

ID: 46706277

Infectious Diseases-HAI, Infectious Diseases - Host Site Description

Hawaii Department of Health

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

Primary Mentor: Sarah Kemble, MD
State Epidemiologist
Hawaii State Dept of Health

Secondary Mentor: Douglas Hatch, MD, MPH
HAI Physician
Hawaii State Dept of Health

Work Environment

100% In-person

Assignment Description

The physical offices of the Department of Health (DOH) are in downtown Honolulu. The main DOH building is also located across the street from The Queen's Medical Center, a major teaching hospital and the State's only Level I trauma center and is proximal to both the University of Hawaii at Manoa main campus as well as the John A. Burns School of Medicine.

By education and training, staff members in Disease Outbreak Control Division (DOCD) have expertise in microbiology, statistics, epidemiology, and other areas of public health. The CSTE Fellow will find DOCD a site rich in epidemiologic learning opportunities and relevant resources. Although direction and guidance will come from the mentors, networking with others in DOCD will help the CSTE Fellow acquire additional knowledge and insight to successfully complete their projects at DOCD.

The CSTE Fellow will be assigned to DOCD under the mentorship of Dr. Kemble and Dr. Hatch, primarily in the area of healthcare associated infection (HAI) and infection control and prevention, including HAI and multi-drug resistant organism (MDRO) surveillance and evaluation, enhancing existing systems including developing and/or improving questionnaires, and analyzing and interpreting data. The Fellow will also develop working relations with healthcare facilities, infection preventionists, commercial laboratories, and physicians and other healthcare providers to work collaboratively to conduct surveillance and reduce HAIs. This exposure will allow the Fellow to develop soft skills essential for a career in public health.

The Fellow's primary project would be their focus. However, depending on the Fellow's initiative, efficiency, and interest, they may engage in other activities (e.g., assisting in a major project or outbreak, leading a project or investigation). The daily schedule will include time for background research and documentation. As part of the Fellow's project, some days may include meetings with other staff and/or with outside stakeholders and going on Infection Control and Prevention site visits with the HAI/AR epidemiologists. Site visits may require the Fellow to be fit tested for an N-95 respirator. Regarding formal meeting requirements, initially the Fellow would meet with the mentors weekly to discuss and review plans, project(s)/ activities status, and steps for progression. As the Fellow gains confidence and experience and demonstrates steady progress in their activities, the number of formal meetings with the mentors would be expected to decrease. Other formal meetings the Fellow would be expected to attend include the HAI Advisory Committee Meeting, weekly Field Investigator meetings, and quarterly DOCD division meetings.

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As an island state in the middle of the Pacific, Hawaii faces unique challenges. The Fellow will have the opportunity to learn about conditions not often seen in the rest of the U.S., including angiostrongyliasis (rat lungworm) and Ciguatera and Scombroid fish poisoning. With the opportunity to serve as a rotating “Officer of the Day,” the Fellow would gain a wide breadth of infectious disease and One Health knowledge by fielding inquiries from clinicians and the public. In addition to expanding their analytic and software skills (e.g., R, SAS, ArcGIS, Tableau), the Fellow can expect to develop skills in public speaking, networking, health communication, logistics, management, and infection control and prevention. Previous fellows have passed the Certification in Infection Prevention and Control (CIC) awarded by the Certification Board of Infection Control and Epidemiology. The certification identifies healthcare professionals who have mastery of infection prevention and control knowledge and is preferred or required by many employers.

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 including sources directly related to the Fellow’s primary project and access to data (e.g., NHSN and MAVEN, Hawaii’s electronic surveillance system for all reportable conditions). In addition, information from other databases (e.g., clinical laboratory antibiogram data) may be accessed either directly by the Fellow or through surveillance coordinators (e.g., food safety and influenza). For data analysis, the Fellow will have access to Microsoft Office products, R, SAS, Epi Info 7, Tableau, ArcGIS, and training materials and opportunities. Statistical consultation is available (i.e., biostatistician, senior epidemiologist).

Projects

Surveillance Activity Title: Statewide Antibiogram Project (Surveillance Activity)

Surveillance Activity Description:

The Hawaii DOH has been creating a statewide antibiogram since 2013, in collaboration with the state public health laboratory, major clinical laboratories, and private hospitals. The antimicrobial susceptibility test data from each laboratory and private hospital are aggregated to create the antibiogram, in accordance with national standards. The Fellow would be responsible for coordinating data collection from each laboratory, including compiling and aggregating the data in a standard format. In addition to ensuring the accuracy and completeness of submitted data, the Fellow will also examine the aggregated data for concerning findings and analyze data longitudinally from prior years through the current year to evaluate for trends over time.

Surveillance Activity Objectives:

The Fellow will deliver a state antibiogram report that can be uploaded to the DOCD’s website.

Surveillance Activity Impact:

Some facilities (e.g., small hospitals, skilled nursing facilities, physician practices) will not have enough isolates to create a facility-wide antibiogram; these facilities can benefit from a regional and statewide antibiogram to help guide antibiotic selection. Our Division pharmacist can train and mentor the Fellow in antibiotic usage and prescription standard practices.

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Surveillance System Evaluation Title: Validation of Acute Care Hospital NHSN Data (surveillance evaluation project)

Surveillance System Evaluation Description:

The Fellow will conduct an external validation of the data submitted to NHSN by healthcare facilities. This validation can be disease specific (e.g. CLABSI; CAUTI), by type of setting (e.g., long-term care facility; acute care hospital) or by specific behaviors (e.g., vaccination intake; antimicrobial use) depending on the interests and goals of the Fellow. Validation also ensures standards of reporting are consistent across facilities and data presented to the public are both accurate and credible.

