ID: 45537522
Environmental Health, Chronic Disease - Host Site Description
Oregon Health Authority

Assignment Location: Portland, US-OR
Oregon Health Authority
Public Health Division/Environmental Public Health Section

Primary Mentor: Carol Trenga, PhD, MS
Senior Environmental and Occupational Epidemiologist
Oregon Health Authority

Secondary Mentor: Holly Dixon, PhD
Public Health Toxicologist
Oregon Health Authority

Work Environment
Hybrid

Assignment Description

The Fellow will be placed within the PHD's Environmental Public Health section, which aims to identify, assess and report on threats to human health from exposure to environmental and occupational hazards, and advise the people and communities of Oregon to best understand potential risks where they live, work and play to remain healthy and safe.

The Fellow will provide environmental epidemiological capacity in the Data and Epidemiology Unit. The Fellowship is cross-cutting with opportunities to learn about and be involved in many environmental health, emergency preparedness and other public health programs. The Fellow will work with mentors, program staff, management, OHA and external agency and community partners to carry out program and project work. Prioritization will be developed by the Fellow and mentors in accordance with the needs of the Fellow's education and EPH programs.

Daily activities include meeting with project teams and partners to ensure proper workflow and smooth communications, conducting literature reviews, evaluating surveillance systems, developing and conducting research and analytical plans and contributing to risk assessments and risk communication activities. Field work may include site visits, meetings with external partners and risk communication activities.

The Fellow will be encouraged to attend virtual, local and national conferences and webinars, participate in work groups and communities of practice, and present projects at internal and external meeting and conferences.

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

The Fellow will have access to multiple state and federal databases that support environmental health measures and related health outcomes, including Oregon's Electronic Surveillance System for the Early Notification of Community-based Epidemics (ESSENCE) and the NSSP-ESSENCE BioSense platform, vital statistics, data systems related to the Environmental Public Health Tracking program, which include demographics, built environment characteristics, environmental hazards, exposure and health outcome data from emergency department and hospitalization discharge systems. Data for toxicological assessments, occupational illness and injury from EMS/trauma registries, exposure data from medical laboratories, and claim and cost data from workers compensation and All Payers All Claims systems are also available. Statistical software available to staff includes R, SAS, SPSS, SQL Server, ArcGIS, Tableau and Tableau Prep. Reporting for the Oregon Environmental Public Health Tracking Program is done via the REDCap platform.

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Projects

Surveillance Activity Title: Syndromic Surveillance for Environmental Hazards

Surveillance Activity Description:
The Fellow will be part of the team monitoring Oregon's Electronic Surveillance System for the Early Notification of Community-Based Epidemics (ESSENCE) near-real time emergency department and urgent care center data for health outcomes that may be associated with exposure to environmental hazards (e.g., heat-related illness, wildfire smoke, cold-related illness, CO poisoning). The Fellow will work with syndromic surveillance (SyS) team members in EPH and ESSENCE data stewards in the Acute and Communicable Disease Program (ACDP) at OHA. Oregon ESSENCE submits data to the National Syndromic Surveillance Program (NSSP) and the Fellow will gain experience working with NSSP data and participate in the NSSP Community of Practice.

Surveillance Activity Objectives:
Project objectives include routine SyS of seasonal environmental hazards and health outcomes to inform risk communications, messaging and the public health response. New queries are developed, piloted and evaluated to improve SyS activities. Hazard reports are published for the general public and media communications; daily or weekly situational status reports are provided for internal and external briefings with agency, state and local public health partners.

Surveillance Activity Impact:
Reducing exposures to environmental hazards such as wildfire smoke by preparing the public to act when conditions worsen. Demographic analysis of SyS data identifies populations that may be experiencing disproportionate impacts and helps public health agencies and community partners target communications and create more effective public health interventions.

Surveillance System Evaluation Title: Evaluating New Queries for Syndromic Surveillance

Surveillance System Evaluation Description:
The Fellow will participate in projects to evaluate new SyS queries in Oregon ESSENCE for health outcomes that may be related to air quality, extreme weather and occupational exposures. For example, cardiovascular health outcome queries as they relate to air quality and/or extreme heat (combined exposures).

Surveillance System Objectives:
This project will improve environmental and occupational health surveillance in Oregon. Deliverables include a descriptive analysis to investigate temporal trends, correlations, case classification and positive predictive values between different queries and comparison data sets such as administrative hospitalization and emergency department visit data.

Surveillance System Impact:
This project will increase awareness of affected populations, inform risk communications and better prepare workers, employers and communities by improving the completeness and accuracy of SyS data related to environmental and occupational exposures.

