

## **STATE-BASED OCCUPATIONAL SAFETY AND HEALTH SURVEILLANCE COOPERATIVE AGREEMENT (PAR-04-106): 2007 UPDATE**

As part of its mission to prevent injury, illness, and deaths caused by hazards in the workplace, the National Institute for Occupational Safety and Health (NIOSH) established surveillance programs which have helped to enumerate the extent of occupational hazards in the United States. These surveillance programs have also identified many problems that require additional research and prevention efforts. Activities by state partners funded through the Office of Extramural Programs (OEP) are a critical part of the NIOSH surveillance program.

For fiscal year (FY) 2005, NIOSH developed and announced an integrated approach for the extramural state-based surveillance activities that included: (1) a fundamental program to extract and analyze data from existing systems that capture information for at least 13 specific occupational safety and health indicators and the effects on workers; (2) an expanded program for identifying new sources of occupational safety and health data and developing interventions for reducing worker related injuries, illnesses, and fatalities; and (3) a consortium that meets twice a year to share and learn from experiences within the group, work through issues of common interest, and to refine state occupational safety and health surveillance activities to maximize impact on worker safety and health. The goal of this program was to use existing systems to collect data on occupational safety and health (OSH) hazards and effect; identify new sources of OSH data; conduct surveillance; interpret findings; and develop and/or recommend interventions.

The NIOSH extramural budget includes approximately \$5.2 million to support the state-based surveillance program. Currently, NIOSH funds 15 states which have Fundamental Programs. Five of these have a Fundamental Program only. The remaining ten have Expanded Programs with one or more priority conditions and/or populations such as Fatalities (9), Pesticide poisoning (5), Asthma (4), Silicosis (2), Burns (1) and Teens (1).

The project period for nine of the currently funded states ends in 2010 and in 2008 for six. The money that will become available in 2008 as a result of the ending grant period for these six states is approximately \$750,000. To continue the current program under this announcement, NIOSH issued Notice 07-003 in April 2007 to describe the funds available and to limit the eligibility for these funds to institutions with an existing or previous cooperative agreement under PAR 04-106. In 2008, up to six new awards will be made; no new applications will be accepted. In 2009 we anticipate that a new Program Announcement will be issued.

## FY2007 Comprehensive State-Based Surveillance Awards

### Project descriptions provided by principal investigators in their applications

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*WI Occupational Safety and Health Surveillance Program*

FUNDAMENTAL: The overall Occupational Safety and Health Surveillance System in Wisconsin has one component: the fundamental surveillance program. Our fundamental Occupational Safety and Health Surveillance System long-term goal is to achieve Objective 3 of the Environmental and Occupational Health Hazards Health Priority in Wisconsin's State Health Plan, Healthiest WI 2010: "By December 31, 2010 the incidence of occupational injury, illness, and death will be reduced by 30%." At the core of the proposed surveillance system are 19 CSTE/NIOSH (includes the 13 10/7/2005 required by NIOSH) occupational health indicators. Tracking these indicators and publishing annual reports will assist Wisconsin and NIOSH monitor occupational health conditions, risk factors, and risk groups to determine progress toward State and National 2010 goals. Our Fundamental Surveillance Program design strategy recognizes the need for a full-time surveillance coordinator dedicated to building and maintaining a surveillance system with the assistance of a part-time data entry and occupation and industry coding staff.

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*Oklahoma Occupational Safety and Health Surveillance*

FUNDAMENTAL: Occupational injuries are a significant public health problem in the U.S. and in Oklahoma. Currently, occupational surveillance efforts in Oklahoma and across the U.S. are fragmented and inconsistent. The Oklahoma Occupational Safety and Health Surveillance program will establish a fundamental surveillance system to collect statewide data on occupational hazards, diseases, injuries, and deaths. The long term objectives of the Oklahoma Occupational Safety and Health Surveillance program are to 1) collect and analyze standardized indicators on occupational health conditions in order to determine the magnitude and 2) trends of occupational hazards, diseases, injuries, and deaths in Oklahoma; and develop, implement, and evaluate occupational injury and illness prevention programs in Oklahoma. The specific aims of this proposal are:

1. Collect statewide occupational health indicator data.
2. Establish a scientific advisory committee to provide input on collecting and disseminating data on occupational health conditions and establishing prevention programs.
3. Analyze occupational health indicator data and provide data to NIOSH and other partners/stakeholders.
4. Participate in all meetings of the Consortium of Occupational State-based

Surveillance and the Coordination Committee; and prepare a performance review of the surveillance program.

Data on all 13 health conditions specified in the program announcement will be collected from existing databases according to the guidelines developed by the Council of State and Territorial Epidemiologists and NIOSH to facilitate comparisons between states. Based on input from the scientific advisory committee and NIOSH, in future years the surveillance system will be expanded, special studies conducted, prevention programs initiated, and publications prepared. Establishing the Oklahoma Occupational Safety and Health Surveillance program will be the first step towards the reduction of these adverse occupational health conditions in Oklahoma.

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### *Kentucky Occupational Safety and Health Surveillance*

**FUNDAMENTAL:** Kentucky's occupational fatality rate is 6.9 deaths/100,000 workers (Kentucky Fatality Assessment and Control Evaluation [FACE] program data, 2003), 72.5 percent above the national rate of 4/100,000 workers. Kentucky's nonfatal worker injury and illness rate is also greater than the national rate (7.1 injuries and illnesses/100 full-time workers compared to 5.3/100 nationally (Bureau of Labor Statistics, 2003). The establishment of a fundamental occupational safety and health (OSH) surveillance program in a southeastern state, Kentucky, will target and unite resources from existing public health surveillance systems and identify and utilize new and existing sources of OSH data. The objectives are to identify worker populations, work environments, and other factors which contribute to occupational injury, and develop state OSH data dissemination strategies to reduce Kentucky occupational injuries. The methodology consists of establishing and conducting comprehensive population-based surveillance of the 13 occupational injury and illness indicators recommended by the Council of State and Territorial Epidemiologists and the National Institute for Occupational Safety and Health, and fatal and nonfatal occupational motor vehicle collisions (MVCs) as another indicator using existing independent data systems: hospital discharge, FACE, Workers Claims (WC), Poison Control Center (PCC), Vital Statistics, Kentucky Adult Blood Lead Epidemiology Surveillance, Collision Report Analysis for Safer Highways, emergency department (ED), and trauma registry data in addition to online resource data. Extensive analysis of 1) linked hospital discharge and WC datasets to examine occupational falls and: 2) linked CRASH, hospital discharge, ED, and trauma datasets to examine nonfatal occupational motor vehicle collisions will be performed. Narrative data analysis of PCC data will be completed on occupational poisoning incidents. The feasibility of ED data and trauma systems data as independent and linked occupational health data sources will be explored. We will initiate and expand partnerships with state and local stakeholders to establish a Kentucky state-specific

consortium called "Kentucky-Working to SAFE Lives". We will analyze and disseminate surveillance data through the state consortium and other community stakeholders and a process and outcome evaluation of the major activities conducted will be performed.

**FATALITIES:** Kentucky's occupational fatality rate is 6.9 deaths/100,000 workers, 72.5 percent above the national rate of 4/100,000 workers. This project focuses on the population-based surveillance of work-related injury fatalities using the FACE methodology that includes a public health model of surveillance, a systematic model of sentinel event case investigation, and targeted interventions in a southeastern state, Kentucky. The Kentucky FACE program continues to build a solid foundation of surveillance, investigations, epidemiological studies, and innovative prevention strategies for translation of research into practice (R2P) for use by employers and legislative bodies. The objectives are to identify high risk sectors, occupations, and worker populations for fatal work injuries, to advance the usefulness of surveillance data at the federal, state, and local level for the prevention of fatal occupational injuries and hazards, and to develop and implement targeted strategies for dissemination of occupational injury data utilizing a sector-based approach, to reduce Kentucky fatal occupational injuries. The methodology consists of conducting comprehensive and timely multi-source surveillance of Kentucky occupational fatalities to identify risk factors. On-site investigations of selected fatality cases involving motor vehicle collisions (MVCs) in the transportation and agriculture sectors and logging industry fatalities will be performed to provide case studies for employer/employee safety training at the company, local, and state levels, by sector and across sectors. Narrative coding of transportation sector MVC fatality reports will be completed to identify company safety management practices, collision characteristics, and personal risk factors for a fatal occupational MVC. Epidemiological analyses of domestic violence-related occupational homicides using multiple sources of data will be conducted to target specific points for the development of workplace homicide interventions. We will provide targeted worker and employer groups with a sound evidence basis for improved worker safety by analyzing and disseminating occupational fatality surveillance data, investigation reports, fact sheets, newsletters, web-based information, presentations, and peer-reviewed publications for impact at both the state and national levels. A process, impact, and outcome evaluation of the major activities will be performed.

