

ID: 74396732

Chronic Disease, Infectious Diseases - Host Site Description

Utah Department of Health and Human Services

Assignment Location: Salt Lake City, US-UT
Utah Department of Health and Human Services
Division of Population Health

Primary Mentor: Leisha Nolen, MD, PhD
State Epidemiologist
Utah Department of Health and Human Services

Secondary Mentor: Jack Pfeiffer, PhD
Violence and Injury Prevention Epidemiologist III
Utah Department of Health and Human Services

Work Environment

Hybrid

Assignment Description

The fellow will work within Utah DHHS's Division of Population Health (DPH) State Epidemiologist's Program. This program promotes high quality science throughout the department through providing scientific support for project design, data analysis, and data interpretation. The program promotes the scientific development of staff and encourages collaborations with outside partners. The program is led by Utah's State Epidemiologist and is composed of the Deputy State Epidemiologist, the State Public Health Veterinarian, an EIS Officer, and the Housing Insecure Population Epidemiologist. By functioning at the division level, the State Epidemiologist's Program can work across traditionally siloed programs and promote data sharing across offices.

Additionally, the fellow will split their time with the Violence and Injury Prevention Program (VIPPP). VIPPP has an overarching goal to understand why violence and injuries occur, their consequences, and the most effective ways to prevent violence and injuries from happening in the first place. Specifically, the fellow will work with the Substance Use Disorder Team, who work to collect and disseminate accurate, timely, and comprehensive data on substance use and substance use risk factors in Utah and to use data to inform interventions to reduce the occurrence of substance use disorder in our state.

The fellow's assignment will be to develop and improve public health surveillance and response in Utah's correctional facilities. The recent transfer of responsibility for Correctional Health from the Utah Department of Corrections to the Department of Health and Human Services as a new Division of Correctional Health Services provides a rich opportunity for our division to monitor and improve the health of incarcerated individuals in our state. The fellow will be able to learn about and apply public health principles for a variety of conditions to the correctional setting. The fellow will work on an interdisciplinary team to assess the current surveillance system, recommend and implement improvements, establish disease surveillance monitoring for priority conditions, and participate in emergency preparedness and outbreak response in our correctional facilities.

While the fellow's mentors are in the State Epidemiologist's Program and the Violence and Injury Prevention Program, they will work closely with The Division of Population Health's Surveillance Team. The team works to provide and build technical capacity within the division for surveillance processes and systems, and they work with all programs to improve the availability, timeliness, and quality of data to inform public health action. The team oversees dashboard development, syndromic surveillance, modeling, genomic epidemiology, wastewater surveillance, and data collection tool development. The fellow will have the opportunity to work closely with members of this team as well as participate in their team meetings to gain a richer context of how surveillance informs public health action.

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Additionally, the fellow will work closely with other programs, including the Disease Response, Analysis, Evaluation, and Monitoring (DREAM - our communicable diseases team), the Office of Preparedness and Response, and our Division of Correctional Health Services. The fellow will have the opportunity to work with members of all these teams as well as participate in their meetings to see how their work promotes public health.

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

Systems: EpiTrax, Utah's statewide integrated disease surveillance system; Fusion, Utah Department of Corrections EHR system; RShiny dashboards; DHHS and DPH limited data warehouses

Software: R, RShiny, REDCap

Database: PostgreSQL

Projects

Surveillance Activity Title: Hepatitis C surveillance in Utah's incarcerated population

Surveillance Activity Description:

A 2020 settlement agreement required universal opt-out screening for hepatitis C virus (HCV) at the Utah Department of Corrections (UDC) and opt-in treatment for a subset of incarcerated individuals at highest risk of hepatic fibrosis and cirrhosis based on AST to Platelet Ratio Index (APRI) and Fibrosis (F) scores in Utah's prisons. Since the settlement, the total prison population has been tested for HCV at least once and all new intakes are screened upon admission. To date, 409 individuals have been treated for HCV, however, over 1,200 individuals in Utah's prisons (~20% of the total population) have diagnosed (antibody positive), untreated HCV. While the Utah DHHS Viral Hepatitis Team has some data to assess the impact of HCV in Utah's prisons, there is a need to improve the collection, analysis, and understanding of transmission in the facilities.

The fellow will conduct a surveillance system evaluation of EpiTrax, Fusion, and any external HCV tracking sheets. They will then work to improve and develop forms and metrics to standardize data tracking and monitoring. This will include developing forms to collect social history and exposure variables, seroconversion, comorbid conditions, treatment eligibility, and compliance. Additionally, the fellow will work to develop a system to efficiently monitor trends over time and detect aberrations.

Surveillance Activity Objectives:

1. Better understand data availability and gaps in existing surveillance systems through a surveillance system evaluation
2. Establish data metrics and develop an internal data dashboard for HCV to monitor transmission and clearance/treatment
3. Review seroconversions and develop a way to track these to understand in-facility transmission

Surveillance Activity Impact:

Better understanding transmission patterns in Utah's correctional facilities will allow public health to better dedicate resources to support enhanced screening, treatment, and surveillance of HCV. Additionally, data to support the allocation of resources to HCV interventions in correctional settings will further support the reduction of HCV transmission in the general population.

