

Degree: MPH-45

Field of Study: Generalist

Practicum Project Abstracts 2023

| Project Title | Project Summary or Abstract |
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| Laying the Research Foundations for a Psychedelic Institute on Vancouver Island | <p>As the Research Lead of Roots to Thrive, a non-profit clinic offering psychedelic medicines for psychiatric diagnoses, I oversaw the completion of five different research projects including a Canadian Institutes of Health Research Grant, two retrospective cohort studies, and an economic evaluation comparing the cost savings of psychedelic therapies for the treatment of depression compared to gold standard in the province. We concluded in the economic analysis that psychedelic therapies would provide cost savings of \$13,875 over five cycles of treatment for someone with a single diagnosis of depression. Using a Markov Model we were able to ascertain that our Ketamine Assisted Therapy Program was more effective at aiding transition from higher severity depression states to milder states over the five cycles. Eventually my role as the Research Lead transitioned into a Director of the new Naut sa mawt Centre for Psychedelic Research.</p> <p>As psychedelic therapies re-emerge in Canadian research, this Centre aims to advance research that integrates Indigenous and Western ways of knowing to promote a collective understanding of the necessary elements of medicine-assisted therapies that will optimize health and wellness outcomes for all. Naut sa mawt, means working together, as one mind and spirit. This practicum involved laying the research groundwork for the Centre. As the research work continues in the field of psychedelic medicines, we also hope that this Centre can become the centre to attract similar minded clinician and research groups in Western Canada and the US for meaningful collaboration.</p> |
| Health Communications Practicum | <p>This project involved designing, conducting, and evaluating a focus group with Community Health Workers (CHWs) in Massachusetts surrounding their experience with MACHW communication platforms. It also involved analyzing the organization's plans, mission and vision, to establish a cohesive communication strategy. Finally, this project involved significant restructuring and/or development of communication tools to meet MACHW member needs, in collaboration with a range of stakeholders including CHWs.</p> |

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| <p>Barriers and enablers of surgical task sharing in Sierra Leone</p> | <p>Task sharing is the systematic delegation of tasks to less specialized workers in order to maximize the efficient use of resources. Task sharing has been recommended by the WHO as an interim solution to expand the medical workforce in LMICs. In Sierra Leone, task sharing was introduced in surgical care in 2011 to safely manage surgical and obstetric emergencies. However, it currently is neither fully regulated nor widely accepted. The purpose of this project was to identify the barriers and enablers of task sharing in surgical care in Sierra Leone from a surgical provider and surgical care facilitator perspective. I collaborated with Global Surgery Amsterdam, an international research and education NGO that works to develop sustainable solutions in global surgery. I developed a protocol for a qualitative study and developed semi-structured interview guides. I travelled to Sierra Leone to conduct twenty-two semi-structured interviews in urban, regional and district hospitals across Sierra Leone. The study results were presented at a global health conference and will be shared with stakeholders to help inform future policy changes, as well as submitted for publication in a scientific journal.</p> |
| <p>Descriptive Analysis of Anesthesia Related Performance in Public Hospital Systems of Mexico for 2017-2022</p> | <p>The Practicum project aims to address the lack of access to safe, affordable, quality, and equitable global surgical care. There needs to be an integrated understanding of surgical capacity in Mexico. Practicum entailed abstracting comprehensive surgical, obstetric, and anesthesia data from a Mexico extensive public database and performing statistical, quantitative, and geographical analysis that eventually led to a report and publication. The descriptive analysis of anesthesia-related performance in the Mexican public hospital system will bring awareness about the current state of anesthesia capacity and lead to impactful and sustainable health policy change.</p> |
| <p>Retrospective Evaluation of Flow Diverter Stent Performance with MR Vessel Wall Imaging</p> | <p>Purpose: To evaluate the performance of vessel-wall MRI (VWMRI) on the early and long-term post-treatment examination of patients with intracranial aneurysms treated with Flow Diverter (FD) stent in comparison to standard Digital Subtraction Angiography (DSA) or CT Angiogram (CTA). Materials and Methods: We retrospectively reviewed patients with intracranial aneurysms treated with FD, who underwent post-treatment follow-up VWMRI for the detection of in-stent stenosis. We collected demographic and treatment-related data from patient's charts, including sex, age, comorbidities, aneurysm size and location, model of FD used, presence of subarachnoid hemorrhage and post-treatment assessment of the patency of the vessel lumen within the flow diversion stent, grade of in-stent stenosis, and grade of aneurysm occlusion. Interrater agreement was reported using</p> |

