Infectious Diseases-HAI, Infectious Diseases
Texas Department of State Health Services, Emerging and Acute Infectious Disease Unit
Austin, Texas

Assignment Description
The Texas Department of State Health Services (DSHS) is located in the capital city of Austin. The Fellow will have mentors from the Emerging and Acute Infectious Diseases Unit (EAIDU) and will also work closely with the Texas Public Health Laboratory (PHL) microbiology staff. The Fellow will be assigned to work within the Healthcare Safety group of EAIDU, which is responsible for multidrug-resistant organism surveillance, healthcare associated outbreak detection and response, and antimicrobial stewardship initiatives across the state. Responsibilities include collecting, managing, evaluating and disseminating data for epidemiologic investigations of HAIs and outbreak response for HAIs and antibiotic resistance and providing antibiotic stewardship (AS) consultations. The group works closely with the regional and local health departments, prepares and presents speeches, technical reports, and briefings on infection prevention, and investigations. At times, the group consults with physicians and hospital administrators on the epidemiology of HAIs. The group also works with other departments at the state such as Regulatory compliance for both acute and long-term care health facilities and emergency preparedness. The Fellow will gain experience in training development for healthcare facility staff on infection prevention and implementation of HAI outbreak reporting. The Fellow will participate in each of these areas alongside members of the group and broaden their professional network by working with a wide range of colleagues.

Day-to-Day Activities
The Fellow's Major Projects will take up the larger portion of their time. They will attend all meetings that the group at-large attends, including a daily group huddle and the Healthcare Safety Advisory Committee meetings. Once acquainted with surveillance methods and epidemiologic processes at the state, they will work towards being able to coordinate investigations with local health department staff and healthcare facility staff. In addition to conducting investigations, they will review investigations submitted by other health departments for review and approval of confirmed cases of multidrug-resistant organisms for the annual case count. Ultimately, by the end of their time, they will be able to lead field investigations of HAI and antibiotic resistant organism outbreaks in a healthcare facility. Once familiar with infection control and prevention practices, they will provide epidemiologic consultations alongside HAI epidemiologists. To maintain a commitment to the Fellow's personal interest, they will be allotted time to focus on an activity of their choosing that falls under the activities of the Healthcare Safety Investigations group; this time can be used daily or weekly.
Potential Projects

Surveillance Activity  Analysis of HAI Data Sources

Carpabenem-resistant Enterobactericeae (CRE) and Multidrug-Resistant Acinetobacter (MDR-A) are notifiable conditions in Texas and the data is stored on the National Electronic Disease Surveillance System (NEDSS). The fellow will analyze epidemiologic data collected via NEDSS to identify risk factors that are linked to the acquisition of CRE and MDR-A in Texas. The Fellow will also have access to HAI data from the National Healthcare Safety Network (NHSN) and, in combination with the notifiable condition data, the Fellow will be able to identify high risk populations in Texas where additional infection prevention or antibiotic stewardship support is needed. Comparing and combining data from both sources will allow DSHS to determine the epidemiology of the state and gain better insights as to what is happening in the state in order to better inform prevention strategies moving forward.

Surveillance Evaluation  Evaluate the feasibility of a routine merge or ARLN and NBS data for more complete MDRO surveillance and analysis

The fellow will create reports that will be published in the DSHS website. The fellow will also conduct analyses to determine if the systems currently in place between Texas DSHS and the Public Health Laboratory can collect and assimilate data in such a way that both sources can be combined to produce a more true, accurate picture of antimicrobial resistance across the State.

Major Project  ARLN Epidemiology and Laboratory Coordination

The CSTE Fellow will serve as the coordinator between the Healthcare Safety Team and the Texas Antibiotic Resistance Laboratory Network (ARLN) Laboratory to ensure prompt and consistent responses to novel antibiotic resistant organisms. The Fellow will facilitate connections between facilities or clinical laboratories and public health laboratories to ensure appropriate isolates are forwarded to the regional ARLN laboratory for targeted surveillance. The Fellow will assist with the evaluation of the Texas ARLN Response Plan and the Texas Epi-Lab Work Plan to improve coordination and information flow. The Fellow will also conduct quality assurance of the data shared between them and use the data to identify high risk facilities.

Major Project  Community Impact of Seeking Antibiotics in Mexico

The Healthcare Safety Program has long suspected the incidence of CRE is higher in Texas counties that border Mexico. Recent analyses of State data appear to support these assumptions and justify further examination of the situation along the Texas - Mexico border. The CSTE Fellow will assist in the development and distribution of a knowledge, attitudes, and practices (KAP) survey to a randomly selected cohort of residents in both border and non-border counties. The purpose of this survey will be to assess attitudes, beliefs, and behavior of individuals regarding access to medical care, specifically relating to access to antibiotics across the border. The results of the survey will be used to design and
deploy interventions to meet the unique needs of patients and providers on the border, and elsewhere in Texas.

**Additional Project**

**Coordination and dissemination of antimicrobial stewardship resources for long-term care facilities developed by Regional Antimicrobial Stewardship Advisory Committees**

Texas House Bill 1848, which went into effect September 1, 2019, requires the Texas Department of State Health Services (DSHS) to establish a regional advisory committee in each Public Health Region (PHR). The purpose of the committees is to address antimicrobial stewardship in long-term care facilities (LTCFs) and to improve antimicrobial stewardship through collaborative action. Expected outcomes for each committee are the development and dissemination of evidence-based practice guidelines for prescribers in the long-term care setting, community and patient centered resources, and a web page on the DSHS website dedicated to these resources. The CSTE Fellow would be responsible for coordinating these resources on the website with the DSHS Antimicrobial Stewardship Expert and the chair of each regional Committee. Additionally, the Fellow would play an active role in the coordination and execution of regional Committee meetings, including meeting agendas, minutes, routing handouts through the appropriate approval process, and other similar duties.

**Preparedness Role**

The CSTE Fellow will volunteer to serve in the State Medical Operations Center (SMOC) under Disaster Epidemiology, Shelter Surveillance, should the need arise. To prepare for this eventuality, the Fellow will attend the full training program culminating in a full-scale exercise with their assigned shift team and SMOC staff.

**Additional Activities**

Support for HAI and antibiotic resistance outbreak investigations- The Healthcare Safety Program responds to reports of possible infection control breaches and HAI outbreaks, working closely with the laboratory as needed. Epidemiologic and laboratory data are used to guide prevention and mitigation efforts. The CSTE Fellow would investigate HAI and antibiotic resistance outbreaks.

**Mentors**

**Primary**

Enyinnaya Merengwa MD, MPH, MHA, DrPHc

Healthcare Safety Investigations Group Manager/Physician-Scientist

**Secondary**

Gretchen Rodriguez BS, MPH, CIC

Healthcare Associated Infections Epidemiologist, Region 8