

ID: 75987586

Infectious Diseases - Host Site Description

Nevada Department of Health and Human Services

Assignment Location: Carson City, US-NV
Nevada Department of Health and Human Services
Division of Public and Behavioral Health - Office of Epidemiology

Primary Mentor: Ihsan Azzam, PhD, MD, MPH
Chief Medical Officer
Nevada Department of Health and Human Services

Secondary Mentor: Cam-Van Huynh, DDS, MPH
CDC Career Epidemiology Field Officer (CEFO)
Nevada Department of Health and Human Services

Work Environment

Hybrid

Assignment Description

The Fellow would be housed in the Office of State Epidemiology (OSE) which employs public health professionals who are versed in infectious disease surveillance, informatics, data management, disease investigation, and data assessment. OSE includes specific infectious disease programs such as healthcare associated infections, One Health, and wastewater surveillance. OSE directly serves the rural and frontier counties across Nevada and assists and consults with the 4 other local and regional health authorities, as needed.

The Fellow's anticipated day-to-day activities may include conducting disease surveillance; assisting with investigations of individual cases and/or reported outbreaks; analyzing data and building data pipelines; identifying data trends, patterns, and potential gaps; identifying solutions and efficiencies in processes; engaging with community members through primary data collection activities; interpreting data findings; communicating data findings to general populations and special working group members; designing and developing website interfaces, including API and dashboarding; shadowing emergency preparedness programs and staff; and engaging in backend data mapping.

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

Nevada has an Office of Analytics (OOA), and OSE works closely with this office. OOA has access to a robust amount of data sets that will be readily available for the AEF to utilize. An example of these data sets include:

- Nevada WebIZ (immunization data)
- Sentinel event registry
- Prescription drug monitoring program
- Nevada Syndromic Surveillance
- ILI Net (influenza-like illness)
- Nevada pregnancy risk assessment monitoring program
- National electronic disease surveillance system
- Nevada population data
- Medicaid data warehouse

The Office of Epidemiology has direct access to case surveillance data in a system called EpiTrax.

The fellow would have access to SAS and R/RStudio for data analysis, and staff at both OSE and OOA will be available to provide data analysis support to the fellow.

Projects

Surveillance Activity Title: Infectious Disease Surveillance Protocol Development & EpiTrax Form Request Changes

Surveillance Activity Description:

Nevada Department of Health and Human Services is in the process of becoming accredited through the Public Health Accreditation Board (PHAB) and one of the major components and deliverables is to create a comprehensive set of infectious disease protocols for reportable conditions. While this project is already underway, a small team of staff have been sharing this responsibility and several protocols have yet to be drafted; second round edits will also need to be made prior to sending the drafted protocols up the chain for review by the State Medical Epidemiologist and Chief Medical Officer. Additionally, if a case report form is needed for a reportable condition which does not mirror the existing data fields in the NNDSS system used in Nevada (EpiTrax), form requests will need to be created for conditions which are not already undergoing Message Mapping Guide implementation. Both of these parallel activities will improve Nevada's ability to respond to reports of reportable conditions in the state.

Surveillance Activity Objectives:

- Assisting with development of the initial draft protocols for approximately 35 infectious diseases/conditions (the fellow will not be expected to assist with all 35...just as many as they are interested in/have time for depending on other projects' needs).
- Assisting with editing and incorporating feedback for at least 40 drafted infectious disease protocols (again, the fellow will not be expected to assist with all 40).
- Creating and submitting any surveillance form requests as a result of case report form requirements for conditions which do not yet have Message Mapping Guides developed and implemented (we anticipate the fellow working on 1 or 2 of these form requests).

Surveillance Activity Impact:

Finalized disease investigation protocols, with accompanying case report form changes in the state's electronic reporting system to mirror elements expected to be collected through investigation, will allow OSE to more efficiently and effectively conduct future case investigations and will help OSE meet CDC reporting requirements.

Surveillance System Evaluation Title: Analyzing Case Reporting Impacts of Electronic Laboratory Reporting (ELR) Onboarding for Respiratory & Enteric Conditions

Surveillance System Evaluation Description:

The Office of State Epidemiology has implemented a new disease surveillance system, EpiTrax, and has been working to onboard more laboratories and providers into the corresponding electronic laboratory reporting (ELR) system. Analysis is needed to determine if there is a notable change in case reporting for certain reportable conditions after ELR onboarding occurs for a condition, specifically in high volume reportable conditions including respiratory (e.g. COVID-19, influenza, RSV, influenza-like illness monitoring) and enteric conditions (e.g. salmonellosis, E. coli, STEC, typhoid fever, campylobacteriosis, giardia, cryptosporidiosis). It is unknown if the conditions set up in the backend of EpiTrax (the backend is a system called EMSA) have been working as designed. With numerous laboratories being onboarded to electronic lab reporting (ELR), the impacts to case reporting have yet to be fully evaluated.

Surveillance System Objectives:

- Trend analysis comparing pre EpiTrax case reporting for respiratory and enteric conditions in the former NNDSS (NBS), with post-EpiTrax case reporting in EpiTrax.
- The goal would be to identify any resulting shifts in disease reporting when ELR changes are implemented for both respiratory and enteric conditions.

