

ID: 35054676

Environmental Health, Infectious Diseases - Host Site Description

New Mexico Department of Health

Assignment Location: Santa Fe, US-NM
New Mexico Department of Health
Epidemiology and Response Division

Primary Mentor: Chelsea Langer, PhD, MPH
Epidemiologist - Advanced
New Mexico Department of Health

Secondary Mentor: Stephanie Moraga-McHaley, MS
Epidemiologist Supervisor
New Mexico Department of Health

Work Environment

100% In-person

Assignment Description

The New Mexico Department of Health (NMDOH) is one of the executive branch agencies of the State of New Mexico. The mission of NMDOH is “To ensure health equity, we work with our partners to promote health and well-being and improve health outcomes for all people in New Mexico.” The Epidemiology and Response Division (ERD) is one of eight divisions in NMDOH; the Environmental Public Health Tracking Program (NM Tracking) is located in the Environmental Health Epidemiology Bureau (EHEB) within ERD. The mission of EHEB is to reduce the prevalence of environmentally-related adverse health outcomes by conducting surveillance of relevant, prioritized health outcomes; identifying environmental exposures of concern; implementing public health promotion through evidence-based approaches; and evaluating program activities to further develop and improve effectiveness. As part of the National Environmental Public Health Tracking Network, New Mexico hosts NMTracking.org as a public source for environmental information integrated with health information to track and understand how the environment might affect the health of New Mexicans. New Mexico has a unique demographic makeup being a majority-minority state, with the nation’s highest percentage of Hispanic/Latino Americans and the second-highest percentage of Native Americans. The state is home to 23 Indigenous tribes, pueblos, and nations. NMDOH is committed to expanding equitable access to services for all New Mexicans and NM Tracking is committed to ensuring health equity for all communities in NM by providing quality data for the understanding of environmental inequities.

As an integrated member of NM Environmental Public Health Tracking/Environmental Health Epidemiology Bureau/Epidemiology Response Division, the Fellow will serve on-call twice monthly. Members of the public can call NMDOH about a variety of issues; EHEB provides on-call Monday through Friday 8 am to 5 pm to answer questions about environmental health issues. The Fellow will also conduct legislative bill analysis when the state legislature is in session. Other tasks will include providing data management and epidemiological support for air quality measures and associated health outcomes, assisting with obtaining and processing climate-related infectious disease measures (e.g., Coccidioidomycosis), and other data measures, as needed. The Fellow will respond to data requests from the public as they arise. The Fellow will manage and analyze EHEB's notifiable conditions database (ENOC). In addition, the Fellow will provide technical support for the visualization of environmental and health data on the NMTracking website. Finally, the Fellow will have the opportunity to participate in relevant NMDOH and CDC content workgroups.

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

NM Tracking uses a variety of databases and software. Databases: Tracking data includes hospital inpatient discharge data, emergency department data, birth defects data, cancer data, EPA air quality data, and Safe Drinking Water Information System (SDWIS) water quality data. NM Tracking and NM Indicator-Based Information System (NM-IBIS) both function on the IBIS-PH platform, a set of open-source software that provides real time querying of SAS datasets, the centralized management of indicator profiles, as well as other content like health topics. IBIS-PH is used by state programs to publicly display integrated health data. Software: NM Tracking primarily uses SAS, Stata, and R for data analysis. ArcGIS is also utilized, when needed. Surveillance systems: the NM Tracking team currently uses the National Syndromic Surveillance Program (NSSP), Surveillance Epidemiology and End Results (SEER), National Poison Data System (NPDS), among others. Locally, we work with NM Bureau of Vital Records and Health Statistics, Hospital Inpatient Discharge (HIDD), Emergency Department, NM Childhood Lead Poisoning Prevention Program (CLPPP) and ENOC, among others.

Projects

Surveillance Activity Title: Surveillance of Heat-Related Illness

Surveillance Activity Description:

The Fellow will design and implement a syndromic surveillance system for heat-related illness (HRI) using the National Syndromic Surveillance Program (NSSP). The Fellow will use 'My Alerts' to actively review HRI cases, particularly during summer months (May - September), with additional times as needed based on temperature projections. The Fellow will work with the Program Coordinator as well as external partners to draft press releases and heat advisories to be released during heat waves. Monitoring HRI cases in real-time will indicate if these actions are effective. The Fellow will summarize findings, including the number of visits by race/ethnicity, age, sex, and county. Finally, the Fellow will develop a dashboard to display HRI visits to EDs in NM.

Surveillance Activity Objectives:

The Fellow will help establish a pro-active response to HRI in NM.

Projected deliverables include press releases and heat advisories, an HRI dashboard, informational materials for providers to recognize HRI, and a presentation at a NMDOH Quarterly Epidemiologist Meeting.

Surveillance Activity Impact:

This project would result in targeted interventions based on the surveillance data analysis (e.g., location and population specific messaging).