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| | <p>Cohen κ statistic.</p> <p>Results: We included 30 patients. Interrater agreement was strong for the evaluation of in-stent stenosis, aneurysm occlusion grade and post-treatment complications (ranging from $\kappa = 0.81$ to 0.97).</p> <p>Conclusion: The non-invasive follow-up of these cases using VWMRI is an innovative method that could replace DSA in the lifetime assessment of the angiographic performance of FD. Information about stent patency and stenosis is crucial for management of associated dual antiplatelet therapy. In addition, this technique can lead to a substantial reduction in hospital costs compared to the standard invasive procedures. VWMRI demonstrates high interobserver agreement for the assessment of FD patency following endovascular treatment of intracranial aneurysms. It has proven to be a safe, effective and reliable method for evaluation of aneurysmal occlusion and post-procedural complications such as in-stent stenosis.</p> |
| <p>HIPAA, De-Identified Data (to ramp up strategic business growth) and Modeling Ethical and Legal Considerations</p> | <p>Research and analysis regarding the different possibilities that Carta Healthcare might have in using data across different entities for modeling and how this might impact the ethical, legal, and medical considerations. How to safeguard rising data privacy concerns while optimizing accelerating business growth.</p> |
| <p>Curriculum for Healthy Dating Relationships in Middle School-Aged Children</p> | <p>I worked at a non-profit called Families and Communities Resources, Inc. (FCR) in Brockton Massachusetts. Their mission is to support any person that has experienced domestic abuse or trauma. My work involved developing a curriculum for parents of middle school aged children that addresses Teen Dating Violence (TDV) as a prevalent public health problem. The curriculum discussed ways of parenting positively and conflict resolution because positive relationships outside the home start with positive relationships inside the home.</p> |
| <p>Racial and Ethnic Disparities in Patient Experience</p> | <p>Background: Patient experience is considered one of the hallmarks of healthcare quality. The Massachusetts Health Quality Partners (MHQP), a non-profit consortium of healthcare organizations, health plans, and patients across Massachusetts, have been dedicated to improving healthcare quality by enhancing the experiences of patients with care. This is done primarily through measuring and reporting patient experience data. MHQP Patient Experience Surveys (PES) have demonstrated that racial and ethnic minorities report worse experiences than their white counterparts. There is little research around the exact nature of these differences in experience. This study set out to</p> |

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| | <p>provide a more in-depth analysis of disparities in patient experience through the review of MHQP PES - Patient Narrative Item Set.</p> <p>Methods: A qualitative analysis was conducted on a subset of the 2022 MHQP PES Narrative Item set. Patients included in the study represented a racially diverse group of commercially insured patients across Massachusetts.</p> <p>Results: Preliminary results demonstrated that good communication was a major contributing factor to patient experience for all racial groups included in the study. Communication subthemes addressed by patients included shared-decision making, empathy, active listening, and patient goals of care. The topics of trust and cultural competency appeared to have a slight predominance among African Americans, although further analysis is warranted.</p> <p>Conclusion: In order to address racial and ethnic disparities in experience, the healthcare community needs to understand where it is failing to meet the needs of patients of color. Patient narratives offer an opportunity to explore these needs and experiences in greater depth.</p> |
| <p>Implementation principles for Digital Health products for Parkinson's Disease</p> | <p>Digital technology within healthcare has dramatically expanded in recent years, particularly with the growth of the use of medical or health-related apps. With this expansion comes the need for regulation and certification, however, the process has many barriers. The use of digital health could have a significant impact on the quality of life of People with Parkinson's Disease, but the regulatory landscape can prove cumbersome for the development of new solutions. The purpose of this practicum is to explore recommendations for developing innovation of digital health products in this clinical area.</p> |
| <p>A process evaluation of EAP service accessibility, utilization and Perception among lower-income workers</p> | <p>This project was an internal process evaluation of Mass General Brigham (MGB) Employee Assistance Program(EAP) conducted from May 2022-November 2022. The evaluation sought to determine whether a program's services(assessment, short-term counseling, referrals, work-group interventions, managerial consults, training and education, and lactation services)and outreach efforts(system communications, website, new hire orientation, information tables manager relationships and referral) were understood, accessible and used as desired, among Environmental Service Workers(EVS) in the system. A survey was administered via email and paper copy to out to EVS staff across 6 different hospital entities: MGH, MVH, McL, NWH, SH, and SRH. 164 employees participated in survey, out of</p> |

