

ID: 34564076

Infectious Diseases, Infectious Diseases - Quarantine - Host Site Description

San Diego County Health and Human Services

Assignment Location: San Diego, US-CA
San Diego County Health and Human Services
Division of Global Migration and Quarantine

Primary Mentor: Alfonso Rodriguez Lainz, PhD, VMD, MPVM
Senior Epidemiologist
Centers for Disease Control and Prevention

Secondary Mentor: Annie Kao, PhD, MS, MPH, BS
Senior Epidemiologist
County of San Diego, Health and Human Services Agency

Work Environment

Hybrid

Assignment Description

The CSTE Fellow will work on projects with both agencies, EISB and SBHMB, some as collaborations and others as separate projects. The two supervisors coordinate closely to ensure the fellow's work plan fulfills all fellowship activities and is not overburdening. The Fellow will also have the opportunity to work with the California Office of Border and Binational Health, a state office, based in San Diego through projects with EISB or SBHMH. The Fellowship focus will be on infectious disease surveillance, outbreak investigations, immigrant/refugee and border health analyses, preparedness and response. Non-communicable disease and chronic disease projects are also a consideration. The Fellow will participate in phone duty rotations receiving local disease reports and queries from medical providers and the community during business hours. The fellow may also be in phone duty rotation during business hours for the US-Mexico quarantine activities across the four border states. The fellow will have access to CDC national datasets to conduct complex epidemiologic analysis.

Day to day activities: Prioritizes reports for action, discussion and monitoring based on protocols. Develops and implements project plans and activities. Participates in and leads outbreak investigations. Analyzes data and creates poster and oral presentations, writes manuscripts, attends educational sessions and staff meetings, meets with supervisors, quarantine and epidemiology colleagues and project partners. The Fellow will have the opportunity to be involved in protocol development, policy analyses, and interagency engagements. For all activities there will be opportunities for the fellow to collaborate with relevant teams and staff in SBHMB and EISB.

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

SBHMB maintains the Quarantine Reporting System (QARS) and the CureTB database. DGMH has a data team with specialists in innovative techniques, evaluation and informatics. Through the larger CDC network, there is access to the Geospatial Research, Analysis, and Services Program (GRASP) as well as to specific national datasets (e.g., National Immunization Survey, California Health Interview Survey, Farmworker Health Survey). SBHMB has a growing footprint in data visualization analyses, using PowerBi and other relevant platforms to monitor infectious diseases in the border region. San Diego County maintains a notifiable disease data system as well as several syndromic surveillance systems, and also uses an electronic laboratory reporting system and has access to electronic health record systems. In addition to standard Windows software, Fellows have SPSSAS, R, SaTScan, Epi Info 7.2, Tableau, ArcGIS, and Access software. The CDC provides access and support for R and R-related packages. Both DGMH and San Diego County can provide biostatistical consultation and support. SBHMB currently has a GIS expert among its staff.

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Projects

Surveillance Activity Title: Epidemiology of Coccidioidomycosis and Assessment of Laboratory Testing Methods in San Diego County

Surveillance Activity Description:

Prior to January 1, 2019, CA Dept of Public Health used the CSTE case definition for coccidioidomycosis which required clinical and laboratory confirmation of disease. Many local health jurisdictions were unable to consistently confirm clinical illness and were, therefore, reporting confirmed cases based only on laboratory reports when resources were limited and coccidioidomycosis reporting and methods for confirmation were not standardized throughout the state impeding efforts to accurately track and assess trends. As of January 1, 2019, clinical confirmation of disease is no longer required. This change allows for more consistent and less resource intensive reporting statewide. EISB proposes a surveillance project updating the epidemiology of coccidioidomycosis in San Diego County, including geo-spatial analysis, and assessing the laboratory methods used to identify Cocci cases since the change in case definition.

Surveillance Activity Objectives:

Objectives will be an updated descriptive epidemiology analysis based on the new surveillance definition of Coccidioidomycosis and comparison with previous trends requiring clinical confirmation. Laboratory methods to confirm the diagnosis will be assessed for changes in trends. Deliverables will include an internal report, as well as abstract or manuscript for presentation at appropriate venues.

