

Infectious Diseases

Assignment Description:

The Maine Center for Disease Control and Prevention (Maine CDC) develops and delivers services to preserve, protect and promote the health and well-being of the residents of Maine. This CSTE Fellowship assignment will be located within the Division of Infectious Diseases (DID) of the Maine CDC. The mission of the DID is to decrease morbidity and mortality through the prevention and control of infectious disease. Maine has a centralized public health system where disease investigations and outbreak response activities are coordinated centrally. The Fellow in this assignment will have the opportunity to participate in a wide range of epidemiologic, surveillance, disease control and preparedness activities across the various programs within the Division.

The Maine CDC is small enough to offer a CSTE Fellow a high level of responsibility with minimal bureaucracy. A Fellow will complete his/her time in Maine with an excellent working knowledge of field epidemiology, surveillance, and state public health practice. The Fellow would have the opportunity to present their work to programs within Maine CDC, to external partners, at national meetings, and in peer-reviewed journals and government publications (MMWR). The Fellow's projects will be determined by the individual's interests in combination with the priorities and needs of the DID.

Day-to-Day Activities:

Daily activities will consist of planned epidemiological studies, acute outbreak investigations, and developing and integrating prevention initiatives. The Fellow will participate in daily epidemiology meetings with Division epidemiologists where current investigations and outbreaks are discussed. The Fellow will also participate in weekly epidemiology case review with medical and central epidemiologists to review procedures utilized for infectious disease case investigations and monitor trends. The Fellow will have the opportunity to be the on-call and after-hours on-call epidemiologist on a rotating basis.

Potential Projects:

The Fellow's projects will be determined by the individual's interests in combination with the priorities and needs of the DID. Potential activities include, but are not limited to the following:

- The Early Warning Infectious Disease Program (EWIDS) is a unique collaboration of state, federal and international partners who collaborate to provide rapid and effective laboratory confirmation of urgent infectious disease case reports in the border regions of the United States, Canada, and Mexico. Maine is a partner in the Eastern Border Health Initiative in collaboration with New Hampshire, Vermont and New York on the U.S. side, and New Brunswick, Nova Scotia and Quebec on the Canadian side. The Fellow will have the opportunity to play a key role in this collaboration including work on such activities as enhancing syndromic surveillance in hospitals and improving electronic sharing of laboratory information and syndromic surveillance data among the participating jurisdictions.
- Maine CDC conducts syndromic surveillance using emergency department data from over half the hospitals in the state. Maine will be participating in BioSense 2.0. The syndromes included in the state's system versus BioSense 2.0 are different. The Fellow will be able to assess the difference between the two systems and the impact on syndromic surveillance for the state.
- Conduct an evaluation of foodborne disease surveillance. Starting in 2011 new forms were developed which gathered more specific food, water, and animal exposures for enteric

diseases. Starting in fall of 2012 the surveillance system was updated to capture all data elements included in the form. There has not been an evaluation of foodborne disease surveillance.

- Maine has a growing foreign-born population with refugees, asylees and asylum-seekers. The Fellow will develop an infectious disease health status of the foreign-born population in the state of Maine, including reviewing latent tuberculosis infection records, giardiasis reports and other data sets.
- Maine has information on reported latent tuberculosis infection (LTBI) cases starting in 2005. The Fellow will have access to this data and be able to examine case counts, risk factor information, treatment completion information and other available data. Starting in January 2012 LTBI data is entered in the surveillance system. The Fellow will be able to perform an evaluation of how well this new process works for staff and create reports using the data. The Fellow will also be able to assist with analysis of a new LTBI treatment regimen in use by some providers in the state.
- Analyze data collected on campylobacteriosis and giardiasis cases among children aged < 5 years. These cases were investigated by field staff until summer 2011, but no analysis has been conducted to date to examine potential differences in demographics, risk factors and the impact of refugee screening among children compared with adults.
- Starting in January 2012 patient-based varicella reports were entered in the surveillance system. Previously, only aggregate counts were entered and reported to federal CDC. A separate database was created and used for varicella surveillance. The Fellow will have an opportunity to work with the data, both cleaning the data, assisting with importing the data, and analyzing the data. The Fellow will also assist with reviewing varicella vaccine dosing data and policy discussions about Maine vaccine requirements.
- Over the past 15 years, the number of Lyme disease cases identified in Maine has increased dramatically, with 1,006 case reports received in 2011 compared with only 71 in 2000. The Fellow would have the opportunity to analyze data collected on Lyme disease cases in Maine children to assess potential differences in symptoms, risk behaviors, and testing compared with adults. The results of this analysis would be used to recommend control measures and prevention interventions. The Fellow could work with various programs within Maine CDC to target education and interventions for children, such as with the Women, Infants and Children (WIC) program.
- In recent years cryptosporidiosis cases have increased. From 2005 to 2010 cases have increased from 30 to 93 cases. The Fellow would be assisting with a project to determine explanations for the increase in cases. This would include working with the state laboratory to increase awareness of cryptosporidiosis PCR testing and genotyping; conducting enhanced surveillance activities including GIS mapping of cases; and working with the Division of Environmental Health to overlay maps of water regions and land management.
- The Advisory Committee on Immunization Practices (ACIP) recently revised its recommendations for the prevention of invasive pneumococcal disease among adults and added current smokers to the list of persons for whom pneumococcal polysaccharide vaccine is recommended. The Fellow would have the opportunity to analyze data from the Behavioral Risk Factor Surveillance System (BRFSS) to assess the impact of this policy change on the prevalence of pneumococcal vaccination among smokers. BRFSS data could also be used to assess the prevalence of seasonal influenza vaccination among persons who report having conditions that put them at risk for severe complications from influenza (e.g., asthma, diabetes, cardiovascular disease).

- Chronic hepatitis C has been reportable since 1997. The Fellow would have the opportunity to clean the data and analyze the data for trends and data completeness. Other projects related to hepatitis C surveillance may include review of death certificates, co-infection analysis and a match with the cancer registry.

Preparedness Role:

The DID is the lead response unit for surveillance, epidemiology, and disease control activities related to emergency preparedness and response. The Fellow will participate in general infectious disease surveillance and attend all trainings involving Infectious Disease Epidemiology staff regarding Emergency Preparedness issues. The Fellow will become knowledgeable about the roles both the Infectious Disease Epidemiology and the Office of Public Health Emergency Preparedness have during a public health emergency.

Assignment Location: Augusta, ME

Primary Mentor: Stephen Sears, MD, MPH
State Epidemiologist
The Maine Center for Disease Control and Prevention

Secondary Mentor: Amy Robbins, MPH
Epidemiologist
The Maine Center for Disease Control and Prevention