Occupational Health, Environmental Health

Massachusetts Department of Public Health, Bureau of Community Health and Prevention - Occupational Health Surveillance Program
Boston, MA

Assignment Description

The CSTE fellow will be working primarily in the Occupational Health Surveillance Program (OHSP) within the Massachusetts Department of Public Health (MDPH). OHSP has strong ties to other state agencies and programs within MDPH as well as with local academic institutions and community groups. The position is located at the MDPH main office in downtown Boston where both the primary and secondary supervisors, Drs. Davis and Nasuti, are also employed. The fellow will likewise work in close proximity to other program and departmental staff, including physicians, epidemiologists, statisticians, and health educators, facilitating active collaboration. The staff at MDPH and OHSP is committed to assuring that fellows have a fruitful applied public health experience that furthers their career in the field.

The overall mission of OHSP is to promote the health, safety and quality of life of working people in Massachusetts. OHSP collects, analyses, interprets, and disseminates data on work-related injuries and illnesses in the Commonwealth and collaborates with a wide range of government and community partners to address identified problems. Special emphasis is placed on identifying and addressing the needs of underserved workers and on integrating occupational health considerations into mainstream public health. The program has a broad array of projects that encompass data analysis, program evaluation, and intervention activities. Potential projects and focus areas are described below. Many of these projects provide for flexibility to accommodate the interest and initiative of the fellow.

MDPH has the capacity and capability to identify infectious disease outbreaks, including outbreaks caused by the deliberate use of biological agents by terrorists. The fellow will be given opportunities to participate in the public health emergency response activities and assist in infectious disease outbreak investigations. Specifically the fellow will be trained in the area of epidemiology and surveillance: disease reporting, vulnerability assessments, and the broader scope of surveillance and intervention.

Day-to-Day Activities

As an occupational epidemiologist at OHSP, the CSTE fellow will serve as a member of the team conducting case follow-up activities including injured worker interviews and field investigations as opportunities arise that are triggered by OHSP’s routine sentinel event surveillance of work-related poisonings, work-related burns, occupational lung disease, teen and young adult injuries at work, and workplace fatalities. The fellow will also be involved in using population-based data sets to characterize these and other work-related health problems in the state, with an emphasis on generating actionable information to guide prevention priorities. The fellow will be encouraged to formulate innovative surveillance research ideas under the direction of the primary mentor. Integration of occupational health with the mainstream public health is one of our program missions. S/he will also collaborate with other programs in MDPH such as the Injury Surveillance Program, Worksite Wellness Program, Asthma Prevention and Control Program, and the Office of Data Management and Outcomes Assessment. Likewise s/he will have the opportunity to participate in statewide planning efforts and community coalitions, such as the Massachusetts Occupational Safety and Health Team, the Massachusetts Preventing Injury Network and the Youth Employment Safety team.
Potential Projects

**Surveillance Evaluation**

Established in 2001, the Massachusetts Sharps Injury Surveillance System is the only system of its kind in the country. Under state regulations, all acute and chronic care hospitals licensed by MDPH are required to submit data on injuries from contaminated needles and other sharp devices among workers to MDPH on an annual basis. Data are submitted electronically. Findings are used to target hospital specific and broad based prevention efforts. Periodic meetings with employee health staff facilitate exchange of information among hospital and hospital workers. Activities are guided by a legislatively mandated Advisory Board that includes infectious disease and occupational health experts and representatives of hospitals and hospital worker organizations. Following CDC's Guidelines for Evaluating Public Health Surveillance Systems, the fellow will take the lead on the evaluation of this surveillance system and examine all system attributes. A potential component of this evaluation could involve development, implementation and analysis of a hospital employee survey to assess the level of under-reporting of sharps injuries by hospital workers. The fellow will take the lead on this work under the supervision of both her/his mentors and the coordinator of the Massachusetts Sharps Injury Surveillance System.

**Surveillance Activity**

Over the last two decades, there has been a marked increase in use of workers hired through temporary agencies across all sectors of the U.S. labor market. These workers are often placed in high risk jobs without adequate safety controls or training, and there is increasing evidence that they are at high risk of occupational injury. Labor laws that establish employer responsibility for workplace safety and health have not kept pace with the changing nature of the labor market, resulting in ambiguous lines of responsibility for complying with workplace health and safety standards. In 2012, Massachusetts passed a landmark legislation, the Temporary Workers Right to Know Law, that gives temporary agency workers rights to information about the jobs they are assigned, including health and safety information. This new law offers a unique intervention option for worksite follow-up of temporary workers injured on the job.

To date, there is little information about specific risks to temporary agency workers in Massachusetts. The fellow will take the lead in preparing a report on temporary worker health and safety in Massachusetts to inform policy development and intervention activities to reduce workplace risks. The project will involve using employment and injury data to describe the temporary agency industry in the state, as well as designing and conducting an analysis of workers’ compensation claim data to characterize work-related injuries and illnesses among temporary agency workers. The fellow will also assist the Young Worker Project staff in a new initiative to collect data directly from young temporary agency workers who have been injured on the job. The fellow will help in developing the survey instrument, assist in conducting interviews with these workers, and analyze the interview data to add to the findings of the workers’ compensation data analysis. If the fellow is interested, this study could be coupled with field investigations of workplace fatalities involving temporary workers conducted by OHSP's Fatality Assessment and Control Evaluation project staff. The fellow could also collaborate with agency and community partners to develop and implement an outreach strategy to disseminate prevention information to temporary agency workers and other key stakeholders.
Major Project  Developing a sentinel case surveillance system for work-related lung diseases

Since 1992, with funding from NIOSH, OHSP has implemented a sentinel model of surveillance for work-related asthma (WRA), a mandatory reportable condition in Massachusetts. While WRA remains a priority in Massachusetts, other work-related lung diseases (WRLDs) warrant attention. In 2013, regulations were updated to mandate reporting of all WRLDs, and OHSP would like to explore approaches for conducting sentinel case surveillance of other WRLDs. Priority will be placed on following-up with cases of lower respiratory tract disease that are indicative of emerging problems, e.g. isocyanate disease from spray foam insulation, new hazards in old places, e.g. silica exposures in the countertop industry or multiple cases from one employer.

