Assignment Description

The CSTE Epidemiology Fellow will participate in a wide variety of applied epidemiology experiences within the Chronic Disease and Environmental Epidemiology (CDEE) Section of the Minnesota Department of Health (MDH). The CDEE Section includes four major program areas:

1. the Minnesota Cancer Surveillance System (MCSS);
2. the Center for Occupational Health and Safety (COHS);
3. the epidemiology portion of the MDH Asthma Program; and
4. the Environmental Epidemiology unit that includes the CDC-funded and state-funded Environmental Public Health Tracking and Biomonitoring Programs.

CDEE currently includes about 45 staff, including 9 staff with doctoral degrees and 10 with masters degrees. The section enjoys a unique relationship with the nearby University of Minnesota School of Public Health. Four of the section staff are adjunct professors in the School of Public Health and many section staff have obtained masters or doctoral degrees while working at MDH. One current staff member is a former CSTE Epidemiology Fellow and there are six other former Fellows employed in other divisions of the MDH, with at least 2 others having recently moved on from employment at MDH to employment in other locations. MDH staff and University faculty frequently serve as co-investigators on a variety of studies and projects. More information about the CDEE section can be found at: http://www.health.state.mn.us/divs/hpcd/cede/index.html.

The main MDH offices are located within the Minneapolis-St. Paul area also known as the Twin Cities. Despite winter weather, this region consistently ranks very high in various surveys of best places to live. The high rankings reflect the many cultural, educational, artistic, and recreational opportunities available. Numerous city lakes, extensive bicycle and walking paths, hundreds of city and regional parks, nationally renowned orchestras and theaters, over a dozen universities and colleges, a diverse economy, outstanding health care, college and professional sports of every category, and highly-educated population are just a few of the quality-of-life attributes of the Twin Cities.

Day-to-Day Activities

The candidate will have an opportunity to participate in a variety of section activities, primarily within the Center for Occupational Health and Safety (COHS) and the MDH Asthma Program. There will be three broad categories of activities: (1) activities that support and expand the goals of a federally-funded occupational surveillance programs; (2) activities that support the surveillance work of the MDH Asthma Program; and (2) activities that support the surveillance program and utilize and expand upon other COHS and Asthma Program activities.

1. Activities related to the Minnesota Occupational Health and Safety Surveillance Program
For many years the National Institute of Occupational Safety and Health (NIOSH) has provided grants and technical assistance to states to enhance their capacity for occupational health and safety surveillance. In 2010, Minnesota received its first five-year grant from NIOSH to support occupational surveillance, joining almost two-dozen other states as part of NIOSH state-based surveillance program.
This grant was renewed for an additional five years (2015-2020). To improve the consistency and availability of the surveillance data, NIOSH and CSTE developed a set of occupational health indicators to be used in surveillance of work-related injuries and diseases and for other measures of occupational hazards. These occupational health indicators include such items as the numbers and rates of workplace injuries and illnesses reported by employers, asbestos-related cancer, elevated adult blood leads, and work-related hospitalizations and deaths for specific conditions such as occupational lung disease. They also include measures such as the number of workers employed in high risk occupations. These indicators utilize data from existing sources such as the state labor department, hospital discharge data, state cancer registry, state mortality records, and other sources as required. States are also encouraged to explore new or state-specific indicators (disease or hazard surveillance).

The COHS surveillance grant supports the development, analysis, and dissemination of 22 indicators, as well as a variety of related occupational health initiatives. The Fellow will have opportunities to collaborate with COHS and other CDEE epidemiologists to apply epidemiologic skills and develop specific areas of expertise in a variety of program-supporting activities:

a) participate in the collection, analysis, and interpretation of Minnesota data for 22 specified occupational health indicators using existing data systems based on criteria established.

