

GUIDELINES FOR MINIMUM AND COMPREHENSIVE STATE-BASED PUBLIC HEALTH ACTIVITIES IN OCCUPATIONAL SAFETY AND HEALTH



DEPARTMENT OF HEALTH AND HUMAN SERVICES
Centers for Disease Control and Prevention
National Institute for Occupational Safety and Health



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GUIDELINES FOR MINIMUM AND COMPREHENSIVE STATE-BASED PUBLIC HEALTH ACTIVITIES IN OCCUPATIONAL SAFETY AND HEALTH

Prepared by

Martha Stanbury, MSPH: Michigan Department of Community Health (Primary author)
Henry Anderson, MD and Pamela Rogers, MPH: Wisconsin Division of Public Health
David Bonauto, MD, MPH: Washington State Department of Labor and Industries
Letitia Davis, ScD: Massachusetts Department of Public Health
Barbara Materna, PhD, CIH: California Department of Public Health
Kenneth Rosenman, MD: Michigan State University

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Foreword

The Occupational Safety and Health Act of 1970 established the National Institute for Occupational Safety and Health (NIOSH) and mandated as its goal that “every working man and woman in the nation” will have “safe and healthful working conditions.” NIOSH has long recognized that close collaboration with state agencies equally committed to the prevention of work-related disease and injury is key to attaining this goal.

The Council of State and Territorial Epidemiologists (CSTE), composed of representatives from all state and territorial health departments, has a longstanding partnership with the Centers for Disease Control and Prevention in disease prevention activities. CSTE has developed these “Guidelines for Minimum and Comprehensive State-based Public Health Activities in Occupational Safety and Health,” a revision and update of a 1995 NIOSH document, to foster the development of state and territorial health departments’ efforts to prevent occupational disease and injury.

NIOSH strongly supports this CSTE effort. We look forward to continued and close collaboration with state and territorial health departments and other state agencies as they design, implement, evaluate and augment their occupational health and safety surveillance and prevention programs.



Christine M. Branche, Ph.D.
Acting Director
National Institute for Occupational
Safety and Health
Centers for Disease Control
and Prevention



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National Headquarters
2872 Woodcock Boulevard | Suite 303
Atlanta, Georgia 30341
770.458.3811 | fax 770.458.8516

www.cste.org

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Dear Colleagues,

This document provides valuable guidance for developing a range of state-based public health programs occupational illness and injury prevention. It is an update of a 1995 publication and was prepared by members of the Occupational Health Surveillance Workgroup of the Council of State and Territorial Epidemiologists (CSTE).

The minimum recommended state-level approaches in the Guidelines describe public health activities in occupational injury and illness prevention that can be performed at a minimal cost using existing staff and data. The comprehensive state-level approaches suggest areas for expansion as resources become available.

Occupational injuries and illnesses are preventable. The first step to prevention is to know the how, why and when of the health condition. The Guidelines highlight the fundamental importance of public health surveillance data or, to use the term from Institute of Medicine, “assessment” as one of the three core functions of public health practice. State health departments have been practicing disease surveillance for the past 100 years. It is something we do well. Strong, state-based public health surveillance systems for occupational diseases and injuries are needed to provide critical data not available in national data systems. Advances in available electronic health data systems in the past ten years have greatly expanded opportunities for state-based occupational health surveillance activities.

In some ways occupational injuries and illnesses are easier to address than other preventable conditions because often the risks can be controlled through better engineering design rather than requiring individual behavior change. However, like other aspects of public health, there can be complex social interplay that may impede effective prevention. The second section, “policy development,” describes minimum and comprehensive activities to address and mobilize social forces to promote occupational safety and health.

Finally, in accord with the third core function of public health - “assurance” - the Guidelines describe a range of state-level approaches to occupational injury and illness prevention, many of which are now possible because of the near universal accessibility of information and communications tools through the Internet. Furthermore, successful prevention strategies that have been developed by a core group of state programs for over 10 years can readily be shared with all states.

CSTE thanks the members of the Occupational Health Surveillance Workgroup for their thoughtful and timely update to the Guidelines.

Eddy Bresnitz, MD, MS
President

Purpose

This document provides a vision and framework for state-based public health programs in occupational illness and injury prevention. Its purpose is to guide states in designing new occupational health programs or enhancing existing programs by presenting a range of successful strategies that can be adopted. The overall aim of the guidelines is to move every state in the nation forward to have at least a minimum level of capacity in occupational illness and injury prevention within its public health infrastructure.

