



**NATIONAL OCCUPATIONAL RESEARCH
AGENDA (NORA)**

July 2015 Revision

**NATIONAL SERVICES AGENDA
FOR OCCUPATIONAL SAFETY AND HEALTH
RESEARCH AND PRACTICE IN THE U.S.
SERVICES INDUSTRIES**

INCLUDING A REVIEW OF COMPLETED RESEARCH AND
INTERVENTION ACTIVITIES BY GOAL

Developed by the NORA Services Sector Council

TABLE OF CONTENTS

Note: Links are provided for topic navigation.

INTRODUCTION, RESOURCES AND NOTES.....	3
NORA SERVICES SECTOR GOALS.....	7
ACCOMPLISHMENTS	16
APPENDIX: LITERATURE REVIEW BY GOAL.....	21
Automotive Repair and Maintenance	21
Building Services	25
Education and Schools.....	38
Hotels and Motels	46
Public Administration (Except Public Safety).....	50
Recreation and Entertainment.....	51
Restaurants and Food Services	55
Telecommunications	64
Temporary Labor Industry	67
Waste Collection and Disposal	68
Musculoskeletal Disorders.....	71
Surveillance.....	75
Hair and Nail Salons	81

INTRODUCTION, RESOURCES AND NOTES

National Occupational Research Agenda: Services Sector

The NORA Services Sector comprises workers who are employed in eleven North American Industry Classification System (NAICS, 2007) industry groups 51 – 56, 61, 71, 72, 81 and 92. These groups, respectively, are: Information; Finance and Insurance; Real Estate and Rental; Professional, Scientific and Technical; Corporate Management; Administrative Support and Waste Management; Education; Arts, Entertainment and Recreation; Accommodations and Food; Other Services; and Government aka Public Administration. In 2012, the Bureau of Labor Statistics (BLS) estimated over 66 million workers in these industries. (This total includes approximately 3 million public safety workers; separate goals have been developed for them.) The largest numbers of employees are in Education (13 million), Accommodations and Food (10 million), and Professional, Scientific and Technical (10 million), Finance and Insurance (7 million), Other Services (7 Million), Administrative Support and Waste Management (6 million), and Public Administration excluding military and public safety (4 million) (BLS, 2012b).

Jobs in the sector are highly diverse. The work environments in the services industries include offices, hotel rooms, outdoor and indoor entertainment facilities, restaurant kitchens, classrooms, automotive garages, public roads, and private households. Services workers frequently travel on roadways as part of their jobs. Many youth are first employed in services jobs, especially in Food Service and in Arts, Entertainment and Recreation. Some occupations require academic degrees and many jobs are physically demanding. A variety of occupational hazards potentially affect the health of these workers.

The NORA Service Sector Council was convened on September 13, 2006, and held additional meetings in January and November 2007 to consider priority issues for the National Services Agenda. The council examined summaries of the stakeholder input that had been received during Town Hall meetings between December 2005 and December 2006 and the comments that were submitted through the NIOSH website during the same period. Occupational safety and health surveillance data for services industries were reviewed and summarized for the Council, primarily for years 2003 to 2006. These data are most reliable for occupational fatalities resulting from traumatic injuries and other occupational injuries that are required to be entered on the OSHA 300 Log. Significant gaps in data for other injuries and all occupational illnesses were identified.

The Council decided to group its goals by services industry sub sectors. Those services sub sectors were chosen by the council after deliberations at the September 2006 and January 2007 meetings. At the January and November 2007 meetings, small groups discussed the current knowledge related to exposures, illnesses, injuries and fatalities in the sub sectors. Gaps in knowledge and intervention opportunities were identified and sets of related goals were drafted. The small group goals were consolidated and the versions of the draft goals were refined. The draft goals were made available for public comment on February 29, 2008. Two comments emphasized the importance of reproductive health and the goals were modified to include these issues.

Since that time, the Services Sector Council has continued to monitor injury, illness and fatality surveillance information from BLS and has been kept informed on research and intervention projects related to the goals at NIOSH and elsewhere. The BLS surveillance data for the Services Sector between 2003 and 2007 were also summarized in a peer-review publication (Utterback, et al., 2012). At an April 2013 meeting of the sector council, the members reviewed the current status of the goals and recommended that some be inactivated because they had been achieved. Those changes were incorporated into this updated set of goals which also included a set of new goals adopted by the council for the Hair and Nail Salon industry (NAICS 81211).

