

ID: 74236503

Infectious Diseases, Infectious Diseases - Foodborne - Host Site Description

Hawaii Department of Health

Assignment Location: Honolulu, US-HI
Hawaii Department of Health
Disease Outbreak Control Division

Primary Mentor: David Johnston, MPH
ELC Epidemiologist Supervisor
Hawaii State Department of Health

Secondary Mentor: Alden Henderson, PhD, MPH
Epidemiologist
Hawaii State Department of Health

Work Environment

Hybrid

Assignment Description

The CSTE AEF Fellow would be assigned to DOCD under the mentorship of Mr. Johnston and Dr. Henderson. This assignment would allow the fellow to have exposures and experiences within all branches of DOCD (Disease Investigation Branch, Immunization Branch, and Healthcare Acquired Infections Branch) and the Office of Rapid Epidemiologic Response. Involvement in these areas would include participating in investigations of, for example, foodborne and vaccine-preventable disease outbreaks, enhancing existing systems including developing and/or improving questionnaires, and analyzing and interpreting data collected. The fellow would also have the opportunity to participate in other areas of interest (e.g., assessments of hospital-associated infections) as long as his/her primary project was progressing as agreed upon with his/her mentors. In addition, the fellow would be expected to gain experience in managing and addressing public inquiries through assignment once a month as the duty officer of the day; this responsibility would lead to sometimes investigating individual cases of infectious disease and potentially serving as the lead investigator for a disease outbreak response.

Describe Statistical and Data Analysis Support, Such as Databases, Software, and Surveillance Systems Available to the Fellow

Data resources will be available to the fellow not only from those sources directly related to the fellow's primary project but also Hawaii's electronic surveillance system (MAVEN) for all reportable conditions in the state. In addition, information from smaller databases may be accessed either directly by the fellow through Microsoft Office products or through the surveillance coordinators (e.g., food safety and influenza) For data cleaning, analysis, and visualization, the fellow will have access to Microsoft Office products, R, SAS, PowerBI, ArcGIS, and training materials and opportunities. Statistical consultation is available (i.e., biostatistician, senior epidemiologist).

Projects

Surveillance Activity Title: Development of Activity Level Thresholds for Leptospirosis Surveillance

Surveillance Activity Description:

Building on findings from the evaluation of data sources for leptospirosis surveillance, this project aims to enhance routine monitoring by establishing activity level thresholds for selected data sources. Monitoring activity levels will help identify increases or other changes in activity which can support a more timely public health response.

ID: 74236503

Infectious Diseases, Infectious Diseases - Foodborne - Host Site Description

Hawaii Department of Health

Surveillance Activity Objectives:

The fellow will:

- Develop thresholds for activity levels for leptospirosis for the selected data sources identified in the surveillance system evaluation
- Evaluate potential methods for threshold calculation (e.g., moving epidemic method [MEM], utilizing standard deviations, etc.)
- Create a workflow for routine monitoring of activity levels, including documentation and standard operating procedures (SOPs)

Deliverables will include a finalized threshold methodology, an established monitoring workflow, and supporting documentation.

Surveillance Activity Impact:

By establishing clear activity level thresholds and a routine monitoring process, this project will improve Hawaii's ability to detect changes in leptospirosis activity, improving situational awareness.

Surveillance System Evaluation Title: Evaluation of Data Sources for Leptospirosis Surveillance

Surveillance System Evaluation Description:

Leptospirosis is a bacterial disease, caused by bacteria from the genus *Leptospira*, which can affect both humans and animals. In humans, it has the potential to cause severe illness, in some cases leading to kidney damage, meningitis, liver failure, and even death. Humans can become infected through exposure to freshwater contaminated with animal urine, it is rarely transmitted from person to person. Hawaii reports some of the highest rates of leptospirosis cases in the United States. Multiple data sources are available, including Electronic Laboratory Reporting (ELR) data, syndromic surveillance, and hospital discharge data, which may provide valuable information for monitoring leptospirosis in Hawaii, but their strengths and limitations have not been fully assessed.

Surveillance System Objectives:

The fellow will evaluate the utility of using these data sources to monitor leptospirosis. This will include:

- Assessing each data source's ability to identify and count leptospirosis cases
- Comparing rates, trends, and patterns across the three systems to identify potential discrepancies
- Evaluate selected attributes of each data source to identify strengths and weaknesses as surveillance systems (using the CDC guidelines for surveillance system evaluation as a guide)

The deliverables of this evaluation will be a comprehensive report that summarizes the findings of the strengths and weakness of each system.

