

Global Health Capstones:

The Capstone is a culminating experience required for graduation in the Master of Public Health Program.

Students will have an opportunity to synthesize the knowledge and public health competencies they have acquired through their coursework, apply them to solving public health problems in their area of interest as well as those of their peers, reflect together to learn from each other and from the relevant body of public health experience including the scientific literature, and begin to develop a common grounding and identity as public health professionals.

Below you will find examples of types of global health oriented capstones as well as examples of past students' projects.

Literature Review with Recommendations

Students will perform a comprehensive review of the current literature of their identified public health problem. This capstone project would involve a clear assessment of the problem, an evaluation of its causal factors and determinants, and discussion of the significant prevention and intervention strategies. In addition, students will include evidence-based recommendations based off of their analysis.

Example Project:

- ❖ A Systematic Review of Haitian immigrants attitudes and health beliefs around the prevention of HPV related cancers

Program Plan

Students will design and develop a plan to implement a specific public health program. This capstone project would address critical issues such as management, fiscal, ethical, and logistical issues.

Example Project:

- ❖ An Organizational Needs Assessment for HIV/AIDS Peer Educators in Botswana: Identifying Challenges and Addressing Opportunities for Improved Community Outreach

Program Evaluation

Students will evaluate and assess a currently existing public health program. This capstone project would include an evaluation of the outputs and outcomes of the specific program, as well as an impact assessment and cost-benefit analysis.

Example Project:

- ❖ Directing Philanthropic Capital for Maximum Impact: A Case Study in Measles

Health Education and Curriculum Development

Students will design and develop a curriculum or health education program to address a specific public health problem. This capstone would entail either producing curriculum for an existing program, organization, or initiative that could be realistically implemented, or focusing on building capacity of partners and skills-based teaching of a particular community.

Example Projects:

Health Education:

- ❖ Empowering Bhutanese teens through collaborative development of a sex education program

Capacity Building:

- ❖ Project Aurora: Collaborating with Community Health Activists to Create Visual Aids in Rural Mozambique

Policy Analysis

Students will identify a current policy and analyze its public health implications. This capstone would examine critical issues such as economic, social, cultural, and political impacts, as well as perspectives on financing, need and demand, ethics, and overall effectiveness.

Example Project:

- ❖ Strengthening global health security: a systematic review of lessons learnt from national implementation of the International Health Regulations

Modeling Exercises

Students will propose and evaluate a hypothesis concerning a selected disease. This capstone would involve projecting how a particular infectious disease would progress and a discussion of the finding's implications on current public health interventions.

Example Project:

- ❖ Transmission dynamics of Middle East Respiratory Syndrome: An investigative modeling study

Survey Development

Students will comprehensively develop a survey tool to be used to assess a public health issue in a specific population. This project would entail analyzing the existing literature on the subject and contextualizing the problem to the population of interest in order to produce a survey that could be realistically applied.

Example Project:

- ❖ Creating a survey instrument for field operations for a household vector control campaign in Arequipa, Peru

Research Proposal

Students will produce a plan for research or a grant proposal with a clear and concise research question. The capstone project would include the specific research objectives, literature review, study design, methods, and implications and importance of the research.

Example Project:

- ❖ Proposal to assess risk and spread of multi-drug resistant TB in Botswana

Research Report

Students will analyze and interpret data to address a public health problem. The capstone project would include discussion of the research question, study design, data collection procedures, data analysis, interpretation, and significance of findings. Studies may be of any methodological approach: qualitative, quantitative, or mixed methods.

- **Secondary Data Analysis:** Students can use an already existing dataset to provide new analysis to answer a research question. This could include content analysis, interview transcript coding, and amongst others, using survey data. Be aware that IRB approval may be needed.

Example Projects:

Using publicly accessible data:

- ❖ Does Social Status Predict Appropriate Treatment for Child Diarrheal Disease? Evidence from Peru

Using another researcher's database:

- ❖ Do depressive symptoms mediate the relationship between excessive alcohol consumption and HIV-medication adherence among HIV-infected patients in Botswana?

- **Primary Data Analysis:** Students will collect original data to answer a research question. Given the ethics as well as logistics of working abroad, this capstone may fit in the context of an ongoing study with a UPenn researcher or a collaborative partnership. However, students may develop their own independent study. Students should leave ample time for IRB approval.

Example Project:

- ❖ Providers' Perspectives on Family Planning Services in Karachi, Pakistan

Examples of Global Health Capstones:

Literature Review with Recommendations:

- ❖ *A Systematic Review of Haitian immigrants attitudes and health beliefs around the prevention of HPV related cancers*

Student: Juana Romelus

Methods: Plans to perform a systematic literature review of the attitudes and health beliefs around the prevention of HPV related cancers of Haitian immigrants. Will comprehensively analyze the existing knowledge of the topic and provide specific recommendations on new HPV prevention methods with this population.

Program Plan:

- ❖ *An Organizational Needs Assessment for HIV/AIDS Peer Educators in Botswana: Identifying Challenges and Addressing Opportunities for Improved Community Outreach*

Student: Jasmine Jones

Methods: Qualitative interviews and observational field notes were conducted to inform a situation analysis to understand the organization's operations and management processes.

Program Evaluation:

- ❖ *Directing Philanthropic Capital for Maximum Impact: A Case Study in Measles*

Student: Sara Hayes

Methods: Evaluated the impact of the Measles and Rubella Initiative. The project assessed the health results, reach, and cost-effectiveness of the program, as well as provided recommendations for future success.

