

ID: 34201666

Infectious Diseases - Foodborne - Host Site Description

Los Angeles County Department of Public Health

Assignment Location: Los Angeles, US-CA
Los Angeles County Department of Public Health
Acute Communicable Disease Control Program

Primary Mentor: Dawn Terashita, MD, MPH
Deputy Director, LAC/DPH - Acute Communicable Disease Control Program
LAC/DPH - Acute Communicable Disease Control Program

Secondary Mentor: Marifi Pulido, PhD, MPH
Epidemiologist
LAC/DPH - Acute Communicable Disease Control Program

Work Environment

Hybrid

Assignment Description

The CSTE fellow will be assigned to the Food Safety Team (FST) of the LAC-DPH Acute Communicable Disease Control (ACDC) Program. The FST is responsible for the surveillance, investigation, and prevention of enteric illnesses reported in LAC. Because LAC-DPH serves a large and diverse population of over 10 million residents, foodborne illnesses contribute considerable morbidity in our jurisdiction, accounting for more than 4500 confirmed reportable enteric disease cases in 2019. In 2020, there were still over 2800 confirmed reportable enteric disease cases despite stay-at-home orders and restaurant closures. Being a fully integrated member of the FST, the fellow will gain experience in the full spectrum of infectious disease epidemiology, from the surveillance of individual cases to the investigation of nationwide disease clusters. The fellow will have the opportunity to work with Public Health Nurses (PHNs) in case investigations of salmonellosis and shigellosis, as well as conduct their own case investigations of vibriosis, listeriosis, and brucellosis. The fellow will also be able to manage outbreak and cluster investigations. In 2019, LAC received over 2000 complaints of foodborne illness related to restaurants, parties, or other events. Of these, FST investigated 31 foodborne illness outbreaks. Through Whole Genome Sequencing (WGS), nearly 50 LAC cases of salmonella were a part of 8 local and 5 multistate cluster investigations. During outbreak investigations, FST partners with Environmental Health and the Public Health Laboratory for restaurant inspections and the testing of complainants and food handlers, providing the fellow with an even broader experience of Public Health.

Day-to-Day Activities

On a daily basis the fellow will work on surveillance activities, work with other team members on outbreak investigations, assist with (and sometimes lead) cluster investigations, and participate in webinars and conference calls with CDC and the California Department of Public Health. The fellow will:

- Be responsible for the disease surveillance of a reportable condition. This includes reviewing reports of illness to determine whether additional follow-up is needed, contacting physicians and hospitals for medical records, contacting laboratories for isolates to be forwarded to the Public Health Laboratory, and interviewing the suspect cases for more detailed demographic, medical, and exposure history.
- Assist with, and occasionally lead, foodborne outbreak investigations. This includes the monitoring of illness complaints received by ACDC regarding restaurants, catered events, etc., interviewing potential cases and controls, interviewing food handlers, coordinating the collection of stool and its delivery to the Public Health Laboratory, entering and analyzing the data, and writing the final report.
- Take the lead in investigating some salmonellosis and shigellosis clusters. This would involve reviewing case report forms completed by public health nurses and possibly conducting additional questionnaires with the case(s).

ID: 34201666

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

The fellow will use MS Access, MS Excel, and SAS software for data management and analysis. The surveillance system in LAC is IRIS, which the Fellow will be able to access for all diseases tracked in ACDC.

Projects

Surveillance Activity Title: Enteric Disease Surveillance

Surveillance Activity Description:

The fellow will learn how to manage surveillance of one or more reportable enteric diseases. For shigella and salmonella, the fellow will provide support to PHNs who interview the cases and review the reports submitted by the PHNs to check for completeness, accuracy, and consistency. For listeria, vibrio, and brucella, the fellow will conduct the case interviews themselves. The fellow will also analyze the surveillance data to identify clusters and/or outbreaks.

Surveillance Activity Objectives:

The primary objective of this project is to familiarize the fellow with routine passive surveillance procedures. The fellow should have reviewed forms or conducted interviews for each of the five diseases listed above.

Surveillance Activity Impact:

Routine surveillance creates a baseline of cases. Without a baseline for comparison, it would be difficult to determine if an observed increase in cases is a true increase that warrants further investigation.

Surveillance System Evaluation Title: Use of social media to identify unreported foodborne outbreaks

Surveillance System Evaluation Description:

Before the COVID-19 pandemic, LAC was working with the New York City Department of Public and Mental Health (NYC) and Columbia University (CU) to establish in LAC the system currently used by NYC to scan restaurant reviews on Yelp! for complaints of foodborne illness. If we are able to revisit this project with NYC and CU, the fellow would assist with adjusting the system to identify relevant reviews on LAC eateries and subsequently develop a protocol to efficiently manage and analyze the reviews for possible foodborne outbreaks.

