ID: 88177046
Infectious Diseases - HAI, Infectious Diseases - Host Site Description
Hawaii State Department of Health

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

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

Secondary Mentor: Nicole Mintz, MPH, CIC
NHSN Epidemiologist and Acting HAI/AR Section Manager
Hawaii State Department of Health

Work Environment
Hybrid

Assignment Description

The CSTE Fellow will be assigned to the Disease Outbreak Control Division (DOCD) under the mentorship of the State Epidemiologist, Dr. Kemble, and the Interim HAI/AR Section Epidemiology Supervisor, Nicole. The Fellow will primarily work with the HAI/AR Section within DOCD. DOCD's role in the Department of Health is to monitor, investigate, prevent, and control infectious diseases in Hawaii. Those include foodborne and waterborne illnesses, vaccine-preventable diseases, arboviral diseases, healthcare-associated infections, antimicrobial-resistant pathogens, and more. The Fellow's primary focus (>60%) will be healthcare-associated infections (HAI) and antimicrobial resistance (AR). HAI/AR activities include conducting surveillance for HAIs, using infection prevention and control as a tool to prevent and respond to HAI outbreaks and AR pathogens, analyzing and interpreting HAI/AR data, evaluating current surveillance and antimicrobial stewardship practices.

The Fellow will have the opportunity to further develop existing relationships with healthcare facilities, infection preventionists, commercial laboratories, and healthcare providers to collaborate on surveillance and reduce HAIs. This exposure will allow the Fellow to develop communication and relationship-building skills essential for a career in public health.

The Fellow's day-to-day activities will evolve throughout their fellowship. Weekly and biweekly check-in meetings with mentors are planned, and the frequency can change as needed throughout the fellowship. At the beginning of their fellowship, we intend to focus on staff introductions, HAI/AR Section onboarding, education on core HAI topics, and training on relevant Department of Health processes. The onboarding period can be individualized to the Fellow's needs and preferences. We historically begin with a surveillance system evaluation, in which the Fellow can choose between honing their skills in R, SAS, Excel, PowerBI, or other statistical software. During this project, the Fellow can work with the Office of Rapid Epidemiologic Response (ORER), Health Data Informatics Office (HDIO), and other branches while choosing an HAI/AR pathogen or surveillance system of interest and need. As disease clusters and disaster preparedness exercises occur, the Fellow will be invited to participate in those. The Fellow will then transition their focus to their major project, which can be analytic or programmatic. Throughout the fellowship, the Fellow will be encouraged to set aside dedicated time to study for the Certification in Infection Control, if they are interested in taking the exam.

Neighbor island travel opportunities may arise. Previous CSTE Applied Epidemiology Fellows have traveled to Hawaii County for flu surveillance, Kauai County for a CASPER survey, and Maui County for needs assessment following wildfires.

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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., CDC's National Healthcare Safety Network, or NHSN, and Hawaii's electronic disease surveillance system, or EDSS, for all reportable conditions). In addition, information from other databases (e.g., clinical laboratory antibiogram data, Medicare Part D 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, PowerBI, ArcGIS, and training materials and opportunities. Statistical consultation is available from HAI/AR Section epidemiologists as well as a biostatistician and senior epidemiologist with ORER.

Projects

Surveillance Activity Title: National Healthcare Safety Network (NHSN) Targeted Assessment for Antimicrobial Stewardship (TAS) Framework for Improved Antimicrobial Stewardship Practices

Surveillance Activity Description:
The Fellow will implement a TAS Framework using NHSN. TAS is available to hospitals participating in the NHSN AU Option, and can be used by health departments to identify where stewardship efforts may have the greatest impact in a healthcare facility or jurisdiction. The TAS Reports use a metric called the antimicrobial use cumulative attributable difference (AU-CAD), which represents the difference between the observed days and a selected Standardized Antimicrobial Administration Ratio (SAAR) target. The TAS Reports allow for ranking facilities within groups, or location groups, and locations within individual facilities, by the AU-CAD (2026 NHSN AUR Protocol).

Surveillance Activity Objectives:
The objective of the TAS project is to optimize antimicrobial use in Hawaii healthcare facilities. The deliverables will be metrics of AU reporting, completed AU TAS Reports formatted appropriately with supplementary educational materials on interpretation for the facilities, and overall, newly identified areas for improved antimicrobial use within a healthcare facility.

Surveillance Activity Impact:
The public health impact is improved antimicrobial stewardship, meaning safer and judicious use of antimicrobial agents.

Surveillance System Evaluation Title: External Validation of Acute Care Hospital NHSN Data

Surveillance System Evaluation Description:
The Fellow will conduct an external validation of the data submitted to NHSN by consenting and participating healthcare facilities. This validation can be event- or disease-specific (e.g. CLABSI; CAUTI, MDRO, CDI), 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. Data validation provides opportunities for collaboration with facilities and identification of areas of improvement.

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 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.

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

Major Project Title: Infection Control Initiative in Long-Term Care Facilities to Prevent and Contain Antimicrobial Resistance

Major Project Description:
Emerging evidence suggests that certain healthcare settings, including ventilator-capable skilled nursing facilities (vSNFs), may serve as important reservoirs and transmission hubs for multidrug-resistant organisms (MDROs) of public health concern. Building on relationships established during the COVID-19 response, this project will focus on systematically identifying infection prevention and control (IPC) gaps within long-term care facilities.