Surveillance Activity Impact:

This project would provide an opportunity to better characterize the epidemiology of San Diego Coccidioidomycosis cases using data from the local electronic disease registry, and contrast with surveillance efforts when clinical characteristics are required as part of the reporting criteria.

Surveillance System Evaluation Title: Evaluation, Enhancement, and Analysis of Binational Case Surveillance in California

Surveillance System Evaluation Description:

The CSTE Fellow will work collaboratively with EISB, USMU and the California Department of Public Health Office of Binational Border Health (CDPH-OBBH) to evaluate, enhance, and analyze surveillance of notifiable diseases meeting the CSTE binational case definition in California for cases related to Mexico. Evaluation activities will include mapping data reporting sources, quality (i.e., completeness, accuracy, relevance) of data received, timeliness of notifications, information sharing protocols, efficacy of surveillance tools (case report forms, referral templates), and validating prioritization process of urgent and routine binational notifications. Finally, opportunities will be provided to design, contribute to, and disseminate results of analyses (e.g., manuscript, technical report, oral/poster presentation) from both existing binational surveillance databases and systematic improvements realized through evaluation and enhancement activities.

Surveillance System Objectives:

The CSTE binational variable was adopted in 2014 to improve surveillance system standardization and epidemiologic characterization of reportable conditions with a US-Mexico binational linkage. However, minimal evaluation of the binational variable in surveillance systems have been conducted. Project objectives are, broadly, to understand the use, quality and impact of the binational case surveillance system. Enhancement activities will capitalize on gaps and opportunities identified in evaluation to further the implementation, breadth, and impact of binational case surveillance throughout the state of California with relevant stakeholders (e.g., public health agencies, binational medical providers).

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Surveillance System Impact:

The public health impact will be to understand the real world implementation of the binational variable as it pertains to US-Mexico linked cases. The project will identify the attributes of the variable that promote or impede its utility in describing the ways in which patients are characterized as binational, and importantly, will improve understanding of the features that promote timely US-Mexico notifications for public health action. Through the evaluation it is expected that refinements in the binational variable definition, implementation or follow-up will be identified to enhance public health actions and advocacy activities.

Major Project Title: One Health Public Health System

Major Project Description:

The World Health Organization defines One Health as "an approach to designing and implementing programs, policies, legislation and research in which multiple sectors communicate and work together to achieve better public health outcomes". One Health is a collaborative approach to health, which recognizes that humans and animals live in a shared environment and that there is added value to be gained by working together on issues that affects us all. The Fellow would assist in ongoing projects the design associated with a new San Diego County Veterinary Public Health surveillance, investigation, and response team, and the CDC One health program.

Major Project Objectives:

The objective of the project is to develop enhance the capacity and tools to move to a more comprehensive One Health approach to surveillance and response in the County of San Diego. Data analysis deliverables would include descriptive epidemiology, frequency of animal health diseases collected in San Diego County, and the analysis of risk/transmission factors related to human/animal health and data interpretation. The Fellow would also gain experience in the One Health approach to disease control and learn practicalities in developing systems to interface human and veterinary surveillance systems.

Major Project Impact:

This will help to prioritize the development of disease protocols and procedures, and investigation guidelines. The goal is to leverage the relationships between human and animal health to promote a healthy community and environment for the residents of San Diego County. The public health impact is expected to be substantial, as the interface between human and animal health is gaining attention and relevance locally and globally. Thus, developing a health department's capacity for One Health surveillance strategies is expected to be foundational in understanding and responding to the human-animal interface locally, and may be a model of other health authorities looking to develop similar systems.

Additional Project #1 Title: Tuberculosis Transnational Referral Evaluation

Project #1 Type: Surveillance Activity

Project #1 Description:

Over 70% of tuberculosis (TB) patients in the US are foreign-born, and nearly 5% leave the US prior to completing a full course of TB therapy. Completion of TB therapy is a cornerstone strategy for TB elimination in the US and globally. CureTB is a program, within SBHMB, that works with TB programs throughout the US and multiple destination countries to provide continuity of care for patients that leave the US prior to completing TB therapy. The program maintains detailed information regarding referred patients and treatment outcomes. The project would be to perform descriptive analyses of patients referred to CureTB since 2016, looking at trends in referrals and treatment outcomes to inform future activities and enhancements.

