Infectious Diseases-HAI, Infectious Diseases

Illinois Department of Public Health, Office of Health Protection-Communicable Diseases

Chicago, Illinois

Assignment Description

The Fellow would be placed within our Communicable Disease section, in the Office of Health Protection. The Fellow would work closely with all members of the HealthCare Associated Infection (HAI) team. The HAI team oversees all aspects of HAI work, including: strategic planning, disease surveillance, informatics, quality improvement/education, and outbreak / disease response and investigation.

The fellow would be located in the Chicago office. Members of the HAI program are based both in Chicago and Springfield, and meet regularly via video and phone conferences, and have nearly daily check-ins.

As HAI is cross cutting, the fellow would work with numerous programs. For example, HAI investigations often involve our environmental investigations (Legionella, or water borne pathogens). Our public health lab does resistance testing for some pathogens and assists with unknown respiratory outbreak investigations.

Day-to-Day Activities

The fellow would have a wide range of experiences.

Day to day activities include:

- Participate in team check in calls
- Participate in outbreak investigations, both in the field and at our office
- Play a lead role in surveillance activities for 1-2 HAI infections (TBD based on particular interest of fellow)
- Run descriptive and analytic statistics on disease trends
- Participate in national (CDC, CSTE) work groups appropriate to projects the fellow is involved with
- Develop reports and presentations to disseminate findings to various audiences (scientific, IHDS, general public)
- Journal review on various topics
- Surveillance evaluation project
- Work closely with other team members on data analytic projects
**Potential Projects**

**Surveillance Activity  Surveillance for Candida Auris**

Candida Auris is an emerging drug resistant fungal infection that leads to significant disease, particularly among residents of long-term care facilities. This is a reportable disease, and we have ongoing surveillance for this pathogen. When a case is identified, there are significant response efforts that are required, including point prevalence surveys of the facility and containment efforts. The Fellow would work with the C. Auris team on point prevalence surveillance, and surveillance efforts. The focus of the fellow's role would be to conduct an analysis of cases across healthcare systems, to identify networks of transmission across facilities, and optimize our approach to notifying facilities in 'realtime' of a new case. IDPH has a novel registry-called XDRO. This surveillance registry allows for bi-directional communication between IDPH, LHDs, and healthcare facilities. Thus, a facility can be alerted to a case upon admission.

**Surveillance Evaluation  Evaluation of Our Legionella Surveillance System**

Legionella is an infection commonly associated with healthcare associated exposures. It is challenging to identify clusters at healthcare facilities, as patients do not always spend their whole incubation period at the facility, facilities are large (and include numerous building), and patients can live in numerous jurisdictions. Case are reported generally by jurisdiction, and thus identifying a common link across a healthcare facility can be challenging. The fellow will evaluate our current surveillance system, focusing on healthcare associated cases. The objectives would be to:

1. Asses the timeliness of identifying healthcare associated clusters
2. Identify limitations, and strategies to enhance the identification of healthcare associated clusters of LD

**Major Project  Unknown Respiratory Illness Outbreaks**

Each year, particularly in the winter, we have reports of unknown respiratory illnesses in healthcare facilities, largely in long term care facilities. The fellow would:

1. Provide a summary and descriptive report of the last 5 years of unknown respiratory illness outbreaks in healthcare settings.
2. Develop tools and protocols to aid facilities in the investigation of these outbreaks
3. Develop tools and protocols to aid facilities in the management of these outbreaks
4. As respiratory outbreaks occur in facilities, the fellow would have the opportunity to assist, and then lead, such investigations

**Major Project  Antibiotic Resistance**

Antibiotic resistance is a growing public health threat, recognized by the WHO as a top 10 global threat. Our HAI program has an antibiotic stewardship program, that focused on surveillance for inappropriate use, and education efforts with various clinical partners and the general public. The fellow would be involved in various data analysis projects to look at antibiotic use trends across our states and identify mechanisms to reduce unnecessary antibiotic use.
Additional Project  Enhancing Infection Control Practices in Public Health

Many local health departments have limited experience with infection control. IDPH is working to build capacity in LHDs, by providing resources, toolkits, training materials to build basic knowledge and best practices tips for LHDs. The fellow would be involved in the development of the material and can assist with educational efforts and training.

Preparedness Role

The partnership of healthcare settings and public health is critical for emerging and novel diseases. Communication, bi-directionally, is paramount in preparing for, and responding, to a public health emergency. The fellow would be involved in a project to enhance our communication streams between Public Health and Healthcare systems. We are actively working to develop a more 'real time' communication mechanism with providers and healthcare systems that would be used to disseminate urgent/emergent information to health care providers and facilities.

Our Preparedness Office works closely with the Regional HealthCare Coalitions on preparedness activities. This includes such activities as: tabletop exercises, preparedness conferences, etc. The fellow will have the opportunity to participate in these exercises, planning, and activities.

Additional Activities

The fellow would be involved in numerous outbreak investigations in healthcare settings. Common outbreaks include: Legionella, influenza, respiratory illness outbreaks, Group A strep outbreaks, and staph scalded skin syndrome outbreaks.

We typically have 2-3 CDC EpiAids each year, often involving healthcare facilities. The CSTE AEF would have the opportunity to be an active participant in these responses.

Mentors

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

Secondary  Judy Kauerauf MPH
Chief of Communicable Disease Section