ID: 46675222
Infectious Diseases, Infectious Diseases - Foodborne - Host Site Description
Hawaii Department of Health

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

Primary Mentor: Caroline Pratt, MSN, MPH
Disease Investigation Branch Chief
Hawaii Department of Health

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

Work Environment
100% In-person

Assignment Description

The CSTE AEF Fellow would be assigned to DOCD under the mentorship of Ms. Pratt and Mr. Johnston. This assignment would allow the fellow to have exposures and experiences within both branches of DOCD (Disease Investigation Branch and Immunization Branch) and the Analytic Epidemiology and Clinical Support Office. 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 analysis purposes, the fellow may be given access to Microsoft Office products, Tableau, R, SAS, Epi Info 7, and ArcGIS. Statistical consultation may be available through existing staff (i.e., biostatistician), and limited administrative support may be available, depending on the urgency of demands on the DOCD program at the time.

Projects

Surveillance Activity Title: Descriptive Epidemiology of COVID-19 Related Mortality

Surveillance Activity Description:
Death is unfortunately a potential outcome of COVID-19, and understanding the rates of COVID-19 related deaths and the populations in which they are occurring is critical to understanding which populations are at greatest risk. Because deaths can occur after the identification and interview of cases and after monitoring of the case is completed, reports of

deaths often are received from various sources, including direct reports for clinicians as well as through Hawaii's Electronic Death Registration System (EDRS).

Surveillance Activity Objectives:
The CSTE AEF Fellow would use data collected through case interviews, reports and death registry data to develop a detailed descriptive epidemiology of COVID-19 related deaths identified through these systems in terms of demographics, past medical history, and other characteristics. Additionally, the fellow would assess this surveillance system to examine the strengths and weaknesses of the processes by which deaths are reported and identify potential areas for improvements in these processes.

Surveillance Activity Impact:
This activity would identify potential ways to improve the reporting of deaths related to COVID-19. It would also bring together previously scattered data to build a picture of risk factors for mortality related to COVID-19. Understanding These risk factors would allow the Department of Health to educate medical providers and the public and, subsequently, decrease COVID-19 mortality rates.

Surveillance System Evaluation Title: Leptospirosis Surveillance

Surveillance System Evaluation Description:
Leptospirosis is considered one of the most widespread zoonoses in the world and is a nationally notifiable disease in the United States. Approximately 50% of the 100-200 cases reported annually in the United States have been reported from Hawaii. The true burden of leptospirosis infections in Hawaii, however, is not fully understood and has not been formally examined. While there is no active leptospirosis surveillance system in place in Hawaii, all leptospirosis serological test results are reported from all major clinical laboratories to Hawaii's Electronic Laboratory Reporting (ELR) system.

Surveillance System Objectives:
The CSTE AEF Fellow, working with his/her mentors, would evaluate the effectiveness of this system in multiple areas, including assessing the burden of leptospirosis infections, measuring incidence, identifying clusters or outbreaks, and identifying at risk populations. The fellow would also evaluate the strengths and weaknesses of the system and identify potential improvements to increase its accuracy and effectiveness.

Surveillance System Impact:
Knowing the burden of a particular disease is the first step for being able to adequately address it. Identifying the populations at highest risk for leptospirosis as well as examining clusters and outbreaks will allow for the development of prevention methods and education to reach those most likely to be affected by the disease.

Major Project Title: Risk Factors for COVID-19 with Focus on Occupational Data

Major Project Description:
As the COVID-19 pandemic continues, an important aspect of the response is to more fully understand the risk factors of the disease. By understanding who is at higher risk of exposure and whom the disease affects more severely, the public health response can be focused more efficiently, and more effective mitigation efforts may be identified and implemented. Using data collected during the course of investigations, the CSTE AEF Fellow will describe and analyze various factors that may contribute to increased risk for, and affect the transmission of, the disease throughout the population. One of the primary areas of focus for the fellow will be on occupational data of cases.

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Major Project Objectives:
The fellow will describe the distribution of occupations among cases, perform analysis to identify potential high-risk occupations, and possibly conduct further data collection through surveys, interviews, or other methods to obtain more detailed and complete data on our population of cases. Other areas that the fellow may focus on include the factors affecting transmission within households, and the description and analysis of the differences between travel-associated and community spread cases, pediatric and adult cases, and hospitalized and non-hospitalized cases.

Major Project Impact:
The work the fellow will do in these areas will help increase our knowledge of how COVID-19 affects our population and will be used to help guide and focus our public health response and prevention efforts for the most vulnerable populations.

Additional Project #1 Title: Rat Lungworm Disease
Project #1 Type: Major Project

Project #1 Description:
Angiostrongylus cantonensis is a parasitic worm passed from rats to snails and slugs. Humans can become infected when consuming raw or undercooked snails or slugs or by eating raw foods (such as lettuce) that contain a snail or slug. The fellow would analyze Hawaii Fellow could analyze statewide data for angiostrongyliasis (Rat Lungworm) cases for the last 10 years.

Project #1 Objectives and Expected Deliverables:
The fellow would produce descriptive analysis of all angiostrongyliasis cases in the last 10 years. The fellow could also cross examine the data with results from a recent most commonly consumed foods in Hawaii survey to help determine the foods currently placing Hawaiians at highest risk for developing the disease.

Project #1 Impact:
The expected health impact of this project would be not only to better describe the epidemiology of angiostrongyliasis in residents of Hawaii but also identify foods and methods of food preparation that place residents at the highest risk of disease exposure. Education could then be developed for Hawaii residents to prevent future infections.

Additional Project #2 Title: Brucellosis and Hunting on Island of Hawaii
Project #2 Type: Surveillance Activity

Project #2 Description:
Humans are exposed the Brucella bacteria through contact with animals or animal products. While consuming unpasteurized dairy products is the most common cause of brucellosis on the US mainland, Hawaii most frequently sees cases in hunters.

Project #2 Objectives and Expected Deliverables:
The fellow would analyze brucellosis cases in Hawaii in the last 10 years, focusing on the connection between brucellosis cases and wild boar hunting on the island of Hawaii. With no recent analysis of this data, the project could easily lend itself to a conference presentation or a publication.

Project #2 Impact:
Understanding the specific risk factors for Hawaiian hunters could lead to the development of messaging or educational programs, thereby making hunters aware of their risk and educating them on ways to decrease that risk.

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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.

Additionally, the fellow may have the opportunity to assist in conducting a Community Assessment for Public Health Emergency Response survey on the island of Kauai.

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.

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

Large amounts of yet-to-be-analyzed COVID-19 data exists. There are many potential analysis projects, including "Risk Factors for COVID-19 with a Focus on Occupational Data." Additionally, there are also opportunities to contribute to Hawaii's public-facing COVID-19 Tableau dashboards. Depending on case rates and reporting requirements, a fellow could also be involved in clusters or setting-specific outbreaks. Additionally, the fellow could be involved in creating the 2023 COVID-19 Cluster Summary Report.

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

With a majority minority population, diversity, equity, and inclusion is at the forefront of many projects in Hawaii. The fellow would also likely have multiple opportunities to use disaggregated Native Hawaiian and Pacific Islander ethnicity data to examine disparities in co-morbidities in outcomes.