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Project #1 Objectives and Expected Deliverables:

The key objectives are to assess the breadth of referral sources, destination countries and treatment outcomes, and to identify trends since 2016 as well as elements that predict successful treatment outcomes. A secondary objective is to provide a general descriptive analysis of referred patient characteristics including site of disease, drug resistance, primary language. Manuscript development and presentation of findings at appropriate forums are expected deliverables.

Project #1 Impact:

Few countries have formal systems to refer TB patients to care upon transferring/moving to destination countries. Understanding the reach of the CureTB system within the US, as well as its utility in timely referral and ability to capture outcomes will inform enhancements to the system and promote understanding on how such mechanisms can enhance TB surveillance and outcome capture in established surveillance systems.

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

SBHMB works with a variety of border partners (e.g. airport authorities, Dept of Homeland Security, health departments) to develop and exercise Communicable Disease Response Plans (CDRP), and promotes development of US-Mexico illness response plans based on the Technical Guidelines for US-Mexico Coordination. The Fellow can be engaged in reviews and revisions of these plans, as well as participate in tabletop exercises. The Fellow will also participate in communicable disease response efforts through their Duty Officer rotations with SBHMB Port Health Stations to provide real time response and collaborate in enhancing quarantine response protocols. The Fellow will also be able to participate in a national project to enhance COVID-10 outreach, preparedness and response among farmworkers in the US. This opportunity has strong data collection and community assessment components. Working with EISB, the Fellow will complete National Incident Management System and Incident Command System training through ICS-400 and will be provided the opportunity to help design, conduct, monitor and report on preparedness exercises that involve local and state partners. The Fellow will also participate during their Phone Duty rotation in illness responses as needed and appropriate.

It is anticipated that at least 20% of activities would designate to this competency.

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

During the Fellow's rotation as EISB Phone Duty Staff they will be expected to become involved with cases that are reported during their shifts, and therefore, become involved in a variety of case, cluster and outbreaks investigations. They will be fully trained on disease conditions and integrated into the EISB Phone Duty Staff role. Based on the interest of the Fellow, they will be able to lead or assist in specific case or outbreak investigations and write abstracts/manuscripts on relevant investigations. These activities will be a core element in the experience of the Fellow and would entail at least 20% of their weekly activities.

SBHMB works with other partners when binational outbreaks or clusters of interest are identified (e.g. resistant pseudomonas cluster in Baja California). Based on their interest, the Fellow would be able to lead or assist in efforts to characterize binational clusters across the US-Mexico region as well as be the SBHMB representative for specific investigations as they arise.

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

The COVID-19 activities for 2024 and beyond will vary based on the epidemiologic trajectory of the disease. The Fellow will be involved during phone duty rotations at EISB and Duty Officer rotations in SBHMB, and so will get experience in frontline response and investigations of COVID-19 cases in various settings, as well as gain familiarity with federal and local protocols for isolation and quarantine. Epidemiologic analyses focused on COVID-19 may be available based on the Fellow's interest and could involve aspects of severity of disease, hospitalization, variant emergence, respiratory co-infections, or the effect of the COVID-19 pandemic on surveillance for other reportable conditions. Time allocation will vary based on the project and evolution of the pandemic.

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

Diversity, equity and inclusion are core elements woven into the work of SBHMB and EISB. All projects and activities are encouraged to have a health equity lens. SBHMB work has a strong focus on mobile and migrant populations as well as hard to reach binational populations, and as such, has been a leader in considering ethnicity, country of birth, language and cultural inclusiveness and competency in work products and public health strategies. The fellow will have opportunity to analyze national and state-level data sets to assess healthy inequities among populations of interest. SBHMB also has been leading efforts to increase inclusion of culturally and linguistically diverse minority populations in public health data collection activities. EISB is also committed to strategies that bolster public health strategies across diverse communities and populations. Both agencies have work groups and initiatives related to health equity, which may be available for the Fellow to participate based on their interest.