

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: Chelsea Foo, 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 Department and VPDC Program goals.

Case investigation and outbreak management: The fellow will assist in this area 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. The fellow will receive extensive training and be able to consult with VPDC staff to address sensitive issues, clinical questions, and barriers to implementing disease control measures.

Quality assurance: The fellow will review data gathered from case and outbreak investigations, correct information following 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 quality assurance efforts, the fellow will also conduct a thorough evaluation of one of the program's surveillance systems.

Data analysis and visualization: The fellow will analyze local patterns of disease burden and vaccination coverage to identify areas for targeted public health action. More specifically, the fellow will use multiple data sources including immunization registries and surveys to analyze vaccine utilization by age, sex, gender, race/ethnicity, and special populations, as well as 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 VPDC 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. Additionally, the fellow will help with work on the National Immunization Surveys (NIS), which will provide current, population-based county estimates of vaccination coverage among children and teens.

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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. Commonly used software includes SAS, R, QGIS, ArcGIS Pro, Python, Excel, Access, and Power BI. Surveillance systems and databases available to the fellow will include the California Immunization Registry (CAIR/Snowflake), LA County's integrated disease surveillance system, and programmatic data systems specific to the county.

Projects

Surveillance Activity Title: Vaccine-Preventable Disease Investigations

Surveillance Activity Description:

The fellow will be trained on the investigation process for the following reportable vaccine-preventable diseases: pertussis, measles, mumps, varicella, rubella, diphtheria, haemophilus influenzae, polio, and tetanus. They will provide ongoing support for 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; 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 tools used in case and outbreak investigation 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 interrupt community transmission of vaccine-preventable diseases.

Surveillance System Evaluation Title: Informing the Development of an Integrated Surveillance System: Evaluation of Legacy Vaccine-Preventable Disease Surveillance Systems

Surveillance System Evaluation Description:

VPDC currently uses several surveillance systems and databases to track vaccine-preventable disease reports, cases, and outbreaks. We are in the process of developing an integrated reporting, investigation, and surveillance system to standardize surveillance across programs in the Department of Public Health. The fellow will examine current VPDC 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 ongoing development of the new integrated surveillance system.

Surveillance System Objectives:

The fellow will draft a detailed document describing existing surveillance systems and their roles within our program. During the evaluation process, the fellow will collaborate closely with program staff to gather feedback and insight from those who routinely leverage these systems. This work will build a quantitative and qualitative understanding of the current systems' strengths and weaknesses. Ultimately, the fellow will deliver technical recommendations and process enhancements to inform the design of the new integrated surveillance system.

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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: Leveraging Vaccine and Disease Data to Generate Real-World Evidence and Guide Policy

Major Project Description:

VPDC has access to a wealth of data on vaccine administration, vaccine-preventable disease cases and contacts, and vital statistics. These data are routinely used to identify vulnerable communities at risk for vaccine-preventable disease outbreaks. Under the guidance of epidemiologists and data scientists, the fellow will perform in-depth analysis of disease and vaccine utilization trends. Multiple data sources including registries and surveys will be used to analyze vaccination coverage by age, sex, gender, race/ethnicity, location, and priority populations. The results will help inform targeted interventions to improve vaccine equity. Vaccine data will also be linked to case reports to assess the impact of vaccination on disease incidence and severity. This work will generate real-world, locally relevant evidence on the effectiveness of novel and longstanding vaccine products against infection and other disease outcomes.

Major Project Objectives:

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

Major Project Impact:

By making timely public health data readily available and digestible, we aim to guide policy decisions and empower communities to make informed choices.

Additional Project #1 Title: Evaluation of Interventions to Improve Vaccine Access and Confidence in Focus Populations

Project #1 Type: Other

Project #1 Description:

The fellow will work with VPDC's community engagement team to evaluate a community-based intervention designed to engage an identified focus population in collaboration with trusted partners, health educators, and vaccine providers. The evaluation will be conducted during the implementation phase to assess whether the activity is operating as intended and is acceptable and accessible to the target population. The fellow will assist with the design of an evaluation plan, logic model, and data collection instruments as well as support data synthesis. Findings will be used to modify the intervention as needed to achieve its objectives.

In addition, the fellow will support LACDPH's Quality Improvement and Accreditation Program activities using a results-based accountability framework for measuring and improving programmatic impact. The fellow will work with each VPDC unit to report on quarterly performance measures. They will also facilitate turn-the-curve sessions to discuss factors contributing to the results, what worked well, and action steps to improve performance next quarter. By tracking these measures, we can evaluate the direct impact of our work on the populations we serve.

Project #1 Objectives and Expected Deliverables:

The fellow will contribute to grant deliverables and report on progress by supporting the following activities.

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1. Partnership effectiveness and event participation: Evaluate the effectiveness of collaboration with existing network partners in reaching and engaging the community.
2. Educational efforts: Assess the distribution and effectiveness of culturally inclusive educational materials.
3. Data collection on vaccination knowledge, attitudes, and behaviors (KAB): Review the quality and completeness of collected KAB data.
4. Mobile vaccination services utilization: Analyze the number of individuals receiving vaccinations and any barriers encountered.
5. Program performance: Evaluate the impact of VPDC's key activities by programmatic area to improve performance on a quarterly basis.

Project #1 Impact:

This project will contribute to the continual improvement of immunization services and targeted programming through process and outcome evaluation to ensure that resources are used effectively to achieve desired public health impact.

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

The fellow will support the planning and implementation of emergency preparedness activities related to immunizations and vaccine-preventable diseases. These efforts will be in anticipation of several large-scale events to be hosted in Los Angeles County, including the World Cup, Super Bowl, and Summer Olympics. The fellow will participate in planning and tabletop exercises to strengthen situational awareness and response capacity. They will contribute to the design and implementation of enhanced disease surveillance systems for mass gatherings, including the development of analytic reports to monitor real-time trends. The fellow will assist in synthesizing and communicating key findings to executive leadership and public partners, supporting timely, data-driven decision-making during high-profile events.

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

In the event of a disease cluster or outbreak, the fellow will be an active member of the response team. The fellow's specific role will vary depending on the nature and scale of the situation. The fellow may support investigations by developing data collection tools, intaking case reports, obtaining medical records from providers, interviewing patients, and educating community partners on disease control and prevention strategies. Additionally, the fellow may prepare written and visual summaries for department leadership. The fellow may also assist in creating public-facing figures and materials or compiling appropriate information in response to media inquiries. These activities will comprise 10-30% of the fellow's time depending on the size and severity of the outbreaks.