Infectious Diseases

Tennessee Department of Health, Communicable & Environmental Disease Services & Emergency Preparedness/ HIV-STD, Viral Hepatitis

Nashville, Tennessee

Assignment Description

The CSTE fellow will be fully integrated into an energetic, multi-disciplinary team at the Tennessee Department of Health’s (TDH) Human Immunodeficiency Virus (HIV)/Sexually Transmitted Disease (STD)/Viral Hepatitis (VH) Section within the Communicable Environmental Disease Services and Emergency Preparedness (CEDEP) program.

The fellow will gain a full understanding of STD and HIV surveillance and programmatic activities. He or she will learn to apply national case definitions to determine case status, as well as the utilization of STD and HIV testing algorithms, conducting field investigations, and techniques in data quality management and assurance.

There will be numerous opportunities for the fellow to develop solutions and implement tools to enhance monitoring, reporting, and dissemination of STD surveillance data. He or she will also be expected to meaningfully participate in all aspects of an outbreak investigation including: questionnaire design, interview training and case/control interviews, data collection and management, data analysis, after-action reviews and field investigation report writing. The will have the opportunity to design and manage analyses of STD trends among subpopulations in Tennessee to improve the understanding risk factors and barriers to testing and prevention. The fellow will have the unique role in the formation of the newly established Congenital Syphilis (CS) Fatality Review Committee, actively developing and implementing a CS case database from which he or she will extract and analyze data to examine CS-related deaths.

The fellow will have the opportunity to collaborate with an array of internal and external partners will be necessary, including staff in local and regional health departments, CDC and others. These interactions will be critical in the development of innovative solutions to challenges inherent to public health surveillance.

The CSTE fellow’s experience at the Tennessee Department of Health will truly be a grassroots experience in STD and HIV prevention and surveillance. The fellow will be mentored and supported to complete all of the fellowship requirements and will be encouraged to present their work at local and national meetings and to publish findings in peer-reviewed journals.
Day-to-Day Activities

- Attend weekly CEDEP and HIV/STD/VH surveillance meetings
- Participate in HIV, STD and/or HCV cluster identification, investigations and response activities, including drug diversion investigations
- Serve as a consultant for local and regional health department staff on questions regarding STD outbreak investigations
- Provide data analysis and report writing support to local and regional health departments
- Attend all statewide epidemiology trainings including monthly CEDEP conference calls and face-to-face meetings
- Conduct special studies to include aspects of study design, implementation, and analysis
- Develop and maintain enhanced STD surveillance monitoring and reporting tools, including internal and public-facing data dashboards and epidemiologic profiles/reports
- Analyze data from TN’s surveillance systems including Patient Reporting Investigation Surveillance Manager (PRISM), Enhanced HIV/AIDS Reporting System (eHARS), National Electronic Disease Surveillance System (NEDSS) Based System (NBS), and vital records (e.g., birth certificates)
- Develop a best practice guide for assessment and tracking of HIV cases in multiple surveillance systems such as PRISM and eHARS
- Prepare presentations and deliver presentations at state and national meetings
- Lead and/or support the writing and development of manuscripts and reports

Potential Projects

Surveillance Activity  Development of Regional STD Surveillance Data Monitoring Tools

In the last five years the rates of Chlamydia, Gonorrhea, and Syphilis have drastically increased in TN, similar to the national rates. STD disparities by gender, race/ethnicity, age and geography persist throughout TN and rates of STDs are significantly higher in some TN regions compared to the state and U.S. rates. Currently STD surveillance tracks regional increases of STD and HIV cases through monthly threshold reports that are emailed to the regions. However, these reports are not timely enough to capture cluster case increases or potential outbreaks. There is an acute need for easy-to-use, real-time STD data visualization/reporting tools that can be used to better monitor for and track the STD epidemics in TN and the regions.

The fellow would have the opportunity to develop these products, collaborating across the STD and HIV programs, to include data dashboards for internal and external use. Processes need to be modernized for usability by both central office and field staff, to rapidly detect and investigate possible STD/HIV clusters and inform prevention and care resources in emergent regions and priority populations. The fellow would be actively involved in translating STD and HIV surveillance data into public-facing products, which is critical for stakeholders relying on these data to guide local prevention and care programs.
Surveillance Evaluation  Evaluation of the NBS STD Surveillance System

TDH’s STD Surveillance Program currently uses the Patient Reporting Investigation Surveillance Manager (PRISM) to collect and monitor information on individuals with positive Chlamydia, Gonorrhea, Syphilis, and newly diagnosed HIV laboratory reports in TN. Information entered and stored in PRISM includes STD and HIV test results, case investigation information (e.g., partners, treatment, and risk factors), and demographic information. This data system is critical for case investigation, surveillance of STD trends, analyzing information to monitor and direct resources to STD/HIV prevention, and reporting data to CDC.

In 2020, the STD Prevention Programs will transition to NBS for STD surveillance. Reporting and surveillance of STD is a new component to NBS and will be adapted to function within the STD program’s structure. The fellow would fill a critical role in evaluating the effectiveness of NBS STD to conduct STD surveillance and develop recommendations for improvement of data collection and analysis. The fellow will utilize the CDC Guidelines for Evaluating Public Health Surveillance Systems for the evaluation of these surveillance systems and to describe the simplicity, flexibility, data quality, acceptability, sensitivity, predictive value positive, representativeness, timeliness and stability of the new NBS-STD Surveillance system. This comprehensive evaluation will be able to inform the program of needed system and training improvements.

