

ID: 74488360

Infectious Diseases - Host Site Description

County of Monterey Health Department

Assignment Location: Salinas, US-CA
County of Monterey Health Department
Public Health Bureau

Primary Mentor: Diksha Ramnani, MPH
Supervising Public Health Epidemiologist
County of Monterey Health Department

Secondary Mentor: Edward Moreno, MD, MPH
Health Officer and Director of Public Health
County of Monterey Health Department

Work Environment

Hybrid

Assignment Description

The fellow will be placed in the Health Department's Division of Communicable Disease Prevention and Control, which resides in within the Public Health Bureau. The Public Health Bureau protects the health and safety of Monterey County residents and visitors, provides credible information to enhance health decisions, and partners with federal, state and local organizations to promote sound public health practice and policy. Key responsibilities of the Bureau include preventing and controlling infectious diseases; performing laboratory testing for infectious diseases and water contamination; preventing injury, chronic disease and premature death; improving the health of county employees and reducing employer costs; preparing for and responding to emergencies and disasters; linking families to community and government services; improving the health of mothers, babies and young girls; improving health outcomes and reducing healthcare associate costs for homeless individuals; ensuring access to pediatric specialty health care services; improving nutrition for low-income families; registering births and deaths, and issuing burial permits. The Division of Communicable Disease Prevention and Control includes the HIV, STD, Immunization, Epidemiology and Surveillance, Tuberculosis Control, and Communicable Disease Units, as well as the Public Health Emergency Preparedness, Hospital Preparedness, Vital Records, and Medical Marijuana Identification Card Programs. The fellow will work collaborative with individuals within the Division, Bureau, Department, and community to improve surveillance for communicable diseases, collect and analyze health information during disease investigations, and create epidemiologic profiles to guide local program strategies.

The fellow's anticipated day-to-day activities include obtaining access to relevant databases, extracting information, cleaning data, and developing R or SAS code for analyzing data. They will attend meetings with Department staff and community partners and participate in statewide teleconferences. The fellow will investigate incidents and outbreaks of communicable diseases, as well as coordinate with public health nursing, laboratory, and environmental health staff. The fellow will review reports from other agencies, create epidemiologic summaries, identify health disparities, and inform stakeholders of local morbidity and mortality trends. The fellow will plan, implement, and evaluate surveillance systems.

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

The fellow will have access to the same statistical and data analysis support as the Department's epidemiologists. After undergoing appropriate training and credentialing, the fellow will have access to the Department's databases and registries developed from primary data collection. They will have access to the County's geodatabase, which contains

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spatial data covering a variety of multidisciplinary topics. The fellow will also have access to data extracted from statewide databases such as the California Reportable Disease Information Exchange (CalREDIE), hospital admissions and emergency room visits via the BioSense Platform, the California Immunization Registry (CAIR2), and the California Vital Records Business Intelligence System (VRBIS). They will have access to software including the standard Microsoft Office suite, SAS, R, PowerBI, ArcGIS, and Qualtrics. The Department Administrative Bureau will provide information technology support to the fellow.

Projects

Surveillance Activity Title: Using IGRA testing results for Latent and Active Tuberculosis Surveillance

Surveillance Activity Description:

Since 2022, laboratories have been required to submit all Interferon-Gamma Release Assay (IGRA) results in accordance with California state requirements. Both positive and non-positive results are transmitted via Electronic Laboratory Reporting (ELR) and recorded in the California Reportable Disease Information Exchange (CalREDIE). The fellow will be responsible for extracting and analyzing these data to generate a comprehensive report for the Tuberculosis Unit and the Program Manager for Communicable Disease Prevention and Control Division to inform prevention efforts. The report will include time trends, spatial and temporal cluster analysis, and any additional epidemiological insights that may be gained from these data.

Surveillance Activity Objectives:

Objectives:

- Become familiar with data reporting requirements for laboratories in California
- Assess Tuberculosis (TB) screening trends in the County
- Determine opportunities to improve testing for TB prevention
- Provide a data report to program staff to determine prevention activities

Surveillance Activity Impact:

The data report will help inform targeted screening and other prevention efforts as determined by the Tuberculosis Controller and other Health Department Communicable Disease staff.

Surveillance System Evaluation Title: Improving Syndromic Surveillance for Outbreak Response

Surveillance System Evaluation Description:

The fellow will evaluate the quality of data received from healthcare facilities for Syndromic Surveillance, ensuring compliance with the minimum standards established by the National Syndromic Surveillance Program (NSSP) and outlined in the latest PHIN Messaging Guide. The evaluation will focus on key data elements necessary to support the Epidemiology team's ability to detect emerging conditions or disease outbreaks effectively. Additionally, the fellow may assist in onboarding new facilities to the BioSense Platform and collaborate with facility IT departments to ensure the accurate and timely submission of HL7 messages.

