ID: 69558524
Infectious Diseases - Host Site Description
Rhode Island Department of Health

Assignment Location: Providence, US-RI
Rhode Island Department of Health
Division of Emergency Preparedness and Infectious Disease

Primary Mentor: Suzanne Bornschein, MD
State Epidemiologist
Rhode Island Department of Health

Secondary Mentor: Meghan MacAskill, MPH, MS
HIV Surveillance Coordinator
Rhode Island Department of Health

Work Environment
Hybrid

Assignment Description

The Fellow will be housed in the Center for HIV, Hepatitis, STD, and TB Epidemiology (CHHSTE) within the Division of Emergency Preparedness and Infectious Disease at the Rhode Island Department of Health (RIDOH). The Rhode Island Department of Health is a small, centralized health department that is responsible for surveillance, investigation, control, and prevention of diseases across the state. As a centralized health department (and one of the only states with no local health departments) RIDOH is engaged in both local public health activities from disease investigation, outbreak response, and partnership with local community-based organizations to state level surveillance, prevention, and reporting to the CDC. Being a small health department, we utilize a syndemic approach with close collaboration between programs to achieve our mission to prevent disease and protect and promote the health and safety of the people of Rhode Island.

The Fellow will gain a detailed understanding of HIV, STD, and viral hepatitis surveillance and programmatic activities, with particular focus on HIV. The Fellow will become familiar with application of HIV CDC/CSTE case definitions to assign appropriate case status, HIV cluster detection, conducting HIV, STD, and viral hepatitis field investigations, and database and data quality management. The Fellow will have the opportunity to develop solutions and implement tools to enhance monitoring, reporting, and dissemination of HIV, STD, and viral hepatitis surveillance data. The Fellow will participate in outbreak and response activities with a particular focus on the HIV program to enhance ongoing detection and response efforts in collaboration with an existing NIH funded research project at Brown University.
The Fellow will be mentored and supported to complete all of the Fellowship requirements and will be encouraged to present their work at local and national meetings and publish findings in peer-reviewed journals.

Fellow's anticipated day-to-day activities:

- Weekly collaboration with mentors on project assignments
- Attend monthly HIV case management meetings
- Participate in HIV cluster detection and response investigations
- Attend monthly meetings with NIH-funded Brown University researchers collaborating with Rhode Island on HIV cluster detection and molecular epidemiology efforts
- Support HIV, hepatitis, STD, and TB epidemiologists in development and maintenance of enhanced surveillance monitoring and reporting tools, including data dashboards and epidemiology reports
- Analyze data from Rhode Island's surveillance systems including the Enhanced HIV/AIDS Reporting System (eHARS), National Electronic Disease Surveillance System (NEDSS) based System (NBS), and HIV Partner Services database (Microsoft Access)

- Prepare and deliver presentations at state and national meetings
- Lead and/or support the writing and development of manuscripts and reports
- Develop resources and training materials for HIV staff on Partner Service data
- Flexibility for learning and shadowing other health department programs of interest

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

HIV surveillance data is stored in the Ehanced HIV/AIDS Reporting System (eHARS) which was created and is maintained by the CDC. All state health departments utilize eHARS for HIV surveillance data. The CDC has developed many SAS codes and technical guidance for working with eHARS data that will be available to the Fellow. Our HIV Partner Service data is currently stored in Microsoft Access, however, the Fellow will be working to identify a new database to migrate this data to. Meghan MacAskill, the HIV Surveillance Coordinator has Microsoft Access textbooks, protocols, and knowledge she will share with the Fellow. There is opportunity to take a Microsoft Access course through RIDOH. We also have a contractor and IT staff dedicated to maintaining the Partner Services database. Our HIV Return-to-Care and Perinatal Surveillance data is stored in REDCap. There is a dedicated epidemiologist at RIDOH for troubleshooting REDCap database issues. All other diseases our center is responsible for (Hepatitis C, STDs, and TB) use the National Electronic Disease Surveillance System Base System (NEDSS/NBS). The STD and TB epidemiologists are experienced NEDSS users that will train the Fellow on NEDSS use. NEDSS guides made by Center epidemiologists will be available for the Fellow to refer to. All database, software, and surveillance systems used by the Fellow will have epidemiologists and supplemental guidance documents available to the Fellow for use. RIDOH also has SAS coding and PowerBI workgroups composed of interested epidemiologists for questions and SAS help.

