

Environmental Health

Assignment Description

The CSTE Fellow will be a staff member of, and active participant in, the work of the Environmental and Occupational Health Surveillance program. The CSTE fellow will report directly to the Program Manager, and will work primarily on surveillance and epidemiologic investigations in the Environmental Public Health Tracking unit (see Potential Projects below). In addition, the Fellow will have the opportunity to work on interdisciplinary projects related to the other units in the EOHS program—Occupational Health Surveillance, Hazardous Site Health Evaluation, and Drinking Water and Public Health—and in CEOHS.

Day-to- Day Activities

The CSTE Fellow's anticipated day-to-day activities on surveillance and epidemiologic investigations would include the following:

- extracting data from surveillance and administrative data sets;
- developing protocols, procedures and methods for on-going surveillance system activities;
- preparing and analyzing data for environmental public health and occupational health indicators;
- conducting data analyses of surveillance data sets looking for geographic patterns, time trends, or space-time clustering;
- preparing Institutional Review Board applications for surveillance and research projects as needed;
- collecting and transforming environmental data sets for use in population exposure assessments;
- examining surveillance data by environmental gradient or occupation/industry coding; or
- conducting statistical analyses of surveillance data to address community concerns about disease clusters or environmental hazards. The CSTE Fellow would also: participate in regular meetings with EOHS program units on current investigations; attend ad hoc meetings with other state agencies, other service areas of NJDHSS, and local health departments as needed; arrange and attend lectures on topics in public health at in-house seminars.

Potential Projects

The Fellow will have numerous opportunities to lead and/or participate in public health surveillance and epidemiologic investigations. Examples of potential projects might include:

1. Analyzing time trends and geographic patterns in environmental and occupational health-related outcomes, using state surveillance databases. o Example: Analyze and map geographical pattern in birth weight among babies born to New Jersey mothers, in relation to demographic factors and census data
 - Example: Examine time trends in morbidity and mortality due to occupational injuries in the state.
 - Example: Examine whether the geographic distribution of specific cancers or birth defects show global or specific space-time clustering.
2. Analyzing health outcome surveillance data with respect to the geographic and temporal gradient of environmental factors.
 - Example: Assess and map the relationship between monitored or modeled ambient air toxic levels (such as diesel particulate) and rates of lung cancer incidence

3. Conducting an epidemiologic analysis of the relationship between a health outcome and environmental or occupational risk factors.
 - Example: Conduct time-series analysis of daily emergency department events for childhood asthma in relation to ozone, temperature, pollen levels, and demographic factors.
4. Developing Environmental Public Health Indicators or Occupational Health Indicators for a specific content area.
 - Example: Research and develop guidance for the development of heat-related morbidity and mortality indicators in New Jersey; collect relevant data; analyze and show time trends and geographical patterns; write indicator text for web publication.
 - Example: Collect data and develop indicators and measures to track hospitalizations due to pneumoconioses over time.

Preparedness Role

In the event of a public health emergency, the fellow may be asked to participate on a NJDHSS response team, which includes sub-teams in the areas of business continuity, Emergency Call Center, communications, epidemiology/surveillance, and data management. The fellow could serve in either the epidemiologic/surveillance or data management sub-teams.

Assignment Location: Trenton, New Jersey

Primary Mentor: Jerald Fagliano, PhD, MPH
Program Manager/Health Science Specialist
New Jersey Department of Health and Senior Services

Secondary Mentor: Barbara Goun, PhD, MPH
Research Scientist
New Jersey Department of Health and Senior Services