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| | <p>1149 EVS employees. 58.8% (87) of participants had not heard of the EAP and 78.3% (119) participants answered that they were likely to use the EAP in the future. Use of multiple workplace supports was positively associated with knowledge of the EAP. . Perception of care was shown to be high, with the majority of respondents reporting that the EAP was helpful or support. The results of this survey were promising, as they provide positive impressions of the EAP and some direction about how the EAP can increase engagement and improve outreach efforts.</p> |
| <p>Developing a Victorian Mental Health Capability Framework</p> | <p>To develop a Mental Health Capability Framework in response to recommendation 3.5 of the Royal Commission into Victoria's mental health system. The mental health capability framework describes the scope and complexity that can be managed across six capability levels of mental health care and will set out the requirements for workforce, infrastructure and equipment, clinical support services, and clinical governance at each of those six levels.</p> |
| <p>Study on Hospice Care Services for the Elderly in Shanghai</p> | <p>At present, China's elderly population over 60 years old reaches 250 million, accounting for 18% of the total population, and there are 40 million disabled and partially disabled elderly. According to other statistics, the annual number of cancer deaths in China has increased over the past five years from about 2.3 million in 2014 to about 2.6 million in 2018 and may reach about 3 million in 2024. The growth of the elderly population is a pressure as well as a challenge and an opportunity for public health in Shanghai.</p> <p>The organization that I worked with is Shanghai Community Healthcare Center which is an important part of community construction. With general practitioners as the backbone, it undertakes the functions of public health, basic medical services, chronic disease prevention and treatment, and family health management within the jurisdiction of each street and town, and the needs of patients with some common and chronic diseases can be met in the community. The center focuses on human health, family as a unit and community as a scope, with women, children, the elderly, chronic patients, disabled people and poor residents as its service focus, and is a grassroots health service organization integrating prevention, medical treatment, health care, rehabilitation, health education and family planning technical service functions.</p> <p>Therefore, I want to make use of this project to better understand what the elderly and cancer</p> |

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| | <p>population think about hospice programs, and to expand the program to more community centers; finally, I also hope that the results of the research could be translated to the government's health care committee to provide advice and help in the further implementation of the hospice program in Shanghai.</p> |
| <p>Ex vivo Phantom for Near-Bone Soft Tissue Vasculature in Photoacoustic Imaging</p> | <p>Photoacoustic imaging is an emerging preclinical modality that uses a combination of optics and acoustics mechanisms to visualize differences in optical absorption in target imaging objects. Photoacoustic imaging is potentially suitable for visualizing vasculature, as the hemoglobin in red blood cells is a prominent heat absorber and therefore serves as a great biomarker. Due to acoustic reflection, diffraction and scattering, photoacoustic imaging is subject to artifacts when the target soft tissue is close to bone. We construct an ex vivo phantom featuring vascularized soft tissue near long bone, to facilitate evaluation of photoacoustic images and to enable future research on artifact removal in photoacoustic imaging.</p> |
| <p>World Bank Group PHCPI - NCDs Improvement Strategies</p> | <p>The consultant will work under the supervision of a Senior Health Specialist team member of PHCPI/WBG. The goal of the internship is to provide a graduate student with the opportunity to review NCD literature and WBG projects related to Primary Health Care and provide meaningful contributions to the development of the deliverables.</p> <p>The objective of the project is to enable an effective response to increased demand for scaling up NCD services by guiding the translation of cost-effective NCD management into practice, particularly within the context of World Bank health sector lending operations. The development and application of a toolkit that is equipped to answer the questions decision-makers must face when seeking to invest in health systems strengthening for NCD management. In addition, an Anthology of NCD Success Stories will be developed to document real-world examples of successful NCD management across a range of country and health system contexts that can help guide country thinking around strategies for improvement.</p> |
| <p>Global Environmental Change and Hospitalized Patients</p> | <p>My practicum aims to review and assess the characteristics of hospitalized patients affected by global climate and environmental change through:</p> <ul style="list-style-type: none"> - Systematic review and meta-analysis of the various pathways that leads to adverse health impact of patients including hospitalizations. - Analysis of hospitalized patients who were exposed to certain events related to global climate and |