2. Activities Related to the MDH Asthma Program

The MDH Asthma Program has been funded by the CDC since 1999 to conduct activities with the purpose of improving the lives of Minnesotans who have asthma. This includes ongoing public health surveillance of asthma prevalence, health care utilization, quality of care and mortality, among other measures. Data sources used for asthma surveillance include the Behavioral Risk Factor Surveillance System (BRFSS), the Asthma Call-Back Survey, vital records, hospital discharge data, the Minnesota Student Survey and the Minnesota Youth Tobacco Survey.

(a) The fellow will have the opportunity to conduct analyses of data from the child and adult Asthma Call-Back Surveys. These surveys provide data on topics including asthma symptoms, asthma control, activity limitations, health care utilization, medication use and environmental triggers. The fellow will also have the opportunity to produce data briefs, reports and/or publications to disseminate the findings from these analyses.

(b) The fellow will also have the opportunity to provide assistance to the Asthma Program on analysis of asthma surveillance data from the sources listed above, as they become available. This work may involve production of GIS maps using ArcGIS software.

2. Joint Activities for Occupational Health and Asthma

The candidate will have additional opportunities to collect, examine, and interpret public health data sets and/or participate in implementation strategies according to his/her interest. Focus areas include:

(a) Work-Related Asthma. Several asthma related opportunities exist in CDEE for an epidemiology fellow. The MDH Asthma Program has been collaborating with the MDH COHS to address work-related asthma one of the most prevalent work-related conditions. The Fellow will have an opportunity to conduct analyses of work-related asthma using data from the adult Asthma Call-Back Survey. The results of a multistate analysis (including Minnesota) of pilot data from the 2005 Asthma Call-Back Survey was published in Lutzker LA, Rafferty AP, Brunner WM, Walters JK, Wasilevich EA, Green MK and Rosenman KD. Prevalence of Work-Related Asthma in Michigan, Minnesota and Oregon. Journal of Asthma 2010; 47(2): 156-161.

(b) The Fellow will also have an opportunity to participate in an investigation of health behaviors and attitudes among cosmetologists, an occupational group at risk of developing work-related respiratory disease, following introduction of a law requiring health and safety continuing education credits to retain licensure.
(c) Behavioral Risk Factor Surveillance Survey. For the years 2013, 2014, and 2015 two questions asking about an individual's industry and occupation were added to the Minnesota BRFSS. The Fellow would have the opportunity to utilize these variables with a number of other variables detailing health behaviors and present chronic conditions to determine if work is an associated factor with these health and behavior outcomes.

**Potential Projects**

**Surveillance Activity**

For many years the National Institute for Occupational Safety and Health (NIOSH) has provided grants and technical assistance to states to enhance their capacity for occupational health and safety surveillance. In 2010, Minnesota received a five-year grant from NIOSH to support occupational surveillance, joining almost two-dozen other states as part of NIOSH state-based surveillance program. This grant was renewed for an additional five years (2015-2020). To improve the consistency and availability of the surveillance data, NIOSH and CSTE developed a set of occupational health indicators to be used in surveillance of work-related injuries and diseases and for other measures of occupational hazards. These occupational health indicators include such items as the numbers and rates of workplace injuries and illnesses reported by employers, asbestos-related cancer, elevated blood leads, and work-related hospitalizations and deaths for specific conditions such as occupational lung disease. They also include measures such as the number of workers employed in high risk occupations. These indicators utilize data from existing sources such as the state labor department, hospital discharge data, state cancer registry, state mortality records, and other sources as required. States are also encouraged to explore new or state-specific indicators (disease or hazard surveillance).

