

Boston University School of Public Health

Student Practicum Abstracts

Spring 2017



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BIostatISTICS

Name: Ademola, Bayonle
Practicum Site: Boston Medical Center
Location: Boston, MA United States
Title: Research Assistant/Data Analyst

Introduction: Project Re-ED Discharge is a research group at Boston University Medical Centre that develops and tests strategies to improve the hospital discharge process in a way that promotes patient safety and reduces re-hospitalization rates. RED-D, is an offshoot of project RED. The goal of RED-D is to see a measurable effect (reduce hospital readmission and Emergency department visits) among patients with depressive symptoms.

Methods: This Clinical trial was powered at 80% for an effective size of 30% in a total of 1200 patients. Patients are randomized to intervention or control arm. All participants get a pre discharge and 2 days post discharge check- up and phone call respectively (a successful project RED toolkit to reduce readmission). In addition, the intervention arm is helped with patient navigation, self-management and Cognitive behavior therapy by a licensed mental health clinician. I approach eligible patients from a daily hospital admission list, screen, consent and enroll patients who meet our eligibility criteria (PHQ9 \geq 10). I also input participants' data. During our Data Safety Monitoring Board Meeting I generated a randomization table to assess the effectiveness of our randomization and progress of our recruitment.

Results/Outcomes: At the end of this trial. It is projected that there will be a 30% reduction in the rate of hospitalization among patients in the intervention arm compared to patients in the control arm. This we expect to stimulate other hospitals to adopt this tool kit. We also hopes it generate further discussion about patients discharge among stakeholders in healthcare.

Name: He, Yufei
Practicum Site: Boston University School of Public Health
Location: Boston, MA United States
Title: Laboratory data quality assurance

Introduction: In the multicenter study of the Accuracy and Feasibility of the Xpert Ultra Test, the laboratory data were collected from Kenya, Uganda, South Africa, China, and Brazil by the Tuberculosis Clinical Diagnostic Research Consortium. Tuberculosis causes over 8 million cases and 1.3 million deaths per year. Xpert MTB/RIF has been used broadly on detection of TB. However, there are still some limitation of detection on pulmonary TB by using Xpert test. Ultra-test was developed to see if there is improved in both performance and in operational characteristics. The main purpose of this study is to estimate and compared the sensitivity of the Xpert MTB/RIF Ultra test and standard Xpert MTB/RIF for detection of culture-positive pulmonary TB in new TB suspects. In order to ensure that the study progress and protocol compliance were worked well, quantitative analyses were performed contributing to visual presentation of the results.

Methods: A list of quality indicators to internally monitor study progress and protocol compliance with respect to sputum microscopy, culture, and Xpert MTB/RIF Ultra test results were identified. SAS was used to generate all the programs on checking the weekly and cumulatively numbers in each table in the quality indicators.

Results/Outcomes: Based on the internal monitoring of this multicenter study, the study went well with no missing data, and the compliance was high in all five countries. The discordances between Xpert and Ultra results in all five countries were higher in ultra-positive and Xpert negative condition compared to Xpert positive and Ultra negative condition.

Name: Huang, Xinran
Practicum Site: Veterans' Affairs Boston Health Care System
Location: West Roxbury, MA United States
Title: Student\Research Assistant

Introduction: Studies find that adverse experiences in childhood have enduring consequences for adult health net of many confounders. The objective of this practicum is to examine the association between psychosocial stress exposure across the developmental span and acute stress response parameters in adulthood.

Methods: My role was to use the MIDUSII data (Midlife in the U.S. second wave) to perform SAS coding and analysis. I began with reading study protocol and publications, identifying and constructing variables of interest from two large datasets and conducting descriptive analysis. I am currently conducting linear regression to examine the relationships between cumulative life time adverse events and cardiovascular response to cognitive tasks and recovery.

Results/Outcomes: In this study, 1054 participants aged from 35 to 86 were included in the analysis. The dose-response relationship between childhood adverse events and blunted cardiovascular reactivity persists after adjusting for adulthood adverse events and covariates. Future analysis to be conducted during the second half of the practicum will examine if this relationship will be accounted for by the mediators.

BIostatISTICS

Name: Luo, Man

Practicum Site: Boston Medical Center

Location: Boston, MA United States

Title: Data Analyst

Introduction: PCORI IMGV research is a patient-oriented research that focuses on the role of Integrative Medicine Group Visit (IMGV) to support health behavior change and reduce patients' chronic pain compared to the role of primary care provider (PCP) visits. The IMGV combines Integrative Medicine (incorporating conventional medicine, education, and non-pharmacologic treatment strategies), Group Medical Visits, and the Mindfulness-Based Stress Reduction techniques to reduce chronic pain and stress. The purpose of this practicum was to perform data analysis for this research.

Methods: I am working with the study team and the Principle Investigator of the PCORI IMGV study: 1) to create clean data-set for the study; 2) to perform in-tent-treat analysis as well as per-protocol analysis using logistic regressions and linear regressions to find out the association between treatments and outcomes, adjusting for other potential confounders; 3) to address the missing pattern for the research data 4) to perform longitudinal data analysis using generalized models to find out the association between outcomes and the treatments at different time periods, adjusting for other variables.

Results/Outcomes: Created a clean data-set for the study as well as a data dictionary. Created tables for linear and logistic regressions accounting for confounders and effect modifiers for both intent-to-treat and per-protocol analysis. Found out the missing pattern for the study data. Created tables with risk ratios (RR) and 95% confidence intervals (95%CI) for longitudinal data analysis using generalized models for outcome variables with

Name: Mu, Yi

Practicum Site: Boston University School of Public Health

Location: Boston, MA United States

Title: Data Management Intern

Introduction: The Data Coordinating Center (DCC) at BUSPH is a data management and analysis resource center. It assists with questionnaire and data collection form design, implementation of study protocols, data management, data entry and statistical, database, and web-based programming. As a statistical assistant here, I had opportunities to improve my data management and programming skills.

Methods: During the past 8 months, I've assisted with several projects: NARCAN, Integrating Community Health Workers, DEC Patient Navigation and Yoga 4 Phase 2. I attended monthly DCC study meetings and was trained on using the Teleform Verifier and RedCap. These are two major data management systems. The RedCap is usually used to design a survey and do data entry. The surveys created on RedCap were also tested and re-tested by doing audit check (comparing the difference between original questions and designed ones). Teleform Verifier software is a software that mainly used in Narcan Project. It can read the scanned case report forms and convert them to electronic version forms which are called Teleforms. I also did SAS macro updating by changing the old sites' names to the new ones and expanding the codes for an intervention to four interventions for DEC Patient Navigation Project.

Results/Outcomes: This one year internship in the DCC helps me get familiar with the data cleaning and verification progress. I gained experience in cleaning, managing and performing statistical analysis with big datasets. It is a great experience to work with the data scientists, SAS programmers and web designers. It brings me to the real data science world.

ENVIRONMENTAL HEALTH

Name: Dally, Kaitlyn
Practicum Site: SimpleWater
Location: Boston, MA United States
Title: Research Contractor

Introduction: SimpleWater aims to provide low-cost, informative, and actionable water testing solutions for anyone asking what is in their water. SimpleWater's Tap Score is offered to customers who purchase a home water sampling kit, and SimpleWater provides each customer with an informative water quality report and score from 0 to 100. The purpose of this practicum was to effectively gather and organize contaminant information to be input into the Tap Score calculation of likelihood of drinking water-related harm.

Methods: This practicum involved research into the best-available information regarding documented effects, threshold, regulatory, and health guideline values for provided contaminants. The approach included classifying compounds by chemical class, and inputting the toxicity values, study types, species, and a value for effect and value certainty. All rationales for identifying toxicity values, determining certainty, and choosing appropriate databases were documented. Factors relating to developmental toxicity were combined with identified toxicity values and uncertainty factors to develop an incremental risk ppb for non-cancer effects, and cancer slope factors (CSF) and unit risks, where applicable.

Results/Outcomes: A working spreadsheet was produced which included compiled all information on health effects, threshold concentrations, certainty scores for both values and effects, estimations of incremental risk per ppb for non-cancer effects, known or estimated CSFs, and sources of all data. A memo was written describing the methods used to produce the working spreadsheet, in order to enable SimpleWater to continue applying this procedure to calculate risk and certainty values for additional contaminants for use in their Tap Score algorithm.

Name: Terrano, Robert
Practicum Site: Boston University School of Public Health (BUSPH)
Location: Boston, MA United States
Title: Research Intern for the VBRANDS eCig Pilot Study: Qualitative Research on Adolescent Use of eCigarettes and Vaping Devices

Introduction: Electronic cigarettes and related vaping devices are an increasingly used alternative to more conventional tobacco products. These devices operate by vaporizing liquids, waxes, oils, or loose-leaf materials to be inhaled. The materials that are vaporized have varying amounts of nicotine and other potentially deleterious additives. Without a more specific understanding of the devices and materials being used, we cannot accurately study their health effects.

Methods: For my practicum I interned as a research assistant for a pilot study at BUSPH. This pilot study is a test of survey methodologies designed to determine what vaping products are being used. To help design the survey, I worked with a team to create focus groups to learn more about youth (ages 16-20) use of these products and the language that they describe them with. The scope of the practicum involved preparing and administering these focus groups. We obtained IRB approval for the focus groups, designed recruitment materials and a guide for focus group moderation, and have begun recruitment, the screening of subjects, and the moderation of the focus groups. Additionally, in preparation for the survey design, we have compiled lists of available brands, devices, and flavors using internet searches.

Projected Outcomes: Enrollment for the focus groups is ongoing. The goal is to have the results of the focus groups inform the final survey design which in turn will be used as a guide for a potential R01 grant proposal to the National Cancer Institute.

EPIDEMIOLOGY

Name: Amin, Gopal
Practicum Site: Boston University School of Public Health
Location: Boston, MA United States
Title: Community Health Sciences Research Assistant

Introduction: Studies have shown that alcohol consumption is a risk factor for oral, pharyngeal, laryngeal, esophageal, liver, colon, rectal, and breast cancer. Even low-level alcohol consumption increases risk. It would therefore be expected that cancer prevention organizations would incorporate these facts into their public stance on the consumption of alcohol. The aim of this study was to examine how national cancer societies in the U.S. and other countries communicate alcohol-related cancer risk to the public.

Methods: We searched through the following cancer organizations for all statements related to the relationship between alcohol consumption and cancer risk: Cancer Council Australia, Canadian Cancer Society (CCS), Irish Cancer Society, New Zealand Cancer Society, Cancer Research UK, and the American Cancer Society (ACS). A categorical system was developed to code the qualitative data for both health statements and alcohol consumption recommendations.

Results/Outcomes: The ACS and CCS were the only organizations that did not explicitly state that alcohol is a group 1 carcinogen and that for some cancers, even low-level alcohol consumption increases risk. Additionally, while the ACS fully supports increasing tobacco taxes through its cancer action network, it has not advocated for similar taxes on alcohol. The discrepancy between the ACS and other international organizations suggests that the ACS needs to update and correct its public statements on alcohol consumption and cancer risk in order to accurately educate the public on the risk of cancer associated with alcohol. Also, its failure to advocate for increased alcohol taxes suggests a lack of will to confront the alcohol industry.

Name: Bhatia, Aksha
Practicum Site: Boston Children's Hospital
Location: Boston, MA United States
Title: Intern

Introduction: Under the direction of Jean Connor PhD, RN, CPNP, FAAN, the Cardiovascular and Critical Care Nursing Research Program, I assisted with two assessments: (1) Hydrocortisone Use for Adrenal Insufficiency and (2) Cardiac Intensive Care Unit (CICU) Nursing Simulation. Currently there is variation across the country in the use of hydrocortisone for management of vasoactive resistant shock. The main aim of the first survey is to assess these various practices and work towards the standardization of hydrocortisone therapy. The second survey aims to assess the use of simulation as a teaching tool for CICU nurse training programs. CICU nurses require extensive training to function effectively in the clinical setting. Training by simulation would better prepare nurses for a clinical environment and thus resulting in an improved quality of care. Currently there is no standard curriculum for the use of simulation in CICU nurse orientation and training.

Methods: (1) Conduct literature reviews (2) Based on these literature reviews develop and distribute surveys using REDCap (Research Electronic Data Capture), (3) Assist in coordination of survey item and data management, and (4) Assist with the data analysis and generate required reports.

Projected Outcomes: The results of these surveys would help in gaining a better understanding of the current state of practice which can be further utilized to help create a standardized practice for hydrocortisone therapy and Nursing simulation curriculum, with the ultimate goal being improvement in quality of care and thus patient outcomes.

Name: Bohmer, Elise
Practicum Site: Massachusetts Commission on the Status of Women
Location: Boston, MA United States
Title: Legislative Intern for the Massachusetts Commission on the Status of Women (MCSW)

Introduction: The Massachusetts Commission on the Status of Women (MCSW) is an agency of the state that is tasked with studying and reporting on the status of women in Massachusetts. Based on its findings, the MCSW offers policy recommendations with the goal of improving women's access to resources and equality within the Commonwealth.

Methods: My role at the MCSW involves researching and summarizing state laws and their impact on women as well as seeking support for specific laws in the form of sponsorship from legislators. I am also responsible for working alongside the MCSW's Legislative Committee and engaging in outreach to organizations and groups that partner with the MCSW to further the MCSW's legislative goals. I have also worked on projects related to the establishment and Inauguration of the newly established regional Commissions on the Status of Women and Girls in Hampden County and the Hampshire-Franklin area.

Results/Outcomes: Within a given legislative session, there are countless bills that come before the Massachusetts Senators and Representatives. By supporting, summarizing, and advocating for specific bills that will have a meaningful impact on the lives of women, we are able to increase the likelihood that this important legislation will pass. The establishment of the two new regional Commissions ensures that women in Hampden County and the Hampshire-Franklin area are able to make their voices heard on the issues that are specific to women in their respective regions. These are crucial steps in advancing the status of all women in state of Massachusetts.

EPIDEMIOLOGY

Name: Bonasia, Kara
Practicum Site: International Tuberculosis Institute
Location: Boston, MA United States
Title: Data Management Practicum

Introduction: The International Tuberculosis Institute is a group within the Department of Infectious Diseases at Boston Medical Center. It is an inter-disciplinary and international consortium that conducts observational studies. These studies focus on the immunology and point-of-care diagnostics of tuberculosis. These studies have field sites in India, Uganda, Kenya, South Africa, China, and Brazil. The practicum project consists of assisting with data management of the studies in the role of a junior data manager.

