

ID: 70342129

Infectious Diseases - Host Site Description

Florida Department of Health

Assignment Location: Tallahassee, US-FL
Florida Department of Health
Division of Disease Control and Health Protection

Primary Mentor: Megan Gumke, MPH
Senior Epidemiologist
Florida Department of Health

Secondary Mentor: Andrea Morrison, PhD
Vector-Borne Disease Surveillance Coordinator
Florida Department of Health

Work Environment

100% In-person

Assignment Description

The Fellow will work closely with staff within the Infectious Disease Prevention and Investigations Section including the Zoonotic and Vectorborne Disease Program (ZVDP), the Acute Disease Investigations Unit, the Food and Waterborne Disease Program (FWDP), the Health Care-Associated Infections Program (HAIP), and the Florida Epidemic Intelligence Service (FL-EIS) Fellowship Program. Additionally they will work with staff within Surveillance Section, the Bureau of Public Health Laboratories, and the Bureau of Communicable Diseases.

Recent investigations or surveillance projects the team has been involved with include: Mpox outbreak, COVID-19, local dengue outbreaks, antimicrobial resistant *Pseudomonas aeruginosa* in health care facilities, HIV outbreak sequencing project, *Naegleria fowleri* investigations, carbon monoxide poisoning post-hurricane, statewide Hepatitis A outbreaks in the homeless and drug-users, measles, melioidosis, repeat syphilis infection assessment, *Listeria* outbreak linked to ice cream, laboratory exposures to *Brucella*, vibriosis investigations.

The programs have access to large databases including: Florida's reportable disease database, "Merlin", communicable disease databases, FWDP outbreak and complaint data and animal arboviral sentinel surveillance data. Programs also have access to statewide syndromic surveillance data, hospital and emergency room discharge data, vital statistics data, and Agency for Health Care Administration data.

The Fellow will be involved in all phases of investigations including: the initial complaint investigations, the design of questionnaire, data collection, analysis, and report writing. Many outbreak investigations require the participation of multi-disciplinary teams. The Communicable Disease Programs, ZVD, FWD, HAI and Acute Disease Investigation programs work closely with county and regional nurse epidemiologists and environmental health staff. Additionally, the programs work closely with state agencies such as: the Department of Business and Professional Regulation, the Department of Agriculture and Consumer Services and the Fish and Wildlife Conservation Commission, as well as federal agencies like FDA, CDC, CMS and USDA.

The Fellow will be involved in all aspects of the ZVDP, the Acute Disease Investigations Unit, FWDP, HAIP and communicable disease activities. Day-to-day duties will include: CDC case report form reviews; answering calls from the public; working with partners on case investigations; serve as a consultant for county health departments on questions regarding prevention and control of these diseases, data analysis, report and manuscript writing, web site development and web postings. The Fellow will also have opportunities to participate in field investigations, develop and present

ID: 70342129

Infectious Diseases - Host Site Description

Florida Department of Health

training programs, and participate in the process of developing guidelines, preparedness response protocols, policies and legislation on program disease surveillance and control related issues.

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

The Fellow will have access to SAS, R, ArcGIS, and other software, as well as access to on-site biostatistics, GIS and syndromic surveillance experts. Fellow may explore the databases listed in specific projects, including the notifiable disease database Merlin, the environmental health database, PRISM and HMS used for STD and TB data, Poison Information Center, Vital Statistics, Syndromic Surveillance, Hospital Discharge, and Emergency Department data, Agency for Health Care Administration data sets, etc.

Projects

Surveillance Activity Title: Local Dengue Introduction Risk Forecasting

Surveillance Activity Description:

Florida is consistently ranked in the top three states reporting the most travel-associated dengue cases annually. While Florida is not endemic for dengue virus, we are at high risk for local introduction due to the state's semi-tropical climate, presence of competent mosquito vectors, and high volume of international travelers. Locally acquired cases are reported nearly every year, and occasional outbreaks of local dengue are detected and responded to. The Florida Department of Health is partnering with CDC's Insight Net modeling/forecasting academic network. The CSTE fellow will have the opportunity to partner with this group and provide analytic support.

Surveillance Activity Objectives:

The main objectives for the fellow will be to collaborate with key partners, manage datasets or subprojects, and conduct preliminary analyses related to identifying leading indicators of increased dengue activity in the state. The Fellow would be expected to produce a written summary of findings and next steps as well as a potential poster or presentation for a conference.

Surveillance Activity Impact:

Identifying these leading indicators would allow for increased situational awareness and strategic planning, including informing efforts related to mosquito control, education for health care providers and the community, and targeted surveillance activities.

Surveillance System Evaluation Title: Evaluation of Quality and Utility of Electronic Case Reporting (eCR)

Surveillance System Evaluation Description:

Electronic case reporting (eCR) is the automated real-time exchange of case report information between electronic health records (EHRs) and public health agencies. Traditionally, health care providers need to know the rules for reporting and manually report about cases, or people with conditions of public health concern, to their public health agencies via fax, phone call, or email. Florida implemented the use of eCR data first with COVID and then expanded to other diseases and conditions over recent years. In 2025, Florida Department of Health's Sexually Transmitted Diseases program plans on utilizing eCR to update certain variables documented in the web-based Surveillance Tools and Reporting System (STARS). The program would like to evaluate this new process.

