

Infectious Diseases-HAI

Idaho Department of Health and Welfare, Division of Public Health

Boise, Idaho

Assignment Description

The Fellow's assignments will primarily focus on projects within the HAI and Epidemiology Programs within the Bureau of Communicable Disease Prevention (BCDP). Organizationally, the BCDP is one of eight Bureaus within the Division of Public Health, a Division within the Idaho Department of Health and Welfare.

The Division of Public Health currently has five doctoral-level epidemiologists. The State Epidemiologist/ Public Health Medical Director, an infectious disease physician who sits organizationally outside of the Bureau of Communicable Disease Prevention (BCDP); the Deputy State Epidemiologist, who also serves as the Chief of the BCDP; the Career Epidemiology Field Officer and State Public Health Veterinarian, both veterinarians and located organizationally within BCDP; and the Chronic Diseases Injury, and Environmental Health Epidemiologist, a PhD epidemiologist organizationally located in the Bureau of Community and Environmental Health. There are three masters-level epidemiologists in the BCDP program, including the Epidemiology Program Manager, the STD/HIV epidemiologist, and the Hepatitis and Respiratory Diseases Epidemiologist; two surveillance staff; and administrative support staff. The BCDP's primary responsibilities include epidemiology functions, epidemiologic aspects of health preparedness, food safety, immunization promotion, ensuring refugee health screening and follow up, and healthcare associated infections. The Epidemiology Program manages several CDC cooperative agreements (i.e., ELC, Tuberculosis Prevention and Control, and the National Syndromic Surveillance System) and sub-grants funding to Idaho's seven public health districts to provide a variety of epidemiologic services (e.g., disease investigation, outbreak response, epidemiology surveillance, and preparedness planning). The Fellow will sit organizationally within BCDP and work directly with the epidemiologists and program managers in both the HAI and Epidemiology Programs.

See <http://healthandwelfare.idaho.gov/AboutUs/Organization/tabid/125/Default.aspx> for more information on the organization of the Department of Health and Welfare and the appendices for more details on the Division of Public Health and the Bureau of Communicable Disease Prevention.

Day-to-Day Activities

- Evaluate current processes to understand the gaps and needs of the program(s)
- Evaluate data as needed
- Provide recommendations on projects based on your evaluation(s) and program(s) needs
- Develop and/or optimize protocols, tools, reports, and/or evaluations as needed
- Collaborating internally with various programs and/or externally depending on project needs
- Project management will be on going

Potential Projects

Surveillance Create an annual HAI report for each HAI Activity

Create a statewide HAI Report Card for each HAI reported through the National Healthcare Safety Network (NHSN): CAUTI, CLABSI, SSIs (Colon and Hysterectomy), Clostridium difficile, and/or MRSA bacteremia. This will allow us to evaluate infection rate trends and target facilities and the types of pathogens or infections that require public health intervention. This data report will assist the HAI Program in setting statewide programmatic goals that focus on reducing and eliminating healthcare-associated infections. This annual report will be shared with Idaho's HAI Advisory Group and will be published on our website.

Surveillance NHSN Surveillance Protocol Evaluation

Build a statewide surveillance protocol for the data reported through the National Healthcare Safety Network (NHSN) to provide a consistent HAI Surveillance protocol and analysis plan. The evaluation will focus on identifying tools, procedures, and reports necessary as part of the protocol for using the surveillance data in the NHSN effectively and consistently so that actionable strategies can be developed.

Major Project Long term care facility outbreak data analysis

Analyze the Epidemiology Program's Outbreak database for outbreaks occurring in long term care facilities in Idaho for the last 10 years. Outbreaks may include Norovirus, influenza, gastroenteritis (etiology unknown), influenza-like illness or other respiratory diseases, and invasive group A strep. These data have never been analyzed and neither the HAI Program or the Epidemiology program have capacity to perform the data cleaning, analysis, result interpretation, and recommendations that will be outcomes of the analysis. This project will strengthen the collaboration between the Epidemiology and HAI Programs in Idaho. This project will provide the HAI Program insight into long-term care facility outbreaks which will direct the program's next steps in addressing and supporting Idaho's long-term care facilities. It will provide the Epidemiology Program with the evidence-base needed to develop training and resources for epidemiologists working in Idaho's local public health districts to better detect and respond to outbreaks and provide support to facilities in preventing outbreaks in the future.