Methods: I am working mostly on one study that concentrates on improving tuberculosis diagnostics and is based in Uganda, Brazil, China, Kenya, and South Africa. For this study I generated reports to be used internally and at field sites to help track pending forms and data, and completed internal data cleaning using Excel and SAS. The remaining part of the practicum is on an upcoming study in South Africa focused on surveillance for which I created case report forms to be used at the field sites, created an Access database.

Results/Outcomes: I created two new reports that can be used to track data, the new Access database and case report forms for the upcoming study, and clean data set that can be analyzed and viewed by others.

Name: Brimah, Idayat
Practicum Site: Boston Medical Center
Location: Boston, MA United States
Title: Research Intern

Introduction: Obesity is said to affect 1 in 6 children and adolescents in the USA. This puts them at risk of developing chronic diseases such as cardiovascular diseases, diabetes etc. This practicum was a Quality Improvement project carried out to assess if Pediatricians adhered to the current standards of childhood overweight and obesity care. The standard care is that every child with BMI $\geq 85^{\text{th}}$ percentile should be assessed for the presence of weight-related complications such as hypertension, signs of insulin resistance etc. Also, they must have a lipid profile screen and be educated on healthy lifestyle and diet with focus on 5-2-1-0 i.e. 5 or more fruits/vegetables per day, 2 hours or less TV time, 1 hour or more physical activity and 0 sugary drinks. The Pediatricians collect and record the above information with a SMART link on the electronic health register (EPIC). Another aspect of the project was a platform developed by the Pediatric Cardiology Unit called FIT4U that offer a twice-weekly educational communication on healthy diet options, exercise and weight management to these patients.

Methods: 1) I identified patients with BMI $\geq 85^{\text{th}}$ percentile to develop a database of overweight and obese patients at the Primary Care. 2) I collected information from the Providers weekly to determine if they used the SMART link. 3) I also enrolled patients on to FIT4U.

Results/Outcomes: 1) Developed a database of 510 overweight and obese children/adolescents. 2) Improvement in adherence to standard obesity care by pediatricians based on a gradual increase in utilization of the SMART link. 3) Successfully enrolled 65 children/adolescents on to FIT4U.

Name: Gulla, Joy
Practicum Site: Boston Medical Center
Location: Boston, MA United States
Title: MPH Student

Introduction: The majority of patients with substance use disorders (SUD) continue to have their deadly disease untreated. Among the 22 million Americans with SUD, only 2.5 million (10%) received any treatment.¹ An Addiction Consult Service (ACS) is a multi-disciplinary consultation team with addiction expertise that diagnoses patient with substance use disorders, counsel them about treatment options, coach and collaborate with inpatient providers, initiate evidence-based medications for addiction and bridge patients to long-term outpatient treatment. The goal of this study is to evaluate whether an ACS improves completion of treatment of acute medical illness, reduces re-hospitalization and increases access to appropriate outpatient treatment.²⁻⁷

Methods: Propensity Score Matching will be used to evaluate whether an ACS improves patient outcomes. Propensity Score Matching can account for covariates that may distort the true relationships between an ACS visit and the study outcomes (such as age, HIV status, or race) that could predict an ACS visit. Longitudinal regression models using the Propensity Score for the propensity of receiving an addiction consult with the ACS will be used to look at the association between the independent variable "ACS consult" and the outcome of 30-day acute care visit.

Results/Outcomes: The projected outcome of this study is to identify whether there is an association between an ACS consult and any post-discharge 30-day acute care visit. This study will be the first of its kind to evaluate the impact of an ACS on 30-day post-discharge acute care service utilization, and can inform the implementation of this model of care across the country.

EPIDEMIOLOGY

Name: Haroon, Samir

Practicum Site: Boston Medical Center

Location: Boston, MA United States

Title: ICOUGH Recovery Mobile Application Development Study/ Principle Investigator

Introduction: The ICOUGH postoperative protocol was developed at Boston Medical Center and has been shown to decrease postoperative pneumonia by 38%, unplanned intubations by 40%, and all adverse outcomes by 40%, which translated to cost savings of \$3 million in a two-year period. However, the ICOUGH protocol remains difficult to implement, sustain, and scale. The utilization of a point-of-care, inpatient mobile application based on the ICOUGH protocol could promote improved engagement and adherence, complement nursing workflow, and ensure easy scalability. We aim to determine the feasibility of conducting a pilot study with a fully-functional mobile application.

Methods: Subjects were asked to use a high-fidelity, interactive user interface (UI) prototype of the application followed by interviews for qualitative analysis to help inform the design and development of the prototype. A general inductive method was used to analyze the interview transcripts. Transcripts and text segments were coded for potential themes. Themes will be used to iteratively improve the design and functions of the application.

Results/Outcomes: Twelve subjects were interviewed. All subjects were able to navigate the prototype and understand its purpose. Recurring themes from patient interviews include using videos for education, the value of family involvement, audiovisual reminders are a desired feature, and summarization and benchmarking promotes adherence. All smartphone-owning subjects said they would use the mobile application as currently designed. Our results demonstrate that it is feasible to conduct a pilot study with a fully functional inpatient mobile application to promote greater adherence and acceptability of the ICOUGH protocol.

Name: Hogan, Matthew

Practicum Site: Framingham Heart Study

Location: Framingham, MA United States

Title: Traumatic Brain Injury Research Assistant

Introduction: The Framingham Heart Study (FHS) started in 1948 under the direction of the National Heart Institute to identify factors that contributed to cardiovascular disease. This research has been considered the gold standard of epidemiologic studies due to the sample size and compliance of participants. The Framingham Heart Study has recently incorporated its third generation of participants, and over the years has expanded its research to numerous other fields of study other than cardiovascular health. For this project, FHS researchers are interested in the association between lifetime exposure to traumatic brain injury (TBI) and neuropathological and psychiatric outcomes, such as dementia and depression, among the original cohort.

Methods: I worked with a team of two other individuals to create a protocol that interns over the summer would use to retrieve TBI exposure data in a standardized fashion. As the initial focus of FHS was not for neuropathological conditions, I created a chart-mapping document that will help guide the interns through the pertinent sections of the medical records of the original cohort, to extract important information relating to TBI. Alongside the retrospective review protocol, I also assisted in the formulation of the training manual for the interns.

Results/Outcomes: Our team is in the midst of finalizing the protocol, which we will be piloting in early May before the start of the full-scale retrospective chart review. Once the TBI exposure data extraction is completed, FHS researchers may finally uncover numerous associations between TBIs and neuropathological and psychiatric outcomes.

Name: Kao, Pei-Chi

Practicum Site: Boston University School of Public Health

Location: Boston, MA United States

Title: Research Assistant, Center for Traumatic Encephalopathy

Introduction: The goal of this practicum is to provide data management support to various projects managed by DCC including the Center for Traumatic Encephalopathy (CTE) and the Narcan Program. CTE seeks to determine the clinical and neuroimaging correlates of CTE through a brain bank and collection of clinical information that will identify posttraumatic neurodegeneration, which they wish to establish the incidence and prevalence of this condition. Their work will have tremendous impact on public health of millions of Americans and greatly increase our understanding of the latent effects of brain trauma. The Narcan program is a Mass. DPH initiative for opioid overdose reversal. It tracks the distribution and use of Narcan, the antidote to opioid overdose. Narcan is distributed, to first responders (Police and Fire) through their municipalities and to current heroin users, their friends and family members through needle exchange programs.

Methods: I worked with a group of investigators from the CTE and Narcan Program: 1) to verify data collection forms on TELEform and REDCap (Research Electronic Data Capture); 2) to perform REDCap system testing for new projects; 3) to update REDCap user manual; 4) to assist with developing SAS programming for regular reporting of study data.

Results/Outcomes: Increase the amount of data collected for the Narcan program, the development of REDCap instruments, a user manual for the CTE Program, a summary report of the race and gender data.

EPIDEMIOLOGY

Name: Lord, Emily

Practicum Site: Boston University School of Public Health

Location: Boston, MA United States

Title: Practicum Intern – Retrospective Design Analysis of Randomized Trials with Time-to-Event Outcomes

Introduction: Conventional design and interpretation of cancer randomized trials (RCT) rely on statistical power and put emphasis on statistical significance. Sign errors - concluding that an experimental treatment is beneficial when in fact it is detrimental- and Magnitude errors - concluding that the treatment effect is larger than it truly is- are novel conceptualizations of the errors that can occur in RCTs. We estimated the Type S and M error risks in a cohort of cancer RCTs.

Methods: We selected all pivotal RCTs with time-to-event outcomes supporting FDA approval of cancer drugs in 2007-2016. We extracted hazard ratios (HR) and standard errors for Overall Survival (OS) and Progression-Free Survival (PFS) from FDA statistical reviews. We estimated the Type S error risk and exaggeration ratio by considering replicated RCTs of equal size and underlying true HRs of 0.7 and 0.9.

Results/Outcomes: We analyzed 32 trials for 32 approved drugs. The median sample size was 614, and 56% of RCTs used placebo/no treatment control groups. Across 32 RCTs reporting OS, the median type S error risk and exaggeration ratio were 0.0% [Q1-Q3 0.0-0.0], and 1.24 [1.01-1.48] for a true HR of 0.7. These numbers were 3.7% [0.4-7.3] and 3.49 [2.19-4.44] for a true HR of 0.9. Results were similar across the 30 RCTs reporting PFS. In pivotal cancer RCTs, the overall type S error risk was small. However, the type M error was frequently large, suggesting that treatment effects were exaggerated.

Name: Luu, Thuy

Practicum Site: Palladium

Location: Washington, DC United States

Title: Value Analytics Practicum with a focus on Global Health

Introduction: Value Analytics is the use of data analytics to improve cost effectiveness in international development. International development agencies including USAID and the Department for International Development (DFID) in the UK continue to place a growing emphasis on data driven decisions and cost effectiveness. The goal of this practicum was to explore the intersection of data analytics and value for money, one scenario was assessing US Federal aid for HIV and countries with the highest prevalence of HIV.

Methods: Data from the World Bank and USAID was used to determine the top 10 countries with the highest prevalence of HIV and US Federal aid for HIV (USAID/PEPFAR) in these countries. Tableau, a publicly available visualization software, was used to show the correlation between US Federal aid for HIV in those countries with the highest prevalence of HIV. R was used to statistically evaluate the correlation.

Results/Outcomes: The visual representation showed no correlation between US Federal aid for HIV in the 10 countries with the highest prevalence of HIV, which was statistically confirmed. This outcome was surprising as the assumption was there would be increased US Federal aid for HIV with increased prevalence of HIV. This is one determinant of the relationship between aid and prevalence of HIV that can be used to drive decisions and maximize cost effectiveness.

Name: Morse, Catherine

Practicum Site: Seres Therapeutics

Location: Cambridge, MA United States

Title: Researcher

Introduction: Bacterial infections due to multi-drug resistant organisms (MDROs) are a growing health problem recognized for years but with few new antibiotics in the development pipeline. However, antibiotics are only part of the solution as drug resistance reliably occurs with any extended drug pressure. Therefore, novel approaches for the treatment of MDROs are urgently needed. Colonization resistance against pathogens is facilitated by a healthy microbiome. Interventions, such as fecal microbiota transplantation (FMT), help to restore a dysbiotic gut microbiome, which may result from antibiotics, which create ecologic holes in the gut microbial network/community.

Methods: A literature review was performed on MDROs and FMT to understand what was already available in the field. Due to the limited amount of studies, the literature review was expanded to investigate the efficacy of FMT for prevention of recurrent *Clostridium difficile* infection (RCDI) as a proof of concept. Clinical trials and intervention studies are included in this review.

Results/Outcomes: In 8 case reports and one clinical study FMT has been demonstrated to reduce or eliminate MDRO colonization, although the numbers are very limited. A few clinical trials are underway with a small number of subjects. FMT has led to prevention of recurrence in subjects with multiply RCDI in both observational and prospective studies providing evidence that FMT restores colonization resistance against *Clostridium difficile* in patients who did not respond to multiple rounds of antibiotic treatment. Further work is needed to investigate the role that FMT or other microbiome therapies may play in reducing colonization and infection by MDROs.

EPIDEMIOLOGY

Name: Muthulingam, Shobana
Practicum Site: Boston University School of Public Health (BUSPH)
Location: Boston, MA United States
Title: Research Assistant

Introduction: The purpose of this project is to, in one way, address ways in which we can measure food insecurity and food deserts in the state of Massachusetts.

Methods: The goals of the project were to define food access, devise methods to assess food access in Massachusetts, and create a preliminary map of statewide food access that pilots these methods to better understand factors and patterns of food access in various community types. In addition to this, we will look at surveys conducted and collected by the Children's Health Watch to identify barriers to food access which may include affordability, coping mechanisms and more information regarding which demographics are being affected. In order to accomplish this, we first conducted a literature review to identify studies that used a variety of methods to measure food insecurity and determine its association to different health outcomes. Terms such as food deserts, food shortage, food access, and food insecurity were used in searching and identifying relevant literature. We then looked into creating a food insecurity index that is specific to the state of Massachusetts by referencing the current Food access Index (Matthews et al.) and correlating to data from the Children's Health Watch.

Results/Outcomes: This will allow us to identify which demographics or particular populations are disproportionately affected by focusing on three aspects of food access: affordability, perception of food security, and distance (walkability & drivability).

Name: Nam, HaYoung
Practicum Site: John Snow, Inc
Location: Boston, MA United States
Title: Intern

Introduction: John Snow, Inc. is a public health consulting and research organization that has worked in more than 100 countries since it was founded in 1978. As a backstopping team, JSI's International Division provides technical expertise and support to a number of international programs that are almost entirely run by local governments and experts.

Methods: As an Intern, my tasks were divided into three areas. Assisting with proposal development, I participated in conducting literature reviews and formatting curriculum vitae using USAID guideline. For data management, I contributed to cleaning health indicators and updating past projects into database by communicating with Senior Advisors and Associate Directors. Working with a Monitoring & Evaluation Advisor, I assisted with qualitative data management and baseline reports for DISCOVER-Health project in Zambia. Other tasks included supporting program officers and backstopping teams for ongoing international projects.

Results/Outcomes: I was involved in a range of different program stages, from assisting with proposal development to proofreading close-out documents. This has given me great insight into how an international health program runs over time and how different technical experts work together in a systematic way. I am confident that my responsibilities gave me a bigger picture of the programs which made my daily tasks more engaging. I was able to observe, learn, and understand the dynamics and culture of a public health consulting firm and the values it holds for better health of people.