Projects

Surveillance Activity Title: Improving Surveillance and Reporting of HIV Testing at Blood and Plasma Donation Facilities in Rhode Island

Surveillance Activity Description:
All blood and plasma donation facilities are required to screen donations for HIV, syphilis, hepatitis B virus, and hepatitis C virus, however, reporting of positive results to the health department is inconsistent. Rhode Island State law requires all specimen testing reactive on the HIV ag/ab screening test to be sent to the Rhode Island State Lab for confirmatory testing. Some blood and plasma donation facilities are currently faxing over reactive test results to the health department for further investigation. This limits our ability to follow up with these individuals to confirm if they have one of these infections and prolongs the timeline that these cases are worked-up. Cases that test reactive and are reported to the health department require outreaching to get them confirmatory testing. This creates unnecessary medical appointments for these cases and additional work for our disease investigators (DIS). If blood and plasma donation facilities begin sending specimen to the Rhode Island State Lab this intermediary step is eliminated.

Surveillance Activity Objectives:
- Perform an audit of all blood and plasma donation facilities in Rhode Island
- Determine laboratory results reported in blood and plasma donation centers in NBS, eHARS, and via faxed/mailed paper labs stored in file cabinets at the health department
- Summarize a list of key information missing from reports from these facilities
- Become familiar with the regulations related to blood and plasma screening for bloodborne pathogens in Rhode Island
- Draft a best practice guide for infectious disease reporting from these facilities using the CDC developed guide for the VA and state prisons as a template

- Identify barriers to appropriate reporting in these facilities and make recommendations for improvement
- Communicate best practice guide to facilities and monitor improvement

Surveillance Activity Impact:
Although case counts of HIV and other infectious diseases remains low amongst injection drug users and those experiencing homelessness in RI, these hard-to-reach populations are more likely to donate plasma for money. This project will improve surveillance for HIV, syphilis, hepatitis B virus, and hepatitis C virus in priority populations in Rhode Island and ensure that we will adequately count, treat, and/or link to care persons living with one or more of these bloodborne pathogens.

Surveillance System Evaluation Title: Evaluation of the Rhode Island Department of Health HIV Partner Service Outcomes

Surveillance System Evaluation Description:
The HIV Partner Services program interviews every newly diagnosed case of HIV in Rhode Island to ensure linkage to care and identify partners (sex and drug use) that need to be tested. Nearly 100% of index clients over the last five years have accepted a partner services interview. Based on partner information provided during the index interview and with the consent of the index case, RIDOH staff will outreach all named and locatable partners to notify them of HIV exposure, facilitate HIV testing, and refer them to clinics offering PrEP. A significant challenge in Partner Service programs nationwide is getting sufficient contact information during index interviews to notify partners. Additionally, of all partners that are named, notifiable, and successfully contacted, often we do not know the outcome of their HIV testing or PrEP referrals.

The Fellow will conduct a data analysis on the HIV partner service outcome data and perform a systematic review on the implementation of partner services to evaluate the current HIV Partner Service program at RIDOH.

Surveillance System Objectives:
- Summarize the partner services cascade data between 2008-2025 (number of named partners, number of locatable partners, number of partners successfully reached by DIS, number of partners referred to HIV testing and PrEP, number of partners testing negative for HIV, and number of partners initiating PrEP following their partner notification)
- Learn the DIS workflow for investigating a person with HIV and notifying any named partners.
- Conduct a systematic review of best practices for partner service programs exploring topics such as the effectiveness of video calls and field visits for interviews.
- Propose changes to the existing index interview and partner notification questions
- Recommend changes to the HIV Partner Service investigation workflow and identify potential solutions for improved data completeness of partner outcome data.

Surveillance System Impact:
A comprehensive and robust partner services program is crucial for facilitating early diagnosis for partners who were potentially exposed to HIV and linking at risk individuals to appropriate prevention resources.

