**Infectious Diseases-HAI**

**New Jersey Department of Health, Communicable Disease Service; Infectious and Zoonotic Disease Program**

Trenton, New Jersey

**Assignment Description**

The New Jersey Department of Health (NJDOH), located in central New Jersey, provides public health services to over nearly nine million New Jersey residents. The fellow will work with the NJDOH Communicable Disease Service (CDS), which is comprised of three area-specific programs (Infectious and Zoonotic Diseases, Regional Epidemiology Program, and Vaccine-Preventable Diseases). The fellow will be part of the HAI/AR team within the Infectious and Zoonotic Disease Program. CDS provides guidance to local health departments and health care facilities statewide regarding routine investigations of reportable communicable diseases and outbreaks as well as public health emergencies, including emerging infections and events related to bioterrorism.

CDS has approximately 70 staff members who represent a range of expertise, including physicians, nurses, epidemiologists, health educators, and veterinarians who are available to the fellow for consultation and/or collaboration. The fellow will have the opportunity to work with the State HAI Coordinator and partner with staff in the Division of Healthcare Quality Assessment responsible for quality metrics of HAI reporting and HAI prevention practices.

**Day-to-Day Activities**

The fellow would be an integral part of the HAI/AR team. The fellow's anticipated day-to-day activities would include work on long-term analytic projects that they have chosen to work on as well as acute outbreak investigations. Other routine activities would include:

- Long-term analytic projects, which would involve collecting and analyzing epidemiological data and reporting findings
- Acute outbreak investigations, which would potentially involve field investigations (site visits), developing and/or administering questionnaires, developing database/linelist, analyzing data, and participating in conference calls with local, federal, and other state public health agencies
- Investigation of reported infection control breaches in healthcare facilities, including diversion of injectable medications
- Investigation of HAI related reports, including viral hepatitis or other pathogens
- Respond to inquiries from LHD or the public regarding infection control or outbreak control measures
- The Fellow will meet at least weekly with one or both mentors. S/he has the option to meet the State HAI Coordinator on a regular basis
- Participation in bi-weekly meetings with CDS epidemiologists regarding current investigations/outbreaks
- Participation in regular meetings with regional (i.e., based at local health departments) epidemiologists regarding current investigations/outbreaks and lectures on topics in public health
- Participation in the NJDOH Drug Diversion collaboration, which offers an annual conference as well as quarterly conference calls to discuss the needs at healthcare facilities regarding drug diversion prevention, detection and response
Participation in the HAI Subcommittee for Infection and Assessment Control and Response (ICAR) quarterly meetings, which is responsible for guiding assessments in infection control capacity throughout the state

- Capacity building (education, technical assistance) and engagement of Tier II and III health care facilities on infection control and best practices
- Oral and poster presentations to the public and health professionals at local/regional or national conferences or training sessions
- Access to statewide in-person and online public health trainings. Examples Include:
  - SAS refresher course
  - Public Health Media Training
  - Communicable Disease Investigator Training
  - Introduction to Logic Models
  - APIC Infection Control Course

Potential Projects

Surveillance

Surveillance for Antimicrobial Resistant Oragnisms Activity

1. Research available data regarding state antibiograms that highlights resistance patterns throughout the state.
2. Develop a NJ-specific electronic state antibiogram system for acute care hospitals or other types of healthcare facilities to submit to the NJDOH and then analyze the data.
3. Assess Electronic Laboratory Data reported to NJDOH for antibiotic susceptibility testing information and develop systems to produce automated state or regional antibiograms or analyze reported data in near-real-time.
4. Analyze resistance data reported into CDC’s NHSN system by healthcare facilities at the local/county level. This could include frequency analysis, determining variation of resistant organisms by region, or geospatial analysis.
5. Develop and administer survey to long-term care facilities, outpatient facilities, or other type of healthcare facility to determine infection control practices, antimicrobial stewardship activities, or other surveillance, lab, disinfection/sterilization activities.
6. Develop and administer survey to determine rates and infection control practices of currently non-reportable MDROs, such as MDR Acinetobacter, Carbapenem-Resistant Enterobacteriaceae (CRE), and Pseudomonas aeruginosa.
7. Analyze epidemiologic and laboratory data from the surveillance testing performed by NJDOH as part of the CDC Antibiotic Resistance Laboratory Network (ARLN).