Major Project TB Project

As a low incidence active tuberculosis state, Idaho's federal funding is very limited and, as a result, the state has limited human capacity to respond to tuberculosis-related events. Collaboration with partner agencies, the healthcare community, and the Idaho Public Health Districts assist in the rapid detection of persons with tuberculosis, the rapid initiation of treatment, the identification of persons exposed, and the successful completion of treatment for persons with active disease or latent infection. Recently, in response to a lack of national guidance documents or frameworks, the Idaho Tuberculosis (TB) Program partnered with animal health agencies to develop protocols for inter-agency information exchange when a person diagnosed with TB is known to have contact with susceptible animals, particularly cattle and other livestock. As the fourth highest dairy-producing state in the United States, as well as in the top ten for refugee resettlement per capita, the human and animal tuberculosis intersect of *Mycobacterium bovis* could impact health, industry, and Idaho's economy. The Idaho TB Program would like to the CSTE fellow to collaborate on completion of an inter-agency information exchange protocol, evaluation of the implemented protocol, and recommendations for next steps to address any gaps identified in information and practice that exists at the local, state, and national levels regarding the management of *M. bovis* and other strains in the MTB complex in persons who work with animals.

Major Project Foodborne Illness Investigation Toolkit

In 2015, Idaho public health officials responded to the largest foodborne outbreak recorded in the state's history. The outbreak, which was centered in Idaho but involved multiple states, highlighted areas of improvement in foodborne outbreak detection and response. Since the event, the state-level Epidemiology Program, in collaboration with the Food Protection Program, have hosted Council to Improve Foodborne Illness Investigation (CIFOR) training, FDA Foodborne Outbreak Investigation training, and have developed enhanced foodborne investigation protocols. However, gaps still exist in surveillance and response protocols. By collaborating with foodborne disease leads at the state-level, food safety subject matter experts, and local public health district epidemiologists on the development of a robust Foodborne Illness Investigation toolkit, containing investigation processes and protocols, communication templates, and laboratory sample submission guidance, many of the gaps identified can be addressed through implementation of an electronically-available, interactive toolkit. The Idaho Epidemiology Program would like the CSTE fellow to be the lead on this toolkit project and collaborate with multiple partners in the development and electronic platform for to improve the effectiveness of public health practice around foodborne diseases in Idaho.

Preparedness Role

Role of the fellow in Emergency Preparedness (required for competency of fellowship):

<http://healthandwelfare.idaho.gov/Health/ReadyIdaho/tabid/1613/Default.aspx>

The CSTE fellow would have the opportunity to participate in a full scale statewide Preparedness and Response exercises involving emerging and novel infections. The Bureau of Emergency Medical Services and Preparedness will lead this effort in collaboration with Bureau of Communicable Disease Prevention, Idaho Bureau of Laboratories, Idaho's 7 Public Health Districts, and other various community partners. These community level exercises will be held in each local public health district and are planned for 2019. While details are limited because planning is just beginning, the planning of these events will ramp up in 2018. The Preparedness and Response team is excited about the possibility of a CSTE fellow assisting in the planning and implementation of these exercises.

Additional Activities

Invasive Group A streptococcus (GAS) enhanced surveillance: Review and finalize the focus on emm typing and whole genome sequencing of GAS isolates in order to better characterize strains circulating in Idaho. Idaho continues to see elevated case counts of invasive GAS and has identified two clusters in different Idaho communities as emm typing and the use of whole genome sequencing expand. However, the ability to make sound public health recommendations for disease control have been hampered by the lack of a national-level framework or best practice. Additional data analysis and literature review might provide a more comprehensive understanding of invasive GAS in Idaho and could be the foundation to developing Idaho-specific disease control and prevention protocols.

Invasive methicillin-resistant Staphylococcus aureus (MRSA) : Perform a follow up study on invasive MRSA in Idaho. In 2008, Idaho passed legislation requiring laboratories to report cases of invasive MRSA to Idaho public health authorities. Dr. Kathy Turner's 2009 analysis focused on invasive MRSA incidence, disease severity, and risk factors for infection relative to environment of infection (e.g., hospital onset, healthcare associated, or community acquired) as well as geographic difference in disease. However, the sample size was small (n=200) and conclusions were difficult to make. Now that Idaho will have 10 years of surveillance data available, we want to duplicate the study methodology and analysis used in 2009 with a larger sample size (~1000) to better characterize not only the incidence of invasive MRSA, but to identify risk factors for invasive MRSA in a predominantly rural state to better inform healthcare and public health in disease control and prevention.

Mentors

Primary

Kathryn Turner PhD, MPH

Deputy State Epi and Bureau Chief, Communicable Disease Prevention

Secondary

Susan Heppler BSN

HAI Coordinator