Name: Patel, Mrugesh
Practicum Site: Boston University School of Medicine
Location: Boston, MA United States
Title: Effect of Implementation of Institutional Triage Algorithms on MDCT Usage in Head and Neck Trauma

Introduction: Multidetector Computed Tomography (MDCT) is an essential imaging modality to identify blunt head and neck trauma (BHNT). These advantages led to an increase use of CT-imaging in emergency departments in the past decade. However, there are unfavorable consequences from CT overutilization such as unnecessary radiation exposure, increased costs, & inefficient use of resources. Clinical triaging algorithms have been created to guide clinicians when appropriate to order CT-imaging. The purpose of our study is to evaluate the impact of implementation of triaging algorithms on the rate of MDCT use in BHNT over 20-month period at Level 1 trauma center.

Methods: This retrospective study consisted of patients admitted for BHNT to level 1-trauma center from 8/2009-3/2011. BHNT patients were divided into two groups based on implementation date of the triaging algorithm (7/1/2010): pre-algorithm and post-algorithm. I reviewed the following parameters within imaging archiving system: number of head CT (CTH), number of cervical spine CT (CTCS), number of CT angiogram of head and neck (CTAHN), and number of CT with positive BHNT-related findings. Chi-square analysis with Yates corrections was used to determine significant differences.

Results/Outcomes: Data analyses revealed significant reduction in CTH use (11%, $p < 0.0001$) and CTCS use (16%, $p < 0.0001$) in post-algorithm vs. pre-algorithm group. There was no significant difference in CTAHN use or number of CT with positive BHNT-related findings between the two groups. Overall, clinical triaging algorithms demonstrate a reduction in unnecessary CT examinations in BHNT patients. We plan to collect more data and incorporate other parameters (length of hospital stay, number of mortalities) to evaluate other potential benefits of clinical triaging algorithms.

EPIDEMIOLOGY

Name: Rudolph, Sara
Practicum Site: Boston Medical Center
Location: Boston, MA United States
Practicum Title: Research Assistant for Mahalingaiah Lab

Introduction: This practicum was comprised of two major parts: 1) publication and presentation of previous research material on polycystic ovary syndrome; and 2) formulation of peer review feedback for journal manuscripts. The first part consisted of revision and reformatting of a concurrent Master's thesis on genetic polymorphisms in women with polycystic ovary syndrome for submission to a scientific journal, as well as presentation of this work to the research lab. Also in this realm was peer correspondence on said publication within the scientific community. The second part of this practicum involved providing peer review feedback on other journal manuscripts within the larger scientific community.

Methods: I worked with members of the lab to: 1) create a publication for submission to a scientific journal; 2) communicate and share knowledge with the lab and larger scientific community through oral and written presentation; 3) provide peer review feedback to other members of the scientific community on their own manuscripts via written communication in order to create an ideal vehicle for delivery of knowledge.

Results/Outcomes: This practicum will, as a whole, ultimately improve the knowledge base of polycystic ovary syndrome and provide a diverse group from which to perform future studies on a wide variety of reproductive disorders in women.

Name: Spinrad, Michael
Practicum Site: Boston Medical Center
Location: Boston, MA United States
Title: Research assistant

Introduction: The Pediatric Pain Clinic at Boston Medical center aims to provide a wide array of service to help manage chronic pain among children. During this practicum, I acted as a research assistant, working on an ongoing study investigating the effectiveness and feasibility of the clinics approach to pain management in an underserved population. My role was to help with the initial data collection and planning of the project.

Methods: My clinical duties were to inform new patients on the research, get consent for their participation in the study, and collect data during their initial visit and three months later. The effect of pain was measured primarily using three questionnaires: PedsQL, the Pain Catastrophizing Scale, and PROMIS pain interference. The questionnaires' range from thirteen to twenty three questions and provide a weighted score that can be used to assess pain. I also extracted data from medical records following a template I help design in Redcap. In preparation for participation in future conferences that discuss pain, I will perform a small literature review of four papers and provide a draft of an abstract of the current study.

Results: At the conclusion of my practicum I will have optimized a template used for collecting data from medical records. I consented ten new participants and collected follow up information on ten others. I will also write an abstract for the study group to use, detailing the goals of the study.

Name: Weinstein, Elliott
Practicum Site: Youville House Assisted Living Residence
Location: Cambridge, MA United States
Title: Programming Intern at Youville House Assisted Living Facility

Introduction: Older adults are living longer than ever before thanks to improved public health programming. While the benefits of increased longevity are multiple, increased life expectancy has highlighted the difficulty of maintaining high levels of quality of life (QoL) among geriatric populations.

Methods: A qualitative research study assessing the subjective perceptions on personal health among older adult residents living at Youville House Assisted Living Facility (n = 7) examined the diverse needs of older populations. Additionally, a weekly art appreciation program, *Art Detectives*, was implemented to improve QoL among older adults through group interaction and cognitive stimulation. A small focus group (n = 6) was held to evaluate older adult participants' attitudes on the overall acceptability, accessibility, and feasibility of the *Art Detectives* program.

Results/Outcomes: Qualitative findings suggest that older adults believe that programs should target not solely physical health, but mental/emotional, spiritual, and cognitive health too. Similarly, themes connected to visibility/invisibility, emotionality, sociability, and adjusting one's attitudes were all associated with older adults' perceptions of subjective health. Older adults who participated in the *Art Detectives* program expressed high enjoyment, interest, and satisfaction with the program and hoped that more programming like *Art Detectives* would be offered. Data yielded from both these qualitative studies suggest that interventions to improve health and QoL among older adults should not only address the specific needs and concerns of an increasingly diverse older population, but also focus specifically on cognitively stimulating programming that has the potential to transcend domains and improve other health aspects among older adults.

GLOBAL HEALTH

Name: Ahli, Shaima
Practicum Site: Healthmap - Children's Hospital Boston
Location: Boston, MA United States
Title: Arabic Language Curator

Introduction: Computational Epidemiology Group (HealthMap) at Boston Children's Hospital works on evolving the way public health is traditionally translated and how surveillance data is collected, through innovative ways to make it more accessible. One of the projects at HealthMap include, collecting real-time data on infectious diseases and outbreaks around the world. Arabic Curators need to confirm the accuracy of the data being fed into the algorithm of disease outbreaks in Arab speaking countries. This research looks at the Middle Eastern Respiratory Syndrome (MERS) outbreak in the United Arab Emirates (2013-2016) and compares the data gathered from HealthMap, to the WHO, and the Health Authority in Abu Dhabi.

Method: I started a Literature Review on MERS in the UAE, did a preliminary data analysis using HealthMap's available data, and collected data from HAAD's MERS news feed.

Results: HealthMap reports the following: in 2013 [12] outbreak cases; 2014 [56]; 2015 [8]; and 2016 [6] (HealthMap, 2013-2016). The WHO reports in 2013 there were [11] cases; 2014 [56]; 2015 [7]; and 2016 [3] (WHO, 2013-2016). Finally, HAAD reports that in 2013 only [4] cases were confirmed; 2014 [5]; 2015 [2]; and 2016 [1] (HAAD, 2013-2016).

Conclusion: The lack of transparency in HAAD could have an adverse effect on controlling future MERS outbreaks since the population is not informed and warned. Data from WHO will be shared with HAAD to validate the numbers and they will be asked to consider policy change in terms of transparency and data accuracy.

Name: Alghamdi, Amenah
Practicum Site: Dana Farber
Location: Boston, MA United States
Title: Quality Improvement of Sickle Cell Disease Newborn Screening in Haiti

Introduction: The Global Health Initiative at Dana-Farber/Boston Children's Cancer and Blood Disorders Center is a program that helps to support international projects on childhood cancer and blood disorders to advance pediatric care worldwide. Collaboration between this program and Partners in Health at the Hôpital Universitaire de Mirebalais in Haiti has led to the establishment of the first sickle cell disease (SCD) screening program in the country. Approximately 6 per 1000 Haitian newborns have the disease. Under-five mortality rate remains high in affected children considering the lack of screening and management programs in the country.

Methods: As an intern with Dr. Natasha Archer at Dana-Farber Institute, I conducted a literature review identifying components of a four-tier screening and management program. With the team, I developed a procurement list for each tier. Later, I conducted a budgeting analysis for a local three-tier program at the Hôpital Universitaire de Mirebalais. I also prepared a budgeting report and analysis for a national level program.

Results/Outcomes: I gained a better understanding of the various components needed to support an SCD screening and management program. To plan for a national program, we shared the national budgeting report with the Sickle Cell Disease Association of America. The budgeting report for the local program will be shared with Partners in Health to provide recommendations for improvement and expansion.

Name: Aung, Mun Pan
Practicum Site: BU School of Public Health
Location: Boston, MA United States
Title: SHIELD Needs Assessment Intern

Introduction: SHIELD offers innovative education programs and leadership opportunities that prepare school nurses to serve as school health leaders; deliver integrated, collaborative student health services programs; earn continuing education credits that fulfill state licensure and certification requirements; and meet the professional development needs of school health professions. As the first year of SHIELD is coming to a close, SHIELD is conducting a needs assessment to identify gaps in the services SHIELD provides as well as the needs of school nurses in Massachusetts. The end goal of this assessment is to collect information that will help SHIELD in making modifications to current programs and developing new programs that will enhance the job performance of school nurses.

Methods: I conducted literature research on previously conducted needs assessments pertaining to school health nurses and created a matrix with methods, target population, gaps identified requiring further attention. In addition, I conducted scoping review of needs assessment that address school health services and summarized findings to inform future studies. Conducted focus group discussion with school nurses and summarized and analyzed findings for the Annual Report.

Projected Results: Most school nurses are overworked as they are handling the caseloads exceeding the National Association of School Nurses' recommended workload. Additionally, most school nurses work autonomously and do not have strong support system at their job sites contrary to the teachers. Therefore, it is essential to identify the needs of school nurses and provide resources that will most effectively enhance the job performance of school nurses in Massachusetts.

GLOBAL HEALTH

Name: Berry, Kaitlyn

Practicum Site: Lesotho-Boston Health Alliance (LeBoHA)

Location: Boston, MA United States

Title: Building a Foundation for Quality Improvement Initiatives to Address Maternal Health Challenges

Introduction: Through this practicum, I worked with the Lesotho-Boston Health Alliance (LeBoHA), an organization that works to build and strengthen the human resources needed to sustain good quality comprehensive care in Lesotho. The goal of this project was to expand the reach of quality improvement (QI) initiatives to cover maternal health related challenges in a context where most resources are dedicated to HIV/AIDs.

Methods: To build a strong foundation for LeBoHA's proposed QI work, I worked to: 1) conduct a situational analysis of the current QI initiatives in the Leribe District, 2) identify gaps in the QI work of partner organizations, 3) develop resources to support future LeBoHA QI projects, 4) train family medicine registrars on basic QI principles and tools, and 5) develop a plan for LeBoHA to move forward with their QI plans.

Results/Outcomes: I first identified the lack of support for facility-based QI teams tasked with leading improvement projects as a key QI gap in the Leribe District. To fill this gap, I developed a locally relevant QI manual and corresponding workbook structured around the Model for Improvement that is designed to guide QI teams in Lesotho through the process of identifying problems, brainstorming solutions, and systematically testing changes that result in improvement. As a result, LeBoHA is now well poised to launch QI projects, led by family medicine registrars and future MPH students, to address problems related to maternal mortality, low rates of facility deliveries, and lack of respectful maternity care.

Name: Bhatti, Anam

Practicum Site: Aga Khan University

Location: Karachi, Pakistan

Practicum Title: Aga Khan University Pakistan Nutrition Strategic Review/ Research Specialist

Introduction: The Food Security and Nutrition Strategic Review is an independent, analytical and consultative exercise designed to identify the key challenges faced by Pakistan in achieving food security and improved nutrition by providing prioritized areas for action for the Government of Pakistan and humanitarian and development partners.

Methods: I conducted a desk review examining the nutrition situation among women and children (0-5 years) from 1980 to present day. I developed focus group discussion questions which helped to inform the discussion during the consultative workshops. I also created provincial presentations which highlighted several nutrition indicators. The presentations were presented during consultation meetings. After each consultative meeting, I cleaned the focus group data and worked with colleagues to translate each transcript to Urdu and then back translate it to English. Additionally, I developed a thorough summary of each consultative workshop tailored by province and territory.

Results/Outcomes: The National Strategic Review was useful in engaging key stakeholders from government, NGOs and multilateral partners in analyzing the successes and gaps in addressing malnutrition within each province. The Strategic Review identified several gaps and challenges in policy implementation and coordination between departments which contributed to slow progress in improving indicators and meeting the goal to reduce malnutrition by half by 2025. We hope that the government of Pakistan will review and discuss the results of the Strategic Review within their individual departments in order to meet the national nutrition goals by 2025.

Name: Gaur, Dipika

Practicum Site: Boston Children's Hospital

Location: Boston, MA United States

Title: Identifying National Trends and Practice Patterns in Care for Children with Long-Term Ventilation Assistance

Introduction: "Models of Child Health Appraised" (MOCHA) is a multi-national research project that aims to standardize optimal models of pediatric care across Europe and to identify potential health and economic benefits for policy makers. Data collection on pediatric care practices for MOCHA extends across Europe, the United States, and Australia. The goals of this study are to (1) assess structural, process, and outcome characteristics of clinical care for children with long-term ventilation (LTV) assistance across the United States and (2) to bring together these clinicians to promote collaboration and quality improvement.

Methods: As a research intern with Dr. Jay Berry, MD at Boston Children's Hospital, I conducted literature reviews on care for children with LTV assistance. I coordinated IRB approval for the study and created a REDCap survey. With a research team, I developed survey questions and conducted ten cognitive interviews to elicit feedback from potential respondents.

Results/Outcomes: The finalized survey will be sent out to approximately 140 health professionals who care for children with LTV assistance in April 2017. Following data collection and analysis, we will begin developing a manuscript for publication. In addition, we will host a webinar for respondents of the survey to share findings and discuss future steps.

GLOBAL HEALTH

Name: Giger, Hannah

Practicum Site: Boston University School of Medicine

Location: Boston, MA United States

Title: Evaluating Patient-Doctor Conversations for More Effective HPV Vaccine Recommendations

Introduction: The human papilloma virus (HPV) vaccine has faced substantial controversy worldwide, and particularly in the United States. This controversy has served as a barrier to increasing HPV vaccine uptake rates in the US, leaving much of the country unprotected against the virus. Because of this controversy surrounding the vaccine, it is thought that consistent and effective provider recommendation of the HPV vaccine may be one of the most important tools in increasing national vaccination rates. This study aims to analyze existing doctor HPV vaccine recommendations to patients and families in order to improve upon the effectiveness of these conversations.

Methods: As a research assistant with Dr. Rebecca Perkins, MD at the Boston Medical Center, I transcribed recorded doctor-patient conversations and HPV vaccine recommendations. In addition, I assisted in quantitatively coding conversation language and patient responses.

Results/Outcomes: The transcribed conversations and coded information will be used to publish articles that will outline effective terminology and approaches for clinicians recommending the HPV vaccine to patients in the US.

