Infectious Diseases-HAI, Infectious Diseases

Connecticut Department of Public Health, Infectious Disease: Healthcare Associated Infections, STD/TB

Hartford, Connecticut

Assignment Description

The Fellowship offers mentoring through the Connecticut Department of Public Health Infectious Diseases Section. The responsibilities of the Section include developing and providing education for health care providers, assisting local health departments, working with regional public health programs, developing guidelines, implementing disease surveillance and analyzing data, conducting epidemiological studies, evaluating program activities, investigating outbreaks, interacting with providers to manage patients, and assisting in the development of public health policy.

Our goal is to further the Fellow's professional growth and expand access to public health practitioners and leaders. The Fellowship provides a variety of practical, hands-on experiences that will expand the Fellow's knowledge and skills in applied epidemiology and public health practice. This experience will help prepare the Fellow for a career with a state or local health department. The Fellow will be considered an integral member of the Section with a special focus on tuberculosis, sexually transmitted diseases, healthcare- associated infections and vaccine-preventable diseases.

The proposed projects are collaborative and emphasize prevention interventions, use of data for decision-making, evaluating programmatic outcomes, and building program capacity. The TB Program is also involved in collaborative projects with other programs in the New England region. The Fellow will have options from a portfolio of projects to demonstrate core competencies in applied epidemiologic methods, communication, public health practice, and program evaluation. Opportunities also exist to attend and present at public health meetings.

Day-to-Day Activities

The Fellow will be fully integrated into the daily activities of the TB, STD and Epidemiology Programs. The Fellow will work with multiple groups within DPH to experience the full range of public health activities represented at the agency. The Fellow will engage in routine surveillance activities including database management, data cleaning, and data analysis, cluster and outbreak detection, investigation and response, program evaluation, and policy development. This will include attendance at a variety of project-based team meetings at DPH including TB/STD and Epidemiology staff meetings, monthly TB case review meetings and weekly field epidemiology meetings where current clusters/outbreaks and other investigations are discussed. In addition to internal meetings, the Fellow will be integrated into programmatic interactions with our partners at the state public health laboratory, our academic partner, the Yale School of Public Health, and our community-based advisory groups. The Fellow will have access to the same information and databases other staff members do to conduct their projects and assist with additional activities (e.g. outbreak investigations) as they arise. The Fellow will work to analyze and prepare audience-specific presentations of data to foster partnership and inform the clinical care community and beyond.

Potential Projects

Surveillance Activity **Carbapenem-Resistant Enterobacteriaceae (CRE) Surveillance**

Connecticut has conducted surveillance for CRE since 2014. CRE surveillance has been based on a complex case definition which has relied entirely on phenotypic results since advanced molecular characterization has been largely unavailable to hospitals within our state. Beginning in 2017, all CRE identified using the phenotypic case definition at clinical laboratories receive full genetic characterization at the State Public Health Laboratory (SPHL). With this enhanced information, the HAI program conducts healthcare investigations for identification of all non-KPC isolates, including laboratory screening of potentially-exposed individuals. During 2018, CT will onboard the Emerging Infections Program (EIP) Multi-Site Gram-negative Surveillance Initiative (MuGSI) which will requore integration of state-based surveillance with CDC protocols. As part of this surveillance activity, the Fellow will have the opportunity to gain a thorough understanding of antimicrobial resistance while learning the process of detailed medical record review, investigation of multi-drug resistant organism (MDRO)- transmission in healthcare settings, and coordination of data management across multiple platforms . CRE Surveillance in CT is highly informed by the work of our Multi-disciplinary Antimicrobial Resistance/Antimicrobial Stewardship Advisory Group; the Fellow will have the opportunity to work with this group as we work to integrate public health and clinical care in the control of MDROs in our state.

Surveillance Evaluation **Evaluation of Latent Tuberculosis Infection Surveillance**

With TB incidence in the United States at historic lows, there is a shift in focus to latent tuberculosis infection (LTBI). Persons with LTBI represent the reservoir of future TB disease patients and treating them can prevent future illness and transmission. LTBI is reportable for certain groups with the highest priority being contacts to known TB cases as these persons are at the highest risk for developing TB disease. While the program is effective at identifying and evaluating contacts, the program is currently not meeting goals for completion of treatment among this group. This evaluation would focus on current activities related to the identification, evaluation and treatment of contacts with LTBI to determine gaps and make recommendations for changes to improve treatment completion in this group.

Major Project **Development of XDRO Registry**

The Connecticut HAI Program is in the early stages of developing a registry of patients who have been colonized and/or infected with an extensively drug resistant organism (XDRO). The goal of the project is to develop a database which is accessible to clinicians across the spectrum of care centralizing information critical to the practice of infection control and the implementation of appropriate precautions. Connecticut has established collaborative relationships with multiple states to first integrate CRE and CRAB data into our web-based surveillance system Consilience Public Health

Solutions Maven (known in CT as CTEDSS), and then develop a messaging interface using RedCAP. This project has many aspects from technical database development to public health policy considerations. The precise involvement of the Fellow will depend on their particular interests and experience and will offer an opportunity to interact with Fellows and staff from other jurisdictions.

Additional Project **Analysis of STD Medical Record Database**

The STD Control Program contracts with 8 local STD clinics to offer a wide range of clinical services for the diagnosis and treatment of STDs at low or no cost to 4000-5000 patients annually. A medical record database (built in Access) has been used by these sites for over 15 years to collect and record data on patient visits. While reports for these visits are generated and sent to the STD Program, there are several opportunities for a large amount of data to be analyzed from this database. Possible projects might include analyzing visits for gonorrhea, chlamydia epidemiology and Trichomonas diagnoses.

Additional Project **National Healthcare Safety Network (NHSN)**

Connecticut's Healthcare-Associated Infections Program mandates public reporting of HAI data through the National Healthcare Safety Network (NHSN). The rapid expansion of this surveillance system to encompass multiple types of healthcare facilities and a growing list of infection types requires that the CT HAI program review, validate, analyze, and publish multiple data sets each year. Introduction to NHSN surveillance and data analysis will prepare the Fellow for job opportunities in this evolving field. The Fellow will train in NHSN case definitions and surveillance methodology, analyze data on the facility level and in aggregate, and produce reports for action (Targeted Assessment for Prevention (TAP)) at the facility level, and for data dissemination to legislators, stakeholders, and the public. The Fellow will also be encouraged to engage in evaluation activities leading to continuous process improvement with respect to public reporting of HAIs.

Preparedness Role

Possible activities might include working with bioterrorism/emerging pathogen response protocols, and planning for continuity of program operations in an emergency. Fellows may participate in a table top exercise, hotwash/after action meetings or other field exercises regularly planned through the agency's Office of Emergency Preparedness.

Additional Activities

If the Fellow is inclined, HAI program staff will support and encourage pursuit of the Certified in Infection Control (CIC) credential. Recently opened to public health professionals, this designation can prove beneficial when interacting with clinical partners if the Fellow is interested in remaining in the area of healthcare-associated infections.

Mentors

Primary	Lynn Sosa BS, MD TB/STD Control Programs Coordinator, Deputy State Epidemiologist
Secondary	Meghan Maloney BS, MPH Epidemiologist 3, Antimicrobial Resistance Coordinator