

ID: 34936826

Infectious Diseases, Environmental Health - Host Site Description

Georgia Department of Public Health

Assignment Location: Atlanta, US-GA
Georgia Department of Public Health
Epidemiology

Primary Mentor: Amanda Feldpausch, DVM, MPH
Deputy State Epidemiologist/One Health Epidemiology Director/Deputy State Public Health Veterinarian
Georgia Department of Public Health

Secondary Mentor: Jessica Pavlick, DrPH, MPH
Epidemiology Preparedness Director
Georgia Department of Public Health

Work Environment

Hybrid

Assignment Description

The CSTE Fellow will be housed in the Acute Disease Epidemiology Section (ADES) in the Epidemiology Program, which is directed by the Dr. Jessica Pavlick. ADES is one of six Sections in the Epidemiology Program; the others include the Chronic Disease, Healthy Behaviors, and Injury Epidemiology Section, the HIV/AIDS Epidemiology Section, the Office for Health Indicators and Planning, Epidemiology Analytics and Molecular Support Team and the Maternal and Child Health Epidemiology Section which are under our State Epidemiologist, Dr. Cherie Drenzek and supported by Dr. Amanda Feldpausch, Deputy State Epidemiologist. The mission of the Acute Disease Epidemiology Section (ADES) is to optimize the health of Georgians by preventing and mitigating certain communicable and/or notifiable infectious diseases. The ADES is dedicated to fulfilling its mission by using epidemiologic methods to:

- Conduct surveillance of infectious diseases (opportunity to work in many other subject areas as well)
- Identify and respond to emerging infectious disease threats and public health crises such as the opioid epidemic
- Provide support to local and district public health and private partners in identifying training and resource needs, developing guidelines for and investigating outbreaks or increases in endemic rates of disease, developing educational and training materials, and collecting and disseminating data.
- Publish and disseminate public health information: statistical reports (e.g. Georgia Epidemiology Report), outbreak investigation reports, annual data summaries, and educational materials.
- Participate in emergency preparedness planning, response and recovery efforts.

The Acute Disease Epidemiology Section is comprised of several infectious disease-specific Surveillance Teams, including the COVID-19 team, Foodborne Disease Epidemiology and Outbreak Investigation Team, the Vaccine-Preventable Diseases Epidemiology Team, the Healthcare-Associated Infections Team, the Zoonotic and Vectorborne Disease Epidemiology Team, One Health Epidemiology Team, and the Drug Overdose Surveillance Team. The CSTE Fellow will have a range of project opportunities in each of these areas.

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

ADES has access to many databases including: the State Electronic Notifiable Disease Surveillance System database (SENDSS); Georgia Registry of Immunization Transactions and Services (GRITS); HIV databases (eHARS, MMP, CAREWare, ADAP, NHBS); EIP data; ABC and FoodNet data; HAI database (NHSN); hospital discharge data;

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Vital Records death certificates; the State Unintentional Drug Overdose Reporting System data; and the Prescription Drug Monitoring Program data. There is statistical and data analysis support available from many of the MPH and doctoral level epidemiologists in ADES, Chronic Disease, and HIV Epidemiology along with a growing community within DPH of persons (including other fellows) who meet regularly and discuss statistical analyses techniques and learning opportunities. The Fellow will have access to SAS, GIS, Excel, EpiInfo, ESRI training products, and more.

Projects

Surveillance Activity Title: National Wastewater Surveillance System

Surveillance Activity Description:

DPH was awarded funding to participate in the National Wastewater Surveillance System (NWSS) in 2021. The team has been and will continue to be partnering with educational/research partners and local utilities/extension services to develop and expand the program for tracking wastewater surveillance of SARS-CoV-2, Influenza, and RSV with planned expansion to other priority public health targets in future grant years within the program. In the interim, the NWSS team is working with both academic and program partners to utilize wastewater results for mpox along with DPH-held surveillance case data to inform decision making and public health action. This includes combining wastewater detection results with geocoded case and vaccine data to identify trends and actionable results through this novel surveillance system with an ultimate goal of supporting development and analysis of an enhanced molecular surveillance system for COVID-19 and other pathogens. In 2024, DPH matched with a CSTE AEF wastewater fellow for which a new ADES fellow could work with on surveillance system activities providing a plethora of project opportunities and institutional support in those projects.

