ID: 42228388
Wastewater Surveillance, Infectious Diseases - Host Site Description
Dallas County Health and Human Services

Assignment Location: Dallas, US-TX
Dallas County Health and Human Services
Acute Communicable Disease Epidemiology

Primary Mentor: Saad Zaheer, MD, MPH, MSPH, FACE
Chief Epidemiologist
Dallas County Health and Human Services

Secondary Mentor: Vikki Yeatts, MSN, RN
Lead Epidemiology Surveillance Coordinator
Dallas County Health and Human Services

Work Environment
Hybrid

Assignment Description

The CSTE Fellow will work in the Acute Communicable Disease Epidemiology Division of Dallas County Health and Human Services on the Wastewater Surveillance Team. Currently, there are two full-time Epidemiologists, a Biostatistician, and the Lead Epidemiology Surveillance Coordinator on the team. The Fellow will spend most of their time working on wastewater surveillance reports, data analysis, and developing an internal and possible external dashboard from WastewaterSCAN on 5 wastewater treatment plants (WWTP), in Dallas County.

We would like for the fellow to do some cross-training within the epi division for notifiable disease investigations, and participate in meetings with the NWSS Health Department Community of Practice, National League of Cities, and other entities for wastewater surveillance.

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

Dallas County HHS utilizes SAS, R, ArcGIS, ESSENCE, Power BI and Salesforce.

Projects

Surveillance Activity Title: Build Dallas County's wastewater surveillance program and data visualization; expand partnerships to increase collaborations within the community.

Surveillance Activity Description:
This is an opportunity for a fellow with training in disease surveillance to flourish and play an integral part in building Dallas County's wastewater surveillance. We would like to see some innovative ways to streamline and visualize data, share the surveillance data with community partners, and look at ways to increase additional testing sites at municipalities within Dallas County. Wastewater surveillance will aid us in our efforts to detect the presence of diseases that are currently monitored and respond with appropriate intervention and mitigation efforts. The opportunity is available for this individual to work with other epidemiologists to further enhance their working knowledge and skills through cross-training in disease investigations.

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Surveillance Activity Objectives:
The CSTE Fellow will be expected to work on the project objectives and deliverables and will include the following:

1. Develop and build visualization tools to enhance the wastewater surveillance reports
2. Build collaborative partnerships within Dallas County and surrounding jurisdictions for wastewater surveillance reporting
3. Participate in wastewater surveillance meetings
4. Develop SOPs on reporting wastewater surveillance data for epidemiology staff at DCHHS
5. Submit weekly/biweekly wastewater surveillance monitoring reports to Lead Epi Surveillance Coordinator
6. Work with DCHHS Biostatistician on wastewater surveillance data

Surveillance Activity Impact:
Monitor for increased presence of diseases that are identified with wastewater surveillance and respond with appropriate interventions and mitigation strategies.

Surveillance System Evaluation Title: Monitor wastewater surveillance data compared with other data sources within Dallas County.

Surveillance System Evaluation Description:
The fellow will regularly monitor wastewater surveillance data from Wastewater Treatment Sites to analyze disease trends within Dallas County. The Data from the Wastewater surveillance system will be compared with other data sources such as hospital or disease investigation data to check the disease transmission trends across various data sources. Develop an internal response workflow with wastewater surveillance that can be used by DCHHS for monitoring diseases that are tracked within Dallas County, and help to identify any outbreaks.

Surveillance System Objectives:
We expect to have actionable data to demonstrate the benefits of using this system to improve community health outcomes. The fellow will be responsible for regular quality assurance on the data analysis.

The CSTE Fellow will collaborate with CDC NWSS to implement partners with expertise to help them build systems and troubleshoot challenges for site selections, sampling strategies, laboratory protocol development, data coordination and quality control, wastewater analytics and visualization. Public health action Implementing partners can access additional resources online and through the CDC NWSS DCIPHER platform to ensure that DCHHS is ready to respond to the next public health emergency.

Surveillance System Impact:
The expected public health impact from increasing our wastewater surveillance monitoring will lead to improved community health outcomes, and improve detection of disease activity to respond with mitigation strategies to prevent outbreaks.

