

ID: 46772908

Infectious Diseases, - Host Site Description

Tennessee Department of Health

Assignment Location: Nashville, US-TN
Tennessee Department of Health
Communicable and Environmental Disease and Emergency Preparedness

Primary Mentor: Mary-Margaret Fill, MPH, MD
Deputy State Epidemiologist
Tennessee Department of Health

Secondary Mentor: Kate Goodin, MPH, MS
Director of Surveillance Systems and Informatics
Tennessee Department of Health

Work Environment

Hybrid

Fellows will be expected to come into the office at least two times per week.

Assignment Description

The CSTE fellow will be fully integrated into the Tennessee Department of Health's (TDH) Communicable Environmental Disease Services and Emergency Preparedness (CEDEP) program. The Fellow will be homed within the Surveillance Systems and Informatics Program for daily work. This program reports to the Deputy State Epidemiologist who would also be the primary mentor of the Fellow. The Fellow will gain a detailed understanding of Tennessee's surveillance infrastructure including NBS, ELR, and eCR as well as data and analytic support for specific programmatic activities including anti-microbial susceptibility lab results with the healthcare-associated infections practice area, and the surveillance lifecycle of the arboviral and tick-borne disease programs. This provides the unique opportunity to be homed in a cross-cutting divisional office and have windows into a variety of disease-specific program areas leading to a well-rounded experience that would set the Fellow up for multiple opportunities for future career paths.

The fellow will be expected to participate and eventually lead, 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 report writing. Collaboration with local, regional and state health department staff, as well as agencies outside of TDH such as the Tennessee Department of Agriculture, CDC, FDA, USDA-FSIS and others will be necessary during that assignment.

- Meet with primary and secondary supervisor (preferentially in-person) weekly
- Attend weekly CEDEP meetings, including SSIP staff meetings, and program area meetings while engaged in those projects
- Work with SSIP staff and program area SMEs to develop and/or modify Malaria and Tick-borne and Rickettsial disease pages in NBS
- Revise Malaria and Tick-borne and Rickettsia surveillance guidelines to model pages developed in NBS
- Serve as a consultant for local and regional health department staff on questions regarding Malaria and Tick-borne and Rickettsial surveillance guidelines and practices
- Become familiar with anti-microbial resistance and Whole Genome Sequencing (WGS) results reporting and storage
- Support data integration of anti-microbial resistance and WGS results into TDH's ARIES application
- Create data visualization examples and best practice guides for use in CEDEP
- Provide data analysis and report writing support to local and regional health departments

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- 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
- Prepare presentations and publications, and deliver them at state and national meetings

Describe Statistical and Data Analysis Support, Such as Databases, Software, and Surveillance Systems Available to the Fellow

The Communicable and Environmental Disease Services and Preparedness (CEDEP) Section of the TDH employs over 40 epidemiologists. Epidemiologists from various programs often meet and consult on how to best analyze data, set up databases and report results. Our fellow will be integrated within this epidemiology network and will be given the trainings and opportunities all epidemiologists at TDH receive. The fellow will be able to participate in SAS, R, GIS, REDCap and Tableau training delivered in CEDEP through formal trainings offered by CEDEP staff as well as user groups we host for each of the softwares. The Surveillance Systems and Informatics Program (SSIP), where the Fellow would sit, is the group providing the Tableau and REDcap trainings and houses the SMEs for those applications. SSIP also leads the division in use and application of SQL, R, and Python programming languages and offers the opportunity to work alongside advanced programmers. The fellow will also be either introduced and/or trained on CEDEP's various surveillance systems including NBS, E-HARS, PRISM, etc. and will be positioned in SSIP to work directly with database SMEs to learn table structures, querying, and other similar data management tasks based on their skills and abilities.

Projects

Surveillance Activity Title: Antibiotic Resistance Information Exchange (ARIES) data pilot

Surveillance Activity Description:

TDH worked with Vanderbilt University to develop an Antibiotic Resistance Information Exchange (ARIES) program on top of a REDCap core. This application was developed as part of the initial piloting of similar registries prior to the current CDC interim guidance publication. With a change over in leadership of the HAI program at TDH, along with the COVID-19 response, the launch of the registry was significantly delayed. The Fellow will participate on an interdisciplinary team to support a revisit of any application changes/development needed, designing the data flow to populate necessary data, authentication of users, and roll out of the final application to target audiences. This will include gaining knowledge on requirements solicitation, large data set management, and HAI program area expertise.

Surveillance Activity Objectives:

The objective of this project is to revisit and finalize a production ready application to support antimicrobial resistant laboratory information sharing upon facility admission.

Surveillance Activity Impact:

We anticipate that this project will lead directly to improved awareness of antimicrobial resistant organism colonization among clinical settings.

Surveillance System Evaluation Title: Pre and Post Evaluation of Malaria and Tickborne and Rickettsial Diseases

Surveillance System Evaluation Description:

TDH currently uses NBS to house surveillance data on a variety of infectious diseases including those within the Arboviral and Tickborne programs. This program would like to modernize their data collection methods and improve the quantity and quality of risk factor data collected on individual case investigations. The Fellow will complete a pre-improvement evaluation of the current surveillance infrastructure using a standard surveillance system evaluation paradigm.

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The Fellow will then work with program area SMEs to develop and implement systems improvements including deploying new disease-specific data collection forms within NBS. The Fellow will then work with SMEs to develop companion training guides which will be deployed to investigative staff. After a pre-determined intervention time period the Fellow will then complete a post-improvement surveillance system evaluation following the previous template. These two evaluations will then be compared to describe the impact of the system improvements.