These guidelines update a document published in 1995 by the National Institute for Occupational Safety and Health (NIOSH)¹ that was developed by a committee of the Council of State and Territorial Epidemiologists (CSTE). It proposed minimum and comprehensive public health-based approaches to occupational illness and injury prevention by states. State-based public health programs in occupational health have developed and evolved appreciably in the decade since the 1995 document, having been affected by the accumulation of experiences by increasingly sophisticated occupational health practitioners at the state level and by larger events and innovations in public health, including the application of information technology systems and use of the Internet. These developments are reflected in this revision to the 1995 *Guidelines* document.

Background

The Federal Occupational Safety and Health Administration (OSHA), state OSHA programs, and the Mine Safety and Health Administration (MSHA), which enforce workplace health and safety standards, have long been viewed by the public as the government agencies with primary responsibility for worker safety and health at the state and local levels. These regulatory agencies play a central and essential function in protecting worker health.

However, promulgation and enforcement of workplace safety and health regulations are only one component of a comprehensive, integrated public health approach to workplace health and safety. State public health agencies have a critical and complementary role in

1 Stanbury M, Rosenman KD, Anderson H. *Guidelines: Minimum and Comprehensive State-Based Activities in Occupational Safety and Health*. DHHS NIOSH Publication No. 95-107, 1995. Available at www.cste.org.

the prevention of occupational illnesses and injuries.² They do this by applying public health surveillance tools to identify problems, target interventions, and evaluate programs to reduce occupational illness and injury morbidity and mortality, and by applying public health approaches to protect the health of working populations. The public health approach to the prevention of work-related illnesses, injuries, and fatalities rests on the scientific rigors of epidemiology and medicine and related public health disciplines including program evaluation and culturally sensitive health communications. The statutory, regulatory, and philosophical commitment of public health to protect and promote the health of the public, especially vulnerable groups that may fall outside the jurisdiction of state or federal OSHA or MSHA, is accomplished not only by the actions of public health agencies but also by collaborations with other agencies and by mobilization of other sectors of society.

The National Institute for Occupational Safety and Health (NIOSH) within the Centers for Disease Control and Prevention (CDC) recognized the key importance of state public health approaches to occupational health and began providing funding in the 1970s for some pilot occupational health surveillance programs in a limited number of state health departments. Since that time NIOSH has funded a variety of approaches to build state capacity in occupational safety and health, ranging from the development of population-based and case-based surveillance systems, to creating focused public health interventions addressing the occupational health needs of high-risk and special populations such as minorities and teen workers. State programs have demonstrated that effective surveillance of occupational illness and injury embraces the concept of “information for action” by ensuring that collection, analysis, interpretation, and dissemination of health data are linked to prevention and control activities. Examples of these successes can be found on individual states’ occupational health Websites and in published literature.³ In 2007, 15 states had funding from NIOSH for at least one full-time equivalent staff person dedicated to occupational health, and an additional 25 states had small contracts with NIOSH to collect laboratory data on adult blood lead tests. Some states have been able to leverage the successes of their NIOSH-funded programs to obtain support from other sources.

2 Davis L. The role of state and local health departments. In: Levy BS, Wagner GR, Rest KM, Weeks JL, eds. *Preventing Occupational Disease and Injury*. American Public Health Association. 2005. p. 63.

3 In-depth case studies of state-based occupational public health programs for six specific conditions can be found in Maizlish NA, ed. *Workplace Health Surveillance: An Action Oriented Approach*. New York: Oxford University Press, 2000.

Organization of this document

The National Research Council described the three core functions of public health in its 1988 publication, *The Future of Public Health*, as assessment, policy development, and assurance.⁴ This document outlines minimum and comprehensive public health approaches to occupational public health in three sections that correspond to these three core public health functions.

All of the approaches presented here have been tested by at least one state-based occupational public health program. Minimum activities should be achievable with one full-time person who has some epidemiology training and a basic knowledge of occupational health and safety principles and resources. A comprehensive program would require additional investment in infrastructure. Web links to resources for further information, including links to state contacts and their Websites, are listed at the end of the document. All of the referenced Websites contain examples of data collection and analysis, educational materials, and program descriptions.

