Infectious Diseases – Healthcare Associated Infections

South Carolina Department of Health and Environmental Control (DHEC), Bureau of Disease Control/Division of Acute Disease Epidemiology
Columbia, SC

Assignment Description

DHEC is responsible for both public health and environmental protection, which allows exceptional collaboration between these functions. DHEC provides a wide range of experiences and mentoring in communicable and chronic disease, environmental and healthcare epidemiology. DHEC is also integrated geographically (state and local health departments belong to the same state agency), greatly facilitating outbreak investigation. Integration of state and local Health Departments into one state agency provides an unusual degree of access to public health problems. The Bureau of Disease Control within DHEC is responsible for communicable disease surveillance and control, and HIV/AIDS, STDs, tuberculosis, immunization, bioterrorism preparedness. It has over 125 employees including seven physician epidemiologists. The fellow’s assignment will be within the Division of Acute Disease Epidemiology (DADE) and will reside in the Healthcare-Associated Infections (HAI) Section. In addition to HAIs DADE conducts surveillance and investigation of diseases which include food-borne, vector-borne, vaccine preventable, and respiratory diseases.

Day-to-Day Activities

Day to day the fellow will be responsible for:
1. Analyze CDC National Healthcare Safety Network (NHSN) data on HAI metrics required to be reported by SC healthcare facilities in compliance with the Hospital Infections Disclosure Act.
2. Participate in establishing data analysis plans for NHSN data to support HAI Prevention Collaboratives.
3. Support healthcare facilities in reporting data to NHSN.
4. Participate in the activities of the HAI Advisory Committee and help with preparing presentations for the meetings
5. Collaborate with state partners (SC Hospital Association, SC Office of Research and Statistics, and CMS QIO) and their epidemiologists and statisticians to evaluate trends and effectiveness of HAI prevention processes.
6. Participate in DADE meetings and educational opportunities as they arise.
7. Meeting with primary and secondary mentors.
**Potential Projects**

**Surveillance Evaluation**  
Project Title: **Evaluation of NHSN as a surveillance system for collection of HAI data**

Analysis of the data gathered through the National Healthcare Safety Network (NHSN), including data on:

1. central line associated blood stream infections (CLABSI),
2. ventilator-associated events (VAE)
3. surgical site infection (SSI) data following (a) coronary artery bypass graft surgery, (b) abdominal hysterectomy, (c) colon surgery, (d) hip prosthesis surgery and (e) knee prosthesis surgery
4. carbapenem-resistant *Enterobacteriaceae* (CRE)
5. healthcare worker influenza vaccination rates
6. *Clostridium difficile* infection (CDI)
7. methicillin resistant *Staphylococcus aureus* (MRSA)

**Surveillance Activity**  
Project Title: **Analysis of National Healthcare Safety Network (NHSN) data**

Evaluation of NHSN as a surveillance system for collecting data on:

1. central line associated blood stream infections (CLABSI),
2. ventilator-associated events (VAE)
3. surgical site infection (SSI) data following (a) coronary artery bypass graft surgery, (b) abdominal hysterectomy, (c) colon surgery, (d) hip prosthesis surgery and (e) knee prosthesis surgery
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5. healthcare worker influenza vaccination rates
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7. methicillin resistant *Staphylococcus aureus* (MRSA)

**Surveillance Activity**  
Project Title: **Participate in assessing and validating the methodology for the new statewide Clostridium difficile infection surveillance system (links lab reports with hospital discharge data).**

The DADE HAI Section is partnering with the Office of Research and Statistics to perform analysis of *Clostridium difficile* infections (CDI) across the state by linking multiple datasets. This will include linking CDI discharge data to CDI Lab ID Event data reported to NHSN and rights conferred to the SC DHEC users group under the Hospital Infections Disclosure Act and to data reported on CDI to the SC reportable disease surveillance system. CDI was added under HIDA and to the SC List of Reportable Conditions beginning in January of 2015. The CSTE fellow will have the opportunity to perform analysis on this database to provide a detail picture of CDI in SC.
Major Project  

**Project Title: Assist with the analysis and writing of the SC Annual HAI report and the SC HAI Interim Report.**

Under the HIDA HAI reporting legislative mandate DHEC is required to publicly release two reports on facility-specific HAI data. This includes an interim report released in October on data from January-June and an Annual Report released in April of the following year on data January-December. Currently the report includes data on CLABSI, SSIs, and MRSA Lab ID Events, and the Interim Report also includes healthcare worker influenza vaccination data. The CSTE fellow would have the opportunity to participate in the analysis and writing of these reports as well as the opportunity to work with the HAI Advisory Committee to explore including additional metrics in the report such as CRE, CDI, and VAE. The CSTE fellow will work with the HAI Coordinator to perform analysis on this data and present to the HIDA Advisory Committee.

Additional Project  

**Project Title: Conduct outbreak investigations.**

In addition, the CSTE Fellow will have numerous opportunities to participate in disease outbreak investigations and public health decision-making. DADE is responsible for reportable communicable diseases/ outbreak surveillance and epidemiologic response and for state policies, coordination, consultation, and training for the public health regional staff. These responsibilities include diseases that are vaccine preventable, enteric, vector borne, and bioterrorist. The CSTE fellow will have the opportunity to serve as area commander on outbreak investigations, particularly those that are HAI related. Other examples of specific surveillance and response programs include seasonal flu, foodborne illness, and antibiotic resistance.

**Preparedness Role**

DADE works closely with the Office of Public health Preparedness (OPHP) to provide epidemiologic insight and support to preparedness activities. This has included Ebola, hurricane, and unknown substance preparedness activities. The CSTE fellow will have the opportunity to participate in calls and other planning and training activities with on emergency preparedness. DADE and OPHP will be working together to perform assessments of facilities who have volunteered to serve as Ebola treatment/assessment centers in SC. This will include onsite visits and follow up communications to ensure that gaps identified are addressed. The CSTE fellow will have the opportunity to participate and contribute to these activities.

**Additional Activities**

The DADE team meets weekly to discuss case and outbreak investigations and has monthly meetings or by conference call with the epi staff in the four Public Health Regions. Often these are joint meetings with the Public Health Preparedness Directors. The CSTE Fellow will attend these meetings and have the opportunity to present to the group and to other state or local meetings. For the past 19 years, DADE has had an annual Epi conference for the multi-disciplinary Regional Response Teams. Hospital Infection Preventionists also attend the conference. The CSTE Fellow would have the opportunity to present at the EPI Conference and to mentor Regional Epi teams as they prepare to present at the conference. The CSTE Fellow will attend the Hospital Infections Disclosure Act Advisory Committee meetings and the multi-agency meetings of the SC Healthcare Alliance for Infection Prevention.
**Mentors**

**Primary**
Matthew Crist, MD, MPH  
HAI Section Director

**Secondary**
Dana Giurgiutiu, PhD, MPH  
Director of the Division of Acute Disease Epidemiology