

Environmental Health-Waterborne

Assignment Description:

This CSTE Fellow position will be located within the Indiana State Department of Health (ISDH), Epidemiology Resource Center (ERC), and work alongside the Director of Zoonotic and Environmental Epidemiology, as well as the Enteric Epidemiologist to improve waterborne disease and outbreak detection, investigation, reporting, and response. The CSTE Fellow will assist the ISDH Surveillance and Investigation Division (SID) to accomplish their vision to minimize the effect of communicable disease in the State of Indiana. The mission of the ISDH SID is to conduct surveillance, investigations, research, communicate findings, and provide education through electronic and other means necessary to improve public health. The CSTE Fellow would contribute to the ISDH ERC by assisting to accomplish the following goals:

- Conduct surveillance for reportable diseases, emerging and re-emerging infections, and respond to outbreaks and requests for information.
- Ensure that appropriate and thorough investigations are being conducted while working with public health partners.
- Support electronic reporting and surveillance development while fostering use and training among all public health partners.
- Communicate and educate to support and improve surveillance and investigation activities in Indiana and timely reporting of data and findings.
- Conduct research to stay current with the science of infectious disease.

Primary responsibilities will include expanding state health department capacity to detect, investigate, and report waterborne disease outbreaks and harmful algal bloom (HAB) events associated with inland and Great Lake beach use. This position will then work to connect this data to other available environmental data such as beach sanitary surveys or water quality monitoring, and this data will be used to make informed decision making by public health officials to mitigate public health challenges. The CSTE Fellow will develop health promotion and educational materials for the general public, public health, and medical professionals to expand public knowledge about reducing risks associated with recreational water use.

Indiana is a de-centralized or “home-rule” state; the CSTE Fellow will be required to provide consultation on case investigation and intervention activities with the local health department (LHD) and assist with investigations, as requested. This position will provide leadership on multi-jurisdictional outbreaks. This position will maintain the National Outbreak Reporting System (NORS) for waterborne outbreaks and the Harmful Algal Bloom Information and Surveillance System (HABISS) that will be reported via NORS. This position will also use waterborne disease and outbreak knowledge to assist in investigations at public swimming pools and splash pads. This position will work collaboratively with divisions within ISDH, such as the Laboratory, Food Protection Program, and Environmental Health and other state agencies, such as the Department of Natural Resources (DNR), Indiana Department of Environmental Management (IDEM), Purdue University, and Board of Animal Health (BOAH).

Day-to-Day Activities:

The CSTE Fellow will:

- Fully participate in the day-to-day activities conducted by ISDH ERC staff, including participating in disease investigations, conference calls with federal, state, and local partners; attending departmental meetings; and attending local and national conferences.
- Conduct surveillance for giardiasis and cryptosporidiosis by reviewing incoming reportable communicable disease reports and lab reports for completeness and accuracy.
- Coordinate with the Enteric and Molecular Laboratories to receive and analyze data.
- Respond to data inquiries and submit relevant data for the annual communicable disease reports.
- Review and close out completed case investigations from the LHDs in a timely manner.
- Serve as a subject matter expert on waterborne diseases and algal blooms.
- Monitor the incoming data for outbreaks and respond appropriately.
- Produce an outbreak report and report outbreaks and algal blooms, when appropriate, in NORS.
- Coordinate with the Respiratory Epidemiologist to assist on surveillance, investigations, and outbreaks of legionellosis.
- Monitor and investigate reports of harmful algal blooms.
- Coordinate with the Enteric Epidemiologist to assist on surveillance, investigations, and outbreaks of enteric diseases, especially of unknown origin that may have the potential to be waterborne.

Potential Projects:

The ISDH ERC is flexible and supportive of innovative ideas and projects, and the CSTE Fellow will have an opportunity to suggest and initiate projects that are timely and beneficial in consultation with the mentors.

Waterborne Disease Surveillance, Investigation, and Outreach:

- Coordinate waterborne disease outbreak investigations by coordinating with field epidemiologists, internal staff and other public health partners in the investigation.
- Ensure investigations are conducted according to established protocol and that current data analysis software, statistical methods, and investigation techniques are utilized.
- Provide guidance to ISDH program areas, field staff, local health departments, health care providers, schools daycare centers, and others during a waterborne disease outbreak.
- Provide educational materials and outreach associated with waterborne diseases.
- Indiana reports an average of 346 giardiasis, 215 cryptosporidiosis, and 64 legionellosis cases per year. Indiana had its first case of primary amebic meningoencephalitis in 2012, and this individual will be responsible for conducting research and public outreach for this condition.

Harmful Algal Bloom Surveillance, Investigation, and Outreach:

Indiana has had numerous recognized HABs in the past several years; ISDH is interested in developing a surveillance and investigation program for HABs. The CSTE fellow would have the opportunity to be a leader in the formation of this program. Development of this program would involve working with DNR, IDEM and BOAH to provide surveillance and technical support for investigating health threats from harmful algal blooms, development of educational resources related to algal blooms for local health departments and public distribution, and database development and monitoring of results from environmental cyanobacteria sampling from the waters of the state.

Indiana Fish Consumption Advisory:

Assist IDEM, IDNR, and Purdue University with annual updates to the Indiana Fish Consumption Advisory utilizing data from fish collection and analysis done in Indiana. Long-lasting contaminants that have been found in Indiana fish and are currently addressed in the advisory include polychlorinated biphenyls (PCBs), pesticides, and heavy metals (e.g., mercury). We would also like to evaluate and address the subject of emerging contaminants such as pharmaceuticals, personal care products, and replacement flame retardants that can be found in fish.

Additional Special Projects:

- Assist ISDH with communicating and conducting training opportunities with health care facilities and others concerning the ASHRAE 188 standard. ASHRAE 188 standard provides a comprehensive set of practices that facility managers can follow to help prevent legionellosis transmission. The standard specifies uniform practices for risk assessment and management which covers potable water systems; cooling towers and evaporative condensers; whirlpool spas; decorative fountains; other water features; and aerosol-generating air coolers, humidifiers, and washers.
- Participate in outbreak investigations, particularly of enteric and environmental origins.

Preparedness Role

Conduct surveillance for reportable diseases, emerging and re-emerging infections, and respond to outbreaks and requests for information. This position will also use waterborne disease and outbreak knowledge to assist in investigations at public swimming pools and splash pads. This position will work collaboratively with divisions within ISDH, such as the Laboratory, Food Protection Program, and Environmental Health and other state agencies, such as the Department of Natural Resources (DNR), Indiana Department of Environmental Management (IDEM), Purdue University, and Board of Animal Health (BOAH). Coordinate waterborne disease outbreak investigations by coordinating with field epidemiologists, internal staff and other public health partners in the investigation. Ensure investigations are conducted according to established protocol and that current data analysis software, statistical methods, and investigation techniques are utilized. Ultimately, this position will provide guidance to ISDH program areas, field staff, local health departments, health care providers, schools daycare centers, and others before, during, and after a waterborne disease outbreak or HAB. An important role will be to provide educational materials and outreach associated with waterborne diseases to promote emergency preparedness.

Assignment Location: Indianapolis, IN

Primary Mentor: Jennifer House, DVM, MPH, DACVPM
Director, Zoonotic and Environmental Epidemiology Division
Indiana State Department of Health

Secondary Mentor: Sarah Popovich, MS
Enteric Epidemiologist
Indiana State Department of Health