Name: Hartt, Angeleque

Practicum Site: Boston Medical Center

Location: Boston, MA United States

Title: Identifying Attendance Trends of Vulnerable Pregnant Women in BMC's Centering Pregnancy Program

Introduction: Boston Medical Center's Centering Pregnancy program is a regional subset of the Boston Health Start Initiative, which aims to help vulnerable women meet their medical needs during pregnancy by addressing health disparities in the local population. BMC's OB/GYN department offers "group prenatal care" and supportive resources to women in the form of single-bundled, comprehensive health visits that allow participants to spend more time with their provider and develop social networks.

Methods: As a clinical research assistant in BMC's Centering Pregnancy program, I collected, organized and updated the attendance data base for prenatal groups that occurred between March 2016 and October 2017. For January-April 2017 groups, I conducted an in-depth analysis evaluating the rate of retention using an Electronic Medical Record System and the Japanese Kanban method, for validation.

Results: Approximately 20 women participated in each group from January - July 2017. Of that amount, an average of 42.1% participants never attended, 18% dropped after 1-2 sessions, and 98% remained after attending 3 or more groups. Based on these results, the groups are operating above the expected averages (41%, 30%, 80%, respectively) in each category. Furthermore, it was found that women who comprised the final group, attended 88% of their required sessions, which is greater than the national average for high-risk women (80%). This preliminary evaluation indicates that women who attend 3 or more centering groups are likely to be participants for the duration of their pregnancy and attend more prenatal visits, than if they were not enrolled into this program.

Name: Konduru Subramani Raju, Priyanka

Practicum Site: Boston University School of Public Health (BUSPH)

Location: Boston, MA United States

Title: Development of Meta-data, Access to Medicines Initiatives

Objective: The objective of the practicum is to develop metadata for indicators that form a part of the monitoring and evaluation framework of access to medicines initiatives. This activity is part of the Metrics, Tracking, and Evaluation (MTE) framework to support Participating Companies and partners at the World Bank and Union for International Cancer Control (UICC) in monitoring progress, measuring achievements, and identifying opportunities to improve NCD Access to medicines programs.

Methods: The metadata consist of a description of each of the indicators used in the framework. I was responsible for developing the metadata, where references from peer-reviewed journals, gray literature, World Bank and Management of health sciences publications were consulted.

Outcome/Deliverables: Through a thorough literature review, the Meta-data was developed in which variables including- abbreviated name, definition, numerator, denominator, disaggregation, method of measurement, method of frequency, monitoring and evaluation, preferred data sources and further information were recorded for each of the core indicators concerning the monitoring and evaluation framework of access to medicines initiatives.

GLOBAL HEALTH

Name: Kwankam, Delphine
Practicum Site: Clinton Health Access Initiative
Location: United States
Title: Zonan Coordinator, eMTCT

Introduction: The Clinton Health Access Initiative (CHAI) is supporting the Government of Cameroon in its policy of eliminating mother to child transmission of HIV (eMTCT). CHAI is as a major implementing partner to the National AIDS Control Committee (NACC) in expanding eMTCT program in the Center region. The goal of the practicum is to support the Regional Delegation of Public Health in the extension of PMTCT services to all health facilities in zone six which comprises of; Djoungolo, Sa'a, Ntui and Yoko health districts.

Methods: Baseline assessment, training in PMTCT option B+, site level visits and support in data rendering.

Results/Outcomes: 96 baseline assessments completed in three districts; Djoungolo, Sa'a and Ntui. Data from the surveys were entered into Epi-data for analysis. This baseline helped identify existing PMTCT sites and gaps in reproductive health services in general in the zone. Based on existing and potential PMTCT sites identified from the baseline, providers were identified for PMTCT option B+ training. Provide technical and logistic support to trainers and participants during trainings. Administer pre and post test to assess the aptitude of trainees. Five PMTCT option B+ trainings organized in three health districts and a total of 143 providers trained from 101 health facilities. Conducted 57 site level visits to supervise trained providers in the use of new monitoring and evaluation tools and ensure knowledge sharing among providers between services. I attended five district coordination meetings to collect PMTCT reports from sites, and districts.

Name: LaSalle, Luisa
Practicum Site: Initiatives, Inc.
Location: Boston, MA United States
Practicum Title: CHW Central Intern-Helping to Connect the CHW Community

Introduction: CHW Central is an online community that provides up-to-date guidance of best practices, resources, and other information related to community health workers (CHWs) and CHW programs. CHW Central is managed by Initiatives Inc., a small business dedicated to improving the health and services provided to developing communities. As an intern, I developed my skills in research, writing, and website design to support disseminating information on CHW issues, policies, and best practices to the global and local community.

Methods: As an intern, my responsibilities ranged from conducting literature reviews, to writing abstracts, to managing social media accounts, and to promoting the latest CHW news and events. I was in charge of the Twitter and Facebook accounts for CHW Central, where we would share news articles and featured CHW stories, as well as connect with partner organizations and CHWs on the ground.

Results: Throughout my time as an intern, I completed a variety of projects, ultimately helping the CHW Central Website to grow and better connect with the CHW community. I assisted on special projects regarding the 1st Annual Symposium on Community Health Workers which took place in Kampala in February. I supported the "CHW Visions" interview series with key thought leaders, I created monthly newsletters for CHW Central subscribers, and developed analytical reports to evaluate the performance of the website and social media channels. These reports showed that CHW Central had the highest number of visitors in 2017, with a record number of users in February of 1,679.

Name: Lin, Chia-Ying
Practicum Site: Management Sciences for Health
Location: Arlington, VA United States
Title: Intern

In Namibia, MSH is implementing the USAID-funded Systems for Improved Access to Pharmaceuticals and Services (SIAPS) project and the Supply Chain Management System (SCMS) project, to strengthen the capacity of the Namibian Government to scale up the prevention, treatment and care for HIV and AIDS. Until recently, the Ministry of Health and Social Services (MoHSS) staff has been using a paper-based inventory management system, which was tedious and prone to data inaccuracy. For the efficient flow of national pharmaceutical stock status information to the recently implemented web-based MoHSS Pharmaceutical Information Dashboard, all district and referral hospitals are undergoing a rollout of a computerized stock management system called the Facility Electronic Stock Card (FESC). FESC increases visibility of high-quality stock status data that improves pharmaceutical supply chain decision-making; identifies potential stock-outs and overstocking to enable timely redistribution of health products; enables efficient management of essential pharmaceutical products to maximize availability and to minimize wastage; and it allows pharmacy staff to devote more time to patient care. The practicum scope of work included tasks to support the launch of the pharmaceutical dashboard and installation of FESC in four district hospitals. By September 2016, 35 district hospitals were equipped with FESC.

GLOBAL HEALTH

Name: Male, Alexandra

Practicum Site: Ibis Reproductive Health

Location: Cambridge, MA United States

Title: Research Intern-Researching the landscape and effects of restrictive abortion legislation in the US

Introduction: Ibis is a reproductive health nonprofit organization with a primary focus on domestic and international, social science and clinical research. The Hyde Amendment project focuses on the effect of this federal legislation on women's access to abortion and the ability of clinics and providers to practice medicine. Ibis also requested state profiles that describe the landscape of abortion legislation in five states.

Methods: As one of the research interns, I had two primary responsibilities. For the Hyde Amendment project I revisited Ibis's deidentified qualitative interviews with abortion care service providers in 15 states and identified and organized data that had not previously been published. For the state abortion profiles, I researched legislation and state reproductive health facts. When one-day projects, such as drafting a poster for a telemedicine conference and creating a demographic table, surfaced I also contributed to other projects

Results/Outcomes: The result of the abortion state profiles research is five page-long fact sheets. Ibis will use the fact sheets internally as a reference for the immediate future. Starting research briefs on the new themes from the qualitative data is the outcome of my work on the Hyde Amendment project.

Name: Mcclenathan, Jane

Practicum Site: Boston Children's Hospital

Location: Boston, MA United States

Title: Automating Data Collection for a Pediatric Surgical Quality Improvement Program

Introduction: Boston Children's Hospital participates in a national quality improvement program aimed at improving pediatric surgery, called NSQIP. Through this program, a Surgical Clinical Reviewer (SCR) records more than 100 surgical variables for 35 patient cases every 8 days, which are then analyzed to inform quality improvement initiatives. The purpose of this practicum was to assist the SCR in managing NSQIP operations and to automate technical processes when possible.

Methods: As project assistant for the NSQIP program, I (1) created and maintained an Excel dashboard to monitor NSQIP operations, (2) performed chart review of patient electronic health records to measure NSQIP surgical variables, (3) collected 30-day patient follow-up through phone calls and documentation review, (4) automated email generation to surgical chiefs when postoperative occurrences were identified, (5) collaborated with information technology (IT) staff to modify data automation and case selection for upload to the NSQIP workstation, and (6) designed and implemented a REDCap database to facilitate multi-user management of NSQIP processes.

Results/Outcomes: The 15-tab Excel dashboard tracked 595 cases over a seven-month period. We met our modified chart review completion target of 35 cases per 16 days, which is now performed using a REDCap database with 3 instruments and 5 reports. Phone call follow-up success improved by 50% and communication with surgical chiefs was standardized. Through my work with the IT staff, case selection has been altered to meet NSQIP requirements, and implementation of a clear, specific work plan for future enhancements to data automation has begun.

Name: Mesick, Jackson

Practicum Site: Boston Medical Center

Location: Boston, MA United States

Title: Student Researcher

Introduction: BMC's Center for Infectious Disease is performing a study to examine the relationship between stool parasites and Mycobacterium Tuberculosis (Mtb) infection. Refugee patients at BMC were recruited to the study, and then their lab tests were monitored. When patients' results were positive (or negative for a certain number of controls) the samples were sent for further immunologic testing. The goal of this study is to identify factors related to Mtb infection, with specific attention to the effects of certain types of parasite infections on the body's ability to mount an immune response.

Methods: Overall, I assisted with conducting the study. I performed informed consent for eligible patients at the BMC Refugee Clinic and doctor's offices, tracked laboratory results using Epic to determine which samples should be sent for further testing, and also completed Case Report Forms and helped create the results database for the project. I also developed a literature review investigating the effects of malnutrition on the Th1, Th2, and innate immune responses.

Results/Outcomes: Results as of November 2016, showed 117 participants had been enrolled with a mean age of 28.8 years. Approximately half of enrollees were from Haiti, but other regions represented included Southeast Asia, the Middle East, and various portions of Africa. Of those 117 participants, 35 were Quantiferon positive, indicating a previous immune response to Mtb. None of the underweight individuals were Quantiferon positive, which could be because malnutrition can lead to a decreased immune response. Further analyses will be performed later this spring/summer.

GLOBAL HEALTH

Name: Mowreader, Kelsi
Practicum Site: Centre for Infectious Disease Research Zambia (CIDRZ)
Location: Lusaka, Zambia
Title: Research Fellow

Introduction: The BetterInfo for Health Study was undertaken by the Center for Infectious Disease Research in Zambia (CIDRZ) with funding from the Bill & Melinda Gates Foundation to better understand the true outcomes of HIV+ patients by tracing those loss-to-follow-up (LTFU). Determining the vital status, treatment status, and clinical outcomes of patients who are LTFU are necessary for better assessment of public health systems and ART program efficiencies. As part of the tracing activities, Pima CD4 point-of-care (POC) machines were used by community health workers (CHWs) to determine the clinical status of ART naïve study participants in Lusaka Province.

Methods: I was responsible for training and oversight of the CHW data collectors, logistics, development of standard operating procedures and reference materials, and data integrity/analysis. The results were used to determine the general efficiency of CHWs to conduct POC CD4 field testing and participants' clinical eligibility for ART initiation.

Results: In total 174 Pima tests were attempted on 121 patients, with only 113 tests producing usable results. Initially, only 32% of tests were valid and accurately matched between databases, 32% suffered from some form of data discrepancy, and 36% of tests were invalid (94% due to operator error). Therefore, 66% of the results were compromised by the CHWs, implying they are not efficient operators. Meanwhile, 60% of patients were eligible for ART initiation at the time of tracing. This implies that treatment outcomes could be improved if resources were dedicated to tracing ART-naïve LTFU patients.

Name: Olanrewaju, Ayobami
Practicum Site: Boston Medical Center
Location: Boston, MA United States
Title: Evaluating the impact of lactation support services on breastfeeding rates at BMC.

Introduction: The Breast is Best project is aimed at increasing breastfeeding resources at BMC to improve urban health equity. Until 2012, BMC had Certified Lactation Consultants (CLC) who provided breastfeeding support services to mothers attending the PACC. Between 2012 and 2015, CLC services became unavailable due to budgetary considerations. By November 2015, lactation services were provided through the newly established Nesting Clinic. The Breast is Best project was designed to evaluate the impact of lactation support services during the three time points.

Methods: As a research assistant with Dr. Rachael Bonawitz, I helped to coordinate IRB submission and approval for the study. We conducted a retrospective cohort study evaluating breastfeeding rates across the different time points, and a qualitative study exploring knowledge, perceptions and practices of caregivers towards breastfeeding and lactation services at BMC. I reviewed the qualitative research methodology and designed data collection tools. We used focused group discussions and key informant interviews to triangulate our data. I also helped extract breastfeeding data for 258 newborns from the hospital records.

Results: We found no significant differences in breastfeeding rates between the pre/post CLC eras. The qualitative component is still underway, although we face recruitment challenges. To improve recruitment, we created fliers and posted them at potential participant locations. We expect that the qualitative study will highlight the role of lactation support services at BMC.

Name: Omoregie, Osariemen
Practicum Site: Action for Boston Community Development, Inc.
Location: Boston, MA United States
Title: Intern, Sister to Sister Program

Introduction: The Sister to Sister Program is a community prevention component of the Action for Boston Community Development (ABCD) Health Services Department. It aims to promote the sexual and reproductive health of young women of color, aged 15-25 in Boston, by reducing their risk for HIV/STI. The program provides HIV/STI risk assessment; education; prevention; HIV/STI testing and counseling; outreach and wellness events in the community.

Methods: Activities included: 1) Facilitate HIV/STI prevention education workshops including condom usage instruction and linkage to HIV testing; 2) Plan community events at health fairs and seminars promoting HIV/STI prevention and women's health; 3) Conduct community outreach to schools, hair salons and community centers for sensitization and increasing awareness about the program; 4) Develop social media messages to promote sexual and reproductive health; 5) Organize prevention resources including safer sex kits and HIV/STI education materials for community events.

Results/Outcomes: The provision of HIV/STI information and resources to young women increased awareness and filled gaps in their knowledge. Clients and community members were sensitized on HIV/STI prevention, contraceptive usage and linked to HIV/STI testing through social media messages, community outreach and wellness events.

