and statistical analysis for complex survey data.

**Trend Analysis Presentation:** I selected four variables present in the three most recent CCHS cycles for trend analysis. The goal was to assess recent trends, overall trends, and differences between Durham Region and the rest of Ontario. I used CCHS year (2015-2020) as the explanatory variable and recoded mental health indicators into binary variables for logistic regression. Post-estimation tests (contrast and lincom STATA commands) were applied to test for linear relationships between cycles in both regions. Additionally, logistic regression with an interaction term was used to examine differences in linear trends between Durham region and the rest of Ontario. Chi-square tests were also conducted, but limitations arose when using survey bootstrap weights as STATA was unable to produce corrected Pearson p-values with survey-specific parameters. Results from the logistic regression will be used to prepare short trend reports.

**A.S.**

**Department of Health and Society, University of Toronto Scarborough**

**Background:** Research shows a positive correlation between life satisfaction and health outcomes, highlighting the importance of understanding its determinants for evidence-based public health policies. This study investigates the association between travel mode choice and life satisfaction among adults in Scarborough, Toronto's easternmost suburb.

**Methods:** Data from the 2023 Scarborough Survey (N=1,206) were analyzed. Linear regression was used to estimate unstandardized regression coefficients (B) and corresponding 95% confidence intervals (CIs) for overall life satisfaction in each transportation mode group (public transit, active travel, remote, and multiple) versus the car transportation mode group, adjusting for sociodemographic, economic, and neighborhood characteristics. Missing data were addressed using multiple imputations.

**Results:** Life satisfaction was highest among those who used a car (mean [SD], 6.7 [2.2]) and those who used active travel (mean [SD], 6.7 [1.9]) and lowest among those who used public transit (mean [SD] 6.4 [2.2]) to commute to school or work. Individuals using public transit (B [95% CI], -0.32 [-0.69, 0.05]), active travel (B [95% CI], 0.01 [-0.73, 0.76]), and those who worked or studied remotely (B [95% CI], -0.23 [-0.67, 0.21]) scored slightly lower in life satisfaction compared to those who used a car to commute, although these differences failed to reach statistical significance. Individuals who used multiple transportation modes (B [95% CI], -0.36 [-0.65, -0.07]) scored lower in life satisfaction compared to individuals who used a car. After final adjustments, the negative impact observed among multiple transportation mode users (B [95% CI], -0.15 [-0.46, 0.15]) weakened and failed to reach statistical significance.

**Conclusions:** Other factors beyond transportation mode may play a more significant role in determining overall life satisfaction. Future research should consider how commute length and time interact with transportation mode choices to better inform urban planning and public health policies aimed at improving the well-being of suburban residents.

**Q.Z.**

**Public Health Agency of Canada**

**Introduction:** Homelessness refers to a state where an individual lacks stable, permanent, suitable housing, or lacks the ability to acquire it. In comparison to people with secure housing, people experiencing homelessness are at a greater risk of self-harming behaviours, resulting in severe injuries, permanent disabilities, or even death. The purpose of this study was to provide a descriptive analysis of self-harm hospitalizations among people experiencing homelessness and explore potential risk factors using national-level surveillance data.

**Methods:** Data was collected from the Discharge Abstract Database (DAD) between 2015 and 2021 in Canada (except Quebec). Housing insecurity, method of self-harm and mental health co-morbidities were captured using the 10th revision of the International Classification of Diseases (ICD-10). Demographic information, level of remoteness, length of hospitalization, and discharge disposition were compared between people experiencing homelessness and people with secure housing. The level of remoteness was determined based on the Jenks natural breaks remoteness index classification. Analyses were conducted using the SAS Enterprise Guide Software (version 7.1, SAS Institute, Cary, NC, USA).

**Results:** A total of 96841 self-harm hospitalization were identified. People experiencing homelessness had a significantly higher age (38.17 years old, 95% CI 37.58-38.76, n=2085) than people with secure housing (34.45 years old, 95% CI 34.41-34.64, n=94756). A great proportion of people experiencing homelessness were adult males, whereas a high percentage of people with secure housing were adolescent females. People experiencing homelessness had higher median number of mental health co-morbidities ( $p < 0.001$ ) and median days of hospitalization ( $p < 0.001$ ). Substance-related poisoning was the leading method of self-harm in both groups.

**Discussion:** In contrast to the consensus that self-harm behaviours are most prevalent among young females, the analysis confirmed that adult males accounts for a significant proportion of self-harm hospitalization. Most events of self-harm hospitalization were captured in easily accessible and accessible areas in both groups, which corresponds to the distribution of population in Canada. However, this could also be a result of unequal access to healthcare in less accessible or remote areas, so further investigation is required.

**Conclusion:** People experiencing homelessness face unique societal and physical challenges which increase their risk of developing mental illness and self-inflicted injuries, thus study findings from this study should be taken into consideration in future policymaking process.

**Z.L.Z.**

**Public Health Agency of Canada, Infection Prevention and Surveillance Division**

I had two main projects for my practicum. The first was to evaluate the implementation and compliance with central line associated blood stream infection (CLABSI) insertion and maintenance bundles among hospital ICUs participating in the Canadian Nosocomial Infection Surveillance Program (CNISP). I also compared CLABSI rates between hospitals that did and did not implement a CPSI or SPS bundle. Findings from this descriptive analysis was written into an abstract and submitted to the IPAC Canada 2024 conference, pending approval. Additionally, I also first authored a manuscript elaborating on these findings that will be submitted to ICHE journal.

My second project was to create an automated report on R markdown for hospital specific viral respiratory illness (VRI) surveillance. The code that I created allows people to run an R script that loops into the R markdown report and generate individual site specific reports based on each hospital's data. The output was 88 word documents containing figures and tables specific to each hospital. The report also provides comparisons for the hospital's VRI rates to national trends.