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*Washington Occupational Surveillance Program*

**FUNDAMENTAL:** The objectives of the Washington State Fundamental Occupational Safety and Health Surveillance Program are to enhance comprehensive state-based occupational health surveillance in Washington State and to participate in the development of a state-based national occupational health surveillance program. Through a combination of state and federal funding, we will continue to enhance our surveillance of work-related musculoskeletal disorders, work-related asthma and hospitalized burns. We will also incorporate the occupational health

indicators identified by the Council of State and Territorial Epidemiologists and National Institute for Occupational Safety and Health into Washington's occupational health and safety surveillance program. Within this program, gaps in our present fundamental surveillance activities will be filled, including worksite walkthrough capacity for follow-up of occupational injury cases and identification of high-risk industries for occupational injury. The specific aims under Washington State's Fundamental Occupational Safety and Health Surveillance program are to:

1. Establish a dedicated Washington State Occupational Health and Safety Surveillance Advisory Committee.
2. Conduct population-based surveillance using the CSTE/NIOSH Occupational Indicators.
3. Develop, publish and disseminate an annual Washington State Occupational Indicator report.
4. Develop and publish a supplement to the indicator report that identifies industries at high risk for high-cost, high frequency non-fatal acute traumatic occupational injuries.
5. Participate in the Consortium of Occupational, State-based Surveillance (COSS).
6. Continue established Washington State occupational health surveillance systems for work-related musculoskeletal disorders, asthma and hospitalized burns.

**PESTICIDE:** The Washington Department of Health (DOH) Pesticide Program has investigated reported cases of occupational and non-occupational pesticide illness since 1970. The DOH pesticide program is a mature surveillance system and captures more cases per capita than any other state. DOH conducts personal interviews with agricultural workers and collects detailed information about the circumstances surrounding each case of pesticide illness. The program has been successful in tracking the extent and nature of pesticide illness in Washington State. For instance, the data show that pesticide drift and inadequate personal protective equipment (PPE) are leading causes of reported pesticide illnesses among agricultural workers. However, recent attempts to use DOH data to identify risk factors associated with these two general types of exposure have shown that our current data system is inadequate at tracking specific root causes of exposure. This limits our ability to identify key training messages and prevention strategies needed to address current problems. The goal of this expanded surveillance activity is to better understand and track specific causes of pesticide drift exposure and poor PPE practices among agricultural workers in Washington, and to use the results of these studies to develop effective prevention strategies. Specifically, we will conduct both retrospective and prospective analyses for causal factors. First, we will review the previous two years of case files to extract additional information about root causes of the two most common exposure scenarios among agricultural workers: pesticide drift and inadequate PPE. We will identify additional data fields needed to track detail on cause and develop causal analysis models for these two exposure scenarios. Secondly, we will develop new interview tools to collect this information and expand our data system to track specific causal factors on

new cases. Finally, we will develop prevention strategies based on identified causal factors and evaluate these prevention outreach activities.

#### TRUCKING INJURY REDUCTION EMPHASIS THROUGH SURVEILLANCE (TIRES):

The overall goal of the Trucking Injury Reduction Emphasis through Surveillance (TIRES) program is to reduce the incidence of non-traumatic back and upper extremity musculoskeletal disorders, falls, motor vehicle crashes, lower extremity musculoskeletal disorders, struck by, and caught in injuries within the trucking industry in Washington State. These six conditions comprise 90% of the industry's workers' compensation claims, costs, and lost workdays. The specific aims of the TIRES program are to: (1) Build and maintain partnerships with representatives from both management and labor within the trucking industry, (2) publish a technical report describing injuries, trends, and costs within the trucking industry by sector, (3) Develop and implement a surveillance system to track claims in the trucking industry, with particular focus on the six priority conditions, (4) Develop and implement case follow-up protocols for identifying risk factors and solutions for the priority conditions, (5) Conduct industry-wide surveys of employers and employees to identify hazards and risk factors, needs, and possible solutions, and (6) Identify opportunities for the use of educational materials and other interventions to reduce hazards and injuries within trucking.

**FATALITIES:** The program will have four components: surveillance, investigation, prevention activities/information dissemination, and evaluation. Basic data will be collected on all work-related fatalities in Washington State. The data will be used to help focus incident investigations as well as to describe the incidents and associated risk factors in surveillance reports. In addition to the fatality investigations and the corresponding reports, WA FACE will continue publishing case series reports, developing construction fatality narratives for each incident in the state, and translating previously produced narratives into Spanish. Similar narratives will also be developed for selected tractor-related fatalities and work zone near-miss incidents. The specific aims of this program are to:

1. Maintain and enhance the current program's timely multi-source surveillance system to identify and track all traumatic occupational fatalities that occur in Washington State.
2. Identify situations and factors using epidemiological, safety engineering, and human factors/ergonomics methods to focus prevention activities.
3. Investigate select fatal incidents. Fatal incidents will be investigated in the three NIOSH-defined priority areas, as well as two Washington state priority areas, the construction and agriculture industries.
4. Develop and disseminate prevention materials that can be used to reduce the risk of fatal occupational injuries in Washington State.
5. Develop a series of Fatality and Near-Hit Narratives that highlight fatal incidents, detailing risk factors for the incidents and recommendations for the prevention of future incidents. Use these materials for prevention training at construction tailgate safety meetings, with expansion to tractor incidents in agriculture.
6. Evaluate the materials that are developed and disseminated.
7. Assess the impact of WA FACE prevention activities for selected target hazards in high-risk industries.

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[LETITIA.DAVIS@STATE.MA.US](mailto:LETITIA.DAVIS@STATE.MA.US)*Expanded Occupational Safety and Health Surveillance in Massachusetts*

FUNDAMENTAL: Work-related injuries and illnesses are a significant public health problem in Massachusetts, imposing substantial human and economic costs.

Massachusetts recognizes the prevention of work-related injuries and illness as a public health priority and the need for state-based surveillance to promote prevention activities at the state and local levels. Since 1986 the MA Department of Public Health (MDPH) has worked to build an Occupational Health Surveillance Program (OHSP). OHSP has developed targeted surveillance and intervention systems for priority occupational health conditions and populations, carried out broad-based prevention activities based on surveillance findings, conducted surveillance research, and worked to integrate occupational health into mainstream public health practice. OHSP proposes to build on past experience and continue occupational health surveillance activities that are fundamental to an established program. The overall goal is to reduce the incidence of work-related injuries and illnesses in Massachusetts. Specific Aims are to: (1) Generate state occupational health indicators annually to track the occupational health status of the Massachusetts population; (2) Conduct more extensive analysis of existing state data sets to characterize work-related injuries and illnesses in Massachusetts; (3) Continue a limited level of case-based surveillance of selected serious occupational health conditions that require immediate public health response to control hazards; (4) Continue working with stakeholders to obtain input on program priorities and to promote use of surveillance findings for prevention; (5) Collaborate with other public health programs to foster integration of occupational health into ongoing public health activities; and (6) Promote collaboration among the northeastern states to improve state capacity to conduct occupational health surveillance and prevention activities. OHSP will be guided by an advisory board of local occupational health experts and advocates.

TEENS: Each year in the U.S. an estimated 230,000 youths are injured on the job and close to 70 are killed. Young workers have been recognized as a Special Population and a national occupational research priority (NIOSH, 1996). The Massachusetts Department of Public Health (MDPH) has likewise identified the prevention of occupational injuries to youths as a public health priority. In 1992, MDPH promulgated regulations requiring physicians and hospitals to report occupational injuries to youths less than 18-years old. Since that time, with support from NIOSH, MDPH has worked to establish a comprehensive surveillance and intervention system for occupational injuries to youths. Multiple data sources including workers' compensation records, emergency department reports, and hospital discharge data are used for case ascertainment, follow-up interviews with injured teens are conducted, and surveillance findings are used to target work site interventions and broad-based prevention activities. MDPH proposes to continue and to enhance the Massachusetts surveillance system for occupational injuries to youths. Specific aims are to: (1) Continue and enhance case ascertainment using multiple data sources to identify sentinel cases and generate meaningful summary data; (2) Conduct timely follow-up interviews with injured youth in

order to fully characterize the cases and to target work site interventions; (3) Analyze surveillance data and disseminate findings to increase awareness and understanding of work related injuries to youths; (4) Plan, conduct, and foster intervention and prevention activities to reduce the risk of occupational injuries to youths in targeted Massachusetts workplaces, industries, and communities; and (5) Continue collaboration with government and community stakeholders in Massachusetts and other states to promote use of surveillance findings for prevention. Proposed new initiatives include: (a) use of self-administered mailed questionnaires to increase capacity to conduct follow-up with injured youths; (b) use of a new statewide database to obtain population-based data on work-related injuries to youths treated in emergency departments; and (c) a targeted prevention project to address teen injuries in the restaurant industry. OHSP will also work with the Massachusetts Department of Education to explore options for conducting surveillance of injuries to teens in work-based learning programs.