Findings will be used to inform worksite interventions and broader practice and policy recommendations. Working with the project epidemiologist, the fellow will be involved in developing approaches to using different data sources for sentinel case surveillance of select WRLDs and assessing the utility of these data sources for ongoing surveillance. Specific activities may include: developing algorithms and protocols for case ascertainment, designing follow-up questionnaires for probable cases of select conditions, creating MS Access databases to track cases and input data from interviews, and analyzing sentinel data and summarizing findings in a report and/or presentation. Pending interest, the fellow may be involved in field investigations of cases conducted by OHSP. There is also the potential for use of multiple population-based data sources to characterize WRLDs in Massachusetts.

Additional Project  Community-level occupational health needs assessment

The influences of both healthcare reform and the new emphasis on local public health accreditation have placed increased emphasis on community health needs assessments as a basis for planning and improving linkages between healthcare and public health services. There is also increasing recognition that “work matters” and that efforts to address lifestyle behaviors contributing to chronic health conditions can only be successful if they take into consideration the impact of work and work organization on these behaviors. Yet, the employment profile and occupational health needs of the community are often not incorporated in current community health needs assessments.

The fellow, under the guidance of her/his primary and secondary mentors, would develop approaches to generate employment and occupational health data at the community level that could in turn be incorporated into community health needs assessments. This will involve the exploration of multiple community-level data sources and GIS applications to generate and present occupational health data by geographic regions within the state (e.g. rates of emergency department visits for work-related health conditions, by city and county). It would include generating information for specific communities funded by MDPH programs, including the new Prevention and Wellness Trust Fund and, potentially, an evaluation component to assess the utility of this information as perceived by both MDPH intervention programs and the targeted communities.

Additional Project  Analysis of interviews conducted with injured workers less than 18 years of age

The Teens at Work Injury Surveillance and Prevention Project began collecting data on work-related injuries to teens < 18 in 1993. The project, renamed the Young Worker Project, has recently expanded to include young adult workers age 18-24. The Young Worker Project staff will be working on several data and prevention activities in the upcoming period, including more extensive analysis of young adult
surveillance data, co-sponsoring an annual Young Worker Safety poster and vine contest for teens, and exploring the use of other media to distribute health and safety education materials to both teens and young adults (18-24 years).

The Young Worker Project is also planning to conduct an in-depth analysis of interviews conducted with over 1,200 teens who have been injured at work in the past 20 years. Data include information regarding medical treatment, circumstances surrounding the injury, and workplace conditions. This analysis will involve application of both quantitative and qualitative methods. One aspect of this analysis will be to assess the potential impact of changes in the child labor laws regarding allowable hours of work implemented in 2007. The fellow will take the lead on this analysis and pursue a peer-reviewed journal publication with the mentors’ guidance. Pending the fellows’ interest and time, she/he may be involved in developing new survey instruments to collect information from injured young adults.

**Preparedness Role**

OHSP’s working relationships with the Office of Preparedness and Emergency Management (OPEM) and the Bureau of Infectious Diseases (BID) offer the fellow opportunities to learn and participate in emergency preparedness trainings, public health emergencies, bioterrorism response, and/or outbreak investigations as they develop, and as time and interest of the fellow permit. The Epidemiology Program at BID oversees the reporting and follow-up of foodborne illnesses, emerging and re-emerging infectious illnesses, tick-borne disease, rabies, and other communicable diseases in the state. In the fall of 2012, OHSP’s former CSTE fellow detailed at BID for two weeks to assist in the compounding pharmacy, fungal meningitis outbreak response. Additionally, OPEM offers emergency preparedness trainings throughout the year that the fellow can participate in, such as for the Emergency Dispensing Toolkit, the National Incident Management and Command Systems, and activities related to their Homeland Security Exercise and Evaluation Program, Hospital Preparedness Program, and Public Health Emergency Preparedness Cooperative Agreement with CDC. The fellow can also register as a volunteer with MA Responds, a MDPH initiative partnering with local Medical Reserve Corps units and volunteer organizations, to directly assist in public health-related emergencies in the state.

**Additional Activities**

**Population sample survey data analysis using the Massachusetts BRFSS**

Massachusetts has been conducting the CDC-funded BRFSS sample survey since 1986. The BRFSS is the largest, on-going telephone health survey system in the world and asks about major behavioral risk factors, health indicators, and health outcomes on an annual basis. Since 2010, the MA BRFSS has collected additional occupation and industry information of respondents, offering opportunities for further analyses of the role of work on health. The full dataset, as well as the detailed occupation and industry codes for multiple years, can be available to the fellow for occupational health-related analyses and research questions. The fellow can design and implement an analysis using the BRFSS data to examine health indicators and conditions (e.g. obesity, depression, health care access) in relation to occupation and industry, which can lead to a peer-reviewed publication. The particular focus of the analysis will depend on the fellow’s interest, and will be guided by his/her mentors. Additionally, the fellow has the opportunity to engage with the Department’s Health Survey Program, participate in their monthly BRFSS workgroup meetings, and learn more about survey design, sampling, weighting procedures, as well as carry out his/her own complex survey analyses.
Mentors

Primary  
Letitia Davis, ScD, EdM
Director, Occupational Health Surveillance Program

Secondary  
Laura Nasuti, PhD, MPH
Director, Office of Statistics and Evaluation