4 Institute of Medicine. *The Future of Public Health*. Washington DC: National Academy Press, 1988.

I. Assessment

The foundation for public health activity in occupational illness and injury prevention rests on a comprehensive and integrated approach to the collection and analysis of occupational illness and injury data. An occupational health surveillance program should be able to identify specific cases of illness, injury, or hazardous exposure that require a public health response; identify illness and injury patterns that suggest problem areas; monitor trends over time; and help evaluate effectiveness of interventions.⁵

“...every public health agency [should] regularly and systematically collect, assemble, analyze, and make available information on the health of the community, including statistics on health status....”
(*The Future of Public Health*, p. 7)

Historically, public health surveillance has been based on state-level statutory and regulatory requirements for health care provider/institution reporting of individuals with diseases of public health concern to state and local public health agencies. All states have laws and regulations for the reporting of individuals with communicable diseases.⁶ This is not the case for reporting of work-related illnesses and injuries, where reporting requirements vary widely among states. Some state public health codes mandate reporting of only one or more specific occupational diseases or injuries, some mandate reporting of all occupational illnesses and injuries, and some have no occupational illness and injury reporting requirements at all. The one national system for statistics on non-fatal occupational illnesses and injuries, the Bureau of Labor Statistics Annual Survey of Occupational Illness and Injury, is based on employer reporting of numbers of ill or injured workers and does not include any illness or injury data collected within the public health infrastructure. Relying on the Bureau of Labor Statistics system has many limitations, including the exclusion of data on the self-employed and public employees in the 24 states where public employees are not covered by OSHA, major underestimates of work-related diseases, and reliance on a statistical sample rather than a census of illnesses and injuries.⁷

5 Baker EL, Matte TO. Surveillance of occupational illness and injury. In: Halperin W, Baker EL and Monson RR, eds. *Public Health Surveillance*. New York: Van Nostrand Reinhold, 1992.

6 Thacker SB. Historical developments. In: Teutsch SM, Churchill RD, eds. *Principles and Practice of Public Health Surveillance*. New York: Oxford University Press, 1994.

7 Azaroff LS, Levenstein C, Wegman DH. Occupational injury and illness surveillance: conceptual filters explain underreporting. *Am J Public Health* 2002; 92:1421-9.

It is well recognized that no single data source, including health care provider reporting that is mandated by public health laws and regulations, will provide a comprehensive view of work-related illnesses and injuries. Public health agencies have access to a wide variety of data sources on which occupational illness and injury surveillance systems can be built. Mandatory requirements for the reporting of illness and injury allow for the identification and follow-up with named individuals, other affected employees, and their employers. Administrative databases established for other purposes are useful, even in the absence of mandatory reporting requirements specific for occupational illnesses and injuries.

These include death certificates, hospital discharge data, emergency department records, cancer registry data, workers' compensation records, poison control centers' data, and medical examiners' records.

Recently, the concept of "health indicators" has been applied successfully to occupational health surveillance. Indicators are specific measures of work-related illnesses, injuries, and factors associated with occupational health that can be generated using state-specific data to track trends in the occupational health status of the working population. The methodology for generating a set of 19 Occupational Health Indicators (listed in the Appendix) was developed by the CSTE Occupational Health Surveillance Work Group and federal representatives,⁸ and this methodology was used to generate the data for the Occupational Health Indicator publication *Putting Data to Work: Occupational Health Indicators from Thirteen Pilot States for 2000*.⁹ CSTE has continued to develop and apply Occupational Health Indicators, and additional years of Occupational Health Indicator data are on the Website of CSTE (www.cste.org/occupationalhealth.asp).

Recommended State-Level Approaches

Minimum

- Develop a profile of state-specific characteristics associated with work and occupational risks, including the distribution of industry and occupation types and worker demographics.
- Access and assess available health data sources and population (denominator) data for their strengths and limitations for occupational health surveillance.
- Regularly compile and disseminate existing data to stakeholders and the public on the magnitude, trends, and risks for occupational illnesses and injuries in the state. Dissemination modalities should include Web postings at a minimum.

8 *Occupational Indicators: A Guide for Tracking Occupational Health Conditions and their Determinants*. Council of State and Territorial Epidemiologists, updated August 2006. Available at www.cste.org.