Surveillance System Impact:

Evaluating the strengths and limitations of these data sources will help inform decisions about how to enhance leptospirosis monitoring in Hawaii. Improved surveillance will enable earlier detection of cases, better situational awareness, which would lead to improved public health responses.

ID: 74236503

Infectious Diseases, Infectious Diseases - Foodborne - Host Site Description

Hawaii Department of Health

Major Project Title: Analysis of Vaccine Coverage and Vaccine-Preventable Disease (VPD) Rates in Hawaii

Major Project Description:

Vaccination is one of the most effective public health interventions for preventing disease, yet gaps in coverage can lead to outbreaks of vaccine-preventable diseases (VPDs). Understanding vaccination coverage and its relationship with rates of VPDs is critical for guiding immunization strategies and reducing disease burden. This project will analyze vaccine coverage across Hawaii and compare it with rates of VPDs to identify trends, disparities, and potential opportunities for targeted interventions.

Major Project Objectives:

The fellow will:

- Analyze statewide vaccine coverage for multiple vaccine-preventable diseases using data from the Hawaii State Immunization System (HISIS).
- Compare coverage data with VPD incidence rates to identify correlations and trends.
- Incorporate geospatial analysis to visualize geographic trends and/or disparities in coverage and disease rates.

Deliverables will include a comprehensive analytic report, visualizations of the data (e.g., maps, charts, dashboards), and recommendations for improving immunization efforts.

Major Project Impact:

Identifying gaps in vaccine coverage and how they relate to VPD rates and trends can help inform targeted immunization efforts and policy decisions. This can ultimately lead to reducing the burden of VPDs in Hawaii.

Additional Project #1 Title: Community Assessment for Public Health Emergency Response (CASPER)

Project #1 Type: Surveillance Activity

Project #1 Description:

The Community Assessment for Public Health Emergency Response (CASPER) methodology was developed by CDC as a way to collect data about the health needs of a community post-disaster. While the CASPER methodology is typically used to assess disaster-related impacts and needs, CASPERs can also be used to establish baseline preparedness levels and build capacity to conduct CASPERs post-disaster. The Kauai District Health Office (KDHO) conducted CASPERs annually from 2017-2025 (excluding 2021) to monitor trends in the emergency preparedness of island residents. Several of these CASPERs also included disaster components such as evaluating impacts from a major flood event as well as the COVID-19 pandemic. Recently the Hawaii District Health Office also conducted a CASPER, with additional ones planned.

Project #1 Objectives and Expected Deliverables:

The fellow will have the opportunity to participate in all stages of a CASPER. They will assist with planning and coordination of the assessment, will participate in conducting the assessment including performing door-to-door surveys, and will assist with the analysis of the results and production of the summary report.

Project #1 Impact:

The information obtained through the annual CASPERs enables DOH to better meet the community's needs before, during, and after a disaster.

ID: 74236503

Infectious Diseases, Infectious Diseases - Foodborne - Host Site Description

Hawaii Department of Health

Please Describe the Fellow's Anticipated Role in Preparedness and Response Efforts – Include Activities and Time Allocation (Required Competency of Fellowship)

The CSTE fellow would be encouraged to participate in public health preparedness and response related activities within the division (e.g., mass vaccination, discussions and planning regarding quarantine and isolation, issues related to high consequence emerging infectious diseases) as well as with outside stakeholders. Times of increased surveillance (e.g., monitoring for the influenza A [H1N1] virus during the 2009 pandemic), responding to statewide disease outbreaks, or preparing the state to respond to the threat of a potential emerging pathogen (e.g., Ebola virus disease response) require assistance from everyone division- and even department-wide. At critical times such as these, the CSTE fellow would be expected to lend his/her full support to the division.

Please Describe the Fellow's Anticipated Role in Cluster and Outbreak Investigations – Include Activities and Time Allocation (Required Competency of Fellowship)

Fellows will have the opportunity to serve as officer of the day for the Disease Investigation Branch on a monthly basis. Cases, clusters, and outbreaks may be reported through this system and ownership is assigned to the officer of the day on duty. Fellows would also be involved in larger or ongoing infectious disease outbreaks. If a fellow has an interest in a specific disease, they could potentially assist with case or outbreak investigations.