Surveillance System Objectives:

The objective of this project is to complete an entire Plan, Do, Study, Act (PDSA) cycle during their Fellowship. This will allow for evaluation of a concrete systems intervention leading to practical and immediate improvements in data collection and reporting. The deliverables will be: 1) pre-improvement evaluation report; 2) documentation of surveillance system changes, 3) development of surveillance SOPs, and 4) post-improvement evaluation report.

Surveillance System Impact:

This project will have a direct and immediate public health impact by supporting more detailed risk-factor data collection and more complete reporting of content to CDC.

Major Project Title: Tableau User Assessment and Data Visualization Steering Committee

Major Project Description:

There are over 150 Tableau users at the Tennessee Department of Health (TDH) within the Communicable and Environmental Diseases and Emergency Preparedness (CEDEP) division which extract data from various reporting systems for visualization. These users create visualizations for use by individuals within and outside of our organization including the public. Given the various reporting methods, requirements, and needs, it has been challenging to identify and collate divisional priorities for use of Tableau.

The purpose of this assessment will be to identify current Tableau use and determine needs (such as increased capabilities or specialized training) of Tableau software within TDH CEDEP programs. This assessment will include key informant interviews or focus groups with program directors, project managers and a survey of Tableau Users. The fellow will, in conjunction with the Data Visualization Coordinator, identify at least one Tableau user per CEDEP program to establish a Data Visualization Steering Committee. At the conclusion of this assessment, the Fellow will additionally work with the committee to review findings, establish divisional priorities, and develop implementation plans for gaps or areas of improvement.

Major Project Objectives:

The objective of this project is to identify needs for data visualization support across CEDEP. The deliverables for this project will be an initial needs assessment report.

Major Project Impact:

Data visualization is a key component to ensuring that data is accessible to a variety of audiences in a variety of formats. By ensuring that CEDEP is adequately prepared to meet current and future data visualization needs, this project will ensure that data is more accessible to a variety of audiences.

Additional Project #1 Title: Tennessee One Health Committee Member Database

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Project #1 Type: Major Project

Project #1 Description:

The Tennessee One Health Committee was established in 2009 and is co-led by the Tennessee Department of Health (TDH) and Tennessee Department of Agriculture (TDA). Communication between these groups and within the committee are informal. Additionally, a voluntary bi-monthly meeting occurs among members. Leadership within the organization has been identified but member roles and goals within the committee haven't been as formalized which results in a lack of understanding the knowledge base of members within Tennessee One Health Committee.

The purpose of this project will be to create a database and follow-up process to collate members of the Tennessee One Health Committee that includes defining members' roles in the Tennessee One Health Committee, expertise, position in their agency, and strategies for reconnecting organizations to the committee when turnover occurs within organizations. The fellow will learn and use technical skills in REDCap or another software to create this database in collaboration with key stakeholders. After quantifying membership, the Fellow will assist in forming a committee to establish a Project Charter for the Tennessee One Health Committee that includes recently formalized roles and ideal organizational participation guidelines in conjunction with Tennessee One Health Committee leadership.

Project #1 Objectives and Expected Deliverables:

The objective of this project is to provide an administrative touch point to support the implementation of the Tennessee One Health Committee. The deliverables of this project are: 1) create a contact data base for all Tennessee One Health Committee members and contacts, 2) SOPs for operating and updating the contact database, 3) creation of a Project Charter.

Project #1 Impact:

This project will continue the formalization of the Tennessee One Health Committee and significantly advance the administrative infrastructure needed to continue this committee into the future.

Please Describe the Fellow's Anticipated Role in Preparedness and Response Efforts – Include Activities and Time Allocation (Required Competency of Fellowship)

The Fellow will participate in general preparedness and response activities by completing all required ICS trainings. This will prepare the Fellow to be integrated into any future response activities that may occur during their assignment to TDH. Typically, Fellows have participated as part of the ICS infrastructure in multiple previous responses such as outbreak investigations, EVALI response, Hepatitis A, and many others. It is difficult to specify a particular response activity or role at this point, but their role will be adapted to meet the situation and the Fellow's skills if the opportunity arises. The trainings typically require 10 hours of contact time. The time allocation for response activities is highly variable.

Please Describe the Fellow's Anticipated Role in Cluster and Outbreak Investigations – Include Activities and Time Allocation (Required Competency of Fellowship)

The Fellow will be afforded the opportunity to lead at least one outbreak investigation in accordance with the Fellowship requirements for competencies. Outbreak investigations can be unpredictable, so it is difficult to put a time allocation on the response activity. There is a surveillance meeting where outbreaks are discussed and this commitment would be one hour a week.

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Please Describe the Fellow's Anticipated Role in the COVID-19 Response – Include Activities and Time Allocation

The Fellow will participate in SSIP COVID-19 activities which center around electronic laboratory reporting (ELR). The Fellow will be trained on processes for receiving ELR and CSV data templates and will be responsible for assisting with file processing ~four hours per week. The Fellow will participate with the same ELR team to support additional COVID lab onboarding, including COVID WGS, results and their integration into NBS. We anticipate this being a more infrequent activity and would likely account for 5-10 hours per month.

Please Describe Opportunities for Fellows to Work in Health Equity as well as Incorporating Diversity, Equity, and Inclusion into their Work

TDH's Division of Health Disparities Elimination hosts a variety of departmental activities including lunch and learns, a book series, ad hoc lectures from outside partners, and other similar activities. This group also hosts a cross-departmental workgroup focused internally on these same topics. CEDEP has a designated representative on this committee, but SSIP does not have a designated contact for this CEDEP representative. The Fellow will have the opportunity to be that program area contact and serve as a coordination point for equity and inclusion activities.