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Major Project Title: Implementing New Data Systems for HIV Partner Services

Major Project Description:
The HIV Partner Services data is currently housed in a Microsoft Access database. Microsoft Access has many benefits including the ability to customize the layout so that questions specific to Rhode Island may be integrated into our index interviews and partner notifications. However, it is difficult to analyze data in Microsoft Access, we require a contractor to make desired changes to the database, and over the years as our program has grown so has our data and we now require a different data system to store a larger volume of data. The Fellow will assist the HIV Surveillance Coordinator in the process of identifying a new database for the HIV Partner Services dataset, migrating the historic data off our current Microsoft Access database, and develop resources for a smooth transition for all staff to the new system. No Microsoft Access knowledge is required.

Major Project Objectives:
- Assist with exporting and cleaning HIV partner service historic data between 2008-2024.
- Play an integral role in identifying new data systems that would better suit the needs of the HIV Partner Service program via discussions with other state health departments.
- Develop a data dictionary for the HIV partner service data.
- Create training resources for DIS doing data entry on the new data system.

Major Project Impact:
Identifying a new database for the HIV Partner Services program will enable improved exploration and integration of the HIV Partner Service data in the future. This dataset is a critical source of information for both the HIV Prevention team, the HIV Surveillance team, and for cluster detection and response efforts.

Additional Project #1 Title: HIV, Hepatitis, STD, and TB Surveillance PowerBI Dashboard Development
Project #1 Type: Major Project

Project #1 Description:
The Center for HIV, Hepatitis, STD, and TB Epidemiology (CHHSTE) where the Fellow will be housed in has significant interest and need for developing PowerBI dashboards across all program areas. Dashboard development is important for surveillance programs to communicate their data to the public and can result in a reduction of data requests to health department epidemiologists. The Fellow will work with HIV, viral hepatitis, STD, and TB epidemiologists at RIDOH to develop PowerBI dashboards with data most relevant to the public as well as an internal center dashboard describing programmatic performance metrics for staff.

Project #1 Objectives and Expected Deliverables:
- Identify relevant epidemiological questions on HIV, hepatitis, STD, and TB pertinent to the public
- Assist with planning data summarization for the various diseases in the center
- Assist with developing data integration and automation necessary for the planned dashboards
- Collaborate with Supervising Disease Investigator (DIS) to identify programmatic performance metrics most useful for monitoring programs and DIS workload internally
- Development of both internal and public facing dashboards for HIV, Hepatitis, STD, and TB

Project #1 Impact:
This project addresses challenges from deficits in the communication of health information. Development of dashboards to communicate state-wide data on HIV, Hepatitis, STD, and TB for the public audience will result in informed public health activities and improved public health education in Rhode Island.

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Additional Project #2 Title: Understanding STD Reinfections and DoxyPEP Uptake in Rhode Island
Project #2 Type: Surveillance Activity

Project #2 Description:
Doxy-PEP is an antimicrobial medication proven to reduce the risk of getting some bacterial STIs. The CDC recently recommended Doxy-PEP as a prevention approach against bacterial STIs among men who have sex with men and transgender women. However, outcome data and implementation strategies for doxy-PEP in real-world settings are lacking. Notification of partners typically takes place by disease intervention specialists (DIS) who often directly contact sex partners of someone who has been diagnosed with an STI. Given that partner services engages people who have been diagnosed with HIV and other STIs, it is an ideal setting for doxy-PEP implementation efforts. RIDOH aims to integrate Doxy-PEP education and referrals into routine partner services activities. The assigned CSTE AEF will have an opportunity to work alongside the STI surveillance and response program to improve understanding of doxy-PEP usage in Rhode Island.

Project #2 Objectives and Expected Deliverables:
- Develop provider assessments, interview scripts and data collection instruments to collect information on doxy-PEP.
- Support data collection and analysis projects as RIDOH aims to obtain outcome data from our largest STI treatment providers about successful linkage to care for cases and contacts, and subsequent engagement in doxy-PEP programs.

Project #2 Impact:
The Fellow will contribute to an increased understanding of provider awareness and implementation of doxy-PEP in Rhode Island and help to integrate doxy-PEP referrals into our current partner service programs. As a result, these initiatives will contribute to reductions in STI rates in the state.