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- A secondary goal would be to identify any abnormal reporting trends over time in major conditions by group (respiratory and enteric), and to determine if any identified abnormal trends correspond with changes made by any major ELR reporters such as Quest Diagnostics and LabCorp.

Surveillance System Impact:

This project will help Nevada better understand the impacts of increasing electronic case reporting, and will inform OSE's understanding of future surges. It will also enable Nevada to identify possible solutions for any unexpected impacts.

Major Project Title: Syndemic Planning Assessment & Evaluation

Major Project Description:

Nevada is creating a Syndemic Action Plan for congenital syphilis, hepatitis C, HIV, sexually transmitted infections, and substance use for the first time, and primary data will need to be gathered from persons in all 17 counties in Nevada, managed, and analyzed to inform the plan. Once the plan is completed, a website with live tracking mechanisms to monitor progress will be created. This fellow would be expected to assist with both these project components: 1) data collection/management/analysis, and 2) design, development, and upkeep of a dashboard or other visual aid to inform the public on progress made towards identified objectives.

Major Project Objectives:

- Assistance with primary data collection through focus groups, community panels, and surveys
- Management and analysis of data
- Development of a succinct write up and interpretation of findings to share with community planning partners. This writeup will help inform decision making for activities within the Syndemic Plan.
- Assistance with creation of a website and some form of visual, easy-to-understand method to communicate progress towards goals, objectives, and/or indicators.

Major Project Impact:

This project will enhance community engagement and facilitate an understanding among the general public and the populations most impacted by the syndemic described above about what work the Nevada Office of State Epidemiology does in this space. It will garner trust from these impacted populations and provide a robust and meaningful impact for the state of Nevada through well-designed objectives to improve syndemic conditions. The development and publication of an online, accessible tool to visualize progress will help with these communication-centric impacts and will be ever-more important as transparency and regular updates about public health conditions are expected from the general public over time.

Additional Project #1 Title: Respiratory Dashboard

Project #1 Type: Major Project

Project #1 Description:

Currently, the state of Nevada's COVID-19 data dashboard is separate from the state's respiratory disease dashboard. As a project, we propose that a fellow conduct an evaluation of existing COVID-19 reportability rules, data collection processes, and available variables as related to the current COVID-19 dashboard, along with the viral respiratory data flow and dashboard. Based on the evaluation results, the fellow would make recommendations for improvements to data collection and would suggest a process for merging the COVID-19 data into the existing viral respiratory dashboard. This will require developing a working knowledge of the current surveillance data sources, what the data is expected to measure, and how the data is being used to drive both public health and clinical action.

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Input from the medical community and other partners who utilize these dashboards will need to be collected and analyzed to inform the Office of State Epidemiology as to the meaningfulness of the data being provided.

Project #1 Objectives and Expected Deliverables:

Short description of the data collection process and proposed workflow for creating a combined respiratory dashboard without requiring manual processes or additional tasks to be conducted by existing staff.

Work with the Office of Analytics to produce a combined respiratory dashboard, developed with considerations of the community input and feedback garnered through the evaluation process.

Project #1 Impact:

Merging COVID-19 data into regular respiratory disease data visualizations will allow the state to continue to provide quality trend information to public health stakeholders and the public, while making the data more user friendly and easier to find. This will need to be accomplished without requiring multiple manual steps, which would need to be maintained by existing staff.

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

Currently, Nevada is experiencing a large-scale H5N1 response associated with dairy farms in some of our rural counties. Given the nature of this response, and the potential for other farms or backyard flocks to be affected, we anticipate that there could be an opportunity for the Fellow to be involved with direct disease investigation and contact tracing efforts in this response situation. Given the nature of emergent public health conditions (e.g. COVID-19, mpox, novel influenza) in recent years, the Fellow would be expected to be pulled into an ICS structure, whether it be formal or informal in nature, and assist in a variety of situationally dependent ways. Depending on response needs, this may account for up to 100% of the Fellow's time during a response. Outside of an emergent response, up to 2 hours a week may be expected of the Fellow's time to better understand processes and resources in place for statewide and local emergency preparedness and response. This may include visits to local and regional public health preparedness program offices as feasible.

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

During cluster investigations or emergent outbreaks, the Fellow could be expected to serve a variety of capacities. Some of these may include: development of standard operating procedures, conducting case investigation, doing contact tracing, performing symptom monitoring, coordinating the collection and shipment of clinical isolates for lab testing, providing education and outreach, communicating with public health partners and the general public, and/or building and maintaining ad hoc surveillance tools or systems as needed (could be 80% - 100% of time during an emergent situation). During non-emergent outbreaks, the Fellow will be expected to assist disease investigation staff in leading or be expected to lead on their own, case investigation activities which include communicating with cases to collect information, providing educational materials to affected individuals, and coordinating with point of contacts and field staff as necessary to facilitate specimen collection to confirm etiology (could be 10%-20% of time).

While the Public Health Preparedness program is part of the Division of Public and Behavioral Health, it is not housed in the Office of Epidemiology. We'd propose the Fellow be offered the opportunity to shadow and walk through operations and participate in any emergency exercises (including tabletop exercises if preferred) in order to better orient them to the processes which are undertaken during an emergency response. This may include local and regional local health agency's respective Public Health Preparedness programs as well (20% of time, until site visits are completed).