

ID: 57643016

Infectious Diseases - Host Site Description

Los Angeles County Department of Public Health

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

Primary Mentor: Felice Lin, PhD, MPH
Epidemiologist
Los Angeles County Department of Public Health, Vaccine Preventable Disease Control Program

Secondary Mentor: Sherry Yin, MPH
Supervising Epidemiologist
Los Angeles County Department of Public Health, Vaccine Preventable Disease Control Program

Work Environment

Hybrid

Assignment Description

The fellow will carry out the following responsibilities in support of the Los Angeles County Department of Public Health, Vaccine Preventable Disease Control Program (VPDCP), working with the program's Epidemiology Unit.

Case investigation and outbreak management: The fellow will assist in this area by intaking VPD case reports, obtaining medical records from providers, interviewing patients, following up on contacts and other exposures, and educating community partners on disease control and prevention strategies. The fellow will receive extensive training and be able to consult with VPDCP staff to address sensitive issues, clinical questions, and barriers to implementing disease control measures.

Quality assurance: The fellow will review data gathered from VPD case, contact, and outbreak investigations, correct information utilizing quality assurance protocols, and share errors and patterns observed with the team. In addition, the fellow will participate in case and outbreak closure procedures including updating surveillance databases and submitting information to the California Department of Public Health and CDC. As part of the quality assurance effort, the fellow will also conduct a thorough surveillance evaluation of the program's surveillance systems and processes.

Data analysis and visualization: With assistance from other VPDCP staff, the fellow will analyze VPD investigation and vaccination data to examine patterns of disease burden and vaccine coverage and identify areas to target public health action. More specifically, the fellow will use multiple data sources including registries and surveys to analyze vaccine utilization and coverage by age, sex, gender, race/ethnicity, and special populations for all required and recommended vaccines. Additionally, the fellow will examine vaccination trends by geography and over time. The fellow will also create innovative communication products to disseminate the results. Products may include reports, fact sheets, dashboards, maps, infographics, toolkits, and other public health materials.

Community outreach: The fellow will engage healthcare providers, schools, and community-based organizations to evaluate the usefulness of VPDCP communication products and incorporate feedback to best meet the needs of community partners and the public. The fellow will also support the assessment of childhood vaccination coverage among school-aged children and liaise with educational institutions within Los Angeles County.

ID: 57643016

Infectious Diseases - Host Site Description

Los Angeles County Department of Public Health

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

The fellow will receive statistical and data analysis support from doctoral and master-level epidemiologists and data scientists. Software routinely used include SAS, R, ArcGIS, Python, Excel, Access, and Power BI. Surveillance systems and databases that will be made available to the fellow include the California Immunization Registry (CAIR/Snowflake), the Integrated Reporting Investigation and Surveillance (IRIS) System, and programmatic data systems specific to Los Angeles County.

Projects

Surveillance Activity Title: Vaccine-Preventable Disease Investigations

Surveillance Activity Description:

The fellow will be trained on the investigation process for vaccine-preventable diseases and provide ongoing support of case and contact investigation and site-specific disease control using approved protocols, interview instruments, and assessment tools. Key activities include investigating new case and outbreak reports; performing all administrative recordkeeping as part of the investigation; and communicating with patients, contacts, medical providers, and other community partners involved in exposure management. Additional activities include educating cases, providers, and community partners regarding disease control and prevention strategies.

Surveillance Activity Objectives:

The fellow will complete standardized instruments and tools used in case and outbreak investigations and update surveillance databases that capture investigation information. The fellow will interact with providers, patients, schools, and other community partners and may conduct site visits. These activities will be ongoing. The fellow is expected to carry out standard case management activities, close out cases, and submit reports to the California Department of Public Health.

Surveillance Activity Impact:

The fellow will fulfill a critical role in implementing evidence-based approaches to prevent and curb community transmission of vaccine-preventable diseases.

Surveillance System Evaluation Title: Evaluation of Vaccine-Preventable Disease Surveillance Systems

Surveillance System Evaluation Description:

VPDCP currently uses several surveillance systems and databases to keep track of vaccine-preventable disease reports, cases, and outbreaks. We are in the process of developing an integrated reporting, investigation, and surveillance system to standardize across programs in the Department of Public Health. The fellow will examine our current systems and evaluate their performance in terms of usefulness, simplicity, flexibility, acceptability, data quality, sensitivity, positive predictive value, representativeness, timeliness, and stability. Findings will be documented and used to inform the development of the new integrated system.

Surveillance System Objectives:

The fellow will draft a detailed document describing the various surveillance systems and how they are used by our program. During the evaluation process, the fellow is expected to work with and gather feedback from program staff familiar with these systems. The objectives are to understand system strengths and weaknesses and recommend technical and process improvements to better address surveillance needs.