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| | <p>environmental change events such as extreme weather events including extreme heat exposure.</p> <p>- Presentation and dissemination of the findings among peers in my cohort at Harvard Chan T.H. School of Public Health, my home institution Icahn School of Medicine at Mount Sinai, and external institutions.</p> |
| <p>Development of curriculum and online training modules for cultural sensitivity training for clinical personnel and researchers traveling abroad through Massachusetts General Hospital Global Health organization</p> | <p>Development of online training modules on cultural sensitivity and pre-departure education on Uganda for clinical personnel and researchers working abroad through the Massachusetts General Hospital Global Health organization. Research and a presentation on learning management systems were performed. The curriculum was developed by performing a literature review on cultural sensitivity and reviewing the required books and established curriculum from the former in-person course taught for cultural sensitivity at the organization.</p> |
| <p>Access to Spine Care in Ontario</p> | <p>Access to Spine Care in Ontario</p> |
| <p>Assessing Specific Programmatic Co-Financing Commitments in Global Fund Grants</p> | <p>The practicum involved working with the Global Fund to critically analyze the use of specific commitments in past and future grant cycles. Specific commitments are those that go beyond the HIV, tuberculosis, and malaria disease-level programs of the Global Fund. I assessed the appropriateness of specific commitments by country and whether implementation and monitoring have been effective. Based on data analysis, I identified best practices and developed recommendations for the Global Fund to conceive, design, negotiate, monitor, and use specific commitments to improve performance in future grant cycles. The goal was to ensure that countries make more concrete, feasible, and mission-relevant programmatic commitments for the next funding cycle and beyond compared to past funding cycles, and that commitments are matched by monitoring, reporting, accountability, and actions to improve program results.</p> |
| <p>Characterization of Lupus Podocytopathy in a Canadian Cohort</p> | <p>Lupus nephritis is one of most common causes of glomerulonephritis, with 10-30% progressing to end-stage kidney disease even with treatment. Lupus podocytopathy is a distinct form of lupus nephritis which is histopathologically characterized by diffuse podocyte foot process effacement in</p> |

the absence of immune complex deposition by immunofluorescence, and clinically presents as nephrotic syndrome. As such, this entity is often misdiagnosed as minimal change disease (MCD) or focal segmental glomerulosclerosis (FSGS). Yet accurate diagnosis of lupus podocytopathy is key, as some studies suggest its response to certain treatments may be more favourable and will prevent more relapses than for MCD/FSGS lesions. The revised International Society of Nephrology/Renal Pathology Society (ISN/RPS) classification of lupus nephritis (LN) in 2018 describes 6 distinct classes of LN but does not include lupus podocytopathy as a distinct class. Further, the true prevalence of this entity in Canada and response to treatment is unknown, as the largest cohort published to date was restricted to those of Asian descent. Ethnicity and race are known factors to cause significant disparity in presentation and outcomes of SLE, and patients of Asian descent in generally fare better compared to patients of different ethnic backgrounds. Therefore, it would be of benefit to see whether a Canadian cohort of these patients, who would be more ethnically diverse, would yield different outcomes in comparison. To address these knowledge gaps, we conducted a retrospective cohort study to better characterize the prevalence, rate of misdiagnosis, and clinical course of lupus podocytopathy in an ethnically diverse population.