**SHARPS INJURIES TO HOSPITAL WORKERS:** Health care worker exposures to bloodborne pathogens due to percutaneous injuries with contaminated needles and other sharp devices are a significant public health concern. The health care industry is the largest single industry in Massachusetts. In 2000, in response to community concern about sharps injuries, the Massachusetts legislature passed legislation requiring hospitals to use safe needle devices, maintain logs of sharps injuries to workers and report information from these logs to the Massachusetts Department of Public Health (MDPH) on an annual basis. Subsequently, MDPH has worked to build a statewide surveillance system for sharps injuries to hospital workers. MDPH proposes to continue and enhance the Massachusetts Surveillance System for Sharps Injuries to Hospital Workers. Specific aims of the project are to: (1) Collect anonymous case level data on sharps injuries to hospital workers from all acute and chronic care hospitals in Massachusetts on an annual basis to generate both statewide and hospital specific information; (2) Analyze sharps injury data and disseminate summary surveillance findings to all hospitals and other stakeholders annually to increase understanding of the problem; (3) Provide guidance to individual hospitals to enhance sharps injury surveillance and intervention activities; (4) Facilitate information sharing among hospitals and health care workers regarding successes and challenges in sharps injury surveillance and prevention; (5) Maintain working relationships with key stakeholders within MDPH and the community to promote sharps injury surveillance and use of surveillance data for prevention; and (6) Collaborate with hospital employee health and infection control practitioners in several hospitals to conduct a survey of health care workers regarding sharps injury reporting and perceptions of the hospital safety culture.

**OCCUPATIONAL HEALTH SURVEILLANCE THROUGH MASSACHUSETTS COMMUNITY HEALTH CENTERS:** Current surveillance of occupational conditions is unable to describe the burden of work-related injury and illness on minority and immigrant workers in Massachusetts. This proposal describes an approach to systematically identify and mine reports of work-related conditions from data systems at community health centers (CHCs), community-based non-profit providers of primary and preventive medicine situated in diverse, urban neighborhoods of Massachusetts. This project will modify CMC data systems for the efficient identification of work-related



conditions, facilitate collection of reportable conditions, and improve CMC providers' knowledge and skill in identifying and addressing work-related conditions. This model for community-based surveillance aims to yield a more complete portrait of the extent of occupational injuries and illnesses among populations of working patients in the catchment areas of 5 CHCs, while institutionalizing occupational health surveillance at those facilities. In addition, the high minority and immigrant mix of the patient populations of these CHCs allows for surveillance data describing the experience of several specific minority and immigrant groups within Massachusetts' largest urban areas. The specific aims of this project are: 1) Modify CHCs' administrative and clinical data systems to enable collection of data regarding work-relatedness of health conditions, and to provide online diagnostic and reporting tools to health care providers; 2) Educate CHC providers to increase their capacity to identify work-related illnesses and injuries, and promote the recording of work-relatedness in the medical record; 3) Collect case reports of work-related injuries and illnesses identified among CHC patients; 4) Create capacity for CHCs to analyze surveillance data on work-related conditions among their patient populations to promote targeted clinical activities and community-based prevention; and 5) Characterize the extent of occupational injury and illness among CHC patients and specific minority groups.

**FATALITIES:** Fatal occupational injuries continue to be a significant public health problem in Massachusetts as they are throughout the United States. Each year in Massachusetts approximately 70 workers are fatally injured on the job. Information about the work setting and the specific circumstances in which these deaths occur is essential to develop effective prevention measures at the national and state levels. Since April 1990, the Occupational Health Surveillance Program (OHSP) in the Massachusetts Department of Public Health (MDPH) has participated in the NIOSH Fatality Assessment and Control Evaluation (FACE) Program. This Program enabled OHSP to build the Massachusetts surveillance system for fatal occupational injuries, to increase understanding of risk factors leading to fatal events through investigations of targeted fatalities, and to undertake activities to prevent fatal occupational injuries in the Commonwealth. OHSP proposes to continue and enhance the Massachusetts FACE Project. The overall goal of the project is to reduce the incidence and associated human and economic burden of traumatic occupational fatalities in the Commonwealth. Specific aims of the project are to: 1) Maintain and enhance the current surveillance system for timely identification and collection of data on all traumatic occupational fatalities to identify high risk workplaces and populations in Massachusetts; 2) Conduct in-depth, on-site investigations of targeted fatalities using FACE investigative methods to identify risk factors for fatal occupational injuries; 3) Disseminate information on high risk work environments, workplace risk factors, and injury prevention to stakeholders who can intervene in workplaces throughout the state; and 4) Plan, conduct, and foster prevention activities targeting identified industries, groups of workers or hazards to reduce the incidence of traumatic occupational fatalities in Massachusetts. New initiatives include investigation of select public sector fatalities, increased collaboration with community partners to prevent immigrant worker deaths, and coordination of government and community stakeholders in a targeted prevention project to reduce falls

in residential construction. Greater emphasis will also be placed on evaluating the impact of FACE activities.

**ASTHMA:** Estimates of the proportion of new onset adult asthma that can be attributed to work range from 5% to 29%. In Massachusetts, an estimated 6.2% of adults with current asthma—over 27,000 people—have been told by their doctor that their asthma was work-related. Better information about workplace exposures associated with WRA is needed to develop effective prevention strategies at the state and national levels. In 1992 the Massachusetts Department of Public Health (MPDH) promulgated regulations requiring physicians to report work-related asthma (WRA). Since that time, the MDPH Occupational Health Surveillance Program (OHSP), with support from NIOSH, has implemented the SENSOR model for surveillance of WRA. Physician reports, hospital discharge data and, most recently, emergency department data are used for case ascertainment, follow-up interviews with reported cases are conducted, and surveillance findings are used to target work site interventions and broad-based prevention activities. Since 1993, OHSP has confirmed over 550 cases of WRA. Multiple work site investigations have been completed. Aggregate data have identified problem industries, occupations and exposures, and have played a crucial role in fostering a number of broad-based prevention activities. OHSP proposes to continue and enhance the Massachusetts surveillance system for WRA. The overall goal is to reduce the incidence of WRA in the state. Specific aims are to: (1) Maintain and enhance case ascertainment for WRA using multiple data sources to identify sentinel cases; (2) Conduct timely follow-up interviews to fully characterize WRA cases and target workplace investigations; (3) Plan, conduct and foster intervention and prevention activities to reduce the risk of WRA in targeted workplaces and industries; (4) Analyze and disseminate sentinel and population-based surveillance data to increase awareness and understanding of WRA; and (5) Continue and enhance collaboration with government and community stakeholders at the state and regional levels to promote use of surveillance findings for prevention. Proposed new initiatives include: routine use of emergency department data for case ascertainment; collaboration with community health centers to increase recognition and prevention of WRA among low income, minority and immigrant workers; new efforts to reduce asthma hazards in schools; statewide outreach to health care providers by disseminating materials on WRA with the Adult Asthma Action Plans; and exploration of workers' compensation records as an additional surveillance data source.