Health Education and Curriculum Development:

- ❖ *Empowering Bhutanese teens through collaborative development of a sex education program*

Student: Saira Huq

Methods: Our objective is to provide the Bhutanese American Organization of Philadelphia (BAOP) with options for evidence-based teen pregnancy prevention programs to implement and to pilot a sexual and reproductive health (SRH) session with Bhutanese teenagers. of the program, as well as provided recommendations for future success. A pilot sex education session was developed in collaboration with members of the Bhutanese community. The sessions were evaluated with an anonymous written survey administered to all participants.

- ❖ Project Aurora: Collaborating with Community Health Activists to Create Visual Aids in Rural Mozambique

Student: Joshua Littlejohn

Methods: This case study outlines one such project aimed at creating educational visual aids in conjunction with community health activists for use in their own communities. Over the course of three months, the author worked with previously identified community health activists from two communities, students from a local university, health professionals, and religious organizations to create a simple, affordable, easily reproducible visual toolkit for use in teaching what the community self-identified as the key gaps in understanding of malaria and the medical treatment process.

Policy Analysis:

- ❖ Strengthening global health security: a systematic review of lessons learnt from national implementation of the International Health Regulations

Student: Sara Cifuentes

Methods: Conducted a systematic review of 16 studies that examined both barriers and facilitators faced by African countries in implementing Surveillance as one of the IHR (2005) core capacities. Indicator Based Surveillance (IBS) and Event Based Surveillance (EBS), the two arms of the core capacity, were evaluated and a list of themes and subthemes was created, compared, and juxtaposed.

Modeling Exercises:

- ❖ Transmission dynamics of Middle East Respiratory Syndrome: An investigative modeling study

Student: Tara Fulton

Methods: The goal of this study is to propose and evaluate a hypothesis concerning the predominant transmission modalities of Middle East respiratory syndrome coronavirus (MERS-CoV) in Saudi Arabia and the Republic of Korea. Three lines of evidence are presented: (1) a literature survey of the typical transmission modality of other coronaviruses; (2) a comparative survey of case reports and epidemic curves of other pathogens for which the transmission modalities are well known; and (3) an attempt to mimic the observed MERS case reports using mathematical models that incorporate explicitly represented transmission modalities.

Survey Development:

- ❖ Creating a survey instrument for field operations for a household vector control campaign in Arequipa, Peru

Student: Phoebe Cruz

Methods: A survey instrument was developed to understand household participation decisions for a Chagas disease indoor residual spraying (IRS) campaign in Arequipa, Peru. Feedback from field staff was used to improve the questionnaire for the IRS

campaign. Based on their input, several versions of the survey were created for further field testing, incorporating different graphical representations of a Likert scale (numbers, facial expressions, hand gestures), different item constructions (interrogative vs. declarative), and two methods of survey dissemination (electronic tablet and paper). The most efficient survey layout for field operations will be determined from the 12 versions of the survey instrument created.

Research Report:

❖ Secondary Data Analysis

❖ **Quantitative Methods:**

- Does Social Status Predict Appropriate Treatment for Child Diarrheal Disease? Evidence from Peru

Student: Kathryn Volpicelli

Methods: Utilized the 2008 Demographic and Health Survey for Peru to: 1) Describe the burden of diarrheal disease among children under 5, and 2) Identify socioeconomic correlates of health-seeking behavior and utilization/appropriateness of treatment among mothers of children with recent diarrheal episodes in relation to household socioeconomic status.

- Do depressive symptoms mediate the relationship between excessive alcohol consumption and HIV-medication adherence among HIV-infected patients in Botswana?

Student: Harriet Okatch

Methods: This study aims to determine if prevalent depressive symptoms mediate the relationship between alcohol use and non-adherence among HIV-infected patients in Botswana. A sample of 940 patients initiating ARV therapy was enrolled in the study and demographic and clinical information was collected at baseline. Alcohol use and prevalence of depressive were assessed at baseline and additional alcohol use assessments were conducted at 1 month and 6 month visits.

❖ **Qualitative Methods:**

- Community Structures as a Means Toward Greater Accountability in a Responsive Health System in Kenya, East Africa

Student: Katelyn Tente

Methods: A secondary data analysis facilitated by Nvivo10 was conducted on the translated then transcribed interviews of community health workers, community health extension workers, and community health committee members in six community units in Kenya.

❖ Primary Data Analysis

❖ **Quantitative Methods**

- Health Care Access After Disasters: Impact of the 2010 Pakistan Floods
Student: Aqsa Durrani

Methods: Employing population proportional, randomized cluster sampling, a survey was conducted to assess access to health services and perceptions of quality among populations affected by the 2010 Pakistan flood.

❖ **Qualitative Methods**

- Improving Diabetes Management in an Indigenous Tz'utujil Community of Guatemala: Patients' Views on Social, Emotional, and Physical Factors of Life with Diabetes
Student: Alejandra Paniagua Avila

Methods: Open-ended, in-depth interviews constituted the qualitative methodology. The interview guide was used to explore the participants' views around the diabetes onset and the influence of diabetes on physical, social and emotional factors.

❖ **Mixed Methods**

- Providers' Perspectives on Family Planning Services in Karachi, Pakistan
Student: Amna Rizvi

Methods: Conducted a mixed-methods study with gynecologists practicing in Karachi, Pakistan. Following IRB approval, structured surveys and in-depth interviews addressing care delivery, training, and perceived knowledge regarding legal restrictions and personal religious beliefs about family planning, including abortions, were assessed.