Infectious Disease-HAI

Healthcare associated infections (HAI) are one of the most common complications of hospital care and are among the leading causes of death in the United States. It is estimated that each year there are more than 240,000 infections, 13,500 deaths, and $3.1 billion dollars in excess healthcare costs due to HAI in acute care hospitals alone. Although these statistics are alarming, experts state that most HAI can be prevented through simple and effective means.

Three important pieces of California legislation, Senate Bills 739 (2006), 158 (2008), 1058 (2008) have drawn attention to and shaped the reporting of HAI in this state. These laws require hospitals to evaluate and augment existing hospital infection control programs and implement new standards and plans to screen, prevent, and report HAI. They also authorized the California Department of Public Health's (CDPH) Healthcare Associated Infections Program in December 2009, partially funded by the American Reinvestment and Recovery Grant, and responsible for the surveillance and prevention of infections in California's 400+general acute care hospitals. The Los Angeles County (LAC) Department of Public Health (DPH) Hospital Outreach Unit (HOU) has partnered with the state HAI program to assist hospitals in implementing these strategies, and continues to conduct special studies on HAI. http://publichealth.lacounty.gov/acd/Report.htm

Los Angeles County (LAC) is one of the largest public health jurisdictions in the United States, encompassing a great diversity of landscapes and climates over 4,000 square miles, 70 miles of Pacific Ocean coastline, the westernmost portion of the Mojave Desert, and several mountain ranges. The 88 incorporated cities and the unincorporated areas range from dense urban neighborhoods to rural areas in the desert and mountains, and house the largest population (10+ million) of any county in the nation, exceeded by only six states. LAC is a vibrant international community, with many distinct ethnic neighborhoods, cultures, and traditions. It stands today as the nation's major immigrant port of entry. In 2006, over 35% of the County's population was foreign born, speaking over 100 languages. In Los Angeles County, 10% of the population is over 65 years old. There is a large income gap among residents, with one in five households having incomes over $100,000 or more, while a third of the population (36%) is at or below the 200% of poverty level, and about 74,000 people are homeless.

The LAC Department of Public Health, Acute Communicable Disease Control Program is committed to teaching and expanding medical knowledge, and staff possess the expertise and competence to instruct and supervise a fellow in the program. They demonstrate a strong interest in the education of medical residents and fellows, and support the goals and objectives of the CSTE Fellowship Program.

The staff has published and lectured extensively and are well regarded in the field of communicable disease control. The fellow will have direct access and work among these individuals throughout the training program. http://publichealth.lacounty.gov/acd/index.htm

Assignment Description

The Fellow will be assigned primarily to work in the HOU with healthcare associated infections and will work on a variety of activities and projects with LAC DPH physicians and staff.

The HOU team includes the Liaison Team, five public health nurses (PHN) and a supervising PHN who report to a medical epidemiologist. The PHNs serve as liaisons who interface with over 100 acute care hospitals in Los Angeles County to strengthen the Department's communication and collaboration, increase traditional disease reporting, improve surveillance for unusual conditions, and assist with infection control and prevention in hospital and emergency department settings.
http://publichealth.lacounty.gov/acd/HOU.htm

The CDPH HAI Program liaison team in Los Angeles is comprised of two experienced infection preventionists (IP) who provide on-site and phone consultation to California's acute care hospitals for activities related to HAI prevention, surveillance, and reporting. These liaison IPs identify best practices, seek to understand HAI priorities and needs of hospitals, provide direct assistance, and make recommendations on HAI prevention resources, tools, and collaboratives. Currently, the liaison IPs focus on providing assistance and education related to the National Healthcare Safety Network (NHSN) enrollment, data entry, surveillance protocols, analysis, and reporting requirements, and will focus on data validation in the future. In conjunction with the LAC HOU and the state HAI Program, the fellow will be involved in a variety of HAI activities that include:

- Provide consultation regarding healthcare associated infections to key hospital staff
- Participate in HAI meetings and conferences (including hospital infection control committee meetings)
- Consult on, validate, and analyze National Healthcare Safety Network's state-mandated HAI data from all acute care hospitals
- Outreach to non-acute healthcare facilities such as ambulatory surgical centers, skilled nursing facilities, and outpatient facilities regarding HAIs, including evaluation of recent surveys conducted by the State
- Investigate outbreaks in both healthcare and community settings