GLOBAL HEALTH

Name: Patel, Avnee
Practicum Site: World Vision Kenya
Location: Grand Prairie, TX United States
Title: Global Health Fellow

Introduction: Child Health and Nutrition Impact Study (CHNIS) is a 5-year (2012-2017) quasi experimental impact study that was conducted by WV in partnership with John Hopkins Bloomberg School of Public Health. The study aims to evaluate the impact and cost effectiveness of World Visions Core Intervention Package (CIP) in 4 countries: Cambodia, Guatemala, Kenya and Zambia. The CIP consists of 3 intervention models: Timed and Targeted Counselling (ttC), Community Health Committees (COMM), and Citizens Voice and Action (CVSA). The overall goal of the approach is to raise awareness on preventative health and nutrition practices, support behavior change and strengthen local health systems. My assignment was to work on updating and editing the final program documentation of the study conducted in Kenya and develop case studies to showcase successes and challenges of the program.

Methods: Conducted a desk review of all available project documentation; Interviewed key National Office Staff and 3 ttC trainers; Field visit to intervention sites and health facilities; Facilitated focus group discussions with: CHWs, CHW supervisors, CVA members and MOH nurses; Accompanied CHWs to observe household visits; Held discussions with WV site managers; Communicated with key stakeholders via e-mail and phone to gather information for the documentation of the CHNIS project

Results/Outcomes: The final products were: the final CHNIS Documentation Report updated, edited, and presented to WVI and John Hopkins, two case studies (Success of CVAs in Karemo, and Collaboration Between WVK and MoH), and one newsletter article (CVAs constructing a new health facility in Barding community).

Name: Perkey, Roger
Practicum Site: Babson College
Location: Babson Park, MA United States
Title: Assessing Trends in Alcohol and Other Drug Use Among College Students & Evaluating the Effect of Masculinity on College Culture

Introduction: Health & Wellness at Babson College provides many resources to the student population, ranging from counseling services to condom distribution. The unique demographics of Babson College, a majority male, and solely business institution provides the campus with a culture of drug and alcohol abuse, and fosters a cultural normalization of toxic masculinity. The goal of this project is to (1) better understand the level of substance abuse by analyzing data from the National College Health Assessment survey and present this in a digestible fashion to enact appropriate programmatic shifts, and (2) to evaluate norms of masculinity to construct a curriculum/course to provide an avenue of open dialogue focusing on this culture of toxic masculinity.

Methods: Working with Ashleigh Hala and Leah Berkenwald at Babson College I reviewed data from the 2015 NCHA survey and performed my own analysis using SAS. A literature review was performed to assess the current best practices in creating men's small discussion groups.

Results/Outcomes: The final data analysis and graphics were prepared as a slide deck and presented to the task force for review. The decision made from this review will affect the programming scheme for alcohol and other drugs in the coming year. The complete curriculum on masculinity will be beta-tested, and presented as a small group seminar during the 2017 – 2018 academic year.

Name: Stetson, Alyssa
Practicum Site: Martha Eliot Health Center
Location: Jamaica Plain, MA United States
Title: Immigrant Health Care at Martha Eliot Health Center

Introduction: Children who have recently immigrated to the U.S. require unique immunizations and testing. However, no guidelines currently exist that clearly explain what providers should offer newly arrived foreign born (NAFB) patients during initial visits. Two residents at Martha Eliot Health Center (MEHC), a primary health clinic that cares for a high proportion of NAFB, performed a chart view of NAFB and found that no patients received all recommended tests while 22% received unnecessary tests. A survey of providers revealed that the vast majority felt that their care was not evidence-based.

Methods: I worked with the principle investigator to share the data collected over the last year with the providers at MEHC. Based on their input, we submitted an application to BCH to create evidence-based guidelines (EBGs) for treating NAFB pediatric patients. We are also working towards publishing the findings.

Results: Creating EBGs for NAFB pediatric patients will ensure that children receive the correct screening and immunizations. It will also prevent unnecessary tests, reducing the burden on providers, patients and their families, and the healthcare system. Publishing our results will allow us to disseminate our findings in order to help other clinics best tailor their practice for their patients.

GLOBAL HEALTH

Name: Tong, Yuxin

Practicum Site: Boston Medical Center

Location: Boston, MA United States

Title: Research Assistance for PRIMIER

Introduction: PRIMIER is a national Integrative Medicine Database designed to uniformly collect and evaluate patient-reported outcomes and electronic health record data. Eligible participants are those who received integrative medicine services in BMC since 2015, and will complete online surveys for 6 times during a 2-year period. My job involves two stages of works: research and analysis. For research part, I help with recruitment, retention, and management of the recruitment team. For analysis part, I use collected data to investigate the association between patient reported outcomes (PROMIS29 Score) for subjects with different services, in specific, using acupuncture versus not using acupuncture.

Methods: We approach patients in four BMC departments which provide integrative medicine services. We explain the details of PRIMIER study and help patients who are willing to participate fill in the survey at baseline. After the first approach, at each follow up time, we make appointment with participants and collect follow up data through email, phone, or in person in clinics. PROMIS29 is the combined score outcome calculated by Questionnaire PROMISE with 29 questions regarding the seven PROMIS domains. We use the sum of raw PROMIS29 score as outcome and service received as the major predictor, as well as other demographic variables, to analyze the covariates and confounders.

Results/Outcomes: We recruited around 40 subjects from May, 2016 to Nov, 2016. We raised the average retention rate from 40% to around 65% for all follow up time periods. Analysis of association between PROMIS29 score and acupuncture is an on-going project.

HEALTH LAW, BIOETHICS, & HUMAN RIGHTS

Name: Benavidez, Gilbert
Practicum Site: Health Law Advocates, Inc.
Location: Boston, MA United States
Practicum Title: J-MHAP Intern

Introduction: JMhap (Now known as a MHAP4Kids) is a diversion program run by HLA and directed by Marisol Garcia. MHAP4Kids is run out of the MA Family Resource Centers. Eligible children are assigned mental health advocates who fight for mental health treatment, proper school placement and home assistance among other things.

Methods: The Boston University School of Public Health is currently doing an evaluation of the program. My job is to obtain the Court Activity Record Information (CARI) report from the MA Office of Probation. This was done via a CARI request form authored by myself and HLA. My process involved writing a letter explaining who I was, what I was requesting, why I was requesting it and the ins and outs of deidentification, anonymity, and the voluntary nature of the process. After this I would call, explain the process verbally, make sure the address was correct and then mail the letter. Upon receiving the letter back, I would de-identify the CARI information and insert it into a database I created. I would then relay updates to the BU team.

Results: The people HLA and MHAP4Kids serve are low income. Inherently, they are a transient population. The constant address and phone number changes made it difficult to get them the request forms, or even get into contact with them. I did manage to talk to quite a few people nonetheless. The results! were such that no record I received indicated that no clients were court involved post-MHA appointment.

Name: McMahon, Lindsey
Practicum Site: McLean Hospital
Location: Belmont, MA United States
Title: Research Assistant/Intern

Introduction: The Neurodevelopmental Laboratory on Addictions and Mental Health is currently conducting three longitudinal studies. The studies involve brain development in adolescents with alcohol abuse, college freshmen with adverse outcomes, and adult women with Major Depressive Disorder. The lab uses neuroimaging to track brain functionality associated with these groups which enables the lab to better predict those vulnerable for addictions and mental illness. The purpose of this practicum is to gain a comprehensive knowledge of implementing studies while assisting in data collection and data entry for analysis.

Methods: I am working with the Principal Investigator and other research assistants to organize participant results from mental health diagnostic tests and IQ tests for analysis. I am observing participant MRI scans, the implementation of tests and questionnaires, and obtaining consent. I am conducting a literature review on ethical issues that arise while implementing observational studies on participants with mental illness, minors, and using neuroimaging. From the literature review I will complete a case study that is related to the three studies I am working on.

Results/Outcomes: It is essential for studies to stay up to date on their data collection and entry during a longitudinal study with a rolling recruitment. The case study will analyze an ethical issue to offer recommendations for future use in the lab. At the conclusion of this practicum the Principal Investigator will review the case study.

Name: Rizk, Nina
Practicum Site: Boston Medical Center
Location: Boston, MA United States
Title: Intervention to Increase HPV Vaccine Compliance in the OB/GYN Department at Boston Medical Center

Introduction: As part of a Quality Improvement (QI) Project conducted in the Obstetrics/Gynecology (OB/GYN) Department at Boston Medical Center (BMC), an intervention was implemented to improve rates of compliance for vaccination against the human papilloma virus (HPV). The intervention – a Patient Questionnaire – is intended to provide eligible patients with information about the HPV vaccine and to initiate a discussion between the patient and the clinician about the HPV vaccine.

Methods: It is recommended that the HPV vaccine be administered to non-pregnant females between the ages of 9 and 26. Based on these criteria, I aim to conduct a retrospective chart review to compare pre-intervention (January 2017 to March 2017) patient encounters with post-intervention (April 2017 to June 2017) patient encounters, measuring documented administration of HPV vaccination or discussion of HPV vaccination among encounters with eligible patients.

Results/Outcomes: From January 2017 to March 2017, there were 731 encounters with eligible patients in the OB/GYN Department. 65% were with eligible patients in which neither completion of HPV vaccination or discussion of HPV vaccination was documented. During this time, only 27 HPV vaccines were administered. We predict that the post-intervention chart review will reveal that the Patient Questionnaire is effective in initiating a discussion between the patient and the provider about the HPV vaccine and in encouraging patients to receive the HPV vaccine.

HEALTH POLICY & MANAGEMENT

Name: Baez, Elizabeth
Practicum Site: Boston Medical Center
Location: Boston, MA United States
Title: Project Manager/Research Assistant

Introduction: The purpose of the pilot: 1) reduce readmission on inpatient Hematology/Oncology Service, 2) Improve Palliative care access in hematology/oncology index admissions (gathered from Hematology/Oncology data on % Patients who died within 1 year of index admit.), 3) increase DNR/DNI status (1st readmission) as the result of earlier goals of care discussions by palliative care and hematology-oncology team, 4) increase End of life discussions on index admits, 5) increase Spiritual, Social work, case management, and Integrative medicine consults, 6) Reduce Cost of admission/readmissions, and 7) decrease Hospital Length of Stay.

Methods: Hematology/Oncology service physicians administer the Hematology/Oncology specific severity of illness tool (SOI) during morning rounds on every admission to the hematology/oncology inpatient service. The activities I completed include data collection from SOI and EPIC, data analysis, and identification of adjustments needed to proceed with pilot study. These activities were relevant to the analysis of the pilot.

Results/Outcomes: The projected outcomes: 1) Reduce readmissions by from baseline of 20% by 20% to a goal of equal to or less than a 16% readmission rate, 2) Improve Palliative care access in index admissions from baseline of 12% to 30%, 3) DNR/DNI status will increase from 21% at >50% (1st readmission), 4) End of life discussions on index admits will increase from 17% baseline to 30% of index admits, 5) Spiritual, Social work, case management, and Integrative medicine consults will increase by 15% from Baseline, 6) Reduce Cost of admission/readmissions by 3-5% for inpatient service, and 7) decrease H-LOS by 0.5 days.

Name: Baker, Kate
Practicum Site: City of Boston
Location: Boston, MA United States
Title: Got Food? Using data on food access to inform policy making in the City of Boston

Introduction: Access to food is a multi-faceted and complex problem with undertones of racial, age, and income disparities. Because so many factors influence access to food— particularly to healthful, culturally-appropriate food — it can be challenging to identify a starting point from which to initiate change.

Methods: This practicum leverages strategic partnerships with community organizations to facilitate listening sessions with Boston residents in collaboration with The City of Boston Mayor's Office of Food Initiatives (OFI). OFI identified neighborhoods of high risk using indicators identified in the ICIC food resiliency report. OFI then identified community partners through a survey process in which the organizations indicated the needs they address and their perception of food insecurity among their constituents. In this practicum, surveys and listening sessions were conducted with participants from those organizations to understand their experiences with food access in the city. Using transcriptions and notes from the listening sessions, as well as notes from similar community-engagement projects led by grassroots organizations in Boston, the most imposing barriers to food access in Boston neighborhoods are being identified. NVivo is used to assist in data analysis.

Results/Outcomes: More complete findings will be available at the end of April. The data gathered in this practicum will be presented in a report to OFI, and will ultimately be included in a larger report to be released by OFI in late 2017. The goal of that report is to inform Boston policy-makers and advocates about realistic opportunities for improving food access in the city.

Name: Brar, Sumeet
Practicum Site: Boston Children's Hospital Pediatric Research
Location: Boston, MA United States
Title: Research Assistant at Boston Children's Hospital

Introduction: Children with medical complexity (CMC) are children who have chronic, complicated conditions in addition to neurodevelopmental delay, functional limitations, and/or reliance on medical technology. Among pediatric patients, this group contributes to a disproportionately high amount of health care utilization and spending. As a result, much effort has gone into developing policies and delivery innovations to improve the health care of this group. One popular recommendation has been to increase the utilization of primary care medical homes for CMC. At Boston Children's Hospital, I contributed to the analysis of data for a study that examined the prevalence of well-child visits in CMC and whether these visits are related to demographic characteristics, clinical characteristics, and health care utilization of CMC.

Methods: I analyzed the study data to determine which findings were particularly important. Then, I created graphs and figures that presented these findings in an intuitive manner. After completing a literature review, I will write a report that presents the results and a discussion of the results in a clear and concise manner.

Results/Outcomes: Significant associations were found between number of well-child visits and method of Medicaid eligibility, Medicaid payment method, and age. The number of well-child visits was not substantially associated with hospital readmission or emergency department admissions. There are significant barriers to primary care for certain subgroups of CMC. Future investigation will require examination of the specific barriers CMC face in receiving primary care and possible health delivery redesigns that can reduce these barriers.

HEALTH POLICY & MANAGEMENT

Name: Chun, Gregory
Practicum Site: Boston University School of Medicine
Location: Boston, MA United States
Title: Research Assistant

Introduction: Electronic Health, including mobile and digital health, is an understudied and underutilized form of providing care. Mobile health has the potential to be beneficial to both patients and providers, by increasing treatment adherence and improving time management respectively. This practicum had two objectives, to gather information for mobile applications for substance use disorder or trauma patients, and to create a trial website to connect patient peers and researchers.

Methods: For the first objective, individual interviews were conducted in the development of two smartphone mobile applications. One application focused on preventing relapse of substance use disorder and trauma, and the other on emotion tracking. These applications could be linked in the future due to interdependency. Individual interviews with patient peers helped to define factors important to the end users. For the second, a prototype website, with an objective to connect patient peers and researchers, was created for usability and navigation testing. To populate the website, short video clips were created, transcribed interviews were added, and navigational structure was designed. The interviews focused on the advantages of having patient peers as an integral part of research studies. All of this helped define the website as a plausible source to connect researchers with patient peers, and to encourage funders to include patient peer inputs on study committees.

