Infectious Diseases

Illinois Department of Public Health, Division of Infectious Diseases
Chicago, Illinois

Assignment Description

The CSTE Fellow will be assigned to the Division of Infectious Diseases (DID), which includes Communicable Disease, TB, Immunization, and STD/HIV Sections. Sections are responsible for state-wide disease surveillance, prevention, and control programs conducted in collaboration with 95 local health departments. There have been 252 outbreaks in Illinois in 2016 alone, due to pathogens such as Legionella, STEC, Elizabethkingia, and measles, as well as 3 CDC Epi-Aids during this time. Fellows will have the opportunity to work on multidisciplinary teams in cross-office analyses on data sets relevant to their projects. Emphasis will be made to involve the Fellow, as his/her interests allow, in field opportunities including infectious disease outbreaks, injury investigations such as those related to drowning events, collaborations to provide analytical data to government and non-government stakeholders in order to inform health policy, and conference travel.

Day-to-Day Activities

The Fellow will work closely with Dr. Layden and the team in the Division of Infectious Diseases in their day to day activities of outbreak investigation, projects, and surveillance activity. The Fellow will receive training / mentorship in statistics, epidemiology / outbreak investigation, surveillance reporting and evaluation, lay communication, public health systems, scientific literature review, and scientific writing. The Fellow will have opportunities to work with scientists at the Carbondale and Chicago Laboratories, and will have the opportunity to work with the IDPH team in Springfield, in the Division of Infectious Diseases.

Potential Projects

Surveillance Activity

Rapid notification of multi-drug resistant bacterial infections

Resistant bacterial infections, including carbapenem-resistant Enterobacteriaceae (CREs) are increasingly prevalent in the Illinois healthcare setting. Using data from the XDRO (extensively drug resistant organisms) registry maintained by IDPH, in collaboration with the Medical Research Analytics and Informatics Alliance and the Chicago CDC Prevention Epicenter, analysis can be performed to examine the impact of rapid notification of interfacility transfer of patients with CREs on implementation of infection control measures, disease clusters and outbreak investigation.
Surveillance}/Evaluation of Enteric Pathogen Surveillance Data

Evaluation

Resistant bacterial infections, including carbapenem-resistant Enterobacteriaceae (CREs) are increasingly prevalent in the Illinois healthcare setting. Using data from the XDRO (extensively drug resistant organisms) registry maintained by IDPH, in collaboration with the Medical Research Analytics and Informatics Alliance and the Chicago CDC Prevention Epicenter, analysis can be performed to examine the impact of rapid notification of interfacility transfer of patients with CREs on implementation of infection control measures, disease clusters and outbreak investigation.

Major Project / The use of non-culture base data for enteric disease diagnoses

Non-culture based molecular methods for enteric disease are becoming increasingly common in the healthcare setting, although the impact, including that on outbreak investigation, case definitions, work restrictions and release of specimens remains unknown. State laboratory data (culture and non-culture based), hospital discharge data and communicable disease surveillance data can be analyzed to understand the impact on rates of culture and non-culture confirmed disease and epidemiological linkage to identify the utility of non-culture based data in the various Public Health Sectors.

Additional Project / Education and Outreach to reduce Drowning Incidents

Every summer, drowning incidents highlight the need for public health education and outreach in Illinois. Analysis of data from injury deaths/vital statistics, as well as data from IDPH regulated facilities with cross-references from media sources can provide information on site and individual risk factors used to target prevention messaging.

Major Project / HCV related healthcare utilization

Illinois does not currently report on HCV-related healthcare utilization. Understanding local epidemiology and resource utilization may inform relevant policies including testing, linkage to care and treatment, as well as access to syringe exchange. Data from communicable disease surveillance could be cross matched with mortality data from vital statistics as well as hospital discharge and emergency department data in order to determine state-based healthcare utilization and mortality rates.

Preparedness Role

The fellow will be involved with Zika preparedness activities in our Department. There is a need for intra and inter-agency and Office communication, both internal and external to our Department. This includes procedures for rapidly disseminating new and important information, as well as guidelines for the implementation of new recommendations. The fellow will help to develop SOP's for these activities. Additionally, the fellow will be involved with various Table Top activities, and other emergency preparedness activities across the Department.
**Mentors**

**Primary**
Jennifer Layden, MD, PhD  
Chief Medical Officer and State Epidemiologist

**Secondary**
Livia Navon, MS  
Career Epidemiology Field Officer