

Environmental Health

Assignment Description:

This assignment provides opportunities to focus on surveillance and epidemiology related to environmental health. The Washington State Department of Health (WS-DOH) has two large CDC-funded projects that would form the core of the assignment. The first project is the Washington Environmental Biomonitoring Survey (WEBS, <http://www.doh.wa.gov/EHSPHL/Biomonitoring.htm>) that will run through August 2014. WEBS offers opportunities to assist with study design, data collection, analysis and dissemination of findings from a field study to monitor environmental chemicals in Washington residents. Opportunities for data analysis extend beyond the grant timeframe, as does participation in several studies that will build on WEBS. These studies also offer collaboration with partners including Department of Ecology, local health departments, University of Washington, and community groups. The second project is the Washington Tracking Network (WTN, <http://WTN.doh.wa.gov>), which also offers opportunities to collaborate in the development of the National Environmental Public Health Tracking Network (EPHTN). In addition to actively contributing to the development of EPHTN, WTN has pursued three overarching goals: 1) Develop data infrastructure and informatics systems needed to streamline the collection, integration, and dissemination of environmental public health data and information via the WTN web portal; 2) Expand the content and data on the WTN public and secure portals to address current and emerging environmental public health issues, and 3) generate useful environmental public health information and indicators from environmental and health data. In addition to these major projects, ongoing WS-DOH Environmental Health and Non-Infectious Conditions Epidemiology Programs offer opportunities in areas such as drinking water, shellfish safety, vector-borne disease, food safety, and chronic disease. The Fellow would also have opportunities to work on cluster or outbreak investigations relevant to environmental health.

Day-to-Day Activities:

Day-to-day activities include working with supervisors, coworkers, and external partners to plan surveillance, epidemiology and evaluation projects; analyzing and interpreting data; and preparing, reviewing and presenting findings. The projects selected will be dictated by the Fellow's goals and interests. Much of a typical day would be devoted to learning to work with datasets of varying sizes and complexity, linking data files, and managing and analyzing data. The Fellow would also gain experience in synthesizing results and presenting them to diverse audiences and learning how to develop data-based policy recommendations. Most of this work would be at WS-DOH, but the Fellow would have opportunities to work in communities as part of WEBS, with local health departments as part of both WEBS and WTN, and with academic and other WEBS and WTN partners, such as the Washington State Departments of Ecology and Labor and Industry.

Potential Projects:

Analyze WEBS data and disseminate findings through WTN: During 2010–2011 WEBS collected about 1400 urine samples from a random sample of Washington residents ages 6 and older. These specimens were recently analyzed for pyrethroid and organophosphate pesticide metabolites. WEBS collected demographic and questionnaire data related to pesticide exposures, and we plan measure levels of phthalates and bisphenol A (BPA) in the samples. The Fellow could take a lead role in analyzing these data which would include developing meaningful indicators, linking questionnaire and laboratory data, and identifying appropriate comparison information. WTN will be one mechanism to disseminate these data. Preparing the data for WTN dissemination would require developing narrative content and identifying additional health and environmental data to provide perspective on the findings. WTN has

developed templates for data dissemination to support this process. In addition to experience in database design and analysis, this project could provide opportunities for interactions with the WEBS Advisory Committee to inform the analytic design and WS-DOH health communications and informatics staff to design, develop and evaluate the WTN portal content and functionality.

Assist with planning and implementing future WEBS activities: Our final WEBS project will involve collecting urine from a low income population to measure levels of phthalates, BPA and pyrethroid pesticides. Several groups are interested in building additional projects onto this study. The Fellow could be involved with integrating these projects into the study. This integration would require working with collaborators from the University of Washington, WTN, and community-based organizations. The Fellow could work with the Institutional Review Board for protocol approval, train field staff in protocol implementation, and gain field experience in data collection.

Develop indicators related to the built environment: WTN is working with both local and national partners on efforts to identify and implement build environment environmental public health indicators. The Fellow could work with the local and national partners, as well as analyze data related to selected indicators of the built environment in Washington. This project would offer the Fellow opportunities to collaborate with WS-DOH programs that focus on chronic disease and related risk factors. These programs also have an interest in aspects of the built environment that affect opportunities for physical activity and healthy diets.

Evaluate a surveillance system: The Fellow could evaluate the WS-DOH Childhood Lead Poisoning Prevention Program (CLPPP) database or indicators in WTN as a surveillance system. The Fellow could expand the evaluation work for CLPPP to analyze data currently in the database along with demographic data to determine risk factors in Washington State that contribute to elevated childhood lead levels, contrasting these results to national patterns.

Preparedness Role:

NICE and Environmental Epidemiology support several WS-DOH programs in responding to natural disasters, epidemics, and industrial or terrorist events. For example, the current CSTE fellow assisted with several investigations related to the 2012 pertussis epidemic in Washington. In 2009–2010, both NICE and Environmental Epidemiology provided assistance with several components of the H1N1 influenza surveillance. For example, NICE's EIS Officer received training to use and evaluate data for rapid influenza tests reported by laboratories and local health jurisdictions. WTN collaborated on the development of a web based data query system that allows county and school officials to view real-time trends in absenteeism to assess whether a school had an excess that might be attributable to H1N1. In the absence of a real emergency, the Fellow can participate in table top exercises and receive training in handling emergency medical materials and in staffing the public emergency call center. More recently, the wildfires in eastern and central Washington State required significant epidemiologic support and is another example of an emergency event with which a Fellow could be involved.

Assignment Location: Olympia, WA

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