Surveillance System Evaluation Title: Evaluate Completeness and Effectiveness of Using Syndromic Surveillance Data for HRI Monitoring

Surveillance System Evaluation Description:

The Fellow will link syndromic surveillance data and ED data to calculate the positive predictive value (PPV) of using NSSP. The Fellow will assess the impact of any press releases and/or heat advisories as well as any impact from distributing informational materials to healthcare providers. In collaboration with the Community Health Systems Epidemiology Bureau, the Fellow will investigate and address specific issues such as facilities that consistently have data issues. Finally, the Fellow will make recommendations for improvements based on their findings.

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Surveillance System Objectives:

The Fellow will provide valuable insight to the effectiveness and completeness of using NSSP as a real-time data source for HRI.

Deliverables: The Fellow will prepare a report summarizing the project and findings. This report would be published as an NMDOH Epidemiology Report and potentially developed into a manuscript for publication.

Surveillance System Impact:

This project will result in improved reporting of HRI by communicating findings back to hospitals reporting data. In addition, we will be able to better communicate HRI cases by highlighting specific terms/coding.

Major Project Title: Effects of temperature and precipitation on Coccidioidomycosis in New Mexico

Major Project Description:

The Fellow will develop a dataset of the incidence of Coccidioidomycosis (Valley fever) cases in New Mexico. Valley fever is a reportable condition in New Mexico; as such, NMDOH collects information and sends that information to CDC through the National Notifiable Diseases Surveillance System (NNDSS). Weekly and annual data are available on the NNDSS website. If greater detail is required, the Fellow will have access to electronic case records. Temperature and precipitation data are available from the National Oceanic and Atmospheric Administration (NOAA), and are already included on the Tracking portal. The Fellow will examine the association between the incidence of Coccidioidomycosis and temperature and precipitation. The Fellow will further explore differences in age, sex, race/ethnicity, and location.

Major Project Objectives:

The Fellow will prepare a manuscript for peer-reviewed publication.

Major Project Impact:

This project will improve our understanding of the change in the incidence of Coccidioidomycosis over time in New Mexico due to climate change.

Additional Project #1 Title: Environmental Health Community Profiles

Project #1 Type: Major Project

Project #1 Description:

The Fellow will revise existing environmental health community profiles with particular attention to areas pertaining to health equity. The Fellow will conduct a review of example community profiles from other states. Based on this review and other health equity work (e.g., the social vulnerability index), the Fellow will modify the profiles to include relevant indicators. In addition, the Fellow will learn to use Tableau, ArcGIS or other software to improve the visual depiction of the data on NMTracking. The Fellow will work with the Program Coordinator to communicate these results to the profiled communities.

Project #1 Objectives and Expected Deliverables:

This project will improve the environmental health community profiles on the public NMTracking website to be more useful in identifying underserved communities around the state.

Deliverables: The Fellow will produce updated/expanded environmental health community profiles on the public Tracking site. The Fellow will incorporate the social vulnerability index or other suitable metrics into the profiles that will illuminate environmental and climate health inequities in our state.

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Project #1 Impact:

This project will not only result in improved information on the NMTracking.org site for underserved/overburdened populations, but it will also improve our understanding of the environmental impact on those populations.

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

The Fellow will collaborate with members of the NM Climate and Health Adaptation Work Group (CHAWG) and the Bureau of Health Emergency Management to implement the Heat Annex to the DOH Emergency Operations Plan. Specific activities would include assisting in public outreach to disproportionately affected communities, working with county emergency managers for implementation, and developing HRI prevention messaging. The Fellow will participate in wildland fire smoke coordination calls to monitor smoke patterns with respect to impacted communities and develop targeted and timely messaging for the prevention of acute respiratory illness. Calls are coordinated with partners at NM Environment Department Air Quality Bureau, US Forest Service, National Weather Service and other relevant agencies. Time allocation: 10%

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

When an environmental exposure-related outbreak occurs, the Fellow will be involved in investigations including data collection and information gathering from hospitals, providers and/or patients; potential environmental sampling/testing; investigation coordination; data analysis; and reporting. One recent example of an ERD outbreak investigation is vaping and lung disease. Other examples include mercury spill investigations, carbon monoxide poisoning investigations, and collaboration with the APPLETREE program to work on public health assessments at sites of concern identified by the program. The Fellow would complete training on environmental sampling, including the use of the Lumex device for measuring mercury levels and donning and doffing of PPE prior to field work. Time allocation: 5% - 10% depending on the size and scope of the event.

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

Not applicable.

Time allocation: 0%

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

NM Tracking is an active member of the Health Equity Work Group facilitated by the Office of Health Equity within NMDOH. We recently revised the public-facing website to include a broader health equity lens. It is essential that the NM Tracking program integrates health equity into all its work moving forward. Further developing the Environmental Health Community Profiles will help us target environmental and climate adaptation efforts in the communities where they are most needed. There are ample opportunities in New Mexico to engage with diverse communities and populations including tribal communities, immigrant populations, early settled Hispanic communities, rural and underserved communities, LBGTO, and people with disabilities.