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*Occupational Safety and Health Surveillance in Louisiana*

**FUNDAMENTAL:** Project objectives are to systematically evaluate existing data sources for use in occupational health surveillance, identify new data sources, coordinate Louisiana Office of Public Health (LOPH) programs currently using data relevant to occupational health surveillance, and describe the overall burden of occupational diseases and injuries occurring in Louisiana. Planning discussions for the

project have identified LOPH program staff with expertise in 5 of the 7 data sources: hospital discharge, vital records (mortality), poison control data, laboratory test reports, and tumor registry. Working collaboratively with identified LOPH programs, data will be evaluated, analyzed, and interpreted. Data evaluation will consider completeness and validity, and analysis will include age-standardized and annual incidence rates, trends over time, spatial analysis using GIS, and hypothesis generating analysis. Chemical exposure and heavy metal toxicity will be included in addition to the required 13 occupational health conditions. An Occupational Health Surveillance Advisory Group will provide technical expertise on the project design, implementation, and dissemination of surveillance findings. A mailing list of individuals and agencies with an interest in occupational health will be developed and maintained. Results will be disseminated through various formats: OPH website; publication of articles in the Louisiana Morbidity Report, local newspapers, and the Journal of State Medical Society; and presentations at state conferences and at Tulane's and Louisiana State University's Schools of Public Health. Ultimately, the surveillance data will be used by LOPH to set research priorities for occupational health surveillance, to target interventions, and to enhance public health capacity in the field of occupational health.

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*Occupational Safety and Health Surveillance in New York*

FUNDAMENTAL: Program that will monitor the occupational health status of New Yorkers. Since NYS is large and has a diverse population, there is a wide spectrum of occupational fatalities, injuries and diseases that occur among the population. An integrated surveillance system will allow NYSDOH to gain insight into the populations being affected by these health issues which should then assist us in preventing future occupational diseases and injuries. We will continue to review existing data sources on occupational diseases and injuries to identify high-risk industries and occupations, as well as populations at an increased risk. Maintaining a core staff dedicated to occupational health surveillance and intervention will also enable NYSDOH to conduct rapid response to new or emerging occupational health issues, including terrorism events. NYSDOH currently oversees three occupational health registries mandated by law: the Heavy Metals Registry, the Occupational Lung Disease Registry, and the Pesticide Poisoning Registry. Information from each of these registries is shared with the National Institute for Occupational Safety and Health (NIOSH) as part of national surveillance activities. NYSDOH has actively worked to enhance each registry's case ascertainment. This has involved an integrated approach addressing barriers among health care providers towards occupational disease reporting. Therefore, NYSDOH has conducted extensive outreach to increase awareness of the diseases and reporting regulations, knowledge of how to diagnose occupational diseases, and understanding of the purpose and functioning of public health surveillance systems. In addition, we have offered consultation and patient referral support through the NYS Occupational Health Clinic Network. We plan to translate these advances in case ascertainment into the development and implementation of measurable hazard

prevention activities. Furthermore, by evaluating our activities and sharing this information with key stakeholders, we will be in a position to assist in improving occupational surveillance nationally.

**PESTICIDE:** The New York State Department of Health, Bureau of Occupational Health, proposes to continue and expand surveillance of pesticide poisonings in New York State (NYS), with the goal of continuing and improving case ascertainment and public health intervention and prevention activities. These activities will be conducted by the New York State Pesticide Poisoning Registry (NYSPPR). This program receives reports from physicians, health facilities and clinical laboratories and offers timely follow-up and intervention in various exposure situations. Program objectives include the following: improve reporting and case ascertainment; utilize registry reports and surveillance data to guide public health interventions; provide education; conduct industrial hygiene interventions, consultations and site visits; develop and disseminate hazard prevention recommendations and strategies; continue to update and improve the nationally distributed Sentinel Event Notification Systems for Occupational Risks (SENSOR) Pesticide Incident Data Entry and Reporting (SPIDER) software program; produce and disseminate annual data summaries and intervention synopses; identify new applications for the NYSPPR as new health threats emerge; continue and expand collaborations; and conduct evaluations of program activities. This program has been and will continue to be an integral part of surveillance activities developed to identify and characterize possible health effects related to West Nile Virus mosquito control programs in New York State. In addition, as part of the terrorism preparedness planning process after the events of September 11, 2001, the NYSPPR has been identified as a potential resource in surveillance for chemical terrorism events involving pesticides - for both sentinel event and post-event surveillance.

**WORLD TRADE CENTER:** The New York State (NYS) Department of Health (DOH) proposes to continue its role as a data collection center for fatalities occurring among World Trade Center (WTC) responders and volunteers. Information on each fatality of interest will be provided to the National Institute for Occupational Safety and Health (NIOSH) and the WTC Steering Committee. Although there is significant science-based literature on illnesses associated with WTC exposures, the same cannot be said of responder WTC-related fatalities. To date, reports of WTC-related responder fatalities have been spurious and limited to news media reports and medical examiner/pathologist opinion. Therefore, it is difficult to respond to inquiries regarding these cases, both as individual cases and as "clusters" or "cohorts" of cases. There is a need for a data collection system that can identify and track all fatalities occurring among WTC responders, post-event, in a timely and complete manner such that science-based investigations of root causes can begin to be systematically explored. This information will be used to improve the understanding of the pathology of WTC-related morbidity and mortality and to better understand the etiologies of WTC-related deaths. This may be helpful in improving the medical treatment of individuals who are currently experiencing, or may in the future experience, adverse health effects associated with WTC exposures. NYSDOH will attempt to identify any fatality that has occurred since September 12, 2001 to any responder or volunteer at the World Trade

Center. For every fatality, an attempt will be made to obtain information on the decedent's demographics; reported cause of death, including underlying causes; health status prior to and after WTC, details of WTC exposure between September 11, 2001 and June 30, 2002; and autopsy results, when applicable. Next-of-kin interviews will be conducted on all non-traumatic/non-suicide fatalities that have occurred since January 1, 2006. Outreach and education will be provided to in-state and out-of-state groups about the WTC Fatality Investigation project and about the need to provide information on any fatality that occurs to a WTC responder. To assist with case ascertainment, BOH will expand upon current relationships with state agencies including health departments, current WTC medical monitoring and treatment programs, the WTC Registry, and with other groups involved with WTC activities.

**FATALITIES:** The New York State Department of Health (NYSDOH), Bureau of Occupational Health (BOH) proposes to maintain and enhance occupational fatality and lung disease surveillance, investigate work situations high risk for injuries, fatalities and lung diseases, and formulate and disseminate prevention strategies to those who can intervene in the workplace. BOH will expand upon the existing Fatality Assessment and Control Evaluation (NY FACE) program to reduce the incident of work-related fatalities and injuries in NYS by increasing awareness of workplace hazards, and improving safety practices and policies among workers, employers, health and safety professionals, and equipment manufacturers. BOH will also continue to utilize the Occupational Lung Disease Registry (OLDR) to conduct surveillance for occupational lung diseases in NYS, undertake prevention efforts aimed at reducing and eliminating occupational lung diseases in NYS, and evaluate the effectiveness of these efforts. BOH has adopted a general approach to integrate the prevention activities of its programs. This approach is guided by several principles on behavior change in the health and safety literature. In order to achieve the ultimate goal of reducing the occurrence of work-related illnesses, injuries and fatalities, it is necessary to change the knowledge, attitudes and behaviors of individuals within the working community. This is achieved concretely by intervening to increase awareness of workplace hazards among workers, changing workers' knowledge to prevent illnesses, injuries and fatalities, improving safety practices and compliance with safety programs, changing policies, improving safety programs and initiating engineering changes. These outcomes are represented by the goals established for the NY FACE and OLDR programs. In order to maximize the resources of BOH's programs, BOH plans to implement a decision logic model which should result in a more cost-effective program, enabling BOH to conduct more outreach while controlling costs. Several injury, fatality and lung disease incidents will be targeted each year for full site investigations. However, for a number of incidents that do not result in a full site investigation and where prevention information already exists, BOH will now utilize other information sources and partners to provide information specific to the event. This should allow BOH to reach a broader community within NYS. BOH plans to strengthen and enhance evaluation of the programs and materials as well, by determining if prevention materials and recommendations that are distributed are accepted and perceived useful by recipients, and if they result in changes in knowledge, workplace policies and behaviors.