ID: 57643016

Infectious Diseases - Host Site Description

Los Angeles County Department of Public Health

Surveillance System Impact:

Surveillance systems are crucial in monitoring where, when, and among whom disease transmissions are occurring. High quality data are needed to ensure that cases are properly followed up and public health interventions reach populations at risk. This project will help identify and address gaps in our surveillance systems so that we can more effectively target disease control and prevention efforts.

Major Project Title: Data Analysis, Reporting, and Visualization

Major Project Description:

VPDCP has access to a wealth of data on diseases, vaccines, vital statistics, providers, and special populations. Under the guidance of epidemiologists, data scientists, and programmatic staff, the fellow will develop a secondary data analysis proposal and perform in-depth analysis of disease and vaccine utilization trends to meet the aims of the proposal. Multiple data sources including registries and surveys will be used to analyze vaccination coverage by age, sex, gender, race/ethnicity, location, and priority populations (such as pregnant women, refugees, and uninsured) for all required and recommended vaccines. These data will be linked with data on vaccine-preventable diseases and other conditions to triangulate areas and subpopulations to target public health action.

Major Project Objectives:

The objectives of this project are to further develop the fellow's epidemiology and statistical analysis skills while improving our public health programs by translating data to action. The fellow will create innovative communication products to disseminate analysis results. Deliverables may include reports, fact sheets, community profiles, interactive dashboards, maps, infographics, toolkits, and scientific manuscripts.

Major Project Impact:

By making public health data readily available and digestible, we aim to empower programs, communities, and partners to make evidence-based decisions.

Additional Project #1 Title: Enhanced Surveillance Activities

Project #1 Type: Surveillance Activity

Project #1 Description:

VPDCP participates in various enhanced surveillance activities through grants, surveys, and special studies. CDC grant activities include enhancing investigation and outbreak response of vaccine-preventable diseases, improving laboratory coordination and outreach, and conducting wastewater surveillance. The program is also involved in immunization surveys, real-world studies of vaccine effectiveness, and evaluation of vaccination strategies. By supporting these enhanced surveillance activities, the fellow will help bolster the program's capacity to detect and respond quickly to emerging public health threats, especially in the most vulnerable communities.

Project #1 Objectives and Expected Deliverables:

The objectives of this project are for the fellow to learn about cutting-edge techniques in public health surveillance and for the program to benefit from early warning signals and enhanced surveillance activities. The fellow will contribute to grant applications by identifying activities to include and reporting on progress. The fellow will also assist with the design of survey methods and instruments, and support studies and evaluations through data collection and analysis. Final products may include abstracts, presentations, and manuscripts.

ID: 57643016

Infectious Diseases - Host Site Description

Los Angeles County Department of Public Health

Project #1 Impact:

This project will prepare the Department of Public Health to respond to emerging public health threats by establishing and monitoring early warning indicators, building epidemiology and laboratory capacity, and continually improving programs through outcome evaluation.

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 preparedness and response efforts related to immunizations and vaccine-preventable diseases. The fellow will support real-time surveillance of diseases and vaccination coverage through streamlining processes, building sustainable infrastructure, and translating data to action. The fellow will also participate in vaccination campaigns in response to emerging infectious diseases by helping to plan outreach events and materials. These activities will comprise approximately 20% of fellowship time.

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

The fellow will participate in cluster and outbreak investigations by intaking case reports, obtaining medical records from providers, interviewing patients, following up on contacts and other exposures, and educating community partners on disease control and prevention strategies. Previous outbreak investigations have included the 2014-2015 measles outbreak related to Disneyland, additional 2016 and 2019 measles outbreaks, the 2019 mumps outbreak in a jail, and most recently, the 2022 mpox outbreak in the county. These activities will comprise 10-30% of the fellow's time depending on the type and severity of clusters/outbreaks that arise.

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

The fellow will support the analysis of COVID-19 vaccine data, triangulating with other programmatic data, and utilizing the findings to target vaccination efforts in the general population as well as in priority groups (e.g., skilled nursing facilities, seniors, schools, people experiencing homelessness, and other underserved communities). The fellow may also participate in outreach events that include COVID-19 vaccine education and administration. These activities are expected to take up around 10% of the fellow's time.

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

Opportunities to work in health equity include vaccine distribution outreach efforts that are primarily focused on addressing disparities and improving access among underserved racial/ethnic groups, uninsured/underinsured individuals, and other disproportionately impacted populations. The program utilizes the Healthy Places Index (<https://www.healthyplacesindex.org/>) along with other indicators to prioritize aid to underserved communities and ensure access to free/low-cost vaccines. The fellow will help develop vaccine-related resources such as vaccination site locators and educational toolkits for public consumption.