

**ID: 45698542**

**Infectious Diseases, Infectious Diseases - HAI - 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:** Danielle Stanek, BS Microbiology, DVM  
State Public Health Veterinarian, Medical Epidemiologist  
Florida Department of Health

**Secondary Mentor:** Megan Gumke, BA Anthropology and Spanish; MPH in Epidemiology, Graduate Certificate in Biostatistics  
Acute Investigations Unit Manager  
Florida Department of Health

**Work Environment**

100% In-person

**Assignment Description**

The Fellow will work closely with 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) personnel, the 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

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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, EpiInfo 7, 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: Analysis of Non-tuberculosis Mycobacteria Infections to Define the Statewide Trend of Disease Transmission**

*Surveillance Activity Description:*

Mycobacterium abscessus (M. abscessus) is a rapidly growing nontuberculous (NTM) mycobacteria found in the environment known to cause skin and soft tissue infections when contaminated medical supplies or equipment are used during medical procedures such as cosmetic procedures and vaccination. Outbreaks of M. abscessus and other NTMs in health care settings are often sentinel events due to gaps in infection prevention and control practices. Agency for Health Care Administration (AHCA) runs the Florida Center for Health Information and Transparency which is responsible for collecting and managing health related data such as Medicaid, Medicare, hospital discharge (in-patient), emergency department (out-patient), and ambulatory care data. Systemic surveillance for NTM infections of AHCA data using ICD-10 codes and the Department's hospital and emergency department syndromic surveillance data system (ESSENCE-FL), will help characterize and reveal trends in M. abscessus and other NTM infections acquired in health care settings, and inform future evidence-based infection prevention and control measures for health care facilities statewide.

*Surveillance Activity Objectives:*

Objectives:

- Characterize health care associated NTM infections and trends
- Compare AHCA data to syndromic surveillance data to determine if a syndromic surveillance query for NTM infections is practical

Deliverables:

- Analyze data to characterize any NTM infection trends in a summary report, produce a guideline for epidemiologic investigations of health care associated NTM infections, and use the project findings to develop a presentation for county health departments and health partners to highlight best practices based on Florida data

*Surveillance Activity Impact:*

Improve detection, data-driven response, containment, communication and collaboration with county health departments and state partners who may be with prevention and investigation of health care associated NTM infections.

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**Surveillance System Evaluation Title: Evaluation of Automated Processing of Syphilis Electronic Laboratory Reporting within STD Surveillance Systems**

*Surveillance System Evaluation Description:*

For decades, syphilis laboratory prioritization for field investigation followed a “reactor grid” based on patient’s non-treponemal test titer and age for the over 55,000 reactive non-treponemal tests received annually. To better align with current syphilis case definitions and to reduce manual processing of electronic laboratory results, the Sexually Transmitted Disease (STD) Program has recently developed and implemented automated processes and procedures for consumption of electronic syphilis laboratory results. These processes and procedures focus on a patient’s syphilis history and assign laboratory results for investigation accordingly. Previous analyses prior to implementation found these new procedures to maintain disease reporting sensitivity while greatly increasing specificity and positive predictive value. This project would involve evaluating the impact of this change in surveillance system in terms of sensitivity, specificity, and other algorithm-related metrics and on the STD program including timeliness of treatment, successful partner services, and more for results assigned for investigations.

*Surveillance System Objectives:*

Objective:

- Evaluate changes in sensitivity, specificity, timeliness of treatment, and proportion of successful partner services resulting from implementation of syphilis electronic laboratory reporting

Deliverables:

- Analyze changes in key metrics before and after the reporting upgrade
- Produce a written summary of findings and next steps
- Provide a presentation on key findings within the Department and ideally at an external conference

*Surveillance System Impact:*

Increased timeliness for reporting, patient follow-up, treatment and contact tracing is expected from this data system upgrade.

**Major Project Title: Analysis of meningococcal disease trends for improved prevention and investigation activities**

*Major Project Description:*

Since the end of 2021, Florida identified an increase in meningococcal disease cases with many among men who have sex with men (MSM) or whom were HIV+. The prior five-year average was about 20 cases per year however in 2022, there were 70 cases. The Florida Bureau of Public Health Laboratories (BPHL) has implemented not only serogrouping of meningococcal cases but also completed genomic sequencing on all viable specimens from 2022 with support from the Centers for Disease Control and Prevention (CDC). This project involves connecting the meningococcal epidemiologic data recorded in the Florida reportable disease system with HIV and STD information from the Bureau of Communicable Disease. Additionally, looking at immunization data from the Florida system that tracks vaccinations. The goal would be to analyze the dataset with support from Bureau of Epidemiology, Bureau of Communicable Disease, and Bureau of Public Health Laboratories to provide an overview of this dramatic increase and determine potential actions the state may take moving forward to prevent further spread.

*Major Project Objectives:*

Objective:

- Utilize vaccination data, laboratory genomic sequencing data, and HIV, STD and epidemiologic data to characterize the epidemiology of meningococcal disease in Florida in 2022, particularly related to the MSM population

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**Deliverables:**

- Compile and analyze data from the various data systems
- Produce a written summary of findings including next steps (a publication in a peer reviewed journal is also strongly encouraged)
- Provide a presentation on key findings to key stakeholders within and external to the Department and ideally at an external conference

*Major Project Impact:*

This project will be used to help direct future vaccination campaigns to protect vulnerable populations at risk for meningococcal disease. It also will help inform data modernization efforts since multiple key data systems will be cross-matched across programs and is expected to improve both epidemiologic and surveillance capacity.