**GERGELY**

U60OH008460

GERGELY, RITA

[rgergely@idph.state.ia.us](mailto:rgergely@idph.state.ia.us)*Occupational Safety and Health Surveillance in Iowa*

**FUNDAMENTAL:** The mission of the Iowa Department of Public Health (IDPH) is to promote and protect the health of Iowans. By establishing a surveillance system to monitor occupational illnesses and injuries in Iowa and by continuing the current surveillance system for the priority health condition of work-related fatal injuries, IDPH will be able to deliver effective prevention and education programs to Iowa's workforce. For the fundamental program, IDPH will collaborate with key stakeholders in academia, business, agriculture, and healthcare to establish the surveillance system. Initially, the system will be comprised of 15 indicators. Thirteen indicators are those required by the National Institute for Occupational Safety and Health (NIOSH) and consistent with past recipients of NIOSH funding to allow for comparison of Iowa to other states. The other two indicators to be included in the system are occupational exposure to anhydrous ammonia and commodity-production related agricultural injuries. Both relate to the prominence of the agricultural industry in Iowa. It is anticipated that Iowa will monitor additional indicators specific to the Iowa workforce in years two to five of the project period. Information gathered from surveillance activities will be published annually and made available on the IDPH website. IDPH is committed to improving the health of all Iowans through the delivery of the core functions and essential services of public health. To promote and protect the health of Iowans, IDPH needs data to make informed decisions and prioritize need. The goal of the Iowa Department of Public Health (IDPH) in developing and implementing a fundamental program to conduct occupational safety and health surveillance in Iowa is to improve the health of Iowa's workers by preventing occupational injuries and illnesses in Iowa. The goal for the priority health condition of work-related fatal injuries is to reduce the number of traumatic occupational fatalities in Iowa and the nation by establishing a fatal occupational injury surveillance system, conducting on-site investigations of the fatal incidents, identifying risk factors for such injuries, developing prevention strategies, and disseminating the results of these efforts. The program will achieve this goal through well-balanced surveillance and research activities and an information dissemination program. The Office of the State Medical Examiner at the Iowa Department of Public Health and the University of Iowa Injury Prevention Research Center will use their institutional strengths in forensic investigations, occupational medicine, epidemiology, industrial hygiene, agricultural engineering, and public health to identify strategies to prevent fatal injuries in the workplace.

**PESTICIDE:** The specific aims of IDPH in this project to develop and implement an enhanced Pesticide Poisoning Surveillance Program are to:

1. Establish and maintain a scientific advisory committee that includes appropriate state partners, local public health agencies, and other stakeholders to identify relevant Iowa-specific issues and priorities for pesticide poisoning surveillance.
2. Collect and investigate reports of pesticide poisoning.
3. Analyze pesticide poisoning surveillance data.

4. Publish pesticide poisoning surveillance results, interpretations, and conclusions.
5. Conduct an annual evaluation of the accomplishments and impact of the pesticide poisoning surveillance program.

The mission of the Iowa Department of Public Health (IDPH) is to promote and protect the health of Iowans. IDPH is committed to improving the health of all Iowans through the delivery of the core functions and essential services of public health. Goal Statement 6-13 and Action Steps 6-13.1 to 6-13.3 in Healthy Iowans 2010 (IDPH 2005) establish the reduction of pesticide poisoning in Iowa as a priority for IDPH in its mission to promote and protect the health of Iowans. Funding of the enhanced surveillance program will allow IDPH to conduct the following activities: Identify clusters/outbreaks and groups at high risk for pesticide-related illness/injury. Identify high-risk pesticide active ingredients and products associated with pesticide-related illness. Target regulatory, enforcement, consultative, or educational interventions to prevent and control pesticide-related illness/injury. Evaluate the effectiveness of prevention efforts. Data from the National Agricultural Statistics Service of the U.S. Department of Agriculture show that for 1999 to 2002, Iowa was second only to Illinois in pounds of herbicide applied to corn, and first among states in pounds of herbicide applied to soybeans. Statistics are not available for the pounds of herbicides, insecticides, and fungicides applied to turf, golf courses, gardens, homes, and fruit and vegetable production. However, the pounds of herbicide and pesticide applied to Iowa corn and soybeans alone are sufficient to show that the surveillance of pesticide poisoning should be a priority for Iowa.

**FATALITIES:** The goal for the priority health condition of work-related fatal injuries is to reduce the number of traumatic occupational fatalities in Iowa and the nation by establishing a fatal occupational injury surveillance system, conducting on-site investigations of the fatal incidents, identifying risk factors for such injuries, developing prevention strategies, and disseminating the results of these efforts. The program will achieve this goal through well-balanced surveillance and research activities and an information dissemination program. The Office of the State Medical Examiner at the Iowa Department of Public Health and the University of Iowa Injury Prevention Research Center will use their institutional strengths in forensic investigations, occupational medicine, epidemiology, industrial hygiene, agricultural engineering, and public health to identify strategies to prevent fatal injuries in the workplace.

## **HARRISON**

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*California Occupational Safety and Health Surveillance*

**FUNDAMENTAL:** The Fundamental Program seeks to provide the foundation for surveillance and intervention activities by generating new information from available data sources, developing collaborations that will enhance program operation and impact, and evaluating progress with the aim of ensuring overall coordination and effectiveness. The Fundamental Program will:

- Collect and analyze on an annual basis surveillance data for 19 occupational health Indicators and an employment demographics profile.
- Conduct an in-depth analysis of selected indicators to guide future program work.
- Continue and expand assessment of the electronic Workers' Compensation Information System as a useful data source for occupational health surveillance.
- Collaborate with state partners, local public health agencies, and other stakeholders to obtain input to guide the program and support to further program goals. This effort will involve creating an OHB Advisory Committee and holding meetings on a regular basis.
- Collaborate with other state occupational health programs and NIOSH through participation in the Consortium of Occupational State-based Surveillance (COSS) and Coordination Committee.
- Disseminate surveillance data, findings of case investigations, and intervention results through an annual publication for stakeholders and enhanced OHB website.
- Prepare an annual performance review of the accomplishments and impact of the occupational health program (Fundamental Program and priority health conditions) with recommendations for improving effectiveness.

ASTHMA: The Occupational Health Branch of the California Department of Health Services proposes to reduce work-related asthma (WRA) in California by maintaining and expanding state capacity for WRA surveillance and intervention. This will be accomplished by conducting an expanded, comprehensive program of public health surveillance activities that builds on the 12 year foundation of the existing program. The expanded WRA program seeks to further characterize and monitor WRA trends using new surveillance data sources, to conduct both case-based and targeted worksite investigations in high risk occupations, to develop and provide prevention recommendations, to further develop collaborations that will enhance program impact, and to evaluate the program to ensure effectiveness. The specific activities to be conducted over the next five years for the California WRA Program are to:

- Expand surveillance by evaluating the utility of two different sources of electronic workers' compensation data and hospital discharge data as case ascertainment tools and adding them for routine data collection if determined to be effective
- Utilize follow-up data to assess the efficacy of each new data source for satisfying the case definition
- Conduct extensive statistical analysis on ten years of WRA surveillance and interview data
- Use surveillance data to guide ongoing case-based investigations, and also conduct in-depth targeted investigations and sustainable interventions for work settings documented by surveillance data to be at high risk for WRA: health care, government office buildings, and schools
- Collaborate with state partners, local public health agencies, labor, industry and other stakeholders through an OHB Advisory Committee to guide surveillance and prevention efforts
- Collaborate with other state occupational health programs and NIOSH through participation in the Consortium of Occupational State-based Surveillance (COSS)



and the Coordination Committee

- Disseminate surveillance data, findings of case investigations, and intervention results through an enhanced OHB website, written materials, peer-reviewed publications, and presentations to a wide audience
- Evaluate program activities, outcomes, and outputs, including utilizing capture/recapture analysis to assess the extent of WRA in California

**PESTICIDE:** The Occupational Health Branch (OHB) of the California Department of Health Services (CDHS) proposes to prevent work-related pesticide illness by maintaining and expanding our current NIOSH-funded surveillance program for Occupational Pesticide Illness (OPI) as one of the four Priority Health Conditions submitted under the Expanded Program. California has had a 12-year history of NIOSH-funded cooperative agreements for State-based surveillance of OPI (1987-1992, 1997 to present). Over the next five years, we propose to maintain the existing model for the surveillance of OPI, and to implement new activities that will expand our previous work:

- Continue to conduct multi-source surveillance for OPI, relying on existing statewide provider-based reporting systems and expand case ascertainment to include reports from poison control centers, electronically reported workers' compensation data and electronic confidential morbidity reports.
- Continue to perform selected case-based investigations of agricultural incidents; targeted investigations of indoor pesticide applications and incidents involving pesticides for which there is little human data; and to recommend policy interventions affecting cholinesterase testing.
- Continue to collaborate with governmental agencies and other organizations to develop and implement strategies to prevent OPI, and continue outreach to employers, labor organizations, health care providers, and community-based organizations. This effort will involve creating an OHB Advisory Committee and holding meetings on a regular basis.
- Continue to collaborate with a diverse range of governmental agencies and other organizations to develop and implement OPI prevention strategies, as well as continue outreach to employers, labor organizations, health care providers, and community-based organizations.
- Continue to disseminate surveillance and case investigation findings to target audiences through a variety of methods including presentations, educational curricula, newsletters, field investigation reports, web site content, and peer-reviewed scientific publications.
- Continue to perform routine and formal evaluations of the OPI surveillance system for case ascertainment, case follow-up and field investigations, and information dissemination.