Surveillance System Objectives:

The fellow will establish the criteria specific to the typical person who eats in LAC that CU's system will use to identify complaints of foodborne illness and potential outbreaks.

Surveillance System Impact:

Optimizing CU's system for LAC will lead to the identification of potential foodborne outbreaks not captured by LAC's current system. In addition to stopping the continued spread of individual foodborne outbreaks, the increase in foodborne outbreak investigations could lead to an improvement of the public's understanding of enteric diseases as they relate to foodborne outbreaks.

Major Project Title: XDR Shigellosis in Los Angeles County

Major Project Description:

In February of 2023, the CDC declared extended drug-resistant (XDR) shigella as a serious and emerging public health threat. Shigella is a highly transmissible bacteria with an alarming capacity to spread, especially in congregated

ID: 34201666

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Los Angeles County Department of Public Health

environments. This is of particular significance to LAC. Although cases nationally are relatively low still, LAC has seen a disproportionate burden of disease with 2 out of 3 cases in CA or 1 in 5 cases nationally are LAC cases. Shigella is now a leading cause of sexually transmitted gastroenteritis among gay, bisexual, and other men who have sex with men (MSM) and a disproportionate burden - 1 in 3 - of XDR shigella impacts people living with HIV. Given its significant rise in incidence especially among medically/socially vulnerable communities, LAC/DPH is preparing to undertake a surveillance study of XDR shigella in the community.

Major Project Objectives:

1. To develop a passive surveillance study protocol for XDR shigella detection. The study design involves asymptomatic testing for shigellosis for persons who are undergoing testing for a sexual transmitted illness via rectal swab.
2. To partner with public health clinical services leadership and providers and the public health lab to pilot a surveillance study.
3. Analyze and present study findings to internal leadership and key external partners.

Major Project Impact:

This study is the first of its kind nationally to attempt to document the community prevalence of XDR shigella. The findings from this study will help inform local prevention efforts and community and provider awareness of the burden of disease.

Additional Project #1 Title: Salmonella cluster investigation

Project #1 Type: Surveillance Activity

Project #1 Description:

In 2019, approximately 8 local clusters were identified in LAC. FST is solely responsible for investigating these clusters, which includes creating and implementing hypothesis-generating questionnaires (HGQs), analyzing the data collected, and investigating the food source, if identified. Currently, there is one full-time staff who is responsible for the surveillance of individual salmonella cases, investigating the local clusters, and assisting the State and CDC with the multi-county or multi-state clusters. The fellow will assist with the investigation of the cluster investigations. For local clusters, this would include reviewing case report forms for commonalities (food sources, geographic, ethnicity, etc.), developing an HGQ, interviewing individual cases with the HGQ, analyzing the data, investigating the food source (if identified), and writing the final report.

Project #1 Objectives and Expected Deliverables:

The fellow will lead the investigation of at least one local cluster of salmonellosis. The findings will be documented in a formal report.

Project #1 Impact:

LAC PHL identifies several local clusters of salmonella cases each year. Investigation of these clusters could identify a common food item and food source, at which point appropriate interventions can be developed and implemented. If the food source is a food facility (e.g., restaurant, caterer, etc.) or a food handler, additional education and training can occur to prevent future outbreaks.

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

The fellow will participate in special pathogen response trainings and activities. For example, when a potential botulism case is reported there are several activities that must occur before anti-toxin is released. The fellow may assist with the completion of those activities.

ID: 34201666

Infectious Diseases - Foodborne - Host Site Description

Los Angeles County Department of Public Health

The fellow will also participate in tabletop exercises to test emergency plans as they currently exist and take mandatory trainings that instruct how to react to emergency situations such as earthquakes, fires, and active shooters while in the office.

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

In addition to routine surveillance, the primary role of the FST is to investigate clusters and outbreaks. The fellow would participate in these investigations at least 50% of their time. Activities would include developing/modifying the data collection tool, interviewing cases and controls, interviewing food workers, coordinating stool collection, serving as a liaison with the PHL, modifying a template database to fit the outbreak, entering and analyzing the data, completing the California state form for reporting outbreaks, and writing a report of the outbreak investigation.

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

The fellow is not expected to participate in COVID-19 response.

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

The fellow will work in one one of the largest and most culturally diverse municipalities in the country. Specifically, the food delivery sectors that the fellow will work with disproportionately represents immigrant communities and communities of color and low wage workers. The fellow will work closely with this sector doing interviews and developing educational tools on food safety.