Results/Outcomes: The two mobile applications will ideally reduce relapse in substance use disorder and trauma patients. Separately, the completed website will improve the quality of research by promoting the inclusion of patient peers in studies.

Name: Coughlin, Elizabeth
Practicum Site: Tufts Health Plan
Location: Boston, MA United States
Title: Cardiac Case Program Outcomes Analyst

Introduction: The Medicare eligible population (age 65 and older) represents about 14% of the US population, while accounting for nearly 34% of all health care spending in 2012. Cardiac procedures are costly and rank among the most expensive procedures. The TMP Cardiac Case program offers discounted cardiac procedures to provider groups who refer their patients to a select set of hospitals which provide a significant volume of cardiac services in our area. This program incentivizes provider groups to control expenses, promote quality care, and fosters a strong relationship between participating providers, the select hospitals and the health plan.

Methods: This project involved researching claims data for cardiac procedures administered across the TMP network. I created a data-set of claims at the participating set of hospitals and a comparable set of hospitals not participating in this program. I analyzed these claims data to determine quality measures at each set of hospitals. The quality metrics I researched included length of admission, re-admission rate, and post-discharge follow-up care (i.e. skilled nursing facility, home care and PCP follow-up visits).

Results/Outcomes: The results of this project are proprietary to the health plan and cannot be released. This project provided quality metrics that can be used to justify exploring whether similar programs would be beneficial to the health plan and its members (i.e. transplantation procedures).

Name: Ferrari, Daniel
Practicum Site: The Palladium Group
Location: Washington, DC United States
Title: Value Analytics Intern/Analyst at The Palladium Group

Introduction: As part of the value analytics team at The Palladium Group, I assisted in creating a proof of concept for data analytics in international development. Specifically, I created data visuals, analyses, website articles, and graphic designs to help build brand awareness and attract clients to the consulting firm. As the demand for value analytics grows among international development agencies, my work at The Palladium Group will play an integral role in both winning contracts and affecting better health outcomes at lower costs.

Methods: Using Tableau data visualization software, I created visuals and cost-effective analyses related to USAID's global Water and Development Strategy. I then discussed these analyses through website articles, intending to show how value analytics could be used to enable better decision making in international development interventions.

Results/Outcomes: USAID's Water and Sanitation Disbursements targeted "strategic priority" countries in later stages of development, rather than countries with low access to clean water and high disease burden. Furthermore, the cost/access to improved water or sanitation was much higher in "strategic priority" nations. By redistributing disbursements to countries in lower stages of development, USAID may affect greater water and sanitation access gains. Using such analyses, The Palladium Group may demonstrate the ability of value analytics to identify and enact cost-effective solutions in international development.

HEALTH POLICY & MANAGEMENT

Name: Goldstein, Rachel

Practicum Site: Boston University School of Medicine

Location: Boston, MA United States

Title: Co-occurrence and severity of neurological burden (cognitive impairment, cerebral palsy, autism spectrum disorder, and epilepsy) at age 10 years in children born extremely preterm (EP)

Co-Authors: Kuban, K; Allred, EA; O'Shea, TM; Joseph, RM, Heeren; T, Douglass, LM; Stafstrom, CE; Jara H; Frazier JA; Hirtz, D; Leviton, A

Objectives: To assess the prevalence of major neurological disorders (cognitive impairment, cerebral palsy (CP), autism spectrum disorder (ASD), and epilepsy) at age 10 years occurring both in isolation and as co-morbid with other neurological impairments among children born extremely preterm (EP); To prepare a framework for categorizing severity of neurological limitations.

Methods: In a prospective, multicenter observational study of 966 eligible survivors, 889 (92%) children were evaluated at age 10 years with measures of cognition, motor function, ASD, and epilepsy. Our neurological outcome severity categorization:

Category I: children with moderate to severely impaired cognition with or without CP, ASD, or epilepsy

Category II: children with normal or near normal cognition with CP, ASD, or epilepsy

Category III: children without these neurological impairments.

Results: 24%, 8%, and 68% of EP children fell into Category I, II, and III, respectively. Among all children, 19% had a single diagnosis, 10% had 2 diagnoses, and 3% had 3 diagnoses. None had 4 diagnoses. Of children with impairment, 59% of children had an isolated deficit. Half the children with cognitive impairment and about a third with CP, ASD, or epilepsy had a single diagnosis. Among the 117 children with multiple deficits, 94% had cognitive impairment, 54% had CP, 37% had ASD, and 40% had epilepsy. At age 10 years, 32% of EP children had cognitive impairment, CP, ASD, and/or epilepsy, and of these children, 59% had an isolated deficit. 68% of EP infants were free of significant neurological impairment.

Name: Grunstein, Michael

Practicum Site: Smile Central Dental

Location: Patterson, NJ United States

Practicum Title: Research Investigator of Silver Diamine Fluoride Intervention for Smile Central Dental P.C.

Introduction: Recently, Silver Diamine Fluoride (SDF), an antimicrobial liquid used to arrest dental caries, was approved for use in the United States and a CDT code was approved in 2016. Smile Central Dental P.C., a general dentist company whose mission is to provide affordable and quality dental care for every child regardless of economic and social background, looked to investigate whether its patient population would benefit from SDF over its current techniques in preventing caries. Smile Central's goal is to begin the process of conducting their own study of examining their results following future implementation.

Methods: My role was to assist in the initial phase of SDF assessment. I conducted a comprehensive literature review, which included organizing qualitative data and methods, in order to better understand the uses and scope of SDF practice under various settings and study populations. I was also responsible for assisting in reviewing Smile Central documentation and organizing information into an excel sheet.

Results/Outcomes: I made excel documents to organize patient information pertinent to a future study. Using power calculations, I was able to provide estimates for sample sizes and discuss study parameters, potential benefits, and identify potential confounding factors (i.e. diet and oral hygiene) that would create meaningful results. This practicum gave me the opportunity to use my epidemiology and biostatistics background to conduct data evaluation and analysis for the purposes of conducting a study from its inception.

Name: Jang, Suk Won (Steve)

Practicum Site: Massachusetts State House

Location: Boston, MA United States

Title: Health care policy intern

Introduction: Representative Jeffery Sánchez is the Co-Chairman of the Joint Committee on Health Care Financing the Massachusetts State House. As a joint committee, this legislative body is responsible for all bills related to funding of health care programs as well as health care financing in the Commonwealth. In addition to this role, he led the commission on provider price variation. Three main issues were considered during the practicum; provider price variation commission, H.602 (an act to limit hospital profits), H.605 (an act that regulate malpractice law suits) and S.652 (an act to promote transparency in pharmaceutical drug prices).

Methods: The analysis was mainly focused on other literature reviews and opinions shared in the media. As hearings for each bills are not conducted until later year, the policy briefs of each proposed act are based on policy research as well as other federal regulations and proposed bill that may preempt State's laws.

Results/Outcomes: The bill analysis will be completed and prepared into a White Paper for the committee to reference for future use and guidance throughout the legislative process.

HEALTH POLICY & MANAGEMENT

Name: Miller, Tabor
Practicum Site: Boston Medical Center
Location: Boston, MA United States
Title: Reducing PICC related CLABSIs at BMC

Introduction: The purpose of this project was to assess current practices related to the utilization and documentation of care of all inpatients at Boston Medical Center with a Peripherally Inserted Central Catheters (PICC). The goals of this project were to reduce the incidence of PICC related Central Line Associated Blood Stream Infections (CLABSI) by implementing a series of interventions which included: changes to hospital policy regarding PICC line protocol and nursing education. These interventions were aimed at improving PICC line care & maintenance.

Methods: Creation and submission of IRB protocol to allow for future publication. Prospective chart review and patient follow up. Patient data was collected and will be analyzed. Analysis of the data will provide baseline knowledge of current practices at BMC as well as identify areas for improvement in quality and patient safety. This project is relevant to this program because it provided me with opportunity to successfully develop and implement a hospital quality improvement project and collaborate with various departments to improve patient care.

Results/Outcomes: Will provide data on: PICC line utilization across each inpatient unit at BMC, line care and maintenance, blood drawing from PICC lines, the use of Alteplase (tPa) to de clot PICC lines, and track the number of PICC related CLABSIs at BMC.

Name: Muto, Katherine
Practicum Site: Uzuri Health
Location: Boston, MA United States
Title: Strategic implementation of Healthcare offering at UZURI

Introduction: Despite efforts to improve access to care, individuals still display a sick-care mentality, only going to the doctor when ill (compare 2 doctor visits per year vs. 6 in Western Europe). This mentality, influenced by factors such as cost, convenience, and lack of knowledge about the importance of primary/preventative care, is a major determinant of poor healthcare outcomes in Sub Saharan Africa. Uzuri disrupts the current system by introducing primary care as part of day-to-day life. Leveraging the highly trafficked beauty services industry, we integrate health and beauty services in a single setting. We aim to reshape the perception of primary care by presenting it alongside skin/hair/nail services as part of a holistic wellness experience.

Methods: We need to determine which healthcare services would be most useful to the community and which would be most cost/time effective to implement and reach a large group. WE conducted customer surveys, did market research, and built business strategies to prepare for implementation.

Results/Outcomes: 67% of respondents were highly interested in receiving healthcare services within a salon/wellness setting. Respondents were willing to spend 50% more on beauty services if they include access to healthcare opportunities.

Name: Okafor, Ijeoma
Practicum Site: Veterans Affairs Boston Healthcare Systems
Location: Brockton, MA United States
Title: Improving Patient Satisfaction Feedback

Introduction: VA Boston Healthcare System's (VABHS) mission is to provide the best healthcare to Veterans, advance medical knowledge through research, and train tomorrow's health care leaders. One goal VABHS leadership identified was to establish a more accurate and qualitatively driven feedback method to best determine areas for improvement and continually promote the highest quality of care for patients. My practicum focus is to analyze the quality of care patients currently receive by assisting the roll-out of TruthPoint surveys measuring patient satisfaction. The surveys are implemented across all 3 VABHS major campuses and all 6 VABHS community based outpatient clinics (CBOCs) in Massachusetts. The initial roll-out has started with Primary Care services, with the intention to implement in all services.

Methods: Collaborating with the Director of Patient Centered Care to: 1. Design an administrative plan for survey implementation 2. Obtain stakeholder buy-in through informational sessions 3. Review questionnaires and finalize primary care assessment 4. Develop position description for staff and volunteers administering surveys 5. Schedule and conduct training sessions for all employees and volunteers administering surveys 6. Collect patient data and analyze results

Results/Outcomes: Patient satisfaction surveys for Primary Care services are successfully being implemented. Once enough data is obtained to accurately assess patient feedback, an analysis of the results will be accessible to administration and staff to pinpoint strengths and weaknesses within the services. VABHS can then make modifications to improve care and determine best practice methods to maintain or improve all patient's quality of care.

HEALTH POLICY & MANAGEMENT

Name: Rai, Akriti
Practicum Site: Beacon Health Options
Location: Boston, MA United States
Title: Health Policy Analyst

Introduction: The purpose of the practicum is to understand and evaluate systemic racial disparities in diagnosis and pain treatment surrounding behavioral health care. It also assesses how racial biases affect access of behavioral health care, and how using alternative payment models can fill the gap.

Methods: The practicum mainly focused on secondary research that exists for this particular problem. I conducted a literature review to analyze the current trends in behavioral health disparities, and the result on patient-provider relationships. I looked at federal agency reports, as well as journal articles to understand the inequity in care delivery, specifically within behavioral health. I also looked at instances of discrimination in providing health insurance for patients with a history of mental illness or substance use.

Results/Outcomes: Even though it is fairly well known that there are ethnic and racial disparities in health care, it is difficult to quantify the extent of how these biases exist. Systemic racism and biases have resulted in increased rates of major depressive disorders for African-American and Latino populations that inhibits accessibility. Cultural differences within various groups also tend to stigmatize mental health and lack of cultural competency facing hospitals exacerbates the problem. These biases act along with low socioeconomic status and lack of education which eliminate an entire section of the population from getting appropriate care. People of color are less likely to receive mental health care services, and such biases end up being intergenerational.

Name: Rivera, Clara
Practicum Site: Boston Children's Hospital
Location: Boston, MA United States
Title: Green Belt Project Team Lead

Introduction: The Nurse Call System (NCS) is a crucial way for the patient and family to communicate with clinical staff and administrators at the desk when they have a care need. A timely response impacts patient safety and satisfaction, however parents report to Press Ganey, that requests for help are fulfilled less than 63% in the timeframe that they would prefer on general medical inpatient units at Boston Children's Hospital (BCH). Responding to patients thoughtfully and promptly is a core BCH value and essential to maintain trust with patients and families.

Methods: Using Lean Six Sigma methodologies a multi-department task force was formed to help identify target areas for improvement. Data from NCS communication records was analyzed to determine number of calls, frequency and duration of administrator phone communications, and type and frequency of call bell request. To obtain the voice of the customer, a survey was created to query patients and families about their experience with NCS.

Results/Outcomes: Findings support a quality improvement initiative that focuses on customer service. Standardization of process should eliminate variability in response time and satisfaction. Education focused on interpersonal communication skills is needed. Currently, the next steps are to implement a standardized process for use of the NCS by administrators is being developed. Education on customer service for staff will also be forthcoming.

Name: Robinson, Sara
Practicum Site: Lexington Board of Health
Location: Lexington, MA United States
Title: Lexington Board of Health: How Public Health is effected by Toxic Substances in Buildings

Introduction: The Lexington Board of Health has asked for recommendations regarding best practices for avoiding the introduction of toxic substances in their public buildings both in future construction projects and in current buildings in the community.

Methods: Special focus was centered on the new elementary school that is being built in the community. I have conducted research and a analysis on alternative healthy building materials which can be used in its construction. Along with identifying the current major toxins in public schools which can contribute to an unhealthy school environment.

Results/Outcomes: This project resulted in a compilation of researched information, data and best practices to implement in the Lexington community to avoid exposure to toxins, which in turn could result in negative health consequences in the Lexington community.

HEALTH POLICY & MANAGEMENT

Name: Rochman, Alexandra

Practicum Site: Veterans Affairs Boston Healthcare System, Center for Healthcare Organization and Implementation Research

Location: Jamaica Plain, MA United States

Title: VA Boston Healthcare System Intraoperative Adverse Event Data Analysis

Introduction: Patient safety is a national public health concern that requires operational reporting to identify errors and improve health outcomes. The purpose of the project was to assess methods used to track surgical intraoperative adverse events that may lead to harmful complications postoperatively. The Veterans Health Administration currently uses the VA Surgical Quality Improvement Program database for incident reporting and quality assurance analysis. The project assessed if surgical debriefing in addition to incident reporting improved the detection of intra-operative adverse events (IAEs).

