Infectious Diseases-HAI, Infectious Diseases

Hawaii Department of Health, Disease Outbreak Control Division

Honolulu, Hawaii

Assignment Description

The CSTE Fellow would be assigned to DOCD under the mentorship of Dr. Kemble and Ms. Cook, primarily in the area of healthcare associated infection and infection control and prevention, including multi-drug resistant organism (MDRO) or HAI surveillance to evaluate such, enhance existing systems including developing and/or improving questionnaires, and analyze and interpret data collected. The Fellow would have the opportunity to participate in other areas of interest (e.g. participation in the annual school-located flu vaccination program, public health emergency preparedness activities) covered by the Disease Outbreak Control Division (DOCD) as long as his/her projects were progressing as agreed upon with his/her mentors. The Fellow would be required to develop working relations with healthcare facilities, infection preventionists, commercial laboratories, and physicians to work collaboratively to conduct surveillance and reduce HAIs. In addition, the Fellow would 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 would lead to sometimes investigating individual cases of infectious disease and potentially even being the lead investigator for a disease outbreak, especially for a HAI outbreak.

Day-to-Day Activities

The Fellow’s primary project would be his/her main focus. In addition, depending on the fellow’s initiative, efficiency, and interest, he/she may engage in other activities (e.g. assisting in a major project or outbreak, or leading another smaller project or investigation). The daily schedule would 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. Regarding formal meeting requirements, initially the Fellow would meet with the mentors weekly to discuss and review plans, project(s)/activities status, steps for progression, etc.; gradually, as the Fellow gained more confidence and experience and demonstrated steady progress in his/her 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, the HAI Steering Committee, weekly meetings of the Field Investigators, and quarterly DOCD division meetings.

Potential Projects

Surveillance Activity      Statewide Antibiogram Project

HDOH has been creating a statewide antibiogram since 2013, in collaboration with the state public health laboratory (State Laboratories Division), the major clinical laboratories, and some 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 need to examine the aggregated data for concerning findings and analyze data longitudinally from prior years through the current year to evaluate for trends over time. [http://health.hawaii.gov/docd/dib/antimicrobial-resistance/antibiogram/]

**Surveillance Evaluation Validation of Acute Care Hospital NHSN Data**

Validation of data submitted to NHSN from healthcare facilities assures surveillance data are of high quality and appropriate in quantifying current HAI burden in a facility. Validation also ensures standards of reporting are consistent across facilities and data presented to the public are both accurate and credible.

Using the tools developed by CDC, the Fellow will create a plan to validate HAI event data in NHSN. HDOH has previously validated CDI data, so the fellow would be free to determine, with input from the HAI Advisory Committee, which HAI to validate. Working with his/her mentors the Fellow will have to develop a sampling frame, potentially conduct site visits, and disseminate results of validation findings.

Alternatively, the Fellow could conduct an evaluation on Hawaii’s electronic laboratory surveillance system for reportable infectious conditions in the state (MAVEN) includes select drug-resistant organisms, including MRSA or VRE. There are insufficient resources for our disease investigators to follow-up on each received report. Although data are submitted from the laboratories, the potential utility of these data depend on the completeness and the quality of the data. The CSTE HAI fellow would evaluate electronic laboratory surveillance for VRE and determine what, if any, epidemiologic conclusions or trends can be drawn from available data.

**Major Project Evaluating Outpatient Antibiotic Prescribing Data**

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 HDOH has been working with Hawaii's healthcare facilities, but only recently started working with the long-term care and the outpatient settings.

Working with his/her mentors, the Fellow will obtain outpatient prescribing data. 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 that other branches of HDOH have access to. The fellow will then conduct an epidemiologic analysis to determine prescribing habits of providers, regional variances, and variances by specialty. The Fellow could then work with his/her mentors, and other stakeholders to develop education and other outreach tools.
Major Project  Expanding HDOH Insight into Infection Control Activities in Long Term Care Facilities Such As vSNFs and Implement Public Health Programs to Improve Infection Control Based \to Contain Spread Of Antimicrobial Resistance

As evidence emerges that certain care settings, such as SNFs that care for a high proportion of people on ventilators, serve as hubs for MDROs of concern, it is becoming imperative the HDOH has a better understanding of the specific infection control gaps in these facilities. Due to limited resources and different past priorities, HDOH has yet to develop strong relationships with these facilities and has little to no insight of the state of infection control. The fellow could develop a survey or other evaluation tool to identify the most major gaps, and then develop resources intended to close these gaps such as individualized infection control training or implementing CRE or Candida auris colonization screening point prevalence studies.

Additional Project  NHSN

The CDC’s National Healthcare Safety Network (NHSN) is the national database used by healthcare facilities to track specific HAIs. As part of routine surveillance, the fellow would assist the HAI Coordinator in performing quarterly data completion checks and in providing technical assistance to facilities when needed. The fellow would also participate in preparation of the Annual State HAI Report, specific to acute care facilities.

Additionally, because of a state mandate, DOCD has access to all NHSN data submitted to fulfill Centers for Medicare and Medicaid reporting requirements. These data could be used by the Fellow to develop a focused project with his/her mentors. One potential project would be to perform a Targeted Assessment for Prevention (TAP) project, which would use NHSN data to determine which facilities increase or decrease the state standardized infection ratio (SIR) for a particular HAI. The results of this analysis can be used to generate facility-specific reports and facilitate implementation of targeted interventions.

Preparedness Role

DOCD works closely with the Public Health Preparedness Branch, which plans preparedness exercises and often recruits participants from elsewhere in the Department as well as outside stakeholders. The CSTE Fellow would be welcome and encouraged to participate in these exercises. 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-wide. At critical times such as this, the CSTE Fellow would be expected to lend his/her full support to the division.
**Additional Activities**

**Healthcare Personnel Vaccinations**

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 Hawaii acute care facilities. Questions included a query regarding their feelings on mandatory influenza vaccination. 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.

Alternatively, depending on the Fellow’s interests and time the fellow could work on a different aspect of HCP vaccinations. The Fellow could conduct an assessment of hospital vaccination policy adherence to national guidelines and develop a roadmap of hospital vaccination policies.

Findings from either of these projects would help to improve healthcare workers vaccinations.

**Mentors**

**Primary**

Sarah Kemble MD  
Deputy State Epidemiologist

**Secondary**

Caitlin Cook MPH  
Antimicrobial Resistance Epidemiologist