Substance Use/Mental Health, Infectious Diseases

Tarrant County Public Health, Disease Control & Prevention

Fort Worth, Texas

Assignment Description

The Applied Epidemiology Fellow (AEF) will work in the Epidemiology and Health Information area of the Tarrant County Health Department, which functionally reports to the Associate Director, Disease Control and Prevention. They will have access to all the resources (both people and other) available to agency epidemiologists. The Epidemiology and Health Information Division consists of 3 units, Infectious Diseases, Non-infectious Diseases, and Surveillance. Over the 2-year experience, the AEF will have total access to all staff. A specific plan and timeline will be provided working with the Primary and Secondary mentors based on the needs and interests of the AEF. The mentors will meet each week with the AEF to go over the previous week’s activities and the plan for the upcoming week. Supervisors of the units impacted will also be included in this meeting.

Day-to-Day Activities

The AEF’s day-to-day activities will largely be determined through matching their identified projects with the processes required for completion. However, there will be times when other activities might be required because of outbreaks or other interesting events. There are several standing meetings that occur each week. One is what is called the 'Huddle' on Friday afternoons at 3 pm. During this time each staff gives highlights of the week related to ongoing outbreaks, interesting cases, or other pertinent information. This is also the time when the on-call telephone is passed on for the next week. There are also meetings with other department staff at TCPH or outside organizations that will be pertinent to the AEF’s projects. The AEF will obviously be included in these meetings.

Potential Projects

Surveillance Activity   Surveillance of Campylobacter Cases at TCPH

Campylobacteriosis It is one of the most common causes of diarrheal illness in the United States. The Foodborne Diseases Active Surveillance Network (FoodNet) indicates that about 14 cases are diagnosed each year for every 100,000 people. Many more cases go undiagnosed or unreported. CDC estimates Campylobacter infection affects more than 1.5 million people every year. Most cases are not part of recognized outbreaks, and more cases occur in summer than in winter. In 2019, TCPH has experienced an increase in reported cases of Campylobacteriosis. The AEF will work with the supervisor of our Infectious Diseases unit to do a retrospective review of all reported cases over the last 5 years. This will include complete descriptive analyses of cases according to person, place and time. The AEF will conduct exploratory analyses to determine if any clusters were overlooked.
Surveillance Evaluation

Evaluation of STI Surveillance at TCHP

Surveillance of STIs (HIV, Syphilis, Chlamydia, Gonorrhea) at TCHP is implemented separately from the Epidemiology and Health Information Division. The plan is to more closely align these activities through a reorganization. The STI Surveillance Unit will still be separate from the Epidemiology and Health Information Division, but demand a closer working relationship. In addition, there is a new surveillance system used by the Texas Department of State Health Services, (TB, HIV, STD Integrated System, THISIS) where these diseases will be reported by local health departments. The evaluation will include both local workflows and capabilities as well as the assessment of how we could electronically send data to THISIS through a link with our system, TriSANO. The outcome of this evaluation will be crucial to further implementation of surveillance for these conditions at TCHP. The evaluation process will follow the Overview of Evaluating Surveillance Systems. Atlanta, GA: Centers for Disease Control and Prevention (CDC), 2013.

Major Project

Establish Behavioral/Mental Health Surveillance and Analytics at TCHP

The major project for the AEF assigned to TCHP, if selected, will play a major role in establishing a formal behavioral health surveillance program at TCHP. This will involve working with our Injury and Violence Prevention Epidemiologist, Informatics Manager, and outside entities. TCHP has embraced the new paradigm of Public Health 3.0 and is moving quickly to be identified at the 'Health Strategist' for Tarrant County, focusing on mental/behavioral Health. Recently John Peter Smith Health System was granted funding to expand mental/behavioral health services in Tarrant County. One of the recommendations was to collaborate in more activities with TCHP. TCHP's goal is to establish dashboard that will provide data from a variety of sources related to mental/behavioral health outcomes to provide timely and accurate actionable data. The AEF will be crucial in making this happen through their activities using basic tools of public health informatics and advanced analytics. The AEF will be prepared to deal with any set of health outcomes as a result of this experience.

Surveillance Activity

Syndromic Surveillance at TCHP

Syndromic surveillance refers to methods relying on detection of individual and population health indicators that are discernible before confirmed diagnoses are made. TCHP has implemented the Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE). This system provides timely (every 24 hours) data on each visit to approximately 100 hospitals in the Texas Region 2/3 jurisdiction. This system is being utilized for routine surveillance of heat-related cases (summer), influenza like illnesses (during flu season) and drownings. We also have been using this system to identify possible cases of acute pulmonary disease related to vaping. The AEF will work with the Informatics Manager to develop additional queries that could be used for surveillance of other conditions of public health importance. Our Informatics Manager, Rasneet Kumar, is a nationally recognized expert on syndromic surveillance and serves as chairman of the Query Assessment Committee that reviews all proposed new queries.
**Preparedness Role**

The AEF will spend time with our Emergency Preparedness Division learning processes related to how TCPH prepares for a public health emergency. One of our ongoing activities is related to preparing for a situation related to the diagnosis of a case of a High Consequence Infectious Disease in Tarrant County, such as Ebola. There is great sensitivity to this and the Dallas/Fort Worth area since this actually occurred in 2014. Thus, we are constantly working with our community emergency management colleagues to prepare. Our Epidemiology and Health Information Division works very closely with the Emergency Management Division. One of our staff Epidemiologists is primarily responsible for this and will include the AEF on all activities.

**Additional Activities**

The Associate Director, Disease Control and Prevention, Dr. Holmes, will include the AEF in specific high-level meetings related to any activities that might be useful as a learning experience.

**Mentors**

**Primary**

Talmage Holmes PhD, MPH
Associate Director, Disease Control & Prevention

**Secondary**

Russell Jones MPH
Epidemiology Manager/Chief Epidemiologist