Surveillance System Objectives:

Objectives:

- Develop a comprehensive understanding of the HL7 messaging structure for Syndromic Surveillance
- Engage with the NSSP Community of Practice to determine data quality best practices
- Improve data collection by collaborating with hospital IT staff and local epidemiologists to strengthen outbreak response

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Surveillance System Impact:

The project aims to enhance the quality of currently collected data, ensuring its accuracy and utility for epidemiological investigations. Additionally, it will strengthen the team's capacity to collect and integrate data from inpatient and outpatient facilities across the county, supporting more comprehensive public health surveillance.

Major Project Title: Enhanced Case Investigation of Carbapenemase-Producing Organisms

Major Project Description:

The fellow will conduct case investigation for individuals recently identified to be colonized with a Carbapenemase-Producing Organism (CPO) and analyze the resulting data for to identify trends, risk factors, and health disparities. The investigation process will include: 1) obtaining and reviewing medical records, 2) identifying and assessing potential contacts, and 3) providing infection prevention and control guidance as appropriate. All collected information will be documented in the California Reportable Disease Information Exchange (CalREDIE). Additionally, the fellow will develop a guidance document to train disease investigators on conducting case investigations and contact tracing for CPO-colonized individuals.

Major Project Objectives:

Objectives:

- Familiarize with the Infection Prevention and control recommendations and California Department of Public Health's Pathogen Containment Plan
- Conduct case investigation in collaboration with local hospital infection preventionists and the Public Health Laboratory
- Develop a best practice guide for disease investigators and epidemiologists to conduct case investigation and outbreak response activities

Major Project Impact:

This project aims to enhance the quality of healthcare-associated infection data, better inform local providers on morbidity trends, and strengthen the Department's capacity for case investigation and HAI outbreak response.

Additional Project #1 Title: Syringe Exchange Program Utilization Data Dashboard

Project #1 Type: Surveillance Activity

Project #1 Description:

The fellow will create a public-facing data dashboard for Monterey County's Syringe Exchange Program. The fellow will facilitate the collection and submission of timely data in collaboration with Health Department staff and Access Support Network, a local community-based organization responsible for operating the syringe exchange. The data will be analyzed and visualized using a dynamic Power BI report, which will be published on the County's website to enhance transparency and inform public health efforts.

Project #1 Objectives and Expected Deliverables:

Objectives:

- Assess current data collection and submission practice
- Analyze collected data and generate metrics in collaboration with Health Department and CBO staff
- Use data visualization best practices to develop a data dashboard for the Department website

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Project #1 Impact:

This project will provide the fellow with the opportunity to collaborate with a community-based organization to collect and analyze data on a critical public health intervention. By applying data visualization best practices to a dynamic dashboard, the project will enhance the communication of program outcomes and impact, ensuring that local policymakers and the public have clear, data-driven insights into this essential service.

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

Public Health Emergency Preparedness is located in the Division of Communicable Disease Prevention and Control, in which the fellow will be placed. They will have opportunities to attend preparedness trainings and participate in preparedness exercises. The fellow will complete basic Incident Command System (ICS) training. The fellow will be assigned a position in Epidemiology Unit of the Department Operations Center (DOC) during activation and may have an opportunity to serve in the County's Emergency Operations Center (EOC). Depending on workload in other areas of professional development, the fellow may also have an opportunity to contribute to the development or update of a public health preparedness plan or protocol. Examples include pandemic flu, general epidemiology and surveillance, isolation and quarantine, and viral hemorrhagic fever preparedness plans. The fellow may spend approximately 10% of their time on general preparedness activities, though this may vary with a declared public health emergency.

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

The fellow will be called upon to assist with cluster and outbreak investigations, should they occur. In a typical year, the Department investigates over 100 clusters and outbreaks including but not limited to foodborne illness, legionellosis, COVID-19, influenza, norovirus, scabies, and multidrug resistant organisms. The fellow will work alongside a team of experienced epidemiologists, public health nurses, health educators, and environmental health specialists and collaborate with public health microbiologists. The fellow will be expected to conduct facility inspections, become proficient in use of personal protective equipment, and be competent in specimen collection and handling. The fellow will collect epidemiologic information, conduct basic epidemiologic analyses, and complete case and outbreak reports. The fellow will spend an estimated 20% to 50% of their time investigating cluster and outbreaks, depending on seasonality and morbidity patterns.