The Fellow will develop and implement a survey or other structured evaluation tool to assess IPC practices and identify the most common and critical gaps contributing to MDRO transmission. Findings from this evaluation will inform targeted interventions to strengthen IPC capacity in these facilities.

Major Project Objectives:
The objectives of this project are to assess current infection prevention and control (IPC) practices in long-term care facilities, with a particular focus on ventilator-capable skilled nursing facilities (vSNFs), and to identify common gaps and challenges that may contribute to the transmission of multidrug-resistant organisms (MDROs).

Major Project Impact:
Findings from this project will inform targeted interventions, such as focused infection prevention and control training and point-prevalence colonization screening for organisms like CRE and Candida auris. Strengthening IPC practices in long-term care facilities will help reduce MDRO transmission and protect vulnerable populations.

Additional Project #1 Title: Analysis of Infection Control Assessment and Response (ICAR) Data from Healthcare Facility Visits
Project #1 Type: Other

Project #1 Description:
According to the CDC, “ICAR tools are used to systematically assess a healthcare facility's IPC practices and guide quality improvement activities (e.g., by addressing identified gaps).” The Infection Preventionists (IPs) at HDOH are piloting an ICAR data collection project in which they will send a healthcare facility representative to pre-fill demographic information and facility practices. Then, when the IPs are onsite, which the Fellow could accompany, the healthcare facility IP or director of nursing and the HDOH IPs review the ICAR survey. Then, HDOH IPs conduct a walkthrough of the healthcare facility, after which feedback is provided on infection prevention and control practices. After the site visit, HDOH IPs will provide the healthcare facility with guidance on IPC improvement activities and resources, and the facility will have an automated REDCap post-ICAR survey delivered. The CSTE AEF Fellow may help with REDCap set up and survey design, post-ICAR survey data analysis, and collecting and interpreting feedback from facilities on the new HDOH process.

Project #1 Objectives and Expected Deliverables:
The objective of the ICAR REDCap Initiative is to improve the quality of healthcare facility site visits by frontloading all survey data collection using REDCap and automating the post-ICAR data collection process. The deliverables will be

reviewing and finalizing the ICAR tool in RECap, a descriptive analysis of the ICAR Survey data from both pre- and post-site visits, and a report on the successes and areas of improvement for the REDCap survey utilization.

Project #1 Impact:
The ICAR REDCap initiative will make healthcare facility visits easier for both HDOH and the healthcare facility, allowing us to visit more facilities with more time spent in discussion and observation while onsite, as opposed to a majority of the visits being dedicated to ICAR tool data collection.

Additional Project #2 Title: Evaluation of Healthcare Facility Legionella Cluster Detection and Response
Project #2 Type: Surveillance System Evaluation

Project #2 Description:
Hawaii has seen an increase in Legionella cases associated with healthcare facilities. To further improve Legionella response, the goal of this project is to evaluate the effectiveness of existing surveillance and detection of Legionella associated with healthcare facilities. This surveillance system evaluation will require collaboration with the Disease Investigation Branch who primarily handles Legionella cases, and pulls in the HAI/AR Section when those cases are revealed to be healthcare-associated. The evaluation can assess various attributes of Legionella surveillance. Special attention will be given to how rapidly potential clusters are identified (potentially using the 7-1-7 method), what triggers initiating an investigation, and how control measures are implemented to prevent further transmission.

The Fellow may use various data sources such as retrospective case data, cluster investigation documents, and HDOH investigator interviews to identify strengths and opportunities for improvement in Legionella cluster detection and response within healthcare settings.

Project #2 Objectives and Expected Deliverables:
The objective of this project is to determine the current average time to detect Legionella clusters in healthcare facilities, identify barriers to timely cluster detection, and propose areas for improvement to strengthen Legionella cluster detection and response.

Project #2 Impact:
Improved detection and response to Legionella clusters will strengthen control and prevention efforts in healthcare facilities. Earlier identification of clusters allows for more timely implementation of control measures, including water management interventions and environmental testing, which can reduce ongoing transmission. Over time, enhanced surveillance and response capacity will help prevent future Legionella cases, protect vulnerable patient populations, and support safer healthcare environments.

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

The Fellow can participate in a Community Assessment for Public Health Emergency Response (CASPER) survey on O'ahu or a neighboring island. During a CASPER survey, the Fellow gets hands-on applied epidemiology experience by designing a survey, going door-to-door to survey the community, and participating in rapid data cleaning and epidemiological analysis. The goal is to have up-to-date data on community disaster preparedness for resource allocation, as well as to build workforce capacity so that in the instance of a disaster, the department has staff that are trained and experienced in how to respond. Over five CSTE AEF Fellows and two EISOs have participated in CASPER in Hawaii.

DOCD works closely with the Office of Public Health Preparedness (OPHP), which plans preparedness exercises and recruits Department participants, external partners, and stakeholders. The Fellow will be encouraged to participate in

these exercises. The Fellow will also be pulled into periods of increased surveillance, responding to statewide disease outbreaks, or preparing the state to respond to the threat of a potential emerging pathogen (e.g., high-consequence infectious diseases (HCIDs). The HAI/AR Section is currently planning an annual conference on HCID in Honolulu, and the Fellow can participate in planning for the next conference depending on their onboarding timeline.

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 Epidemiologist and the AR 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 clusters, and potentially being the lead investigator for a disease outbreak, particularly for an HAI outbreak. Previous fellows were engaged in outbreaks and clusters of Legionella, COVID-19, influenza, norovirus, Tuberculosis, and more.