ID: 57714274
Infectious Diseases - Host Site Description
Washington State Department of Health

Assignment Location: Shoreline, US-WA
Washington State Department of Health
Office of Communicable Disease Epidemiology

Primary Mentor: Kacey Ingalls, PhD, MPH
Disaster Epidemiologist / Epidemiologist III
Washington State Department of Health

Secondary Mentor: Francoise Pickart, MPH
Data Democratization Manager / Senior Epidemiologist
Washington State Department of Health

Work Environment
100% Virtual

Assignment Description

The fellow will be reporting to the primary mentor, Dr. Ingalls, who leads the Disaster Epidemiology Program. The Disaster Epidemiology Program is in the Readiness and Response Section of our Office of Communicable Disease Epidemiology. The Disaster Epidemiology Team currently has one other epidemiologist that the fellow will work closely with. The Disaster Epidemiology program is in the beginning stages of being established which will offer the fellow many opportunities to be involved in workplan creation, strategic planning, and writing emergency response plans. Day-to-day activities will primarily be focused on making connections within the agency and establishing our disaster epidemiology presence within the Office of Communicable Disease Epidemiology. This may look like presenting at section or office meetings on disaster epi work, socializing strategic and response plans with partners, or participating in conversations around disaster epi best practices. The fellow will have the opportunity to work the primary mentor to identify tasks that best meet their professional and personal goals.

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

R Studio, Tableau, Power BI, WDRS, ArcGIS online, REDCap

Projects

Surveillance Activity Title: All Payer Claims Emergency Data Dashboard

Surveillance Activity Description:
The main purpose of this surveillance activity will be to identify populations across Washington state with functional disabilities that create vulnerability during public health disasters and generate user-friendly maps and datasets that can be used in real-time during emergencies to inform decision-making and community outreach.

Surveillance Activity Objectives:
This project will use All Payer Claims data, HHS Empower data and agency systems to identify vulnerable populations by functional issue (I.e. ability to evacuate, electrically dependent medical equipment, etc.) and generate data products that allow public health responders to adapt to the specific needs of local populations. The objectives of this surveillance activity is to provide a rapid way to support decision makers during an emergency response by utilizing All Payer Claims data.

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Surveillance Activity Impact:
Washington State has 35 Local Health Jurisdictions, ranging from urban centers to extremely rural countryside. Many of our smaller jurisdictions do not have the resources to conduct this type of analysis. Jurisdictions will be able to view specific disability statistics for their area, as granular as possible, and use that to make specific requests for assistance during emergencies like wildfires. This project will also help Washington State consider how functional disabilities are present throughout the state and help identify areas for partnership with state and local agencies, healthcare providers and community groups serving people with disabilities.

Surveillance System Evaluation Title: Disability Data Collection Practices

Surveillance System Evaluation Description:
This surveillance system evaluation project involves an assessment of disability data collection methods at our agency. Inspired by the jurisdictional assessment that was sent by CSTE and ASTHO in Fall of 2023, we'd like to further evaluate what data are currently being collected on disabilities in our surveillance systems and what improvements can be made to better capture individual- and population-level disability information. This project would also work towards creating an agency-wide definition for disability.

Surveillance System Objectives:
The main project deliverable is a data dictionary outlining what information is being collected on individual- and population-level disabilities. This would include data sources as well as recommendations to improve our agency's data collection practices.

Surveillance System Impact:
This evaluation is closely aligned with our surveillance activity previously described. This project will help Washington State consider how disabilities are present throughout the state and help identify areas for partnership with state and local agencies, healthcare providers and community groups serving people with disabilities.

Major Project Title: Disaster Epidemiology Data Aggregation Initiative

Major Project Description:
This main project supports the Disaster Epidemiology program and the Washington State Department of Health to develop and test capacity to rapidly generate situational awareness dashboards to support public health decision making before and during emergencies.

This project will bring together agency staff, data assets and tools to create and test a process to quickly explore, process and synthesize data from core data systems and rapidly produce sharable visual reports. This project will require the fellow to work closely with the WAHealth team, who manage a platform for collecting healthcare capacity data, communicable disease programs, syndromic surveillance and more.

This project will focus initial efforts on creating dashboards of state and regional healthcare capacity alongside burden of disease, vulnerability, and syndromic surveillance data and test these dashboards with both subject matter experts at DOH, the hospital coalition and agency leadership. The dashboards will be updated based on testing feedback. Once the initial dashboards have been testing and improved, further datasets will be brought in, including long-term care, urgent care and pharmacy data.

Depending on feasibility this project may also explore the implementation of a unique identifier for hospital campuses, similar to that used in New York State (Permanent Facility Identifier (PFI)).

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This project is cross cutting and would involve working closely with hospital associations, the Office of Resiliency and Health Security (ORHS), the Department of Licensing (DOL), Rapid Health Information Network (RHINO), and other internal and external partners. The focus of this project would be to provide a sustainable structure that can be used for emergency preparedness, response, and recovery. Additionally, this project would create a structure to complete similar projects with licensed facilities, such as urgent care centers, pharmacies, and skilled nursing facilities.