9 *Putting Data to Work: Occupational Health Indicators from Thirteen Pilot States for 2000*. Council of State and Territorial Epidemiologists, October 2005. Available at www.cste.org

- Using validated methodologies, periodically generate those Occupational Health Indicators that are within the scope of available data and resources in the state.⁸
- Review surveillance reports within the public health agency to identify opportunities for inserting data related to the occupational health aspects of these subjects.

Comprehensive: In addition to the previous

- Guided by state-specific priorities for illness and injury surveillance, advocate for mandatory health care provider reporting of occupational illnesses and injuries and laboratory reporting of tests (e.g., lead and other heavy metals) related to occupational exposure.
 - Compile case reports in secure, electronic data files.
 - Conduct sufficient follow-up with reported cases to identify worksites where exposure occurred and to determine whether others are at risk.
- Advocate for the inclusion of information, including employer, industry, and occupation, about work-related health conditions in state health data sources.
- Advocate for mandatory coding of cause and place of injuries (“External-cause-of-injury” codes) in state hospital discharge and emergency department databases.
- Periodically compile and disseminate data to stakeholders and the public on the magnitude, trends, and risks in occupational illnesses, injuries, and hazards, including interpretation of significant findings relevant for prevention activities and generation of new hypotheses.
- Develop and implement targeted, condition-specific surveillance systems that are consistent with recommendations from CSTE¹⁰ and/or specific interests of state stakeholders. Include collection of in-depth information on the causes and associated risk factors of the conditions under surveillance.
- Collaborate with other states and NIOSH to make state-based data available nationally in useful, standardized formats. At a minimum this includes annual generation of all Occupational Health Indicators developed by the CSTE Occupational Health Surveillance Work Group.

10 *The Role of the States in a Nationwide Comprehensive Surveillance System for Work-related Diseases, Injuries, and Hazards*. Council of State and Territorial Epidemiologists, July 2001. Available at www.cste.org.

II. Policy Development

Public health policies in occupational health are often intertwined with complex legal and regulatory issues. Leadership to ensure that the public interest in occupational health is served requires not only technical knowledge and professional expertise, but also sensitivity to larger political issues.

Specific strategies can be developed to promote comprehensive public health policy making in occupational health. Institutionalized communications within public health and other

“...every public health agency [should] exercise its responsibility to serve the public interest in the development of comprehensive public health policies by promoting use of the scientific knowledge base in decision-making about public health and by leading in developing public health policy.”
(*The Future of Public Health* p. 8)

governmental agencies and among businesses, unions, and other public constituencies are essential. These communications can be accomplished through regular mailings, formal advisory boards, stakeholder workgroups assembled to address specific issues, or other outreach strategies. Sound policy development comes from informed and educated stakeholders, governmental officials, and the general public.

Recommended state-level approaches

Minimum

- Develop and maintain a contact list (e.g., e-mail, address list) of stakeholders in the public and private sectors. This list should be used to target dissemination of reports with surveillance findings and of other materials.
- Develop working relationships with other state and federal agencies conducting occupational health activities to promote actions that address problems identified through surveillance.
- Develop working relationships within the state health agency to promote awareness of occupational health issues by other public health programs.
- Develop and maintain a site on the state’s Web system that serves as a portal for scientifically sound information about occupational health issues in the state and nationally.

Comprehensive: In addition to the previous

- Collaborate with stakeholders in establishing statewide public health objectives for occupational health based on local, state, and federal health priorities (e.g., *Healthy People 2010* objectives).
- Publish a document that establishes long-range goals and objectives for occupational public health for the state, sets priority areas for surveillance and intervention, and proposes resource allocation.
- Develop or support enabling legislation, regulations, and policies. These may include establishment of a state-funded occupational public health program, minimum standards in occupational health for local health departments, extension of federal OSHA regulations to public employees, and provisions for state-funded occupational health clinic services.
- Implement strategies (e.g., serve on advisory committees, serve as technical advisor on occupational health issues to public health leaders or to other public health programs) to ensure that occupational public health issues and programs are integrated into the full range of public health programs in the state, including those on chronic illness and injury control, environmental health, communicable disease, and emergency preparedness.
- Develop programs and working relationships to mobilize and support initiatives among prevention partners (e.g., OSHA) and other stakeholders to promote occupational illness and injury prevention and control.
- Develop program capacity and flexibility to identify and respond to emerging occupational hazards, issues, or unique prevention opportunities.