ID: 70342129

Infectious Diseases - Host Site Description

Florida Department of Health

Surveillance System Objectives:

Primary objective is to analyze the utility of eCRs in improving data quality. Deliverables would be to analyze changes in data quality before and after the implementation of eCR. Produce a written summary of findings and next steps as well as provide a presentation on key findings within the Department and ideally at an external conference.

Surveillance System Impact:

Having complete data would support the easier location of infected persons and their partners to provide appropriate treatment and intervention activities. Therefore understanding the data eCR can provide is important in improving data quality.

Major Project Title: Infection Control Gap Analysis

Major Project Description:

Since January 2024, the Florida Department of Health's Health Care-Associated Infection (HAI) Prevention Program has conducted over 1,500 Infection Control Assessment and Response (ICARs) within health care facilities and other congregate settings. The program utilizes ICARs to systematically assess health care facilities infection prevention and control practices. All ICARs are entered into the Research Electronic Data Capture (REDCap) data platform. REDCap has the capacity to capture all components collected during an ICAR. Further analysis can be conducted on ICAR components to identify facility trends and guide quality improvement activities (i.e., educational campaigns).

Major Project Objectives:

The project objective is to create targeted infection prevention resources at a regional level by analyzing ICAR results from health care facilities (e.g., skilled nursing homes, assisted living) that have experienced an HAI-related outbreak from January 2024-December 2024. Deliverables include conducting a gap analysis within each region to address areas of highest concern in current infection prevention practices. Produce a written summary of findings including a plan for targeted outreach and interventions by region.

Major Project Impact:

Implementing targeted interventions will improve regional infection prevention best practices throughout Florida protecting the health of Florida residents.

Additional Project #1 Title: Wastewater and Respiratory Disease Trends in Florida

Project #1 Type: Surveillance System Evaluation

Project #1 Description:

Wastewater sampling has quickly become an additional surveillance tool for a variety of diseases. Currently, Florida has several sites that participate in the National Wastewater Surveillance System (NWSS). NWSS was developed in September 2020 by CDC to test SARS-CoV-2 levels in wastewater and provide a national database to report results. Since then, it has expanded to include other pathogens. The primary list of NWSS targets for surveillance is SARS-CoV-2, Influenza A (including subtypes H1, H3, and H5), Influenza B, and Respiratory Syncytial Virus. Further analysis is needed to understand how Florida might best use this data.

Project #1 Objectives and Expected Deliverables:

The objective is to understand the interaction between wastewater data and other surveillance sources. The fellow would compile wastewater data, Emergency department visit data and and laboratory positives for the three main respiratory pathogens (Flu, COVID and RSV) over the last couple of respiratory seasons. They would analyze and compare them in a retrospective study. They would provide a presentation on key findings to key stakeholders both at the state health department and local health departments.

Project #1 Impact:

Having a better understanding of the correlation of these data sources can provide public health officials with more information regarding the best surveillance tool for early detection of these illnesses. This would support the agency's ability to guide public health messaging in a timely manner.

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

The Investigations Section works closely with the Department's disaster and bioterrorism preparedness team. Program staff has been involved in the epidemiological and environmental health response to multiple hurricanes and tropical storms that have struck Florida over the years. In 2024 alone, there were three hurricanes that made landfall in Florida, Hurricane Debby, Hurricane Helene and Hurricane Milton. Additionally, the section has participated in the planning of surveillance efforts associated with the 2009 and 2020 Superbowl and the 2012 Republican National Convention. Significant infectious disease outbreaks such as the Zika 2016-2017, Hepatitis A response in 2018-2020 and COVID-19 Pandemic in 2020-2022 were managed using the Incident Command System (ICS) with emergency management experts. The programs are represented on teams that are standardizing the department's syndromic surveillance efforts, updating protocols for collaborative investigations with the FBI and other law enforcement entities, updating our BIOWATCH response plan, and updating the epidemiology and biological incident response sections of the state's Comprehensive Emergency Management Plan and the state's biologic plan. The Fellow will have several opportunities to participate in the development and review of preparedness response plans and policy. There is annual hurricane preparedness exercises and trainings as well as an annual Florida Infectious Disease Transport Network Exercise involving multiple local, state and national agencies.

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

Florida is the third most populous state and a mobile population, increasing chances of being involved with national outbreaks and sometimes internationally associated outbreaks. Recent examples of national outbreaks the Department was involved with include a national Listeria outbreak associated with ice cream (source identified by the Department's Food and Waterborne Disease Program), a carbapenem resistant pseudomonas outbreak associated with health care facility products, the 2022 mpox international outbreak, and local dengue outbreaks. The Department's Jacksonville and Tampa Laboratories have whole genome sequencing capacity to help facilitate outbreak investigations ranging from meningitis, hepatitis A, salmonellosis, and HIV. The Department is also involved with special genetic sequencing projects with CDC including mpox and animal rabies cases. The Fellow will be able to visit the Department's laboratories and participate in both large and small outbreaks with various Department programs throughout their fellowship. Cluster and Outbreak investigations will be the focus of at least one of the Fellow's projects. Previous Fellows have been involved with managing data from concurrent mpox, meningitis and hepatitis A outbreaks involving men who have sex with men, investigating reptile associated salmonellosis cases, and creating syndromic surveillance queries for the rapid identification of arboviruses such as dengue and Oropouche. Fellows will also participate in weekly, biweekly and monthly meetings and calls discussing cluster and outbreak investigations that are occurring in the state.