

Infectious Diseases

Assignment Description

The Michigan Infectious Disease Fellow would have a truly unique opportunity to act as a member of Michigan's infectious disease epidemiology team, with special emphasis on zoonotic, vectorborne and emerging infectious disease opportunities. The Fellow will work closely with Dr. Kimberly Signs and Dr. Mary Grace Stobierski in the Zoonotic Disease and Special Projects Section of the Communicable Disease Division. The Fellow will participate in all current activities of the Section, which include routine surveillance, interagency collaborations, and education and outreach on a variety of zoonotic and vectorborne diseases. The CSTE Fellow would provide support to acute outbreak investigations requiring immediate public health response, under the guidance of the lead Epidemiologist. This would include working first-hand with the CDC, federal and state regulatory partners on multi-state investigations. In addition, MDCH will support the candidates completion of the required activities related to this CSTE Fellowship, including a surveillance system evaluation.

In 2013, the Section began a series of One Health webinars that are hosted quarterly on a variety of zoonotic and vectorborne topics. These have been extremely popular and are attended by most Michigan Local health departments. This will provide a venue for the Fellow to interact with public health partners in the State and present information promoting the most current guidance on the investigation and reporting of reportable zoonotic and vectorborne diseases in the State. The Communicable Disease Division organizes and hosts an annual statewide Communicable Disease Conference each spring to provide updated information and guidance on communicable disease topics and emerging disease threats. The target audience includes all Local Health Departments, as well as infection control practitioners and clinical laboratory directors from healthcare systems and nursing homes. Our previous Fellows have had the opportunity to present their work at this and other statewide meetings.

Day-to-Day Activities

The Fellow's anticipated day-to-day activities would include work on long-term analytic projects and acute outbreak investigations (suggested projects below). Other routine activities would include:

- 1) Assist in human case surveillance and outbreak investigations for zoonotic and vectorborne diseases. The Fellow will have an opportunity to review reported human cases of disease for alignment with national and state case-definitions; interact with local health departments regarding ongoing case investigations; and analyze and summarize current and historic data.
- 2) Assist in field-based surveillance and control efforts for currently emerging diseases in Michigan such as West Nile virus and Lyme disease. The fellow would have an opportunity to learn about the epidemiology of zoonotic diseases in Michigan; surveillance techniques and systems for vectorborne diseases; perform field-based surveillance for tick vectors; help to promote mosquito surveillance activities at the community level; and interact with local health departments in a support role.

- 3) Engage with other MDCH program staff in the Communicable Disease Division through meetings, seminars, and training events. The Fellow will have an opportunity to expand their knowledge of how different programs within public health interact from the local to the federal level, and may also be presented with opportunities to assist in cross-cutting public health investigations.
- 4) Participate in existing state-level working groups and discussions on topics of zoonotic disease, including the Michigan Arbovirus Working Group, the Michigan Rabies Working Group, the Michigan Bed Bug Working Group and the monthly Michigan One Health conference call.
- 5) Assist in developing outreach and educational materials regarding the prevention of zoonotic and vector-borne diseases in Michigan. Working with senior staff, the Fellow will have an opportunity to translate current epidemiologic information into effective messages for the public. Materials may be posted on the State Emerging Diseases Website, formatted for printing, or used in presentations to stakeholder groups.

Potential Projects

We are proud of the diversity of projects that past CSTE Fellows have been able to pursue here. The arena of zoonotic and vectorborne disease allows many opportunities for collaboration on interdisciplinary teams including the ELC workgroup (a state-wide task force of epidemiologists, sanitarians, laboratorians, and physicians devoted to improving local health department applied epidemiologic knowledge and skills and providing the state with feedback on tools and resources under development), the Michigan Rabies Working Group, the Michigan Arbovirus Working Group, and the Michigan Bed Bug Workgroup, to name a few.

Past projects have included a KAP survey of Veterinarians in Michigan regarding Leptospirosis, collaboration with Michigan State University researchers conducting field research on the ecology of Lyme disease in Michigan, and development of the Michigan Bed Bug Manual, to name a few. MDCH has been collaborating with partners at Michigan State University and the National Park Service/Sleeping Bear Dunes on an ongoing Lyme disease project. This project has provided previous Fellows with valuable field experience, an opportunity to contribute to a meaningful epidemiologic investigation, as well as a means to meet some of their Fellowship objects.

The CSTE Fellow may choose among several focused areas to tailor experiences leading to advanced skills in applied epidemiology as well as policy and program development. The Fellow, together with both mentors will be able to choose a project suited to the background of the Fellow and current needs of the Division. In 2014, potential projects include:

- 1) West Nile Virus: Enhanced ecologic surveillance for West Nile virus which will include promoting the establishment of community mosquito surveillance in historically high risk counties. This project will require the Fellow to assess disease risk based on the biogeography of disease vectors, and to recommend the best methods in deploying limited resources to achieve the maximum information related to disease risk in a timely manner.

- 2) Travel Associated Illness Project: Collaborating with the US National Park Service (NPS) and CSTE on a multi-state active surveillance project to enhance the collection of patient travel information during case investigation of select zoonotic, vectorborne, and enteric diseases.
- 3) Tickborne Disease Surveillance: In collaboration with partners at Michigan State University (MSU), coordinate a second state-wide tick survey as part of ongoing tickborne disease risk assessment. Improving emerging tick-borne disease surveillance through the use of federal and state tools aimed at engaging healthcare providers, veterinarians, and the public and assessing their effectiveness. Expanding the scope of a previous pilot healthcare worker survey assessing the Knowledge, Attitudes and Practices of physicians regarding the epidemiology, diagnosis and treatment of Lyme disease in Michigan. Increase healthcare and public submissions of ticks found in Michigan, to help understand the ecology of various vector species in the State.

Preparedness Role

Michigan has an established Office of Public Health Preparedness which has drawn staff from both the epidemiology and laboratory programs of the health department and thus maintains close ties with both of these programs. The Fellow would have many opportunities to participate in trainings, tabletop exercises, discussions and projects with the Office of PH Preparedness in Michigan. Among these would be:

Incident Command Training: The availability and completion of Incident Command System training for better integration with the National Incident Management System structure employed throughout Michigan's public health community in response to emergent public health issues. This structure is mandated for incident response at the federal, state and local level.

Bioterrorism Education: The Fellow would also be encouraged to take advantage of the many Bioterrorism-Preparedness education opportunities and exercises offered through the Michigan Center for Public Health Preparedness based at the University of Michigan campus, which is part of a national network of centers established to support preparedness efforts of state and local health departments nationwide.

Assignment Location:	Michigan Department of Community Health Lansing, Michigan
Primary Mentor:	Kimberly Signs, DVM Zoonotic Disease Epidemiologist
Secondary Mentor:	Mary Grace Stobierski Section Manager; Zoonotic, Vectorborne and Special Projects Section