**FATALITIES:** The Occupational Health Branch (OHB) of the California Department of Health Services (CDHS) proposes to continue to build on our thirteen years of experience in California for conducting traumatic occupational fatality surveillance, investigation and intervention activities using the fatality assessment and control

evaluation (FACE) model. The objectives of the proposed California work-related injury fatality program (WRIF) are to identify work environments that place workers at high risk for fatal injury; identify the risk factors for these fatal injuries; and develop, disseminate and evaluate prevention strategies. Through an in depth analysis of data on interactions of the worker, the work environment, and work processes, the ultimate goal of the California WRIF program is to reduce the burden in California of traumatic occupational fatalities through the development of effective prevention measures. We seek to build upon our past experience in state-based fatality surveillance to increase the base of knowledge to prevent work-related injury deaths in California in the currently identified priority areas, as well as other occupations that we may identify as a result of data analysis or new prevention opportunities. Our long range goals are to develop prevention/intervention strategies aimed at reducing fatal injuries in the workplace. We propose a balanced program that includes occupational fatality surveillance, field investigation of priority category fatalities, and development and dissemination of preventive strategies. Specifically, we propose to continue to (1) implement a multi-source surveillance system to identify all traumatic occupational fatalities occurring within a specific region (Los Angeles County) in a timely fashion to allow investigation of targeted fatalities. We will continue to utilize established data management and quality control systems to ensure timely reporting of required data elements to the NIOSH Data Center in a uniform and compatible format. (2) conduct on-site investigations of specific traumatic occupational fatalities using the NIOSH FACE investigative model. Our protocol with specific criteria and rationale for the selection of on-site investigations will continue to be employed. (3) develop and evaluate prevention strategies for reducing the incidence of traumatic occupational injuries and fatalities at the State level. Prevention strategies will include dissemination of our findings and prevention recommendations through hazard alerts (FACE Facts), publication of reports on the OHB Web site, and publication of a scientific publication summarizing our data and selected investigations to date.

**HEUMANN**

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*Oregon Worker Illness & Injury Prevention Program*

FUNDAMENTAL: The Oregon Department of Human Services' Environmental & Occupational Epidemiology section (EOE) proposes to build a more comprehensive state-based occupational health surveillance system, the Oregon Worker Illness & Injury Prevention Program (OWIIPP). The Fundamental surveillance system goes beyond condition-specific surveillance and survey data to generate standard Occupational Health Indicators that include industry and occupation-specific information. OWIIPP will supplement and evaluate the standard Indicators with data from existing EOE surveillance data, including economic costs. OWIIPP will disseminate data that better characterize the magnitude, severity, causes and costs of worker injuries and illnesses in Oregon. Building on existing, extensive partnerships, EOE will engage additional stakeholders in prioritizing, developing and implementing intervention strategies. The formal mechanism for this communication will be the Occupational Health Surveillance Advisory Committee. OWIIPP will include extensive evaluation to

improve the fundamental surveillance model and its components. Data, methods, process and other findings will be widely shared, through the Consortium of Occupational State-based Surveillance and other mechanisms, to learn from and provide a model for other states conducting occupational health surveillance.

**FATALITIES:** The Oregon Fatality Assessment and Control Evaluation program (OR-FACE), beginning in late 2002, has successfully implemented the NIOSH objective for state-based surveillance, investigation, assessment, and outreach in order to prevent future occupational fatalities. With 2 years of complete data on fatalities, the ORFACE team is already implementing a variety of intervention strategies to promote safety in priority areas. The expanded fatality surveillance project allows the continued development of training materials, education and outreach, using the results of fatality surveillance, investigation and assessment. The research plan is designed to reflect the key components of successful injury surveillance and prevention programs. A multi-agency, multi-disciplinary approach has been used to identify occupational fatalities in the state, to investigate work situations where fatalities occur, to analyze root and contributing causes, and to formulate and disseminate prevention strategies to workers, employers, insurers, and health & safety professionals. The research plan is designed to maintain the current structure of OR-FACE activities in surveillance, investigation, assessment, and outreach related to traumatic occupational fatalities, while expanding prevention activities that target high-risk activities in specific industries and occupations for intensive intervention which may include training, education, engineering controls, and policy recommendations. The expanded fatality surveillance project will be conducted as a collaborative effort among academic researchers, industry experts, state, local and federal agencies, and a network of business, labor, community and professional contacts. The purpose of this study is to identify and describe all work-related deaths that occur in Oregon during the study period. Information collected during the study will be used to develop methods to prevent future deaths by understanding the underlying risk factors and cause of work-related deaths.

**BURNS:** The Oregon Department of Human Services' Environmental and Occupational Epidemiology section (EOE) will establish the Oregon Worker Illness and Injury Prevention Program (OWIIPP). OWIIPP will collaborate with a wide range of public and private partners to better understand and prevent occupational burn injuries. Data from sentinel providers and worker's compensation claims will be analyzed to characterize demographic patterns and causal factors in general and within specific industries and occupations. These data will be compared to and supplemented with hospital discharge measures generated in the Occupational Health Indicator #6. Economic costs and case rates will be calculated. Particular attention will be paid to special population of workers at risk of burn injury, including youth. Data for the target condition will be reviewed, and investigations conducted on selected case to identify underlying causes and potential new hazards. Analysis results and intervention recommendations will be shared with partners through the Occupational Health Surveillance Advisory Committee. EOE will work with these partners to prioritize and pursue strategies to prevent occupational burns in high-risk populations. The project will be evaluated for efficiency and usefulness of the model and its components. This

evaluation will serve to improve Oregon's surveillance system and demonstrate its reproducibility for other states. EOE's surveillance methods, data findings and intervention experiences will be disseminated through local publications, peer-reviewed journals, presentations, and shared with NIOSH and other states via the Consortium of Occupational State-based Surveillance.

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*New Mexico Occupational Health Surveillance*

FUNDAMENTAL: The goal of this funding is to continue and expand the occupational illness, toxic exposure, hazard, and injury surveillance program in the State of New Mexico. The fundamental program goals are to enhance existing surveillance infrastructure by refining data use agreements and incorporating other datasets with occupational health surveillance application, conduct analysis of existing datasets including, but not limited to, analysis using the "CSTE/NIOSH Occupational Health Indicators How to Guide", and to report data analysis results and program impacts to partners at NIOSH, CSTE, and the NM Department of Health, as well as to health care providers, workers, and labor and industry. Interventions for occupational illness and injury prevention will be conducted, and the NMOHR will work with the New Mexico Occupational Health and Safety Bureau, the state occupational health regulatory agency, for the analysis of data and intervention within the NMOHSB Local Emphasis Programs of silica, blood lead, and workplace violence.

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*Michigan Enhanced Program in Occupational Injury and Illness Surveillance*

FUNDAMENTAL: Michigan State University (MSU), the MIOSHA Program at the Michigan Department of Labor and Economic Growth (MDLEG), and the Michigan Department of Community Health (MDCH) have been collaborating in the conduct of state-based occupational health surveillance since 1988, when Michigan received a NIOSH grant for the NIOSH SENSOR Program. Building on these 16 years of experience, this application for the Fundamental Program proposes four specific aims to maintain and enhance occupational health surveillance activity in Michigan. These specific aims are designed to promote the overall goal of the Expanded program; the reduction of the occurrence and burden of work-related illnesses and injuries in the state. The four specific aims of the Fundamental Program are: 1) Collect, analyze, and publish surveillance data for Michigan's occupational health Indicators; 2) Implement three key occupational health surveillance recommendations contained in a report issued by MDCH in June 2004: Profiles of Occupational Injuries and Diseases in Michigan; 3) Maintain the surveillance reporting infrastructure and data systems for mandatory occupational disease reports submitted under the Michigan Public Health Code; and 4) Maintain and promote infrastructure for occupational health across

Michigan's public health, academic, and occupational health regulatory system, in partnership with stakeholders and the concerned public. The three recommendations in the 2004 Profiles report that will be implemented include:

(a) Publish summary data on occupational diseases and injuries annually, and issue an update of the Profiles report in 2009 (b) Conduct in-depth analyses in order to elucidate two findings in the Profiles report: that Michigan rates of injuries overall and of disorders of repeated trauma were consistently higher than national rates in data published by the Bureau of Labor Statistics, and (c) Improve surveillance data by the promulgation of new rules that require health care providers and laboratories to report all cases of injury or illness due to exposure to mercury, arsenic, cadmium and pesticides. There will be an interim and a final program evaluation in years three and five, respectively, based on CDC's framework for evaluating public health surveillance systems. MSU is designated the bona fide agency of the state for this Program, and will provide overall leadership and direction. MDCH staff will provide much of the data analysis and report writing for the Fundamental Program, as a contractor to MSU, under the guidance of the Principal Investigator at MSU. Legal authority to conduct occupational health surveillance and to protect Michigan's workforce is the responsibility of MDLEG, which will provide consultation to the Fundamental Program.

