

Subject Area: Infectious Disease-HAI

Assignment Description

The Cook County Department of Public Health (CCDPH) is the local health authority serving 2.4 million residents of suburban Cook County, Illinois (Chicago area). The jurisdiction of CCDPH spans 700 square miles and includes 125 municipalities, 21 acute-care hospitals, 150 long-term care facilities, and over 600 schools. CCDPH has a staff of 340 spread among 5 technical sections (communicable diseases, environmental health, emergency preparedness, vital statistics, clinical services) and 3 support programs (public information, legal and finance). The CSTE Fellow assigned to CCDPH will be assigned to the communicable disease control section under the supervision of the director. Routine, daily activities of the Fellow will include one or a combination of the following functions: investigation of healthcare-associated infectious disease outbreaks, surveillance for designated cases of new, rare and/or challenging infectious diseases, communicable disease outbreak investigations, analysis of surveillance data, reviewing diseases of special and/or unique interest in the Illinois National Electronic Disease Surveillance System (I-NEDSS) to assure accuracy and completeness of reported cases, on-site inspection of facilities with suspected or confirmed outbreaks, liaison with the Enhanced Surveillance Program regarding anomalies in CCDPHs syndromic surveillance system (ESSENCE) that may signal disease clusters, and assisting with local and statewide pandemic disease planning and emergency preparedness issues, as requested.

The emergence and spread of drug-resistant bacteria is a growing problem in the United States. In a report released by the CDC in September 2013, entitled 'Antibiotic Resistance Threats in the US', carbapenem-resistant Enterobacteriaceae (CRE) were listed as an "urgent" threat. While carbapenemase-producing *Klebsiella pneumoniae* (KPC) have been responsible for much of the increase in CRE in the US, other carbapenemases such as the New Delhi-metallo-beta-lactamase (NDM), have the potential to add to this burden. In Illinois, several measures have been taken by the state and local public health departments to address concerns over the proliferation of CRE. Activities aimed at controlling the spread of CRE include:

- Establishment of an XDRO Registry that requires all hospitals, hospital-affiliated clinical laboratories, independent or free-standing laboratories, long term care facilities, and long-term acute care hospitals in IL to report CRE isolates that meet surveillance criteria through a web-based portal. The purpose of the registry is to 1) improve CRE surveillance and 2) improve inter-facility communication.
- A CRE Task Force has been convened which includes representation from state and local health departments, plus ID and microbiology experts from local academic medical centers. The role of the task force is to identify actionable public health interventions for CRE control, formulate regional CRE

communication and messaging, develop CRE educational materials, and organize field teams to respond to facilities with increased prevalence of CRE.

- A long term care roundtable has been convened to educate long term care and long-term acute care infection preventionists about CRE and efforts to control CRE in this region.

Day-to-Day Activities

The fellow will be assigned to the communicable disease control unit and will work on disease surveillance, prevention and control activities under the direct supervision of the Unit Director. The primary areas of assignment will be CRE surveillance, CRE outbreak investigations and the development and implementation of CRE prevention and control measures. Routine activities will include disease surveillance and outbreak response. Settings in which the fellow is likely to be involved in outbreak investigations include acute care hospitals, long-term care and assisted-living healthcare facilities, and other congregate settings such as skilled care nursing facilities, daycare centers, and retirement communities.

Routine, daily activities may include one or a combination of the following functions:

- Participation in the CRE prevention and control activities listed above.
- Surveillance for incident cases of notifiable communicable diseases or disease clusters.
- Surveillance for designated cases of newly emerging, rare and/or challenging infectious diseases.
- Communicable disease outbreak investigations including on-site inspection of facilities with suspected or confirmed outbreaks.
- Analysis and report generation of outbreak and surveillance data.
- Quality assurance of local data in the Illinois National Electronic Disease Surveillance System (I-NEDSS) to assure accuracy and completeness of reported cases.
- Monitoring anomalies in CCDPHs syndromic surveillance system (ESSENCE) for detection of potential disease clusters.

Potential Projects

Due to the increasing frequency of reported clusters of infections caused by drug-resistant bacteria, primarily carbapenem-resistant enterobacteriaceae (CRE), there is a need to evaluate the prevalence of CRE in Cook County long-term care facilities. Under the supervision of the Director, the fellow will be responsible for developing and administering a survey, assessing infection risk and potential transmission routes, developing and implementing intervention strategies, collecting and analyzing data using standard analytic applications, and preparing a report of the project findings.

Preparedness Role

The fellow will be given the opportunity to participate in the agency's incident command structure and will assist the CD Director in preparation of briefings of disease intelligence for local or regional outbreaks as well as functional drills. The fellow will assist with local and statewide pandemic disease planning and emergency preparedness activities, as necessary.

Assignment Location: Cook County Department of Public Health
Oak Forest, Illinois

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