Assignment Description

Our fellows are welcomed as entry-level epidemiologists into our agency and are afforded identical rights and privileges as newly hired full-time staff epidemiologists. This fellow will be organizationally housed within the Emerging and Zoonotic Infectious Diseases (EZID) Section, Bureau of Disease Control, Prevention and Epidemiology. An office space, again identical to those of regular staff epidemiologists, will be made available to this person. It will be located next to other Section and Bureau staff.

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 mentors Dr. Kimberly Signs and Dr. Mary Grace Stobierski in the Emerging and Zoonotic Infectious Diseases (EZID) Section of the Bureau of Disease Control, Prevention, and Epidemiology, as well as other members of the Section. The mentors will oversee the training, research and field activities of the Fellow, ensure that the Fellow is familiar with the processes and responsibilities of the Section, and encourage the overall professional development of the Fellow.

The Fellow will be involved in all aspects of the work of the section including reportable disease surveillance, outbreak response, educational outreach, interagency collaborations, and response planning. Outbreak investigations may require working in multi-disciplinary teams. The EZID Section works closely with local public health staff, as well as state partners at the Departments of Agriculture and Rural Development and Natural Resources, and Federal partners including the CDC, and USDA’s Veterinary Services and Wildlife Services Divisions.

Recent investigations or surveillance projects the Section has been involved with include: cluster of tularemia infections in falconers, Shiga-toxin producing E. coli infections associated with a local petting farm, multi-state salmonella outbreak associated with contact with live poultry, transfusion-associated Babesiosis, outbreak of cryptosporidiosis associated with a high school agricultural education program, Mycobacterium tuberculosis infection in research macaques, emergence of Lyme disease on an island in Lake Michigan, and the first case of plague in Michigan in a recent traveler to an endemic area of Colorado.

While this host site application includes a major project description, once the Fellow is acquainted with the activities of the EZID Section, they may choose to develop an alternate project based on their interests as well as the current activities and needs of the EZID Section. In addition to a major project, MDHHS will support the candidate’s completion of the required activities related to this CSTE Fellowship, including a surveillance system evaluation. The CSTE Fellow will have the opportunity to
support acute outbreak investigations requiring immediate public health response, under the
guidance of the lead Epidemiologist. This may include working first-hand with the CDC, federal, state,
and local regulatory partners on local and multi-state investigations. They will learn how to
communicate effectively about health risk and utilize those skills to develop and disseminate
messages for a variety of audiences.

The EZID Section also provides some unique opportunities for Fellows to meet their core
requirements. Fellows will be trained to develop and edit content for Michigan’s Emerging Diseases
website. They will participate in organizing and developing content for EZID’s One Health webinars
provided to public health partners in the State. They will also attend and have the opportunity to
present at the annual statewide Communicable Disease Conference. The target audience includes all
Local Health Departments, as well as infection control practitioners and clinical laboratory directors
from healthcare systems and nursing homes. Fellows traditionally participate in fieldwork for Lyme
disease surveillance including tick dragging and mammal trapping. The Fellow will also get an
introduction to mosquito surveillance for West Nile virus through our ongoing community mosquito
surveillance project with select local health departments. Our previous Fellows have had the
opportunity to present their work at this and other statewide meetings. Fellows are encouraged to
seek out educational and training opportunities, as funding and resources allow.

**Day-to-Day Activities**

On a daily basis, the CSTE Fellow will:

1) Assist in surveillance and outbreak investigations for zoonotic and vectorborne diseases in
Michigan.

2) Participate in regularly scheduled meetings within the EZID Section, Bureau and
Department.

3) 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, and the monthly Michigan One Health conference call.

4) Attend local, state, and national level meetings on topics including public health,
epidemiology and infectious disease.

5) Assist with field investigations MDHHS may undertake to better understand the
epidemiology of zoonotic and vectorborne diseases in Michigan.