Surveillance Evaluation

Evaluation of NHSN for HAI data

1. Evaluate HAI data reported into CDC’s NHSN system in acute care hospitals throughout New Jersey. These data may include MRSA, C. diff, CLABSI, CAUTI. Fellow could choose to perform validation or geospatial analysis as part of the evaluation, as these data are self-reported by healthcare facilities. A previous CSTE HAI Fellow did a validation study of the MRSA LabID event NHSN data which provided key information to hospitals on their reporting as well as MRSA colonization rates. NJ has the need for further NHSN data validation to be performed. NJDOH is also in the process of acquiring access to NHSN data reported by nursing homes in
Validation of HAI data reported by nursing homes including C. diff and CAUTI data will then also be possible.

2. Using NHSN data, assess the impact of staff influenza vaccination rates on influenza infections in healthcare workers of acute and long term care facilities.

3. Using NHSN data to assess the relationship of adherence to active surveillance testing requirements and infection rates of MRSA in acute care hospitals.

**Major Project**  **Infection Control Assessment and Response (ICAR) Projects**

NJDOH was one of the states which applied for and received ELC Ebola Supplemental Funding from CDC that tasks the state with assessing infection control capacity throughout the state. The fellow will assist in analyzing and evaluating data from the infection control assessments being performed as part of the ELC Ebola/ICAR Supplement grant activities. The HAI/ICAR team is currently using CDC standardized interview tools and direct observation tools, to assess infection control capacity in acute care, long-term care, dialysis, and out patient settings. As infection control capacity is assessed at various facilities, the fellow will help identify areas that are gaps in infection control and assist in the mitigation of the gaps. Information from the data collected and analyzed will assist in the development of training for healthcare workers. The fellow can assist in the development and implementation of the training in increase infection control across the data.

**Additional Project**  **Evaluation of NJ Communicable Disease Reporting and Surveillance System**

Depending on the interest of the fellow, perform a surveillance evaluation on a reportable disease of the fellow's choosing in the state's Communicable Disease Reporting and Surveillance System (CDRSS). CDRSS captures both person-entered and electronic (ELR) disease reports.

**Additional Project**  **Projects with other partners**

Depending on the project/investigation, CDS works closely with other areas in NJDOH, including the Consumer, Environmental and Occupational Health Service; the Division of Public Health Infrastructure, Laboratories and Emergency Preparedness; the Division of HIV, STD and TB Services; and the Division of Health Care Quality and Oversight. The Fellow will have opportunities to collaborate with and use data from the NJDOH Center for Health Statistics, which oversees the state's Behavioral Risk Factor Survey, Healthy NJ 2010, and vital statistics/death registry. Previous projects collaborating with these groups have included investigating flu vaccination and death rates in children and investigating Hurricane Sandy-related deaths in NJ residents.

**Preparedness Role**

1. Participate in state BioWatch and FBI meetings/trainings.
2. Fellow will be assigned after hours emergency on call duty for the NJDOH twice a year.
3. In the event of a public health emergency, the fellow would be part of the CDS response team (which includes sub-teams in the areas of business continuity, Emergency Call Center, communications, epidemiology/surveillance, and data management). In the past, this has included Influenza H1N1, Ebola, and Lassa fever response.
**Additional Activities**

1. Investigations of outbreaks - both healthcare and community associated. The Fellow will have numerous opportunities to lead and/or participate in outbreak investigations; CDS receives over 300 reports/year of communicable disease outbreaks of various etiology.

2. Participate in infection control assessment visits being performed by the state in various healthcare settings as part of the ELC Ebola/ICAR Supplement grant activities.

**Mentors**

**Primary**
Edward Lifshitz, MD,FACP  
Medical Director

**Secondary**
Rebecca Greeley, MPH  
Infectious Disease Team Lead