Infectious Diseases

New Mexico Department of Health, Epidemiology & Response Division, Infectious Disease Epidemiology Bureau

Santa Fe, New Mexico

Assignment Description

The fellow will be placed in the Infectious Disease Epidemiology Bureau (IDEB) which is a unit under the State Epidemiologist devoted to the collection, analysis, and application of high-quality surveillance and investigation data to guide public health practice for infectious diseases in NM. The fellow will have hands-on experience with the roles of epidemiology in securing public health at the state and local level. The experiences will center around infectious diseases, the bedrock of public health practice. The state serves as the local public health authority in NM and the CSTE fellow will respond to reports and inquiries from across the state and have opportunities to conduct epidemiological field work. In addition to the major activities proposed, opportunities exist for special studies among those living at the U.S.-Mexico border, American Indian, Hispanic, and other sub-populations. Beyond routinely scheduled meetings, both primary and secondary supervisors have an open-door policy to allow adequate access for questions, teaching and project planning.

Day-to-Day Activities

The CSTE fellow will be an active member of IDEB and its various functions to prevent and control communicable diseases. In addition to primary surveillance and epidemiology projects exemplified below, the fellow will participate in daily wrap-up sessions to review the cases investigated by on-call epidemiologists and after 2-3 months, will participate in taking daytime calls from the public and practitioners and may serve as a surveillance officer for a week at a time every 6-8 weeks triaging NM notifiable conditions reported through various reporting mechanisms, assigning them for investigation, and assuring the timely completion of investigations and notifications to CDC.

Potential Projects

Surveillance Activity  Notifiable Disease Surveillance in NM

The fellow will learn about the establishment and maintenance of Notifiable Disease Surveillance in New Mexico, including the legislation and mechanisms to modify the list. The fellow will directly participate in daily infectious disease surveillance, case investigation and outbreak response as a member of the infectious disease surveillance team. The fellow will support the lead epidemiologists for invasive bacterial infections, respiratory diseases, and vaccine preventable diseases to improve toolkits and educational materials for on-call staff and callers to ensure timely and accurate surveillance and response activities. This will include direct interaction with patients and their healthcare providers, public health nurses and disease prevention specialists for the prevention and control of disease in New Mexico.
Surveillance Evaluation  

Having one of ten national sentinel sites for active surveillance of invasive bacterial infections, quality assurance and system improvement is particularly important to understanding the epidemiology of these infections across the nation. The fellow and mentors will work together to design and implement an evaluation of the data characteristics of case reports for these infections by comparing multiple complementary data sources to include the notifiable disease reporting system (NMEDSS), the immunization registry (NMSIIS), the state health information exchange (NMHIC), and hospital discharge data downloads. Following the CDC guidelines for evaluating public health surveillance systems, the fellow will identify practical ways to improve the efficiency and quality of our active surveillance program.

Major Project  

At-risk Populations in NM

The diversity of the NM population by race, ethnicity, and geography affords unique opportunities to contribute to our national understanding of risk while improving our epidemiological characterization of risk in NM that can lead to program change. The fellow will research methods for capturing demographic, social, and behavioral risk factors in surveillance data and design a study protocol that can be applied across infectious and non-infectious disease conditions. Depending on the interest and experience of the fellow, a variety of analytic methods could be applied to refine our understanding and ability to focus programmatic efforts to reduce the impact of these conditions in high-risk populations such as American Indians. For example, the fellow could take a case series of S. pneumoniae and Influenza hospitalizations captured through active surveillance and investigate demographic, social, and behavior risk factors for disease and disease severity.

Additional Project  

Temporal Trends in Recurrent Invasive Infections

We have demonstrated in prior studies that patients with a single invasive bacterial infection are at increased risk of subsequent invasive bacterial infections. We would like to explore this relationship further and assess temporal trends in these findings over the 15 years NM has conducted active surveillance for invasive bacterial infections (ABCs). An extension of this study will be to assess the relationship between invasive bacterial infections and other notifiable conditions.

Additional Activity  

Etiologic Causes and Characteristics of Pneumonia and Influenza Mortality in NM

Pneumonia and Influenza Mortality is a longstanding and crude metric of seasonal influenza activity. As diagnostics improve our ability to discern respiratory disease agents, we have a better opportunity to understand the role of different pathogens contributing to P&I mortality. We envision a study with record and electronic system follow-up on a sample of the 2-300 annual P&I deaths to better characterize this indicator of respiratory disease and influenza.
**Preparedness Role**

The fellow will complete Incident Command System training and be oriented to the NM public health emergency operations center. Infectious diseases are among the most common causes and complications for public health emergencies and the staff of IDEB stand on-call to report to the Department Operations Center (DOC) and fulfill emergency response roles. The fellow will join other IDEB staff in deploying to an infectious disease response and will participate in relevant drills and exercises during the fellowship. Additionally, the primary mentor has 15 years of federal leadership in public health emergency response and will tutor the fellow in this area to the extent the fellow expresses interest. Opportunities are available to participate in an after-action review for an infectious disease response, support non-pharmacological intervention training for a pandemic response, or help to update the infectious disease response incident annex.

**Additional Activities**

The fellow will assist with data dissemination and public outreach by conducting presentations and/or provide trainings to inform disease control and prevention. Opportunities to present include New Mexico Quarterly Epidemiology meeting, state public health association meetings, professional organization meetings, and national and regional public health conferences. The fellow will be expected to participate in the development (e.g. planning, writing, submission) of at least one publication of their work. In addition, the fellow may be involved in crafting health alert messages, writing press releases, and conducting media interviews.

**Mentors**

**Primary**

Dan Sosin MD, MPH  
Medical Epidemiologist

**Secondary**

Salina Torres PhD, MPH  
ABCs Coordinator