Major Project  Dashboards on STD Trends in Tennessee

The STD Prevention program has a need for impactful data visualization and improved dissemination to stakeholders and the public. Currently, the STD Prevention program started to publish STD Epidemiological Profiles in 2018, however many requests are made for STD data not available in the epidemiological profile. The development of a data dashboard will empower regional and local health department staff and other partners to bypass the traditional system of data requests and dynamically visualize and breakdown the data to suit their needs.

The fellow will work in developing, designing and implementing an online public-facing data dashboard. This will include determining the best surveillance data to include in dashboards by seeking feedback from stakeholders and regional health departments, extracting, analyzing and formatting the data for the dashboards, and implementing a process for yearly data updates. The development of these dashboards will greatly reduce data requests and enhance the dissemination of important STD surveillance data to stakeholders.

Additional Project  Evaluation of Management of Newly Diagnosed HIV Cases in Surveillance Systems

Newly Diagnosed HIV cases are managed through two surveillance systems, the Patient Reporting Investigation Surveillance Manager (PRISM) and the Enhanced HIV/AIDS Reporting System (eHARS). PRISM is used for case management and information on treatment, partners, demographics, and transmission risk is monitored and stored. The eHARS system is used to collect and monitor information on individuals who are newly diagnosed or living with HIV in TN. Information entered and stored in eHARS includes HIV test results, viral load, and CD4 count/percentage. However, there are data discrepancies of cases of newly diagnosed HIV patients that overlap between these two systems.
The fellow will play a role in evaluating the current processes of the STD Prevention program and HIV Surveillance program in managing and entering these cases into both systems. He or she will develop recommendations for improvement and assist in implementing them. These efforts will help improve the quality of surveillance data used for reporting and to inform programs efforts.

**Additional Project   Develop STD/HIV Specific ELR Processing and Quality Reports/Dashboards**

The Electronic Laboratory Record (ELR) onboarding is processed centrally by the Surveillance Systems and Informatics (SSI) program. Once onboarded, these data are sent to three main surveillance systems: NBS, PRISM, and eHARS. As PRISM is phased out through 2020, it will be necessary to re-examine these electronic routes to ensure no data loss or changes in timeliness of reported laboratory results processed into the surveillance systems. The Fellow will work with SSI staff as well as technical leads within the HIV/STD/VH program to create data quality monitoring reports in Tableau. These reports will track data processing from receipt through incorporation into the surveillance systems (3 and then 2) and include information on reporting frequency, volume of labs, detection of aberrations for investigation, and completeness of reporting. These reports will be available to technical and programmatic staff for ongoing monitoring of ELR processes. The Fellow will gain practical experience using Tableau, data visualization principles, and Quality Assurance best practices.

**Preparedness Role**

The fellow will work closely with all regional surveillance staff to provide technical assistance (TA) for investigation of and response to potential outbreaks, as needed. In addition, the fellow will become familiar with the State Health Operations Center and receive training in Incident Command System (ICS) for public health outbreak investigations. The fellow will also serve as surge capacity during any CEDEP-related outbreaks and emergency response activities of significance outside HIV/STD. This may include participation in Community Assessment for Public Health Emergency Response (CASPER) activities; opportunities will exist for the fellow to participate in emergency response training, exercises, and events during the two-year fellowship.
**Additional Activities**

The STD Prevention program will conduct Target Evaluation Plans (TEP) within the next four years as part of the Strengthening STD Prevention and Control for Health Departments (STD PCHD) CDC grant. Currently, the first TEP is underway, looking at extra-genital testing attitudes for Chlamydia and Gonorrhea among Local Health Department (LHD) nurses in one of TN’s southern regions. Work on the next TEP is planned to begin in Fall of 2020. The fellow will assess current emerging STD issues and regional surveillance data to assist in designing and developing the next program evaluation. He or she will work with the LHD to implement the TEP and in analyzing the data collected. The fellow will use the data to make recommendations and inform the STD Program. This will be an opportunity for the fellow to gain skills in program evaluation from beginning to end.

The fellow will work with the HIV/STD/VH Informatics Coordinator, the NBS Coordinator, and program staff to explore the utility of Workflow Decision Support options within NBS. This will be coincident to the program’s transition from PRISM to NBS. The fellow will examine and document current PRISM workflows, understand Workflow Decision Support options in NBS, and then work with the program area to examine future workflows in NBS and optimize efficiency for staff and timeliness and quality of investigations data. Once a decision is made about the use of Workflow Decision Support, the fellow will work with central office and field staff to train them on the new workflows and document necessary information in training materials. The fellow will gain experience through site visits with field staff, technical experience in surveillance systems management, and leadership experience through developing and disseminating trainings.

**Mentors**

**Primary**  
Dyanne Herrera-Vasquez, PhD, MPH  
STD Surveillance Director

**Secondary**  
Pamela Talley, MD, MPH  
Medical Director