PESTICIDE: Michigan State University (MSU), the MIOSHA Program at the Michigan Department of Labor and Economic Growth (MMDLEG), and the Michigan Department of Community Health (MDCH) have been collaborating in the conduct of state-based occupational health surveillance since 1988, when Michigan received a NIOSH grant for the NIOSH SENSOR Program. Surveillance for work-related pesticides illness and injury began in 2001 at MDCH under the NIOSH "Core Occupational Health Surveillance" program. Building on 16 years of occupational health surveillance collaboration and four years of pesticide surveillance, this application for work-related pesticides surveillance proposes four specific aims, with the overall goal of reducing the occurrence and burden of work-related pesticide illness and injury. These aims are: (1) To continue surveillance for work-related pesticide illness and injury in Michigan. (2) To prioritize and expand ongoing compliance and consultative activity to prevent and reduce work-related pesticide exposure. (3) To integrate work-related pesticide illness and injury surveillance with related public health programs in Michigan. (4) To continue and expand on occupational pesticides surveillance collaborative activities among states and with NIOSH. Interventions to prevent additional exposure and illness will be conducted primarily by the Michigan Department of Agriculture (MDA), which has lead responsibility in the state for oversight of pesticide use, investigations into misuse, and enforcement and training for the federal Worker Protection standard for agricultural workers. MIOSHA has an agreement with MDA to delegate enforcement actions related to these authorities to MDA. Cases will be referred to MIOSHA for intervention in situations where MDA does not have jurisdiction. Prevention and intervention activities beyond enforcement activities are also included in this proposal. There will be an interim and a final program evaluation in years three and five, respectively, based on CDC's framework for evaluating public health surveillance systems. MSU is designated the bona fide agency of the state for this Program, and will provide overall leadership and direction. MDCH staff will carry out the management of

the reporting and follow up to pesticide illness reports. Legal authority to conduct occupational health surveillance and to protect Michigan's workforce is responsibility of MDLEG.

**ASTHMA:** Michigan State University in conjunction with the Michigan Department of Community Health and the Michigan Department of Labor and Economic Growth has been conducting state-based occupational safety and health surveillance since 1988. This proposal will continue and expand this activity. This proposal will fund a surveillance program for work-related asthma. The state has had a SENSOR funded project for work-related asthma since 1988. With SENSOR funding, overall occupational disease reporting has increased from less than 100 reports a year prior to 1988 to between 15,000 - 20,000 reports a year. Since initiation of surveillance 2,074 cases of work-related asthma have been confirmed. Five hundred and eighty-eight follow back industrial hygiene inspections have been conducted, and 8,443 fellow workers interviewed during these inspections. The confirmation process industrial hygiene inspections and fellow worker interviews will be continued. Sixty different quarterly newsletters and 13 annual reports have been written and mailed out to approximately 3,000 targeted physicians and health care professionals. There has been 100% reporting from the 156 acute care hospitals in the state. Active outreach to encourage reporting will be continued. Additional activity that will continue will include presentations and display booths at medical meetings, publishing papers in the medical literature on worked-related asthma and working with other state organizations such as the medical licensing board to publicize Michigan's occupational disease reporting law. There will be the evaluation of the effectiveness of this surveillance system to improve working conditions. All the above basic surveillance activity will continue over the next 5 years. The State of Michigan has had a long standing work-related asthma surveillance program and is aware of many although not all of the significant exposures in the state that cause work-related asthma. We will initiate several new projects to address previous identified problems: expanding our use of workers' compensation data, conducting follow-back interviews of previously confirmed asthma cases, conducting follow-back interviews of fellow workers of the index case, evaluation of reasons for under reporting by health care providers, evaluation of the effectiveness of OSHA enforcement inspections in response to cases of work-related asthma and a project to investigate the reason(s) for the increased incidence of work-related asthma among African-Americans.

**SILICOSIS:** Michigan State University in conjunction with the Michigan Department of Community Health and the Michigan Department of Labor and Economic Growth has been conducting state-based occupational safety and health surveillance since 1988. This proposal will continue and expand this activity. This proposal will fund a surveillance program for silicosis. The state has had a SENSOR funded project for silicosis from 1988-1992 and from 2002 to date. With this funding, overall occupational disease reporting has increased from less than 100 reports a year prior to 1988 to 15,000 - 20,000 reports a year. The state continued silicosis surveillance without SENSOR funds from 1993 to 2001. Nine hundred twenty four cases of silicosis have been confirmed since the

initiation of surveillance. Seventy-nine follow-back industrial hygiene inspections have been conducted. Both the confirmation process and industrial hygiene inspections will be continued. There has been 100% reporting from the 156 acute care hospitals in the state. Sixty different quarterly newsletters and 13 different annual reports have been written and mailed out to approximately 3,000 targeted physicians and health care professionals. Active outreach to encourage reporting will be continued. Additional activity that will continue will include presentations and display booths at medical meetings, publishing papers on silicosis and working with other state organizations such as the medical licensing board to publicize Michigan's occupational disease reporting law. The effectiveness of our effort to reduce silica exposure levels will continue to be evaluated. All the above basic surveillance activity will continue over the next 5 years. The State of Michigan has had a long-standing silicosis surveillance program and is aware where the risk of silica exposure is in the state. Accordingly, in addition to the ongoing surveillance which allows us to both target and monitor our intervention program we will initiate several new projects to address previously identified problems: implementation of contract language for highway reconstruction; resurvey of abrasive blasters; inspection of foundries; underreporting surveys; mine education program; and an assessment of increased risk of silicosis in African-Americans.

**FATALITIES:** Michigan State University in conjunction with the Michigan Department of Community Health and the Michigan Department of Labor and Economic Growth has been conducting state-based occupational safety and health surveillance since 1988. This proposal will continue and expand this activity. This competitive supplement proposal will fund a surveillance program for work-related fatal injury. The state has had NIOSH funded surveillance projects since 1988. With this funding occupational disease reporting has increased from less than 100 reports a year prior to 1988 to 15,000-20,000 reports a year. The state has had a NIOSH funded project in work-related fatal injury since 2002. Michigan conducted work-related fatal injury surveillance with state funds from late 2000 to 2002. Since initiation of surveillance, 605 work-related fatal injuries have been confirmed. Sixty-six fatality investigations have been conducted. The confirmation process and fatality investigations will be continued. Forty-five presentations have been made to labor, and trade association groups. Seventy-nine fatality summaries, 6 hazard alerts, and an annual report each year (total 4 different reports) have been written and distributed to targeted groups including labor unions, employers, health and safety professionals, emergency responders, state and local agencies and vocational teachers and health care professionals. A website with all the educational material and reports we have prepared has been and will be maintained in the future. Active outreach and dissemination of information will be continued. Evaluation of the effectiveness of our effort to improve working conditions will also continue. In addition, to the above basic surveillance we will be expanding our outreach, followback and evaluation activity. New activities include: 1) A project to address work-related fatal injuries in temporary employees; 2) Involvement of engineering students in designing equipment to prevent future fatal injuries; and 3) Expansion of efforts to evaluate our impact.