Additional Project #3 Title: Improved Completeness of Previous Negative HIV Test for Persons with HIV Infection and Named Partners
Project #3 Type: Surveillance Activity

Project #3 Description:
Rhode Island's HIV Prevention and Surveillance programs are funded through a cooperative agreement with the CDC. One required grant activity includes documenting the last known negative HIV test result for newly diagnosed HIV cases, an activity Rhode Island consistently falls short on. This data is not only impactful for identifying acute HIV cases but also for understanding the HIV status of named partners interviewed in our partner services program. Rhode Island receives HIV lab results through a few avenues: in electronic laboratory results (ELRs), faxed or mailed lab results to our office, in a portal from our state lab, and through patient self-report. The Fellow will work on a project to improve completeness of previous negative HIV test results for person with HIV on eHARS and for notifiable partners on the HIV Partner Services database. Additionally, they will assist STD epidemiologists with improved completeness of HIV status in NEDSS.

Project #3 Objectives and Expected Deliverables:
- Develop a process to transfer physical lab results stored in the office into an electronic format that is searchable.
- Review compiled labs for negative HIV test results of persons with documented HIV infection in Rhode Island's eHARS database.
- Monitor improvements in completeness of last documented negative HIV test data in eHARS using already developed SAS coding with the goal of reaching 70% complete
- Investigate HIV status of persons diagnosed with STDs by reviewing HIV data in eHARS
- Perform HIV/STD coinfection match annually following establish protocols

- Opportunity to perform additional data analysis of interest on HIV/STD coinfection data

Project #3 Impact:
Completeness of last documented negative HIV test results for persons diagnosed with HIV is impactful for gaining a better understanding of the stage of HIV infection individuals were at time of diagnosis. Improved identification of acute HIV cases (individuals with a negative HIV test within 6 months of diagnosis) contributes to a more comprehensive understanding of the current state of HIV transmission in the state and is helpful for cluster detection and response efforts. Additionally, improved completeness of named partner testing outcomes is informative for ongoing HIV prevention efforts.

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

The Fellow will complete the emergency preparedness training required by all RIDOH staff and would be considered for an appropriate position within RIDOH's Incident Command System (ICS), should it be activated during the Fellow's tenure at RIDOH. In the event of an identified CDC HIV Cluster of Concern (we have had 2 in the past 30 months), the Fellow would be included in all cluster response planning, meetings, and help coordinate activities in the community with our partnered CBOs. We are planning on actively developing a HIV cluster/outbreak "crash course" that has capacity building resources, materials, and guidance for Center staff who do not routinely work on HIV that would be pulled into response efforts if ever necessary. The Fellow will have opportunity to help develop these resources and guidance alongside Meghan MacAskill our HIV Surveillance Coordinator, our Lead DIS, and our Prevention Manager. Time allocation is approximately 2 hours per week.

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

In collaboration with the Centers for Disease Control and Prevention (CDC) and Brown University, RIDOH has been using molecular methods to identify possible emerging HIV transmission networks in order to reduce the spread of HIV in the state. The tools involve determining genomic similarity among the various HIV strains circulating in Rhode Island. The outcome of this work has helped prioritize HIV prevention and screening activities. More can be learned about this project through these published reports:

(i) Novitsky et al. Empirical Comparison of Analytical Approaches for Identifying Molecular HIV-1 Clusters. Scientific Reports 2020;10:18547. PMID: 33122765 PMCID: PMC7596705;
(ii) Novitskyet al. Longitudinal Typing of Molecular HIV Clusters in a Statewide Epidemic. AIDS 2021;35:1711-1722. PMID 34033589;
(iii) Novitsky et al. Not All Clusters Are Equal: Dynamics of Molecular HIV-1 Clusters in a Statewide Rhode Island Epidemic (in press, AIDS).

The Fellow will attend monthly meetings with our Brown University partners on cluster detection where growing HIV phylogenetic clusters are discussed. In addition, the Fellow will do deep dives on clusters identified by the Brown University research team that do not meet CDC criteria but may be impactful to investigate for Rhode Island. If there is a CDC cluster of concern detected during the Fellow's time, they will be involved with every step of the outbreak investigation and response.