**Additional Project #1 Title: Health Equity and Vulnerability Assessment of Selected Zoonotic and Vectorborne Diseases**

**Project #1 Type: Surveillance Activity**

*Project #1 Description:*

Geographic and demographic epidemiologic data from the state reportable disease data system will be analyzed in combination with application of Public Health Tracking and Geographic Information Systems (GIS) Programs vulnerability and poverty mapping tools to characterize disparities in health equity for two or more of the following selected zoonotic and vectorborne diseases and conditions: rabies post-exposure prophylaxis, brucellosis, Hansen’s disease, ehrlichiosis, and imported and local dengue cases for the past five years (2018-2022). A report summarizing findings including maps with a plan to provide targeted outreach and prevention education to geographic health equity disparity hot spots will be one outcome of this project. Findings will also be presented to the Public Health Tracking Work Group.

*Project #1 Objectives and Expected Deliverables:*

**Objectives:**

- Characterize health equity disparities and vulnerabilities for cases of selected zoonotic and vectorborne diseases reported between 2018-2022 using population data based on geographic location to help direct targeted outreach and interventions

**Deliverables:**

- Compile and analyze case geographic data using mapping tools
- Produce a written summary of findings including a plan for targeted outreach and interventions that also includes key community partners (Publication in a peer reviewed journal is also strongly encouraged)
- Provide a presentation on key findings to the Public Health Tracking Work Group and ideally at an external conference

*Project #1 Impact:*

Data used to characterize geographic health equity gaps by location and disease can be used by public health and public health partners for targeted preventive outreach and interventions to help mitigate risk for selected diseases of public health concern.

**Additional Project #2 Title: Develop External Public Health Outbreak Reporting Portal**

**Project #2 Type: Surveillance Activity**

*Project #2 Description:*

Presently, potential outbreaks or clusters are reported to county health departments (CHDs) by a facility via phone, fax, or email notification. CHDs request line lists information on persons with a specific setting (i.e., school, long-term care

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facilities, and correctional facilities) notating symptoms, tests performed and results, and other pertinent data. All too often, the turn-around time between notification and receipt of line list information to determine and investigate an outbreak can be days or longer. The purpose of an external outbreak reporting portal would allow facilities to notify the Florida Department of Health of potential outbreaks through a portal data collection feature. This would, in turn, auto-generate an outbreak in Merlin's OBM and apply a task for that specific CHD to follow-up with the facility. The benefits of doing this would include:

- 1) Ease in reporting 24/7 to CHDs by facilities without needing to contact CHD staff after-hours or next business day
- 2) Decrease outbreak reporting delays
- 3) Improve timeliness in reporting outbreaks and pertinent information to CHDs, and
- 4) Reduce time and effort on the CHDs part to obtain this information and implement mitigation efforts. The external outbreak reporting portal would function in the same manner as Florida's Electronic Laboratory Reporting (ELR) portal where facilities would register to the portal and have the ability to manually enter data directly or upload via a csv file to the portal. Registering would be voluntary but encouraged

*Project #2 Objectives and Expected Deliverables:*

**Objective:**

- Improve efficiency and timeliness of external partner reporting of outbreak cases

**Deliverables:**

- Determine key fields to capture in the portal in consultation with Surveillance data system managers and a representative group of County Health Department Epidemiology Managers and reviewing previously reported outbreak reports
- Help test and troubleshoot the portal during development and Beta test before final roll-out
- Develop written guidelines and an as needed taped training for users

*Project #2 Impact:*

Improving ease and speed of outbreak reporting will help reduce time for outbreak response and also help reduce the ever-increasing work burden for county health departments.

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

The FWDP, ZVDP and Acute Disease Investigations Unit work 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 including Hurricane Irma in 2017, Hurricane Michael in 2018, Hurricanes Ian and Nicole in 2022, and 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 BLOWWATCH 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 are also multiple potential COVID-19 related project opportunities including evaluation of COVID-19 contact tracing surveillance, COVID-19 reinfections involving staff and residents of long-term care facilities, COVID-19 impacts on pregnant women and their infants and validation of COVID-19 point-of-care antigen testing. There are monthly and quarterly preparedness meeting opportunities as well as annual hurricane preparedness exercises and trainings besides actual responses that Fellows can participate in.

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**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 meningococcal disease, 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 concurrent mpox, meningococcal disease and hepatitis A outbreaks involving men who have sex with men, reptile associated salmonellosis, hurricane associated carbon monoxide poisoning, dengue outbreaks, an HIV outbreak related to sex work, and antimicrobial resistant campylobacteriosis associated with pet store puppies. Fellows will also participate in weekly, biweekly and monthly meetings and calls discussing cluster and outbreak investigations that are occurring in the state.

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

Fellows will have the opportunity to participate in COVID-19 outbreaks in sensitive locations such as long-term care facilities. The Department also works with the Florida Department of Agriculture and Consumer Services to investigate potential SARS-CoV-2 transmission to captive wildlife and pets including testing and potential sequencing of positive animals and people.

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

The Department's Public Health Tracking Program has epidemiologists available to provide different data sources to overlay in maps to identify different population vulnerabilities, demographics, and income gaps. The Fellow can also work with the GIS program to apply these resources to maps representing various public health conditions. This type of mapping was used during a Zika outbreak in 2016, to help identify geographic areas with higher numbers of non-English speaking, non-white populations, as well as women of child-bearing age. During the recent mpox outbreak, additional demographic data related to diversity and health equity was also routinely shared between the Bureau of Communicable Disease and Epidemiology. This was also a major step forward toward data modernization goals.