Surveillance Activity Objectives:

- Enhancement of existing internal and external surveillance reports to support appropriate and accurate data dissemination to partners
- Presentation to internal subject matter expert epidemiologists on NWSS surveillance and progress on future priority items
- Perform data cleaning and basic descriptive statistics utilizing preliminary NWSS data using statistical software such as GIS, R, SAS, and more
- Participation in monthly CDC NWSS meetings and calls regarding NWSS training, program updates, and partner presentations
- Gain understanding of and participate in the NWSS data pipeline from raw data to analysis, to data dissemination
- Gain understanding of and participate in NWSS program management and planning including but not limited to tracking grant deliverables, communicating with internal and external partners, conducting wastewater treatment facility site visits, etc.
- Coordination and presentation to GA NWSS partners such as wastewater treatment facilities (WWTF), local public health, academic partners, etc.

Surveillance Activity Impact:

By completing these deliverables, the fellow will assist in the overall development and improvement of NWSS in Georgia. Because this is a new program in the state, the fellow's work on identifying priority targets and gaining knowledge on interpretation of wastewater data on these will create a greater understanding and awareness of wastewater surveillance to both internal and external partners. In addition, depending on fellow interests, they will also have opportunity to engage directly with WWTF partners whether through site visits, one-on-one onboarding calls, or assisting the NWSS team lead plan and conduct the quarterly partner town hall.

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Overall, the fellow would contribute to the growing body of science in wastewater surveillance and its use in public health as well as to the overall data quality of the program.

Surveillance System Evaluation Title: Surveillance Evaluation (fellow-lead option)

Surveillance System Evaluation Description:

Opportunities exist in many areas of epidemiology, including expanding areas at DPH that include Environmental Health Epidemiology and cross-cutting opportunities with divisions like STI, HIV, and TB. The individual surveillance system evaluation will depend on the fellow's interests and may include a desk- or field-based evaluation depending on the project chosen. Examples of surveillance system that need to be evaluated and have support in place to conduct an evaluation include evaluation of:

- New pan-respiratory reports and data sharing (as of the end of 2024 and the removal of COVID-19 from the NNC). Several fellow-lead projects have resulted in the production of pan-respiratory reports and projects and evaluation will be critical to the early years of these reports in the wake of COVID-19 reporting and data sharing expectations.
- Non-COVID-19 notifiable disease surveillance to determine the impact of COVID-19 on timeliness and completeness of reporting.
- Ebola Active Monitoring System (EAMS) - this system was used in 2014-2016, 2021, and now in 2022 for the monitoring of travelers returning to Georgia from Ebola affected areas. This system is to be used in the development of other emerging health threat monitoring systems; review of the system would inform these activities.
- National Wastewater Surveillance System is a new surveillance tool in Georgia and is developing further in 2024, additional feedback on the system would benefit expansion of the program in its coming grant years. Additionally, there is a current CSTE ww fellow to collaborate with.
- New occupational health variables have been added to Georgia's notifiable disease surveillance core variables as of October 2022, evaluation of the use of these variables would inform messaging and next steps for these new surveillance variables.
- Evaluate the new HIV molecular surveillance system designed to quickly identify areas where HIV may be spreading and provide prevention and treatment services, breaking the chain of transmission.

Between 2023-2025 most recent ADES and wastewater CSTE AEF fellows have completed surveillance system evaluations with the National Wastewater Surveillance System (NWSS) team, Tuberculosis Epidemiology team, and with the Drug Surveillance Unit (DSU).

Surveillance System Objectives:

The fellow should follow CDC's guidance on evaluating public health surveillance systems. The fellow will conduct a thorough literature review of the area they chose to evaluate, they will work within that DPH team to thoroughly understand how the surveillance system works, evaluate it, and then provide suggested improvements and help implement those improvements.

Surveillance System Impact:

An evaluation of any of the listed projects as well as how to improve these projects after evaluation will lead to improvements to DPH's response to these public health concerns.