Major Project Title: Developing a Comprehensive Wastewater Surveillance Program at Dallas County Health and Human Services

Major Project Description:
This comprehensive wastewater surveillance program will involve monitoring and analyzing wastewater data for pathogens that can lead to increases in diseases and outbreaks in a community. The fellow will work with the department's biostatistician and epidemiologists to understand the different types of disease surveillance utilized at DCHHS and create an internal dashboard for data visualization. The information will help identify trends for early

detection of diseases and share that information at DCHHS and with community stakeholders, clinicians, and hospitals so that appropriate action can be promptly taken to safeguard the public's health.

Participation with other public health departments at similar stages of wastewater implementation and geographic proximity for collaboration discussions will be expected. Learning about communities of practice related to wastewater surveillance that have digital platforms is encouraged. Partnering with local stakeholders along with CDC NWSS, National League of Cities (NLC), DCHHS PHL and other laboratories, and local wastewater utilities to get high-quality, community-level data they can use to protect the public's health and improve community health outcomes.

Major Project Objectives:
The objectives and expected deliverables of this project are to produce a structured program and develop protocols that can be used for decades to come in Dallas County. Developing standard operating procedures for the program will help other epidemiologists continue the work on wastewater surveillance.

The project objectives will be completed by the following:

- Data coordination, interpretation, and report
- Peer-to-peer sharing and collaboration with wastewater surveillance stakeholders
- Public health action
- Relationship-building across utilities, public health departments, and laboratories

Public health departments at similar stages of wastewater implementation and geographic proximity also have more focused discussions during monthly cohort calls. Certain communities of practice also have digital platforms to engage outside of meetings.

Major Project Impact:
Wastewater surveillance can have a significant public health impact by providing early detection of diseases, monitoring trends, identifying timely interventions, allocating resources efficiently, and informing public health strategies to safeguard the community's well-being.

Additional Project #1 Title: Wastewater surveillance data analysis and data visualization
Project #1 Type: Surveillance Activity

Project #1 Description:
The fellow will utilize data analysis and data visualization to interpret data from WastewaterSCAN at WWTPs (Wastewater Treatment Plants) located throughout Dallas County. The fellow will build an internal reporting system for wastewater surveillance, and develop relationships within Dallas County to potentially add additional testing sites among the municipalities within Dallas County.

Project #1 Objectives and Expected Deliverables:
The objective is to identify any gaps and strengthen the wastewater surveillance data in Dallas County through analyzing and visualizing relevant data. Deliverables will be created through various data visualization tools and used to inform DCHHS' response to disease threats in the community.

Project #1 Impact:
As a result of this activity, it is expected that community partners will be more informed and better prepared to address disease trends within Dallas County and respond with appropriate interventions and mitigation strategies to prevent outbreaks in the community.

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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 COVID preparedness and response efforts as it relates to healthcare-associated cases only, and even then, they would not do primary investigating in this area. We have another department dedicated to COVID-19 investigations in LTCFs, which is where we see most outbreaks. The Applied Epidemiology Fellow will need to be aware of COVID preparedness and response, and be able to speak to them as part of a holistic infection prevention and control practice. This Fellow's emergency preparedness and outbreak response efforts will be focused on learning to complete disease and outbreak investigations, wastewater data analysis, and building an internal dashboard. Activities include confirming and defining the outbreak, alerting key partners, case finding, maintaining a line list, creating an epi curve, searching for the source and/or propagation methods of the outbreak, implementing interventions, evaluating interventions for effectiveness, and writing a follow-up report. Time spent on these activities will depend on the number of case investigations or outbreaks we have at DCHHS.

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

Disease or outbreak investigation activities, include confirming and defining the outbreak, alerting key partners, case finding, maintaining a line list, creating an epi curve, searching for the source and/or propagation methods of the outbreak, implementing interventions, evaluating interventions for effectiveness, and writing a follow-up report. Time spent on these activities will depend on the number of case investigations or outbreaks we have in Dallas County.

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

The Applied Epidemiology Fellow will need to be aware of COVID preparedness and response, and be able to speak to them as part of a holistic infection prevention and control practice, but very little, if any will be dedicated primarily to COVID.

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

One of the Dallas County goals is to create/host educational content for our healthcare stakeholders, and even healthcare personnel inside and outside of Dallas County to have access to current health-related information. These would be fairly short and intended to be consumed during monthly infection control training with staff, or even during shift change huddles. Staff members of healthcare facilities can work towards more equitable outcomes for target populations, and Dallas County's role would be to provide education and help facilities set and reach goals. Through our close relationship with facility leadership, including the fellow, can use this opportunity to encourage leadership buy-in of the importance of health equity.