Other potential projects may include:

Hospital Antibiotic Stewardship programs mandated by the State
Senate Bill 739 requires that general acute care hospitals develop a process for evaluating the judicious use of antibiotics, the result of which shall be monitored jointly by appropriate representatives and committees involved in quality improvement activities. The antibiotic stewardship program should promote appropriate use of antimicrobials by selecting the appropriate dose, duration, and route of administration to minimize acquired resistance, improve patient outcomes and toxicity, and reduce treatment costs. Fellowship activities may include:

- Assessment of antimicrobial stewardship programs in place in LAC hospitals in order to identify barriers to success and methods to overcome them
- Development of evidence-based recommendations on how to implement or strengthen antimicrobial stewardship programs, given available resources and hospital attributes.

- Consultative advice and practical evidence to hospitals in order to gain administrative and pharmacy buy-in.

- Collaborations among hospitals with similar difficulties and/or healthcare systems so that facilities can learn successful and unsuccessful strategies from one another.

- Education of long-term care facilities on the benefits of antimicrobial stewardship programs and working on research proposals to better study the efficacy of antimicrobial oversight in the long-term care setting.

- Work with the Antimicrobial Stewardship Subcommittee of the state HAI Advisory Committee to evaluate educational opportunities for California facilities to learn from and expand on their antimicrobial stewardship programs; expand current legislation to include long-term care facilities; and specify characteristics of an antimicrobial stewardship program required in California facilities.

Evaluate the carbapenem-resistant *Klebsiella pneumoniae* passive surveillance system started June 1, 2010 in Los Angeles County

Carbapenem-resistant *Klebsiella pneumoniae* (CRKP) is an emerging nosocomial pathogen that has become endemic in some hospitals on the US east coast. CRKP is resistant to almost all available antimicrobial agents, and infections with CRKP are associated with higher rates of morbidity and mortality. Because these pathogens are resistant to virtually all commonly used antibiotics, monitoring their spread through surveillance is crucial to control efforts.

- Assessment of the existing CRKP surveillance and response activities

- Identification of surveillance gaps of the CRKP surveillance and response activities

- Documentation of the strengths, weaknesses and opportunities of the existing systems and to make appropriate recommendations

Review and promote safe injection practices

The transmission of bloodborne viruses and other microbial pathogens to patients during routine healthcare procedures continues to occur due to unsafe and improper injection, infusion and medication vial practices being used by healthcare professionals in various clinical settings throughout the United States. Breaches in safe injection, infusion, and medication vial handling practices continue to result in unacceptable and devastating events for patients. Responsibility for the oversight and monitoring of patient safety must be clearly designated in healthcare settings to assure that staff education is available for all healthcare professionals providing such services to patients. Furthermore, periodic monitoring for absolute adherence to safe injection practices in healthcare settings is vital in order to ensure effective engineering of and adherence to safe practices in everyday patient care.

- Assessment of the extent of safe and unsafe injection practices and identification of key problem areas

- Conduct studies and surveillance activities to improve safety (e.g., cost-benefit analysis and investigation of risk factors)

- Development of comprehensive information, training materials, and guidelines

- Provision of technical expertise to support hospitals in implementing planned activities to improve safety

- Development of new technologies to minimize risks or potential risks of adverse events.

- Evaluation of injection safety programs based on process and outcome indicators

- Obtain consensus and political will to implement practices to reduce injection overuse

Preparedness Role

Emergency preparedness and response has become a priority for everyone. No single entity, organization, discipline, or agency can claim responsibility for the complex array of challenges associated with public health disasters. Expertise should come from all levels to enhance the infrastructure of first responders. The Fellow will receive training in Incident Command Structure as other county workers do, and participate in any emergency response that may arise, including Point of Dispensing clinics for vaccinations or prophylactic medications.

Assignment Location:	**Los Angeles, CA**
Primary Mentor:	Dawn Terashita, MD, MPH Medical Epidemiologist Los Angeles County Department of Public Health
Secondary Mentor:	Laurene Mascola, MD, MPH Chief, Acute Communicable Disease Control Los Angeles County Department of Public Health