Assignment Description

The Fellow will be placed in the Occupational and Environmental Epidemiology Branch, which identifies and assesses the impact of environmental and occupational conditions and hazards that may pose a risk to human health. Our Branch quantifies exposures to environmental and occupational contaminants; conducts health risk assessments and risk communication; provides medical evaluation and surveillance for adverse health effects; and provides health-based guidance on levels of exposure to such contaminants. The Fellow will have the opportunity to complete projects focusing on environmental health, occupational health, climate and health, toxic substance surveillance, and public health preparedness and response. We have several potential projects in each of these areas that can be customized to the Fellow’s interests.

Day-to-Day Activities

We anticipate that the Fellow will be involved with an ongoing surveillance program (e.g., heat-related illness, carbon monoxide poisoning, toxic substance releases), which will require data analysis, report creation, and communication of findings to external partners. When environmental or occupational public health emergencies occur (such as chemical releases), the Fellow will play an active role in the investigation, which may include developing a line list of victims, following up with first responders, participating in conference calls with other agencies, and writing Situation Reports. The Fellow will participate in professional development activities, including monthly Epidemiology Lunch and Learn presentations, monthly Epidemiology and Evaluation Team meetings, and biweekly Epidemiology Mentoring group meetings with a CDC Career Epidemiology Field Officer.

Potential Projects

Surveillance

Evaluating the Effectiveness of NC DETECT for Mortality Surveillance during a Disaster

Evaluation

During a hurricane, tornado, or other disaster, local and state public health agencies can benefit from near real-time data to monitor disaster-related deaths to guide disaster response efforts and record health impacts due to disasters. We are interested in evaluating our state’s syndromic surveillance system, NC DETECT (Disease Event Tracking and Epidemiologic Collection Tool) for emergency department visits, to capture deaths during a disaster. The deaths captured through NC DETECT retrospectively for a disaster can be compared to registered death records (i.e., death certificates). Death certificates could be considered the “gold standard” to evaluate the effectiveness of NC DETECT to record disaster-attributable mortality (e.g., date of fatality, cause of death).
Surveillance Activity

Toxic Substance Surveillance and Outreach

North Carolina is one of only a handful of states that conducts surveillance of chemical releases and their public health consequences through ATSDR's National Toxic Substance Incidents Program. The Fellow could analyze surveillance data from this system, identify vulnerable populations, and create educational materials for workers or first responders at risk of being exposed to toxic substances.

Major Project

Analysis of Extreme Weather-related Injuries Surrounding Hurricanes, Tropical Storms, and Tropical Depressions

The Fellow could participate in a number of projects related to the Building Resilience Against Climate Effects program. The program focuses on the areas of health impacted by climate change: heat-related illness (e.g., vulnerable populations, syndromic surveillance), extreme weather-related injuries (e.g., deaths from hurricanes and tropical storms), waterborne disease (e.g., gastrointestinal disease, Legionnaire’s), and respiratory disease (e.g., allergic disease).

The Fellow would work with diverse partners to develop a project and see it through to completion, including dissemination of results. The Fellow would be welcome to work on existing program questions or explore some of their own interests within these focus areas. One potential project already in development is an analysis of extreme weather-related injuries surrounding hurricanes, tropical storms, and tropical depressions. The Fellow would work with the Florida Department of Health to analyze trends using SAS and explore the development of a generalizable method across the Southeast region to look at these types of injuries and deaths.

Additional Project

Evaluation of NC Occupational Safety and Health Consultative Services Bureau Program

The NC Occupational Safety and Health Consultative Services Bureau provides, upon employer request, free on-site business visitation consultations services that are non-penalty and enforcement-less to small employers and high-hazard establishments. These services help employers comply with OSHA standards for a safe and healthy workplace. For this project, the Fellow could evaluate the impact of these consultative services and make policy recommendations for increasing follow-up visitations or modifying consultative visitation practices.

Preparedness Role

The Fellow will be involved in preparing for public health emergencies, such as an ebola case or chemical release, by collaborating with other agencies and developing guidance documents for local health departments. The Fellow will participate in biweekly preparedness meetings in which Occupational and Environmental Epidemiology staff discuss recent public health emergency events with a liaison from the Public Health Preparedness and Response Branch.

Additional Activities

The Fellow will have the opportunity to assist the Communicable Disease Branch with infectious disease outbreak investigations, which may include maintaining a line list of cases, interviewing cases and controls, creating a database, and analyzing data.
Mentors

Primary
Mina Shehee, PhD
Branch Head, Occupational and Environmental Epidemiology

Secondary
Annie Hirsch, MPH
Epidemiologist