The COHS surveillance grant supports the development, analysis and dissemination of 22 indicators, as well as a variety of related occupational health initiatives. The Fellow will have opportunities to collaborate with COHS and other CDEE epidemiologists to apply a range of epidemiologic skills and develop specific areas of expertise in a variety of program-supporting activities:

(a) participate in the collection, analysis, and interpretation of Minnesota data for 22 specified occupational health indicators using existing data systems based on criteria established by CSTE (2015);

(b) aid in further refinement and break down of the 22 occupational health indicators to provide descriptive epidemiological results and identify at risk occupational and demographic groups;

(c) identify, develop, and evaluate new surveillance approaches for indicators of occupational health in Minnesota;

(d) identify and maintain relationships with agencies, organizations, groups, and individuals who can provide and/or utilize appropriate surveillance data;

(e) develop and implement strategies to disseminate and publish surveillance results, their interpretations, implications, and conclusions;

(f) develop new communications strategies for occupational health and safety, including for example, a periodic newsletter; and

(g) develop articles for the NIOSH eNews electronic newsletter.
Surveillance Evaluation

Occupational Health Surveillance Evaluation

For many years the National Institute for Occupational Safety and Health (NIOSH) has provided grants and technical assistance to states to enhance their capacity for occupational health and safety surveillance. In 2010, Minnesota received a five-year grant from NIOSH to support occupational surveillance, joining almost two-dozen other states as part of NIOSH state-based surveillance program. This grant was renewed for an additional five years (2015-2020). To improve the consistency and availability of the surveillance data, NIOSH and CSTE developed a set of occupational health indicators to be used in surveillance of work-related injuries and diseases and for other measures of occupational hazards. These occupational health indicators include such items as the numbers and rates of workplace injuries and illnesses reported by employers, asbestos-related cancer, elevated blood leads, and work-related hospitalizations and deaths for specific conditions such as occupational lung disease. They also include measures such as the number of workers employed in high risk occupations. These indicators utilize data from existing sources such as the state labor department, hospital discharge data, state cancer registry, state mortality records, and other sources as required. States are also encouraged to explore new or state-specific indicators (disease or hazard surveillance).

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(f) develop new communications strategies for occupational health and safety, including for example, a periodic newsletter; and

(g) develop articles for the NIOSH eNews electronic newsletter
Major Project  Work-Related Asthma

Work-related asthma. Several asthma related opportunities exist in CDEE for an epidemiology Fellow. CDEE has had a CDC-funded asthma initiative since 2001 and both the Asthma Program and the COHS are collaborating to address work-related asthma one of the most prevalent work-related conditions. The Fellow will have an opportunity to work with an experienced asthma epidemiologist in examining BRFSS and other sources of asthma surveillance data. The Fellow will also have an opportunity to aid in development of an investigation of health behaviors and attitudes among cosmetologists, an occupational group at risk of developing work-related respiratory disease, after introduction of a law requiring health and safety continuing education credits to retain licensure. In addition, the Fellow will have an opportunity to work with Asthma and COHS program staff and other stakeholders to develop and implement a strategic plan for work-related asthma.

Additional Project  Behavioral Risk Factor Surveillance Survey

For the years 2013, 2014, and 2015 two questions asking about individual industry and occupation were added to the MN BRFSS. The Fellow would have the opportunity to utilize these variables with a number of other variables detailing health behaviors and present chronic conditions to determine if work is an associated factor with these health and behavior outcomes.

Additional Project  MN Student Survey

a state-wide survey of 9th and 11th grade students conducted every three years, provides a significant data set of behavioral (including working for pay), academic, and health indicators for Minnesota adolescents. The Fellow could use this dataset to formulate many additional analyses to address several issues of importance to adolescent work safety.

Preparedness Role

CDEE is currently engaged in planning activities with the MDH Office of Emergency Preparedness to develop plans for long-term surveillance activities as part of the State All-Hazards Emergency Response Plan. The candidate will participate in the emergency planning activities and discussions related to occupational, environmental, and chronic disease surveillance. All CDEE staff are expected to complete a series of training classes (live or web-based) related to emergency preparedness. Previous CSTE Fellows participated in a variety of table top exercises and planning for radiological, biological, and chemical hazards. Many opportunities will exist for a Fellow to actively participate in a wide range of emergency preparedness activities and planning.

Mentors

Primary  Adrienne Landsteiner, PhD, MPH
Epidemiologist Principal

Secondary  Wendy Brunner, PhD, MPH
Epidemiologist Principal