Methods: We implemented a surgical debriefing component asking surgeons, anesthesiologists, and nurses to report IAEs immediately after operations and continue traditional incident reporting. We constructed a database that compared surgical debriefing and incident reports at the West Roxbury VA hospital. We compared the types and rates of IAEs detected by each reporting method.

Results/Outcomes: There were 3020 surgical procedures performed during the one year study period with 279 (9%) total detected IAEs, 136 (49%) by surgical debriefing and 143 (51%) by incident reporting, and only 4 (1%) IAEs were detected by both methods. The most frequent IAEs detected by surgical debriefing were hypotension, bradycardia, hypothermia, and unplanned ICU admissions. Most IAEs captured by incident reporting were system related issues rather than patient harms, such as device failures, incorrect labels, and communication problems. The findings indicate that surgical debriefing collects more comprehensive IAE data than incident reporting. The results suggest that surgical debriefing complements existing incident reporting practices for better systematic IAE detection and improved patient safety efforts.

Name: Shue, Jody

Practicum Site: Massachusetts Department of Health and Human Services

Location: Boston, MA United States

Title: Project Liaison

Introduction: April 2017 is *Healthcare Decisions Month* across the Commonwealth, an initiative led by the *Massachusetts Coalition for Serious Illness Care* whose goal is ensuring that health care for everyone in Massachusetts is in accordance with their goals, values and preferences at all stages of life and in all steps of care. During *Health Care Decisions Month*, Coalition partners will work to encourage MA residents to have advance care planning conversations with their loved ones and their doctors, and to name health care proxies. *At present, only a little more than half of Massachusetts residents have had a conversation with loved ones about their wishes for serious illness care.*

Methods: Working in the office of Secretary Alice Bonner (Executive Office of Elder Affairs), I am the project liaison for EOE activities related to the MA Coalition for Serious Illness Care. I have managed the Administration's programming around *Healthcare Decisions Month* in the Commonwealth, and have been actively involved in the build-up to the second annual MA Coalition Summit being held on May 9 at the JFK Library and Museum, which will be attended by Governor Baker.

Results/Outcomes: I've developed a State-based Model Employer Pilot Program to encourage State agencies and/or Commissions to support ACP education for their employees. We believe that well-informed employees become more well-informed advocates for constituents around the State. I've also partnered with agencies and commissions to promote awareness of *Health Care Decisions Month* through print and web based channels.

Name: Spaargaren, Elizabeth

Practicum Site: Boston Medical Center

Location: Boston, MA United States

Title: Volunteer Based Asthma Education in Pediatric Primary Care

Introduction: The main objective of this quality improvement project is to see if an evidence based asthma education program can be applied effectively to pediatric primary care at BMC. The aim for this project is in the six weeks from March 13th to April 21th, 2017, 80% of patients who are seen in the primary care on Monday through Friday, 9am-5pm for a visit and have an asthma diagnosis in their problem list will have had asthma education.

Methods: The asthma education volunteers were trained to educate in primary care. The number of patients educated as well as the number of patients with asthma in their problem list will be recorded and used as a measurement tool for the success of the program. Additionally, the number of referrals/week before and after the implementation for *Breathe Easy* home inspections and asthma home visits will be compared.

Results/Outcomes: Results from this quality improvement project will be made available on April 27th at the Practicum Poster Finale. It will include the total number of patients educated, how many were educated per day and out of those who needed the education, how many we were able to educate. We will also include the values of referrals made before and after implementation.

HEALTH POLICY & MANAGEMENT

Name: Stovroff, Morgan
Practicum Site: Cambridge Health Alliance
Location: Cambridge, MA United States
Title: CHA Performance Improvement: Communications Intern

Introduction: Cambridge Health Alliance (CHA) is an academic health system that strives to provide quality care to the community. As an intern for the department of Performance Improvement, we aim to not only maintain high levels of quality, but to improve them. The goal of this specific project is to make the ideals of quality and performance improvement more transparent to the CHA community. In this technologically reliant society, the formulation of a website dedicated to Performance Improvement appears to be a bridge to connecting our message to the community.

Methods: In order to convey the goals set by my department, I worked with the director and the performance improvement advisor on formulating the means to do so. To achieve our wanted outcome, I first did market research on what information currently existed. Since CHA uses the Google system, the creation of the page is through Google sites. As this project continues, I will customize the page to include information on the basics of the department, educational tools, and encompass other tools for communication.

Results/Outcomes: Through utilizing the information collected during research, the projected outcome is to create a clear website that not only informs, but educates. We hope that the CHA and greater community will have a better understanding of what PI tools are and how to use them. We hope that this platform will create a more informed population that will lead to smarter healthcare decisions and better outcomes.

Name: Tran, Duy-Tan
Practicum Site: Boston University Medical Center
Location: Boston, MA United States
Title: Research Assistant

Introduction: Emily Rothman's "Keeping Safer" study is looking at the prevalence of illicit activities in which youth and adolescents who utilize Boston Medical Center may engage. Knowing the prevalence rate and feedback from participants can help leaders in the community to determine best practice methods in making safer communities.

Methods: We determined the research location to be a large teaching hospital in a major urban area, this allowed us to have a higher rate of recruitment for the study. A questionnaire was then created with an age range for the sample of 14-25. The location was an adolescent outpatient care waiting, a pediatric emergency room, and an adult emergency room was chosen as the recruiting location. After the completion of the survey, the data was entered into REDCap for analysis. Everything was done in mine to keep the anonymity and confidentiality of patients and respondents.

Results/Outcomes: Our initial results show that over 70% (19) of our respondents are female, 25% (7) are male, and 3.7% (1) identify as transgender. The mean age of respondent is 18.11 with a standard deviation of 2.31. Currently only 1 person have been asked to purchase a gun, giving a prevalence of 3.7%; and the same person was a singularity for storing a gun. Over 25% (or 7 positive) respondents say they bought drugs for someone but only 22% or 6 respondents said they've stored drugs. However, these are only preliminary results, more information can be known after a larger sample size have been recruited.

Name: Tran, Nathaniel
Practicum Site: Cambridge Health Alliance
Location: Cambridge, MA United States
Title: Improving Discharge and Follow-Up Appointment Scheduling in the Cambridge Health Alliance Medical Surgical Department (March-May 2017)

Introduction: Potentially avoidable readmissions (PAR) are hospital readmissions that could have been prevented if the patient received effective discharge care planning and coordinated outpatient follow-up after their initial admission. Clinically-speaking, preventing PARs reduces a patient's risk of contracting a hospital-acquired infection (HAI). Financially, preventing PARs results in cost-savings to Cambridge Health Alliance's (CHA) whose patient population is heavily subsidized by Medicaid. Because the Centers for Medicare and Medicaid Services (CMS) adjusts payments to hospitals with higher PARs, CHA has a financial incentive to avoid PARs. To reduce PARs, CMS suggests providing patients clear discharge instructions and scheduling timely follow-up appointments. This project will address the latter by correcting the inaccurate assignment of patients to primary care providers (PCP) in the electronic medical record (EMR) and by creating more efficient solutions for unit secretaries to schedule follow-up appointments with primary care clinics.

Method: We used Lean principles to survey the current status of patient registration, EMR documentation, hospitalists' workflow, and follow-up appointment scheduling. Additionally, we conducted Gemba walks with stakeholders, process mapped, analyzed root causes, established SMART goals, and pilot-tested proposed interventions using the PDSA model.

Projected Results: Preliminary data indicates that 25 percent of patients discharged from the Medical Surgical department are classified as having no PCP or a non-staff provider (NSP). Qualitative data from Gemba walks is compiled into a process map that connects the workflows of the Registration and Admitting department, hospitalists, and unit secretaries (Appendix 1). As the project proceeds, more results will become evident.

MATERNAL & CHILD HEALTH

Name: Black, Adriana

Practicum Site: Boston University Fitness and Wellness Center at Blackstone

Location: Boston, MA United States

Practicum Title: Graduate Assistant

Introduction: According to the Center for Disease Control, 21% of children aged 12-19 are classified as obese. Children's Body Mass Index (BMI) rates and the prevalence of childhood obesity in the United States has tripled over the past three decades. More importantly, when stratified by race, 20.2% of Black children and 22.4% of Latino children are classified as obese; 6% and 8% more than White children, respectively. Given these existing racial inequities, the purpose of this practicum was to develop a curriculum and create a program that focused on overall health promotion, fitness, and nutrition of Black and Latina adolescent women living in Boston's South End neighborhood.

Methods: The "G.I.R.L.S. – Girls in Real Life Slay" Program was created based on interview data from adolescent women attending after school programs at Blackstone Community Center, feedback from Blackstone management, a neighborhood needs assessment, and examples in the literature of similar intervention projects. The program consisted of six weekly, two-hour workshops with specific themes and topics that would be addressed through a one-hour educational component and a one-hour fitness component. The first session would require a focus group discussion where members could state their wants and needs of the program. The remainder lesson plans would be created based on the members' initial feedback.

Results/Outcomes: The G.I.R.L.S. Program was not implemented at Blackstone Community Center. Follow-up interviews with Blackstone Management indicate that more incentives are needed to successfully retain programming membership.

Name: Dougherty, Tricia

Practicum Site: Boston Children's Hospital

Location: Boston, MA United States

Title: CHICO, Government Relations Intern

Introduction: BCHOGR works with stakeholders to advance the overall mission of the hospital – providing high quality pediatric care. In the light of the current political climate, BCHOGR is invested in paving the way to increasing access to care, improving delivery methods, and addressing the rising total cost of care. BCHOGR leverages local, state, and federal partnerships to highlight the hospital's legislative agenda and to share best practices in improving children's health.

Methods: I assisted with the application to create an ACO. There is a risk to the hospital and individual providers in changing the current care delivery and reimbursement structure, especially in light of the on-going uncertainty of federal funding for Medicaid and CHIP. I took interest in advocating for and acting on behalf of S.647 because of the ambiguity in whether the new BCH ACO would be sustainable if federal funding were not accessible. As part of my interest and investment in preserving coverage for CHIP kids and federal reimbursement to MA for MassHealth, I drafted consumer-friendly materials to inform legislators for their support in passing the bill.

Results/Outcomes: My involvement with the ACO led to the creation of educational materials to train advocates to push for children's health care legislation. The short-term effect of this will ideally be the passage of MA S.647 and preserve access to coverage for CHIP kids and families. Hopefully Massachusetts will be the model for federal legislation and usher in innovation in health care delivery with the reauthorization of CHIP and the proliferation of ACOs.

Name: Eden, Porsha

Practicum Site: Boston Medical Center

Location: Boston, MA United States

Title: Birth Sisters Best Beginnings for Babies Program (Randomized Control Trial): Examining the Infant Feeding Intention, Depression, Housing and Food Security amongst Black and Latina Pregnant Women

The Birth Sisters Best Beginnings for Babies Program is one that evaluates the Boston Medical Center Birth Sisters Program which offers doula care to women. Doula support provides pregnant women with non-medical care including physical, emotional and social support during the prenatal and postpartum period. The Birth Sisters Best Beginnings for Babies Program seeks to understand the efficacy of doula care on women's health outcomes, particularly in lowering postpartum depression and caesarean section rates, alongside improving breastfeeding initiation rates. In order to examine the efficacy of doula care services provided, pregnant women are recruited through the antenatal unit. Pregnant women must be ages 18-24, be 16-24 weeks pregnant, have a singleton gestation, receive public health insurance, be a first time mother and not be high risk. Women are approached and enrolled into the study in which they either receive or not receive a doula through randomization after an initial prenatal interview. Postpartum interviews are then conducted in order to contrast the initial prenatal interview with the postpartum interviews. Once data was collected, Statistical Analysis System Program was utilized in order to compare Black and Latina pregnant women's infant feeding intention, depression, housing and food security rates. Depression and housing rates are closely examined, seeing that they both significantly impact the well-being of women and newborns. Black and Latina women have varying rates across the aforementioned factors which can be addressed through providing sustainable culturally and socially tailored doula services at Boston Medical Center.

MATERNAL & CHILD HEALTH

Name: Huezo, Michelle

Practicum Site: Massachusetts Alliance on Teen Pregnancy

Location: Boston, MA United States

Title: Developing Menstrual Health Programming for Homeless Youth

Introduction: The average cost of menstrual supplies over the course of a year is approximately \$120. About 55% of young people aged 16-24 who are homeless or use transitional housing benefits menstruate. Those who identify as LGBTQIA make up a disproportionate number of youth who are homeless or have unstable housing. Thus, menstruation can cause an additional burden for youth accessing menstrual products who may not have steady income or stable housing. The purpose of this practicum was to develop a pilot program under the Massachusetts Alliance on Teen Pregnancy, called My Body, My Biology (MB2), to promote medically and biologically appropriate, and LGBTQIA inclusive, menstrual education to youth who experience homelessness, while providing free menstrual products.

Methods: Using interview data from community key informants and menstruation education resources, a workshop curriculum and activities were developed focusing on three key areas: (1) The Menstrual Cycle (2) Menstrual Product Options (3) Menstruation Myths and Facts. An evaluation plan was also created through development of workshop surveys and organizational questionnaires. Additionally, a social media strategy was produced, along with a donation plan to help support program needs.

Projected Outcomes: While the program has not yet been implemented, data retrieved from key informants suggest a need for menstrual health education, as well as distribution of menstrual products, among homeless youth. Providing menstrual health education and free menstrual products is expected to increase knowledge about menstruation, dispel myths that surround menstruation, and provide temporary relief associated with the economic burden of purchasing menstrual products.

Name: Rajamani, Mallika

Practicum Site: Midwives For Haiti

Location: Hinche, MA United States

Title: Program Intern

Introduction: Midwives for Haiti (MFH) is a non-profit in Hinche, Haiti that aims to increase access to maternity care and reduce preventable maternal and infant deaths. The organization accomplishes this through educating Haitian nurses in a midwifery program, training traditional birth attendants (matwòns) in safe birth practices, staffing the maternity wards at Ste. Therese Hospital, and running a mobile prenatal clinic.

Methods: During my time with MFH, I attended several mobile clinics and shadowed a midwife at Ste. Therese to observe the daily functioning of the newly implemented triage clinic. I created a mobile clinic referral sheet to be used when transferring women from the rural prenatal clinics to the hospital. I also aided in the development of a triage chart, informed, in part, by the WHO Safe Birth Checklist, by which to track incoming patients at the hospital and record details of their visit. Lastly, I created a master schedule for student clinical rotations throughout the academic year.