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Major Project Title: Major Project (fellow interest-lead options)

Major Project Description:

Opportunities exist in many areas of epidemiology, even outside of infectious diseases, depending on the fellow's interests. DPH has excellent statistical support with many highly skilled epidemiologists and biostatisticians and a collaborative learning environment, partnering with Georgia Tech and Emory University to increase our data modelling and analytic capacity. There are multiple existing datasets and analyses that will enable a range of complex analytical projects and can be chosen based on the fellow's area of interest. Some examples of analyses include analyzing spatial and temporal COVID-19 patterns among certain populations to use as predictors of outbreaks and other potential COVID-19 projects. New and emerging health threats have offered opportunity and need for deeper data analyses and cross-cutting work including monkeypox case data comparisons with longitudinal datasets from DPH STI and HIV programs to inform future response actions; monkeypox case and GRITS (immunization) data comparisons to look at vaccine effectiveness over time; and SET-NET/vital records data comparisons to look at monkeypox and pregnancy/infant outcomes.

There will also be future opportunities as Georgia DPH grows its Environmental Health Epidemiology team. Additional cross-cutting opportunities are and will remain available outside of emerging health threats through our One Health approach in GA for fellows interested in multi-organization or multi-sectional projects.

Major Project Objectives:

Varies by project.

Major Project Impact:

Varies by project.

Additional Project #1 Title: One Health Surveillance Enhancement

Project #1 Type: Surveillance Activity

Project #1 Description:

DPH has been committed to expanding One Health activities through building capacity in human resources and developing/fostering collaborative relationships within the agency and with external partners related to the human-animal-environment interface. The fellow will have the opportunity to work with the One Health Medical Epidemiologist and State Public Health Veterinarian on a variety of One Health projects. A specific need lies with better organizing a systematic approach to surveillance surrounding One Health investigations. These include domestic and companion animal investigations, zoo and aquaria, and wildlife. The fellow would work with external partners in agriculture, wildlife, education, and industrial settings as well as internal partners in case management, sequencing, and surveillance teams. In the past 2 years, these investigations have primarily centered around SARS-CoV-2, including small companion animals in shelter and household settings, Asian Small-clawed Otters in an Aquarium setting, Western Lowland Gorillas in Zoo setting, among others, but have also included other focus such as Highly Pathogenic Avian Influenza and Swine Variant Flu. Developing more systematic and consistent plans and methods for documentation and reporting for these investigations will be a goal of this project.

Project #1 Objectives and Expected Deliverables:

The fellow will assist DPH staff in developing systematic plans for surveillance at the human-animal-environment interface. This will include organization and documentation of legislative information surrounding testing and reporting in animals of specific infectious agents. Collaborating with external and internal partners to help develop an SOP for approach to investigations, documentation, and information sharing. The fellow will assist with data collection in One Health investigations and in timely reporting to CDC through HHS Protect.

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Project #1 Impact:

One Health approach supports public health in all areas by increasing communication, collaboration, and coordination at the human-animal-environment interface. Contributing to this project will help lay the foundation for systematic use.

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

There are many opportunities for involvement with epidemiologic emergency preparedness including: participating in active emergency responses (ex. monkeypox, HPAI, Ebola monitoring, etc); developing a plan for state epidemiology surge support during emergencies; developing a plan to implement the ICS command structure for disease outbreak investigations; developing a plan for DPH first responder pre-deployment and just-in-time training as well as deployment and post-deployment health and safety monitoring; and developing standard operating procedures for responding to zoonotic disease outbreaks that affect the human and veterinary community in collaboration with other state and federal partners.

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

Our fellows are directly included in many cluster and outbreak investigations, there are many in Georgia and specific involvement may be led by the fellow's interests and other priority projects. Activities may include creating notifiable disease surveys and helping to create and provide disease guidance to our local health districts, partners and the public. They will work closely with our local health districts and may help conduct case investigations and assist in control activities. A fellow would be offered a leadership role in an aspect of the cluster or outbreak investigation that fits their skills and availability at the time. This might include overseeing monitoring for close contacts or managing a small team of individuals performing enrollment interviews.