III. Assurance

An array of strategies is needed to protect the workforce, including enforcement of applicable laws and regulations; professional, employer, and worker education; technical consultation on design of health and safety programs; hazard reduction activities such as ventilation design and ergonomics; assurance of the linkage to medical services; and research to evaluate the impacts of interventions and to answer etiologic questions. These activities require

“...Public health agencies [should] assure their constituents that services necessary to achieve agreed upon goals are provided, either by encouraging actions by other entities (private or public sector), by requiring such action through regulation, or by providing services directly.” (*The Future of Public Health* p. 8)

expertise from a variety of disciplines, such as industrial hygiene, safety engineering, ergonomics, behavioral sciences, health education, occupational health nursing, occupational medicine, biostatistics, and toxicology. Individuals with these kinds of expertise are usually found in agencies other than public health and in the private sector. Mobilizing partnerships across agencies and sectors is thus essential to achieve public health prevention goals in occupational health. As an occupational public health program grows, it can expand from its core epidemiology staff to staff with expertise in some of these other disciplines.

In addition, the state occupational public health program should ensure that public health agencies in local governments have sufficient expertise and resources to meet informational needs of their constituencies, be knowledgeable about available resources at the state and federal levels, and be able to provide appropriate referrals for technical assistance.

Recommended State-Level Approaches

Minimum

- Maintain sufficient expertise, Web-based or written materials, and lists of resources so that inquiries from the public about the nature, causes, and control of adverse health effects of occupational hazards can be addressed or referred appropriately.
- Maintain sufficient technical expertise to provide referrals in response to reports of particularly serious occupational injuries or illness that signal a need for immediate intervention to prevent additional morbidity.

- Allocate sufficient funds to support office functions, ensure access to occupational health data, maintain the occupational health Website, print and mail materials, and enable staff to attend an annual meeting with other states' occupational public health staff.
- Assign one epidemiologist to function as the occupational health epidemiologist, and designate that person to serve as liaison with NIOSH and with the other state occupational epidemiologists.

Comprehensive: In addition to the previous

- Promote enforcement and, where indicated, revision of pertinent laws and regulations by evaluating the effectiveness of the regulatory authority to reduce work-related risks.
- Compile a comprehensive library of educational materials and technical resources and make it available to stakeholders throughout the state.
- Ensure follow-back to worksites identified by occupational illness and injury surveillance data as sources of hazards to identify and ameliorate hazardous conditions, especially worksites associated with vulnerable groups of workers that fall outside the jurisdiction of regulatory agencies.
- Ensure that lessons learned from worksite follow-back are disseminated to empower employers and employees in similar at-risk occupations/industries to implement prevention strategies, including engineering and administrative controls, personal protective equipment, and worker education.
- Develop linkages with academic medical centers to promote medical education and research in occupational safety and health and the development of hazard control strategies.
- Assign one or more professionals in the disciplines of industrial hygiene, health education, safety engineering, occupational medicine, occupational health nursing, and toxicology to the occupational public health program.
- Allocate sufficient funds to support program operations, conduct field investigations, develop and evaluate education and intervention programs, and maintain a competent occupational public health workforce.
- Promote workforce development, including, for example, support for mentoring, internship, and fellowship programs.
- Implement process and outcome evaluation measures for the occupational public health program.

Web Links for Additional Information

Web links to state occupational public health programs are at:
www.cste.org/OH/OHwebsites.asp

Web links to NIOSH publications on occupational health surveillance are at:
www.cdc.gov/niosh/topics/surveillance/survpubs.html

Appendix

Occupational Health Indicators: 2007

Employment Demographic Profile

- Non-fatal injuries and illnesses reported by employers
- Work-related hospitalizations
- Fatal work-related injuries
- Amputations reported by employers
- Amputations identified in state workers' compensation systems
- Hospitalizations for work-related burns
- Musculoskeletal disorders reported by employers
- Carpal tunnel syndrome cases identified in state workers' compensation systems
- Pneumoconiosis hospitalizations
- Pneumoconiosis mortality
- Acute work-related pesticide poisonings reported to poison control centers
- Incidence of malignant mesothelioma
- Elevated blood lead levels among adults
- Workers employed in industries with high risk for occupational morbidity
- Workers employed in occupations with high risk for occupational morbidity
- Workers employed in industries and occupations with high risk for occupational mortality
- Occupational safety and health professionals
- Occupational Safety and Health Administration (OSHA) enforcement activities
- Workers' compensation awards



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