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Surveillance System Evaluation Title: Evaluation of the correctional facilities' Electronic Health Record (EHR) System for Public Health Surveillance

Surveillance System Evaluation Description:

In 2022, the Utah Department of Corrections implemented a new EHR System, Fusion. Fusion is a system designed for clinical services, not for public health surveillance. However, it is where health information is collected and stored for the incarcerated population. Further, additional information, such as screening, risk, and social history are entered into a separate system (OTrack) during the intake process. The fellow will perform an evaluation of the Fusion system and additional correctional systems for public health surveillance purposes utilizing the CDC guidelines for evaluating public health surveillance systems. Specifically, the fellow will assess the completeness and validity of the data, collaborate with CHS physicians to assess the acceptability of the EHR system, assess the sensitivity and predictive value positive of the system, and assess the representativeness of the EHR to collect social history and comorbid conditions for cases. Further, the fellow will explore the interoperability of Fusion with our other state-maintained surveillance system, such as EpiTrax and our immunization registry.

Surveillance System Objectives:

1. A completed evaluation of Fusion as a surveillance system for CHS
2. Recommendations and an implementation plan for how to improve the utility of Fusion for public health surveillance

Surveillance System Impact:

Improving the utility of Fusion as a public health surveillance system will improve Utah DHHS's ability to monitor, detect, and respond to public health concerns in the correctional facilities. Having a strong surveillance system is instrumental to improving the health of a population.

Major Project Title: Chronic disease epidemiology among the incarcerated population of Utah

Major Project Description:

The integration of correction health into DHHS provides us with a novel opportunity to understand the epidemiology of disease in our two state correctional facilities, informing decisions to improve health and levels of care while individuals are incarcerated. The fellow's project will ideally lay a strong foundation for DHHS to achieve our vision of having quality data available in real-time to understand the burden of disease in our incarcerated population.

One of the most pressing public health concerns among our incarcerated population is Opioid Use Disorder (OUD). The fellow's main project will be assessing OUD in our prison population, which will include developing a surveillance system, understanding and enhancing data collection and data flow, performing data analysis, and presenting data to key stakeholders.

Major Project Objectives:

1. Evaluating the existing CHS surveillance infrastructure, with a focus on OUD
2. Using the results from the evaluation, creating a plan for establishing / enhancing surveillance of OUD among our incarcerated population
3. Analyzing preliminary surveillance data and developing data-driven public health recommendations (if data allows)
4. Sharing relevant findings and recommendations with appropriate partners

Major Project Impact:

Well designed surveillance systems are a highly effective public health tool. Such systems allow for the monitoring of outcome patterns over time, identification of disparities and abnormal fluctuations in outcome occurrences, assessment of intervention efficacy, and more. Utah's incarcerated population stands to benefit from improved surveillance

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infrastructure. This project will provide a better understanding of the burden of OUD in this population, as well as setting the stage for targeted, needs-based interventions and enhanced evaluation capacity down the road. Additionally, this project will better position CHS to implement and maintain broader surveillance of additional outcomes in the future.

Additional Project #1 Title: Modeling risk factors for homelessness

Project #1 Type: Surveillance Activity

Project #1 Description:

The State Epidemiologist Team recently hired a Housing Insecure Population Epidemiologist to study health outcomes among Utah's population experiencing homelessness and advocate for interventions to improve their health. We aim to take a more comprehensive view of health and homelessness in Utah through leveraging other state partnerships. The fellow will evaluate the data available to identify people who were served by Utah State programs, specifically Juvenile Justice Youth Services, Child Protective Services, Utah State Hospital, and Department of Corrections, who experience homelessness before or after the encounter. Using data from these programs as well as mapped community health condition data, the fellow will complete a descriptive analysis of risk factors for homelessness in our state before or after interacting with our state programs.

Project #1 Objectives and Expected Deliverables:

The expected project deliverable is a completed evaluation of the availability, completeness, and validity of the data to monitor housing status of people who have been served by Utah State programs. Further, the fellow will complete a preliminary report on risk factors for homelessness in our state before or after interaction with our state programs.

Project #1 Impact:

This project will serve as an important first step in gaining a comprehensive understanding of how our state systems and programs could better support housing stability amongst the populations who use our services. Through identifying risk factors for homelessness among our clients, we can identify opportunities to increase housing stability and thus promote healthy living conditions for those we serve.

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

The fellow will have the opportunity to spearhead preparedness and response efforts for the UDC correctional health services team. In collaboration with our Office of Preparedness and Response (OPR) and our Disease Response, Analysis, Evaluation, and Monitoring (DREAM) program, the fellow will incorporate recommendations and considerations for correctional facilities into our response plans for emergencies and outbreaks. OPR maintains over 30 response plans; the fellow will review high priority plans (such as our Catastrophic Earthquake Plan and All Hazards Risk Communication Plan) and provide recommendations to ensure that incarcerated individuals are represented in the plans. Further, the DREAM program maintains disease plans that outline the public health response to cases and outbreaks of every reportable disease in our state. The fellow will have the opportunity to incorporate recommendations for cases within the prison setting, allowing an opportunity to apply principles of disease transmission and intervention for all types of communicable diseases.

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

The fellow will be able to participate in outbreak investigation for outbreaks that occur in the correctional setting. They will join an interdisciplinary team of health care professionals which is led by the infectious disease nurse employed by

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the Division of Correctional Health Care. The fellow would be included in all outbreak notifications and participate in boots-on-the-ground investigations to enhance reporting, deepen understanding of the nature of the outbreak, and be involved in testing interventions to the outbreak. In addition, the fellow would be invited to participate in responding to outbreaks outside of the correctional facilities based on their interest and time.