**ST. LOUIS**

U60OH008463

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[thomas.st.louis@po.state.ct.us](mailto:thomas.st.louis@po.state.ct.us)*Connecticut State-Based Surveillance Capacity in Occupational Health*

FUNDAMENTAL: The primary objective of this proposed project is to maintain established capacity for occupational disease surveillance in Connecticut. This surveillance capacity includes not only the ability to collect and analyze data pertaining to occupational diseases through the CT Occupational Disease Surveillance System, but also the ability to utilize the results of those analyses to target specific intervention activities. In addition, the degree to which information exchange is established and maintained between the Connecticut Department of Public Health Occupational Health Program and its partners interested in protecting worker health within our state, regionally, and nationally is critical to the continued success of the program. We propose to achieve this primary objective through activities focused on addressing the specific aims of the proposed project, which are: 1) to continue longitudinal analysis of occupational disease underreporting in Connecticut through comparison of existing data sources; 2) to continue longitudinal analysis of the occupational health indicators for Connecticut; 3) to expand surveillance activities for work-related carbon monoxide poisoning and mercury poisoning and continue expanded surveillance activities for occupational asthma; 4) to broaden the representation and scope of duties for the Connecticut Occupational Health Advisory Group; and 5) to maintain regional collaboration with occupational health partners from the other Northeast states on specific surveillance activities, including expanded analysis of selected occupational health indicators. These specific aims have been developed to support the current capacity for occupational disease surveillance in Connecticut and to maintain continuity in existing surveillance and intervention programs for the duration of the project period. These programs and the staff they support provide the basis for the protection of worker health in Connecticut, not only through surveillance and intervention activities but also through the generation of ideas of how to make our program activities more efficient, effective, and beneficial to the health of the Connecticut workforce.

**VALIANTE**

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[DAVID.VALIANTE@DOH.STATE.NJ.US](mailto:DAVID.VALIANTE@DOH.STATE.NJ.US)*Fundamental and Expanded Occupational Health Surveillance*

FUNDAMENTAL: The New Jersey Department of Health and Senior Services (NJDHSS) Occupational Health Surveillance (OHS) Program proposes to conduct comprehensive population-based surveillance of established occupational health indicators in order to estimate their magnitude and trends, and evaluate existing occupational health surveillance systems in order to enhance data collection, prevention, and intervention activities in the state.

NJDHSS will maintain and expand data collection for 13 specified occupational



health indicators. The indicators will be completed using the directions provided by CSTE's "How To Guide." The indicators will be completed for all years starting with year 2000. NJDHSS will perform an annual analysis of the occupational health indicators including yearly numbers and trends over time. Further analysis will be completed for indicator data outliers. An end result of completing the occupational health indicators will be the dissemination of an annual indicators summary report to interested parties in New Jersey. NJDHSS will work with other state health departments on a regional and national level to produce reports combining indicator data from all states. NJDHSS will conduct additional surveillance of occupational injuries and illnesses among the Hispanic and African-American workforce using the occupational health indicators framework. NJDHSS will focus on the 5 of the 13 indicators where we have current access and experience with the database and historical data. An annual analysis and report on these special populations will include annual numbers and rates, trends over time, primary exposure agents, primary industries, and occupations. NJDHSS will use New Jersey's Hospital Discharge Data (HDD) and Emergency Department Data (EDO) real-time data system in order to identify cases of reportable occupational injuries, illnesses, and poisonings. The HDD and EDO systems will provide data on the number and types of occupational injuries, illnesses, and poisonings occurring in New Jersey. These analyses of HDD and EDO data will culminate in two separate annual reports and a five-year cumulative report that will be disseminated to public health groups.

**ASTHMA:** The New Jersey Department of Health and Senior Services (NJDHSS) Occupational Health Surveillance (OHS) Program proposes to conduct comprehensive surveillance of work-related asthma in New Jersey. The overall goal of this proposal is to identify cases of work-related asthma, evaluate agents and exposures associated with the cases, identify new agents and causes, and implement preventive measures to reduce and eliminate work-related asthma in New Jersey. This occupational disease surveillance system follows a model comprised of four principal components: a selected target condition, health data sources for case identification and reporting, a surveillance center to collect and evaluate case data, and targeted intervention activities using case data. Cases of work-related asthma will be identified from hospital discharge data, emergency department data, physician/advanced practice nurse/physician assistant reporting system, workers' compensation data, and death certificate data. NJDHSS will conduct industrial hygiene evaluations at the companies identified by our work-related asthma surveillance. This intervention process includes employer telephone contact to collect preliminary information, an on-site industrial hygiene evaluation of the workplace, a report of findings for the company with recommendations for preventing exposure to the suspected asthmagen, and a follow-up evaluation to determine company action pertaining to the NJDHSS intervention. Three industry-wide interventions will be conducted under the workrelated asthma surveillance system. NJDHSS will work with various partners and stakeholders in work-related asthma surveillance. The objective of this surveillance component is to provide outreach and education aimed at increasing recognition, identification, and prevention of work-related asthma both nationally and in New Jersey.

**SILICOSIS:** The New Jersey Department of Health and Senior Services (NJDHSS) Occupational Health Surveillance (OHS) Program proposes to conduct comprehensive surveillance of silicosis in New Jersey. The overall goal of this proposal is to identify cases of silicosis, evaluate exposures associated with the cases, identify new industries and sources of exposure, and implement preventive measures to reduce and eliminate silicosis in New Jersey. This occupational disease surveillance system follows a model comprised of four principal components: a selected target condition, health data sources for case identification and reporting, a surveillance center to collect and evaluate case data, and targeted intervention activities using case data. Cases of silicosis will be identified from hospital discharge data, death certificate, physician/advanced practice nurse (APN)/physician assistant (PA) reporting system, workers' compensation data, and emergency department visit data, data. Additional data for the case are collected from patient interviews, reporting physician/APN/PA, medical record review, chest X-ray classification, and work/exposure history evaluation. All available information is then evaluated to confirm and classify the case of silicosis. NJDHSS will conduct industrial hygiene evaluations at companies identified by our silicosis surveillance. This intervention process includes employer telephone contact to collect preliminary information, an on-site industrial hygiene evaluation of the workplace, a report of findings for the company with recommendations for preventing exposure to crystalline silica, and a follow-up evaluation to determine company action pertaining to the NJDHSS intervention. NJDHSS will work with various partners and stakeholders in silicosis surveillance. The objective of this surveillance component is to provide outreach and education aimed at increasing recognition, identification, and prevention of silicosis both nationally and in New Jersey.

**FATALITIES:** The overall goal of this proposal is to reduce fatal occupational injuries in New Jersey. This will be accomplished through a series of aims and objectives following four principal surveillance components: selected target condition, health data sources for case identification, a data center to collect and evaluate case data, and targeted intervention activities using case data. Major aims are to maintain the NJ Fatal Occupational Fatality Surveillance System through continued collaboration with established data sources, conduct field investigations of in-scope fatalities to identify risk factors and safety engineering issues, develop prevention recommendations and on-site interventions, conduct statistical analysis of the fatality database, and to conduct outreach and disseminate educational materials to targeted groups and individuals. A system that track fatal work-related injuries in New Jersey will allow to not only prevent these fatalities but also to reduce the number of workers who suffer severe non-fatal injuries that lead to temporary and long-term disability. This tracking system will also allow to recognize groups of workers that are more likely to suffer these injuries and develop special programs to help them.

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*Texas Occupational Health and Safety Surveillance*

**FUNDAMENTAL:** The major goal of this project is to collect, analyze, and share data related to occupational health and safety in Texas. The fundamental project focuses on 13 occupational health indicators - as identified by the Council of State and Territorial Epidemiologists. A long-term objective of the fundamental project is to participate in the establishment of a comprehensive, nationwide system of state-based occupational injury and illness surveillance. Texas is one of the largest states, both geographically and demographically, and as such, is an important component in the development of a nationwide system. The focus of the fundamental part of this project will be on examining and sharing data so that occupational health partners in the state can determine priority conditions for the state. Two intervention projects addressing priority conditions in the state will be selected and implemented. An annual report, which outlines and analyzes the latest findings and describes the accomplishments and impact of this surveillance program, will be published.

**PESTICIDE:** The expanded program will focus on the priority condition of pesticide exposure. The aims here are to maintain and enhance current follow-up and investigation procedures for reported exposures; develop new protocols and educational materials for workplace intervention especially in industries that are considered high-risk; and enhance case ascertainment, which recently incorporated occupational exposures to disinfectants. To increase case ascertainment, we will continue to maintain strong reporting ties and develop new agreements, requesting pesticide exposure reports from specific employers. We will also continue to collaborate with NIOSH and other states to identify targeted occupations and associated risk factors, and to develop prevention strategies accordingly. In addition, new collaborative ties will be developed through the regional ad-hoc pesticide committees and reporting relationships with key community partners in underserved populations and at-risk communities will be enhanced.