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Major Project Title: Creating Data Dashboards for Environmental Health Data

Major Project Description:
The Fellow will work with Oregon Environmental Public Health Tracking program (Oregon Tracking) program staff to conduct epidemiological analyses of health outcomes and environmental exposure data. The major project involves providing content to the Oregon Tracking Data Explorer, which includes interactive maps and data on environmental quality measures and health outcomes. Examples of available environmental measures include air quality, extreme temperature, built environment, food environment and water quality. Examples of health outcomes include respiratory, cardiovascular, cerebrovascular morbidity, premature births, low birth weight and mortality.

Major Project Objectives:
The Fellow will work with the Oregon Tracking team to produce content that includes data visualizations, qualitative data and data storytelling, community profiles, summaries and messaging materials for public-facing dashboards.

Major Project Impact:
Data provided can be used by local public health departments to inform community health assessments, programs and outreach activities. Researchers and community members will have access to environmental health data, much of it at sub-county levels, to inform grant applications and provide information to support community members taking an active role to protect their health and improve quality of life in their communities.

Additional Project #1 Title: Updating Oregon's Inhalation Toxicity Reference Values on an Intra-Agency Team
Project #1 Type: Surveillance Activity

Project #1 Description:
The Environmental Public Health Section of OHA assists the Oregon Department of Environmental Quality (DEQ) in multiple projects related to toxic air contaminant health risk assessment. In this project, the Fellow will be on an intra-agency rulemaking team to review and update DEQ's inhalation toxicity reference values (TRVs). A TRV is the amount of a contaminant in air that may cause health problems when inhaled. Reviewing TRVs involves interpreting and communicating epidemiological information.

Rulemaking efforts like this span multiple years. Over the next two years, DEQ and OHA will present TRV proposals to a rules advisory committee and fiscal advisory committee, respond to public comments, and present proposals to DEQ's governing board for rule adoption. This project will be a great opportunity for the Fellow to learn about the overlap between environmental epidemiology and toxicology, and to work at the intersection of science and policy.

Project #1 Objectives and Expected Deliverables:
The Fellow will work with OHA toxicologists to prepare rulemaking materials related to the TRV proposals. In particular, the Fellow will work with OHA toxicologists to respond to health-related questions and comments during the public comment period of DEQ's TRV rulemaking. The Fellow will compile and review epidemiologic literature related to the toxic air contaminants. The Fellow will work with internal and external partners including epidemiologists, toxicologists, engineers, chemists, policy analysts, and leadership at DEQ as well as DEQ's Oregon Air Toxics Science Advisory Committee.

Potential deliverables include preparing documents summarizing epidemiological studies and data related to toxic air contaminant exposure; written responses to health-related questions and comments that arise during DEQ's TRV rulemaking; presentations and documents for agency staff, advisory committees, and/or the general public on specific health topics related to the TRV updates.

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Note: We selected *Surveillance Activity* as the project type for lack of a better option. This project will fulfill multiple AEF competencies including (1) interpret findings from epidemiologic studies, including recognition of the limitations of the data and potential sources of bias and/or confounding and (2) understand the basics of health risk communication and communicate epidemiologic findings in a manner easily understood by lay audiences.

Project #1 Impact:
This project will help protect the health of Oregonians by making sure DEQ's air quality programs are using TRVs based on the latest science. TRVs enable the calculation of quantitative health risk assessments, and results from these assessments can inform regulatory action, policy development and individual decisions.

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

The Fellow will serve as part of the EPH Hazards planning and response team. Members of this team meet regularly with internal OHA partners in Health Security Preparedness & Response (HSPR), OHA Public Health Division leadership and Oregon Department of Human Services (ODHS) team members to discuss program implementation, surveillance and coordinate responses to emergent environmental health threats. This will also be an opportunity for a CSTE Fellow to learn and contribute to ongoing emergency preparedness efforts. This work builds capacity in OHA-ODHS for responding to acute environmental threats and provides ongoing opportunities for staff in EPH to prepare for acute environmental threats before they occur. The Fellow will also be expected to complete Incident Command System (ICS) trainings through ICS-300, Intermediate ICS for Expanding Incidents, ideally by the end of their first year in order to be prepared to participate in an incident management team. An estimated 10-15% of the Fellow's time will be dedicated to emergency preparedness and response.

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

Outbreak investigations in EPH might include responding to mass pesticide exposure incidents; cyanotoxin and shellfish poisoning cases; community requests to investigate a potential cancer cluster; a carbon monoxide exposure in a public building such as a school; responding to a chemical spill, gas leak or other environmental event that results in community exposures. Outbreak investigations would provide the opportunity for the Fellow to become familiar with OHA's notifiable conditions database. (5-10% FTE on average over the course of the fellowship)