Results/Outcomes: The development of a more structured referral and tracking system at the new triage clinic at Ste. Therese has the potential to increase efficiency and improve timeliness of care to women. Furthermore, the master schedule will ensure that the same midwifery students are staffed at the same mobile clinic each month, both improving their knowledge about the health of a specific community and encouraging continuity of work in rural areas of Haiti.

SOCIAL & BEHAVIORAL SCIENCES

Name: Christian, Jessica

Practicum Site: National Alliance for Mental Illness

Location: Boston, MA United States

Title: Project Management and Evaluation Internship/Practicum- Criminal Justice Diversion

Introduction: The appalling reality is that individuals with mental illness are incarcerated at disproportionately higher rates. Approximately 14% of male and 30% of female inmates are believed to have serious mental illnesses, including schizophrenia, bipolar disorder, and major depression, and many more require mental health treatment upon incarceration. In Massachusetts alone, approximately 25% of state correctional inmates and up to 50% of county jail and house of correction detainees and inmates in Massachusetts are receiving some mental health services. Police officers and other first responders are often inadequately prepared for calls with mental health emergencies, which often lead to unnecessary arrests. The National Alliance on Mental Illness (NAMI) Criminal Justice Diversion (CJD) Program of Massachusetts has been developing targeted and innovative solutions that intersect both mental illness and criminal justice to reduce the unnecessary arrests made of people with mental illness and to ensure the safety of the wider community.

Methods: Over the course of this Practicum, several programmatic pieces of NAMI's CJD program were monitored and evaluated for their overall effectiveness, impact, and sustainability. Project management tools were developed to track outcomes from the CJD project and relevant tables and tools were produced from this data. Technical assistance was provided for materials development and management of stakeholder relationships was prioritized throughout the project life.

Results/Outcomes: Finally, the Practicum culminated in the authorship and submission of a final year-end report to the Community Health Network Areas grantors evaluating successes, challenges, and proposals for project sustainability.

Name: Cosgrove, Danae

Practicum Site: Emerald Physicians

Location: Hyannis, MA United States

Title: The Farm and Local Health Alliance for Vegetables and Fruit in Outcome-based Prescription Pilot (FLAVORx)

Introduction: Adopting a healthy diet can prevent and reverse the effects of chronic disease, yet many people lack access to fresh produce. Using a randomized control trial design the FLAVORx pilot study sought to ascertain the effectiveness of a voucher mechanism to increase access to a local farmer's market and influence health on lower Cape Cod. The purpose of this practicum was to assist with the implementation of study components.

Methods: Activities completed included: 1) participated in implementation planning meetings; 2) gathered feedback about participant engagement at follow up visits; 3) distributed incentives; 4) completed case report forms; and 5) assisted with the final program report.

Results/Projected Results: Due to limited enrollment only one factor of nutritional knowledge was identified as statistically significant (i.e. the ability to identify sources of dietary fiber). Measurements of waist circumference, body weight and total cholesterol improved more among participants in the treatment group. The results of the FLAVORx pilot indicate that a voucher program is feasible and could easily be scaled to other Cape Cod communities.

Name: Dacier, Brittany

Practicum Site: Boston University School of Public Health

Location: Boston, MA United States

Title: Research Assistant for "Keeping Safe"

Introduction: "Keeping Safe", a study led by Dr. Emily Rothman, investigates straw purchasing of guns and illegal drugs among individuals 14-25 years old who are patients in the Adolescent Outpatient Clinic, Pediatric Emergency Department, and/or Emergency Department at Boston Medical Center. A "straw purchase" describes when the actual buyer of a firearm or drugs uses another person to purchase a firearm or drugs. In this study, eligible patients are asked to complete an anonymous survey that asks questions about whether they have been asked to purchase, hide, or store a firearm or illegal drugs for another person. The purpose of this practicum was to assist with study development and implementation.

Methods: Development activities included: prepare IRB protocol application; create a survey for data collection; develop a protocol for handling cash; and edit the recruitment script and exemption information. Implementation activities included: distribution of the informed consent, enrollment of eligible patients; and entry of survey data into a REDCap database.

Results/Outcomes: Study recruitment is in its early stages. Preliminary results demonstrate that 3.7% of participants have been asked to purchase a gun or firearm for someone else and have been asked to store or carry a gun or firearm for someone else. 25.9% of participants have been asked to purchase illegal drugs for someone else, while 22.2% have been asked to store or carry illegal drugs for someone else.

SOCIAL & BEHAVIORAL SCIENCES

Name: Dunbar, Melissa
Practicum Site: GN2.0-Nidus, Inc.
Location: Needham, MA United States
Title: Project Manager

Introduction: GN2.0- Nidus, Inc, a newly founded corporation, will provide patient subscribers experiencing back pain with multiple second-opinions offered by a spinal experts' panel. Nidus will capture patient-reported outcomes, effectively creating a database that will help inform comparative effectiveness research. The aim of this practicum was to understand how patients with back pain access care and to help develop an implementation plan, marketing tools including a brochure and website, and a web-based platform.

Methods: A comprehensive literature review and stakeholder interviews were conducted to assess patient population access to surgical opinions, health outcomes, and needs of community members living in suburban and rural communities in Massachusetts. Upon implementation, 15 hospital sites will utilize the Nidus platform.

Results/Outcomes: Outcomes of interest to stakeholders were identified, including patient-reported measures, radiographic images, and healthcare related costs. These were integrated into a web-based platform that will enable spinal experts to recommend their opinion in the patients' care as well as track these patients' outcomes after the expert recommendations have been reviewed between the patient and their provider. The literature review and results from the community assessment informed the implementation plan and a protocol for a prospective, non-randomized multi-center registry. Ultimately, it is the intention of Nidus to offer patients multiple reviews of their images and diagnosis and engage the patient in the decision making process related to their care.

Name: Katz, Aviva
Practicum Site: Everfi
Location: Boston, MA United States
Title: Research Intern

Introduction: Recreational marijuana is currently legalized in eight states and the District of Columbia and many college administrators are not yet clear how to address the impact of this legislation on their campus. Potential adverse consequences of recreational marijuana can be prevented by incorporating a public health framework that illuminates opportunities to promote campus health. The purpose of this practicum is to assess what college campuses are doing locally regarding marijuana education and to report these findings at EverFi's Annual Campus Prevention Network (CPN) Summit in June.

Methods: Activities included: 1) conduct literature reviews to identify relevant issues; 2) develop and distribute a survey to a sample of college administrators in states where recreational marijuana is legalized and also those states where it is not; 3) analyze the data to determine where education to students about marijuana is happening.

Results/Outcomes: When completed, the survey findings will be presented at the annual CPN Summit EverFi holds. This information will be distributed to inform colleges about existing campus educational prevention programs that may be adapted locally to better serve their students. This may also lead to the creation of a marijuana educational curriculum that colleges can use.

Name: Margolis, Jessica
Practicum Site: McLean Hospital
Location: Belmont, MA United States
Title: Research Assistant

Introduction: McLean OnTrack is a transdiagnostic early intervention program for first episode psychosis, specializing in early recognition and treatment of psychotic disorders for individuals between the ages of 18 and 30. The purpose of my practicum was to assist with the NIMH-funded protocol "Neurobiological Markers as Predictors of Later Functional Outcome in First Episode Psychosis." Specifically, my role was to determine which measures can be collected from the electronic medical records of OnTrack program participants.

Methods: A comprehensive inventory of 178 assessment tools was conducted under the following categories: demographics, childhood/developmental history, family environment, clinical information, treatment, functioning, medication history, and criminal history. These measures were derived from the PhenX Tool Kit, an inventory of validated measures created by the NIH, and PREP (Prevention and Recovery in Early Psychosis), a program sponsored by the Massachusetts Department of Public Health. Data was extracted from medical records of program participants and notation was provided for whether or not the measure can be collected. In addition, keywords or codes that help to locate the desired measures within the electronic medical record were identified.

Results/Outcomes: This practicum is a preliminary step that will help inform OnTrack researchers which measures can be feasibly collected through automated extraction of electronic medical records. This information will ultimately help OnTrack to expand the scope of its research in order to better understand and treat first episode psychosis.

SOCIAL & BEHAVIORAL SCIENCES

Name: Mazuz, Daphne
Practicum Site: Boston University School of Public Health
Location: Boston, MA United States
Title: Research Assistant, Needs Assessment for HIV Services

Introduction: The Center for Advancing Health Policy and Practice (CAHPP), on behalf of the Boston Public Health Commission (BPHC) conducted a needs assessment for HIV services among people living with HIV (PLWH). The was to determine what services are needed by PLWH, which of these needs are not met by existing service provision, and what barriers exist to receiving these services, as well as to provide information on barriers and facilitators to medication adherence and remaining in care. This information will be used by BPHC's Ryan White Planning Council to guide decisions regarding the allocation of federal HIV funding.

Methods: Data collection methods included 2 self-report surveys, one of PLWH (n=231) and one of HIV primary care providers (n=17); 4 focus groups, 2 consisting of PLWH (long-term survivors and gay/bisexual men of color) and 2 consisting of medical case managers (from Massachusetts and New Hampshire); and 8 key informant interviews with HIV primary care providers. All respondents resided or worked within the EMA. Focus groups and interviews were transcribed and survey data was cleaned and coded for analysis in NVivo and SAS, respectively.

Results/Outcomes: The data were analyzed and compiled into a presentation before the Planning Council and a written report. Results showed the greatest needs among PLWH are mental health services, peer support, and housing assistance, and similarly, mental illness, unstable housing, lack of social support, substance use, and fragmented and culturally inappropriate services and care were the biggest barriers to services, care, and medication adherence.

Name: Miller, Patrick
Practicum Site: Brookline Department of Public Health
Location: Brookline, MA United States
Title: Community Health Intern at the Brookline Public Health Department

My practicum was based at the Brookline Department of Public Health in the Community Health Division. As a Social & Behavioral concentrator I was interested in finding a position that would allow me the opportunity to engage with vulnerable populations. During my time with the department I was able to develop health communication strategies to increase community involvement in department sponsored events. I developed a wide skillset in health promotion marketing utilizing various social media platforms, flyers, and partnerships with local community organizations. I volunteered at many community events such as flu clinics, the Pan Asian Lunar New Year, and National Public Health Week; all of which saw hundreds of people. I also got the opportunity to develop a multimedia video for an event honoring BU Professor Alan Balsam that incorporated music, photos, and video. This gave me the opportunity to learn how to use programs like Photoshop and iMovie, and how to operate an AV system. During my practicum I found that people do care about their health, and the well-being of their community, when one is able to generate some excitement about it. It takes a lot of hard work and creativity, but community outreach is vital in insuring the health of our society, and the experiences I've had during my time at the department will be with me wherever my career takes me.

Name: Penwill, Nicole
Practicum Site: Boston University School of Public Health (BUSPH)
Location: Boston, MA United States
Title: Research assistant

Introduction: As a research assistant in the Graduate Research Affiliate Program, I assisted in the writing of a paper on HIV disclosure to infected adolescents, specifically in China, as part of the larger Adolescent Adherence Support in China (AASC) project.

Methods: For this project, the following activities were accomplished: 1) reviewed and analyzed the literature to better characterize adolescent HIV disclosure practices internationally; 2) identified relevant China-based studies; 3) completed an annotated bibliography; 4) wrote the introduction and discussion sections; 5) analyzed findings from our pilot study in the context of the literature; and 6) prepared to make recommendations regarding disclosure practices and future research in China.

Results/Outcomes: The completed paper is currently undergoing peer review and finalization by the practicum supervisor, with the intent to publish our work. Primary findings in this study suggest that, in China, disclosure is often delayed to late adolescence; stigma is a major barrier to caregiver disclosure; health providers may play an important role in educating and supporting caregivers through disclosure; and interventions are needed to reduce community stigma, especially in schools, in order to facilitate disclosure. As HIV disclosure to adolescents has not previously been studied in China, this report will provide the first published data on this subject specifically in the Chinese context.

SOCIAL & BEHAVIORAL SCIENCES

Name: Quezada, Xavier
Practicum Site: Boston Medical Center
Location: Boston, MA United States
Title: Quality Improvement Intern

Introduction: The Department of Surgery Quality Improvement (QI) team at Boston Medical Center (BMC) seeks to increase smoking cessation counseling conducted by surgeons. It is shown that smokers undergoing surgery are more likely to encounter complications shortly after their surgical procedures. Unfortunately, many surgeons lack training to counsel patients, don't feel comfortable prescribing nicotine-replacement therapy, and don't have a dependable program to refer patients. In 2015, the QI department piloted a telephone-based counseling initiative (Quitworks) that aimed at standardizing the process of counseling and documenting active smokers. Since its implementation, further work needs to be done to make the process sustainable.

Methods: As a means to improve upon Quitworks, this practicum involved: 1) Planning and launching a 3-month pilot program with the Surgical Oncology clinic, referring patients to BMC's Pulmonary Tobacco Treatment Center as an alternative to Quitworks. 2) Developing a report to be sent out to participating surgeons that summarizes trends in smoking and counseling. 3) Supporting QI team with general project management and organization.

Results/Outcomes: Because of high loss to follow-up with Quitworks, it is proposed that the alternative pilot utilizing BMC's Pulmonary Tobacco Treatment Center will be more effective at getting patients to quit smoking. The reports developed from Quitworks referrals provide data to Surgeons that will hopefully prompt them to increase counseling and referrals for smoking cessation. Lastly, general project management has improved the efficiency for collecting data and has developed tools for future interns to utilize.

Name: Schmidt, Clare
Practicum Site: Health Care for All
Location: Boston, MA United States
Title: Behavioral Health Fellow

Introduction: While parity for mental health and substance use disorders are protected by state and federal law, many consumers still face numerous barriers to accessing quality behavioral health care (care for mental health or substance use disorders). Health Care For All, a Boston-based non-profit, conducted a state-wide assessment of behavioral health care to examine structural barriers that negatively affect the ability of Massachusetts residents to receive quality care.

Methods: This assessment consisted of two parts: 1) four focus groups were conducted with consumers of behavioral health care and two focus groups were conducted with behavioral health care providers; and 2) a state-wide survey disseminated to Massachusetts residents who have sought behavioral health care. As the Behavioral Health Fellow, I coded the qualitative data from the focus groups, developed and programmed the online survey, and analyzed the survey results.

Results/Outcomes: Through this assessment, the research team identified a number of barriers to behavioral health care such as difficulty finding in-network behavioral health providers, a lack of transparency in health insurance plans, and difficulty accessing behavioral health care. The final findings from the study will be published by Health Care For All and will be used to inform the organization's policy recommendations in the future.