Major Project Objectives:
The deliverables for this project are a series of situational awareness dashboards focused on the capacity of healthcare facilities based on existing resources, the vulnerability and disease burden of the catchment area and disease forecasts. The dashboards will include concise instructions for creating the dashboards as well as data dictionaries and caveats.

The dashboard will allow its users to:

- Rapidly assess hospital capacity by region, facility or event (pandemic vs. wildfire).
- Identify vulnerable communities at risk of losing healthcare or pharmacy access.
- Explore emergent data points alongside healthcare capacity data to better address novel outbreaks.

Major Project Impact:
Since the pandemic, WA DOH has been working to improve its data collection systems, with a focus on the healthcare system and vulnerability data. While these systems are improving, analytic results are siloed across data systems and often across domains, limiting our ability to quickly share results and support evidence-based decision making.

Additional Project #1 Title: mHealth and Emergency Response
Project #1 Type: Surveillance System Evaluation

Project #1 Description:
mHealth, short for mobile health, is an online platform designed to assist local health partners with enteric disease investigations. Typically, enteric case investigations require a lengthy phone interview between public health staff and the ill person to determine specific food exposures that may have been the source of illness. These interviews can be time-consuming and burdensome for public health staff. Oftentimes, local health jurisdictions do not have the capacity to investigate all enteric conditions, and diseases such as campylobacteriosis and giardiasis are less prioritized. Additionally, with advancements in technology, reaching cases over the phone has been increasingly difficult. mHealth provides an alternative option for investigating illness by allowing cases to fill out an online survey on their own time. Currently, Washington DOH's mHealth platform has been built to administer online surveys for campylobacteriosis and giardiasis investigations. Survey links are sent to cases via text message or email and case data is collected directly in REDCap. Automated data pipelines between REDCap and Washington's Disease Reporting System (WDRS) allows for easy upload of collected survey data into the state's Maven communicable disease surveillance database.

Project #1 Objectives and Expected Deliverables:
The expected deliverable for this project would be a proposal and a workflow for how mHealth could be utilized efficiently for emergency response. This would include diagrams of data pipelines and outlining necessary steps to automate the process as best as possible. This would look like creating established use case scenarios and generating buy in for this novel surveillance tool.

Project #1 Impact:
While mHealth has been a successful tool for campylobacteriosis and giardiasis investigations, there is immense potential for this platform to be expanded for investigation of other communicable diseases and to be adapted for many public health situations, including emergency preparedness and response.

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Supporting the maintenance and expansion of this tool will provide an Applied Epidemiology Fellow with tremendous experience in building data systems, designing surveys in REDCap, managing data pipelines, collaborating with local health partners, and investigating communicable diseases. mHealth is a novel epidemiological surveillance tool and can have tremendous benefits for improving public health capacity and response.

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

WA DOH is one of very few public health agencies that have established a Disaster Epidemiology Program. The Disaster Epidemiology Program sits within the Office of Communicable Disease Epidemiology's Readiness and Response Section. This will also provide the fellow with first-hand experience in strategic planning, emergency response plan writing, work plan creation, and participating in training activities. Part of the training for the disaster epidemiology team is to complete FEMA ICS trainings. The fellow's primary mentor leads the Disaster Epidemiology Program and day-to-day activities would support the program as a whole. The fellow would also work closely with many members of the Office of Resilience and Health Security.

Overall, 100% of the fellow's time will focus on emergency preparedness, response, or recovery in some capacity given the nature of the projects outlined in this application and the roles and responsibilities of both the primary mentor and the secondary mentor.

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

In the event of a cluster or an outbreak the fellow many potentially be assigned to the Surveillance and Informatics IMT group and have the opportunity to be involved in outbreak investigations and response. The mHealth project described above would partner closely with the foodborne team which may also provide an opportunity for cluster and outbreak investigations. In addition to investigations, they can help create outbreak reports for leadership if applicable.
Depending on the needs of the response the fellows activation time will vary.
The mentors will work with IMT Leadership to ensure that the fellow is able to continue with the major projects of this program. The fellow would gain IMT experience and learn how disaster epidemiology influences response operations.

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

Based on the outlined projects, we do not anticipate that the fellow will be involved in any COVID-19 response work.

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

A key goal of this work is to improve the agency's ability to make equitable decisions in emergencies. The major project focuses on bringing together health datasets alongside census demographics, redlining data, and environmental justice data so decision-makers have sufficient context to make considered decisions. By focusing on data available at the sub-county level across the state, local decision makers will be able to see health data alongside community data that can provide insight not seen by looking at the disease reports alone. When testing these dashboards with partners, part of the fellows assessment will focus on how successfully these dashboards encourage considerations of racial and disability equity in an emergency response.