6) Develop the knowledge and skills necessary to field the calls and questions from the public
and other stakeholders on zoonotic and vectorborne disease topics.
Potential Projects

Surveillance  Blastomycosis in Michigan
Activity
Michigan is endemic for Blastomyces dermatiditis. Human cases occur sporadically within the state and previous data has shown exposure risk to be higher in the northern half of the state. Dogs are good sentinels for the pathogen in the environment, but the disease is not a reportable condition to the Michigan Department of Agriculture and Rural Development. This project would develop an epidemiologic profile of blastomycosis in Michigan. The Fellow will review and update the state’s case definition for blastomycosis, investigate sources of data for veterinary cases of blastomycosis, use available sources to update the statewide risk map for blastomycosis in Michigan, and develop a webpage with information and resources for human and animal healthcare providers and the public about the disease in Michigan.

Surveillance  Animal Bite Reporting
Evaluation
In Michigan, animal bites are reportable to the local health department but are not required to be reported at the state level. As a result, there is little statewide data available about animal bites beyond the number and types of animals that are tested for rabies annually by the MDHHS Bureau of Laboratories. Several years ago, the EZID Section developed an “Animal Bite Report Form” that was added as an option in the Michigan Disease Surveillance System (MDSS), the electronic mechanism for reportable disease tracking. This form was created at the request of local health departments that wanted to use MDSS to track their animal bite reports. The MDSS animal bite data has not been analyzed at the State level. The Fellow will evaluate the use of MDSS for animal bite reporting by Michigan local health departments.

Major Project  Rabies Post-exposure Treatment (PEP) Reporting
The EZID Section would like to make rabies PEP a reportable condition in Michigan, so that we can better assess the use of PEP in the state and identify areas for additional education and training. This is an ongoing project that other Fellows have contributed to over the past few years. The next step is to develop a case report form and pilot and assess its use with targeted local health departments and the health care facilities in their jurisdiction. The results of this project will provide the evidence to support (or not) officially making rabies PEP reportable state-wide.
Additional Project Animal Exhibit/Petting Zoo Toolkit

The National Association of State Public Health Veterinarians (NASPHV) has developed the Compendium of Measures to Prevent Disease Associated with Animals in Public Settings, a guidance document for public health and venue operators. There are a variety of challenges to health associated with these settings, but most serious are those involving potential exposure to dangerous pathogens such as Shiga-toxin producing E. coli. Despite this guidance, outbreaks associated with these settings continue to occur and challenge public health authorities. There is interest among public health authorities to improve the tools available to investigate these outbreaks, to learn more about which aspects and activities present the greatest risk, and improve the public’s compliance with public health prevention messages. The Fellow could become involved in this effort for Michigan.

Additional Project Canine Brucellosis in Michigan

In the past few years, canine brucellosis, caused by Brucella canis, has been detected in a number of large breeding kennels in Michigan. This is a zoonotic disease that primarily affects dogs, but can infect people. Human cases are difficult to detect because the disease may be mild and there is currently no serologic test that can identify when a person has been exposed. Despite a number of kennel outbreaks there have been no documented human cases of Brucella canis in Michigan, but the risk exists. With kennel outbreaks increasing in frequency in the state, there is a need to address this issue through a number of different stake-holder groups including public health, veterinarians, animal control, pet stores and breeders. The Fellow would organize the effort to develop a comprehensive approach to canine brucellosis surveillance, outbreak response, and control under a One Health approach.

Preparedness Role

Michigan has an established Bureau of EMS, Trauma, and Preparedness (BETP) 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 this Bureau. 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 a variety of sources, including the MI-TRAIN portal (https://mi.train.org), a learning resource for professionals who protect the public’s health.
**Additional Activities**

The CSTF Fellow can 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 Bureau. Past projects have included developing and distributing education materials about Lyme disease targeted to healthcare providers and assessing their effectiveness, 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 Beg Bug Manual, to name a few. MDHHS has been collaborating with partners at Michigan State University 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 objectives.

**Mentors**

**Primary**
Kimberly Signs, DVM  
Zoonotic and Vector-borne Disease Epidemiologist

**Secondary**
Mary Grace Stobierski, DVM, MPH  
Section Manager, State Public Health Veterinarian