

Infectious Diseases—Healthcare Associated Infections (HAI)

Assignment Description

The Fellow will have the opportunity to evaluate the Minnesota Department of Health (MDH) CRE surveillance system that began as statewide passive reporting in 2009 and has expanded to include active, laboratory- and population-based surveillance in Minnesota's two most populous counties as part of the Centers for Disease Control and Prevention (CDC) Multi-site Gram-negative Surveillance Initiative (MuGSI). The MDH CRE surveillance system was developed by a former CSTE Fellow, Kristin Shaw, who continues to coordinate this surveillance and will work closely with the future CSTE Fellow on these projects.

The high mortality rate associated with invasive CRE infections and the dearth of new antibiotics to treat CRE infections has made CRE surveillance a public health priority. MDH has nearly 5 years of experience with CRE surveillance. Despite this, external changes that will impact how we conduct surveillance are on the horizon. We will be transitioning CRE surveillance to a new electronic reporting and tracking system for communicable diseases: Minnesota Electronic Disease Surveillance System (MEDSS). Additionally, improved laboratory diagnostics tests to detect carbapenemase-producing CRE are under development and are being evaluated at the MDH PHL; how these tests are ultimately utilized by clinical laboratories may influence our surveillance processes. Finally, a national CRE case definition is being developed by a CSTE work group. Considering these factors, a formal evaluation of the MDH CRE surveillance system would be timely and useful for Minnesota and for state health departments across the country.

The Fellow would also have the opportunity to work with a future MDH special antibiotic use study in patients with CRE positive urine cultures. Urine is the most common source of CRE to date in Minnesota, and these isolates are detected in patients across the spectrum of care; many of whom may have no documentation of prior infection for which antimicrobials are indicated. Such a study would contribute to an understanding of prescribing practices, impact antimicrobial stewardship efforts in all types of healthcare settings, and inform interventions to reduce CRE in Minnesota.

Mentors will work with the Fellow to enable opportunities for abstract presentation at a national conference and development and publication of a manuscript(s).

Day-to-Day Activities

The Fellow's anticipated day-to-day activities would include work on long-term analytic projects and acute outbreak investigations (suggested projects below). Other routine activities would include:

- Participate in a daily morning meeting at which epidemiologists and laboratorians review current investigations and activities
- Collaborate with MDH PHL staff and ICAR CRE surveillance officer in ongoing CRE surveillance
- Participate in weekly ICAR Unit meetings where current projects are discussed, problem solving, and peer consultation occur

- Participate in weekly infectious disease conference with the University of Minnesota infectious disease physicians and fellows
- Participate in MDH “Epi Brown Bags”
- Participate in monthly MuGSI conference calls led by CDC; attendance at annual MuGSI Surveillance Officer meeting convened by CDC
- Participate in monthly APIC-MN meetings and on APIC-MN subcommittees to review and revise the MDH CRE Infection Prevention Recommendations
- Present at above the conferences and meetings
- Participate in MEDSS planning and implementation for CRE; evaluation of CRE surveillance using MEDSS
- Attend the CSTE Annual Conference at least one of the two years of the fellowship
- Meet a minimum of four hours per week during the first month and two hours per week thereafter with Mentors

Potential Projects

There is flexibility built into the program such that the Fellow will have the option of pursuing specific projects of interest. Typical potential projects include:

- Development of a surveillance system for infections in outpatient dialysis centers and/or ambulatory surgical centers
- Participation in a demonstration project of reducing antibiotic use in long-term care facilities
- Survey of childcare providers and administrators on the use of antibiotics in children
- Development of infection prevention and control guidance for ambulatory care settings, including dialysis centers
- Assistance with analysis of National Healthcare Surveillance Network data for selected conditions
- Outbreak field investigations including HAIs, respiratory infections, foodborne and viral gastrointestinal infections
- Risk factor and case-control studies (as part of an outbreak investigation or part of a special project)

Preparedness Role

The Fellow will work with epidemiologists in the ICAR and Emerging Infections Unit to assess existing and develop new guidance pertaining to novel respiratory pathogens.

Assignment Location:	Minnesota Department of Health St. Paul, Minnesota
Primary Mentor:	Ruth Lynfield, MD State Epidemiologist and Medical Director
Secondary Mentor:	Jane Harper, BSN, MS, CIC Supervisor, Infection Control and Antimicrobial Resistance Unit