Surveillance System Objectives:

Using the tools developed by CDC, the Fellow will create a protocol to validate HAI event data in NHSN and present the protocol to DOCD and potentially external audiences. The DOH has previously validated C. difficile Infection (CDI) data, so the Fellow would be free to determine, with input from the HAI Advisory Committee, which HAI to validate. Working with mentors, the Fellow will develop a sampling frame, potentially conduct site visits, and disseminate results of validation findings.

Surveillance System Impact:

The Fellow will plan and conduct an external validation of NHSN data reported by healthcare facilities to assure quality of NHSN surveillance and reporting. The validation can help improve accuracy when quantifying current HAI burden in a facility.

Major Project Title: Expanding insight into infection control activities in long term care facilities, such as ventilator skilled nursing facilities (vSNFs), and implementing public health programs to improve infection control to contain the spread of antimicrobial resistance

Major Project Description:

As evidence emerges that certain care settings, such as vSNFs, serve as hubs for MDROs of concern, it is important to gain a better understanding of the specific infection control gaps in these facilities. The COVID-19 response has allowed us to establish relationships with these facilities. However, we are interested in identifying gaps in infection prevention and control. The Fellow could develop a survey or other evaluation tool to identify the most frequent gaps.

Major Project Objectives:

The Fellow will be expected to deliver a protocol, data, analysis, and presentation and/or report with recommendations on how to address identified gaps in infection prevention and control in healthcare facilities.

Major Project Impact:

Data and analysis obtained from these evaluations or surveys could be used to design and implement activities to address identified gaps, such as targeted infection prevention and control trainings or implementing CRE or Candida auris colonization screening point prevalence studies.

Additional Project #1 Title: Evaluation of outpatient antibiotic prescribing data

Project #1 Type: Major Project

Project #1 Description:

Emerging antibiotic resistance is a growing problem in the United States, and Hawaii is no exception. The overuse of antibiotics is one of the leading factors leading to antibiotic resistance. Since 2015, we have been working with Hawaii's healthcare facilities but only recently started working with the long-term care and outpatient settings. Working with their mentors and the Public Health Pharmacist, the Fellow will obtain outpatient prescribing data.

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Potential data sources include Medicare Part D claims data, data obtained through agreements that CDC has made with private health data companies and agreed to share with states, or large all-payer claims databases available to the Department. The Fellow will conduct an epidemiologic analysis to determine prescribing habits of providers, regional variation, and variation by specialty. The Fellow could work with their mentors, HAI team, and other internal and external stakeholders to develop educational materials and other outreach tools.

Project #1 Objectives and Expected Deliverables:

The Fellow will be expected to deliver a protocol, data, analysis, and presentation and/or report with recommendations.

Project #1 Impact:

This epidemiological analysis is one of the first steps in targeting antimicrobial stewardship educational activities and collaborative efforts.

Additional Project #2 Title: Healthcare personnel vaccinations

Project #2 Type: Major Project

Project #2 Description:

In 2013, facilities were required to report their healthcare personnel (HCP) influenza vaccination rates to NHSN for the first time, and vaccination rates in Hawaii's facilities were lower than anticipated (overall rate 67% for the 2013/2014 influenza season). In 2015, a previous CSTE HAI Fellow conducted a survey assessment that identified knowledge, attitudes, and behaviors regarding influenza vaccination in healthcare facility employees in two acute care facilities. Questions included a query regarding their feelings on mandatory influenza vaccination. Results of the survey were used to develop new strategies for engaging healthcare facilities to increase influenza vaccination rates among HCPs. The new Fellow would repeat the survey assessment (potentially subtracting/adding questions as needed) to trend attitudes and perceptions with regards to influenza vaccination and mandatory vaccination policies over time, and adding in questions on knowledge, attitudes and practices related to COVID-19 vaccination.

Project #2 Objectives and Expected Deliverables:

The Fellow will be expected to deliver a protocol, data, analysis, and presentation and/or report with recommendations. The Fellow will potentially deliver a presentation to the Healthcare Association of Hawaii (HAH) and other external audiences showing the results of the survey, a comparison with previous survey results, and recommendations.

Project #2 Impact:

Findings from this project would help inform interventions to improve HCW vaccination coverage rates.

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

DOCD works closely with the Public Health Preparedness Branch, which plans preparedness exercises and recruits Department participants and external partners and stakeholders. The Fellow will be encouraged to participate in these exercises. Periods of increased surveillance (e.g., monitoring for the influenza A [H1N1] virus during the 2009 pandemic, or SARS-CoV-2 during the 2020 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.

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

The Fellow will be expected to work with the HAI outbreak epidemiologist to investigate HAI/AR clusters and outbreaks in a variety of healthcare facilities. Additionally, the Fellow will be expected to gain experience in managing and addressing public inquiries through occasionally being assigned to be the duty officer-of-the-day; this responsibility will lead to investigating individual cases of infectious diseases and potentially being the lead investigator for a disease outbreak, particularly for an HAI outbreak.

Please Describe the Fellow's Anticipated Role in the COVID-19 Response – Include Activities and Time Allocation

The Fellow will be expected to lend support to COVID-19 outbreak response efforts as needed. During the COVID-19 outbreak response, we anticipate the Fellow would work ~60% on COVID-19 response in both acute care and long-term care settings and ~40% on AR/HAI investigations.

Please Describe Opportunities for Fellows to Work in Health Equity as well as Incorporating Diversity, Equity, and Inclusion into their Work

The Fellow can be connected to the newly created Office of Health Equity, Chronic Disease Prevention & Disease Promotion Division to explore opportunities to incorporate diversity, equity, and inclusion principles and practices into their work. As a newly created Office, collaborations are encouraged and welcome.