

ID: 87158058

Injury, Infectious Diseases - Host Site Description

Solano County Public Health

Assignment Location: Fairfield, US-CA
Solano County
Health and Social Services/Public Health

Primary Mentor: Sean Ezenwugo, MPH
Senior Epidemiologist
Solano County Public Health

Secondary Mentor: Marco Caro, MPH
Senior Epidemiologist
Solano County Public Health

Work Environment

Hybrid

Assignment Description

The fellow will be assigned to the Epidemiology Unit, which is within the Public Health Administration Bureau and Public Health Division. The Public Health Division's responsibilities prioritize the health of the community through addressing different areas and populations: maternal, child, and adolescent health; emergency preparedness and emergency medical services; communicable disease; healthy people and community wellness; older and disabled adults services; and nutrition services. These different topics are covered in each bureau within the Public Health Division. The fellow will be placed in the Public Health Administration Bureau, where their day-to-day activities will include disease outbreak investigations, data visualization for periodical reports related to infectious disease, morbidity, and mortality; and responding to data requests from other Public Health bureaus.

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

The fellow will have access to databases provided through the California Department of Public Health. Databases include disease incident data, disease outbreak data, lab reports, birth and death data, and hospitalizations. They will have access to multiple software programs used for data analysis and visualization: RStudio Pro, SAS, Excel, Power Bi, and ArcGIS. The epidemiology unit also has access to syndromic surveillance through the National Syndromic Surveillance Program (NSSP).

Projects

Surveillance Activity Title: Hospitalization and Morbidity Dashboard

Surveillance Activity Description:

This dashboard will present graphs and visualizations of hospitalization data, morbidity data, and syndromic surveillance data extracted from state and federal databases. This dashboard will display the latest five years of data; and visualize data grouped by different demographic factors such as race, ethnicity, and age categories. The dashboard will also have a GIS component, identifying areas of concerns based on the condition of interest.

Surveillance Activity Objectives:

Objectives of the project include creating a pipeline for importing hospitalization and morbidity data; designing a data source repository which identifies the indicators of interest, their data sources, and paths to accessing; and gaining skills

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in data analysis and visualization through RStudio and ArcGIS. Expected deliverable will be a Power BI dashboard, available to the public through the county website.

Surveillance Activity Impact:

The public health impact will be providing data visualizations to the community, allowing opportunities to identify potential health disparities across groups, apply for grants related to groups of interest, and present to interested and impacted stakeholders.

Surveillance System Evaluation Title: Syndromic Surveillance Implementation and Evaluation

Surveillance System Evaluation Description:

This project will evaluate the existing connections that Solano County Public Health has with healthcare providers and their syndromic surveillance data. Once providers are identified, next steps include connecting with other healthcare providers and onboarding them into the National Syndromic Surveillance Program (NSSP) to strengthen hospitalization surveillance.

Surveillance System Objectives:

Objectives include identifying existing healthcare providers currently reporting to NSSP, onboarding new healthcare providers into NSSP, and building a repository of healthcare providers, contact information, and syndromic surveillance reporting status.

Surveillance System Impact:

The impact will increase the amount of syndromic surveillance data available to the public through adding new healthcare providers into NSSP. This increased amount will make syndromic surveillance data more representative of the county population.

Major Project Title: Comprehensive Morbidity Report

Major Project Description:

The Comprehensive Morbidity Report will be a static report that summarizes morbidity and hospitalization data over the past 10 years. It will summarize counts and rates, as well as stratify by demographic information to analyze potential health inequities. The report will observe potential drivers behind hospitalizations, such as socioeconomic status and other social determinants of health.

Major Project Objectives:

Objectives will include creating visualizations showing morbidity trends over ten years, using significance testing to identify health inequities between groups, and providing recommendations for reducing morbidity across groups. Fellow will gain intermediate skills in RStudio, RMarkdown, and Quarto. The expected deliverable will be a comprehensive report, available to the public through the county website.

Major Project Impact:

The Impact will involve providing a hospitalization and morbidity report to the public, to use for presentations, grant proposals, and health education purposes.

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Additional Project #1 Title: Poison Control Surveillance Report

Project #1 Type: Surveillance Activity

Project #1 Description:

The Poison Control Surveillance Report will analyze data reported daily from the California Poison Control System. The report will summarize multiple indicators such as intentional and unintentional poisoning, type of exposure, city, and age.

Project #1 Objectives and Expected Deliverables:

Objectives include designing an algorithm to transform PDFs into data line lists using RStudio, creating an automated pipeline for ingesting data from Microsoft Outlook into RStudio, and identifying poisonings and exposures of concern in Solano County.

Project #1 Impact:

The impact will be identifying potential poisonings and exposures of concern in Solano County. This will allow for timely situational awareness for public health leadership, and resource allocation as needed.

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

The fellow will be an active member of the Solano Healthcare Coalition (HCC), within the Emergency Preparedness Unit. The HCC sustains a comprehensive disaster healthcare response system, ensuring the health and safety of everyone in Solano County before, during, and after emergencies. The HCC also strengthens the healthcare delivery system's ability to continue to provide care during a disaster or emergency and improve patient outcomes. Time allocation will be an hour a week.

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

The fellow will take an active role in disease outbreak investigations impacting congregate facilities across the county. Activities will include providing technical assistance to staff at congregate facilities, collaborating with public health labs for testing, and reporting outbreaks to the state database. Time allocation will depend on the time of the year. During the fall and winter seasons, time allocation would be around 1-2 hours a week, since respiratory disease outbreaks are more common. The spring and summer seasons would require allocating no more than an hour a week.

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