The industry experts, labor representatives, academic investigators and public health practitioners that make up the NORA Services Sector Council identified research and intervention goals for now 11 services industry sub sectors and for musculoskeletal disorders and occupational safety and health surveillance. The goals appear in the following order in this document:

1. Automotive Repair and Maintenance
2. Building Services
3. Education and Schools
4. Hotels and Motels
5. Public Administration (aka Government) except Public Safety
6. Recreation and Entertainment
7. Restaurants and Food Services
8. Telecommunications
9. Temporary Labor Industry
10. Waste Collection and Disposal
11. Musculoskeletal Disorders
12. Surveillance
13. Hair and Nail Salons

In June 2013, a review of pertinent literature was completed (Appendix). The purpose of the review was to identify completed research and intervention activities related to the individual goals in the National Services Agenda. The review was completed primarily through PubMed. Other sources at OSHA and NIOSH were reviewed primarily for intervention activities. The detailed results are in the Appendix by goal. Additional publications and intervention activities are likely to exist and the program is interested in learning about them. You may contact the program coordinator, Cheryl Estill, with any products that should be added to the list at clf4@cdc.gov.

The review led to decisions to retire some of the goals and label them as “accomplished.” They have been moved to a separate section. Research and intervention activities may continue to be beneficial on topics related to the accomplished goals but they are no longer considered priorities by the NORA Services Sector Council. In the summer of 2014, the sector council reviewed the goals and identified additional completed research and

intervention activities. Additionally, the goals were edited and reduced in number to better reflect goals that were accomplished and the level of effort currently available in the Nation to address the remaining priorities.

RESOURCES

Alexander DL (2006). Occupational Health and Safety for Faculty and Staff. In *Safe and Healthy School Environments*, Frumkin H, Geller R, Rubin IL, Nodvin J, eds. Oxford University Press, New York, 432-443.

Buchanan S, Vossen P, Krause N, Moriarty J, Frumin E, Shimek Ja, Mirer F, Orris P, Punnett L. (2010). Occupational Injury Disparities in the U.S. Hotel Industry. *Am J Ind Med*. 53(2):116-25. doi: [10.1002/Ajim.20724](https://doi.org/10.1002/Ajim.20724).

Bureau of Labor Statistics (2011). Survey of Occupational Injuries and Illnesses, Table R8, Incidence rates for nonfatal occupational injuries and illnesses involving days away from work per 10,000 full-time workers by industry and selected events or exposures leading to injury or illness, 2010. <http://www.bls.gov/iif/oshwc/osh/case/ostb2832.txt>. Accessed July 29, 2013 (Many similar tables for 2003 to 2012 are available for the services sector.)

Bureau of Labor Statistics (2012a). Labor Force Statistics from the Current Population Survey by Occupation. <http://www.bls.gov/cps/cpsaat11.pdf>. Accessed July 29, 2013

Bureau of Labor Statistics (2012b). Labor Force Statistics from the Current Population Survey by Industry. <http://www.bls.gov/cps/cpsaat18.pdf>. Accessed July 26, 2013

Luo T, Mann A, Holten R (2010). The expanding role of temporary help services from 1990 to 2008. *Monthly Labor Review*, August 2010: 3-16.

NIOSH (2012). Fact Sheet: Solid Waste Industry. DHHS (NIOSH) Pub. No. 2012-140, <http://www.cdc.gov/niosh/docs/2012-140/>. Accessed July 29, 2013

NIOSH (2013). Program Portfolio: Surveillance. <http://www.cdc.gov/niosh/programs/surv/>. Accessed July 29, 2013

North American Industry Classification System – NAICS (2007). 2007 NAICS. US Census Bureau. <http://www.census.gov/cgi-bin/sssd/naics/naicsrch?chart=2007>. Accessed July 29, 2013

Utterback DF, Charles LE, Schnorr TM, Tiesman HM, Storey E, Vossen P (2012). Occupational Injuries, Illnesses and Fatalities among Workers in the Services Sector Industries: 2003 – 2007. *Am J Ind Med* 54, 31–41. doi: [10.1097/JOM.0b013e3182398e36](https://doi.org/10.1097/JOM.0b013e3182398e36).

NOTES

Strategic goals target reductions in illnesses, injuries or fatalities of a certain percent. The **baseline** date for the reductions may be assumed to be 2006 unless otherwise specified.

Some goals may address **lost work day** injuries or illnesses, also known as **days-away-from-work**. The magnitude of the number of lost work days is a measure of the severity of the illness or injury although it may also be affected by the physical requirements of the particular job, among other factors.

Strategic goals for **Public Safety, Veterinary Services and Pet Care Services**, included in the NAICS industry codes for the NORA Services Sector, have been established by other Councils and appear in their documents.

NORA SERVICES SECTOR GOALS

AUTOMOTIVE REPAIR AND MAINTENANCE

The number of automotive service technicians and other mechanics employed in U.S. industries is estimated to be 1,682,000 (BLS, 2012a). The majority of these workers are employed by automotive repair shops and automotive dealers, with others being employed by transportation businesses, stores, gasoline stations, government agencies, and self-employment. Automotive technicians and other mechanics frequently work with dirty and greasy parts and in awkward positions. They often lift heavy parts and tools, and much of their work is strenuous and dirty. Automotive technicians and other mechanics are potentially exposed to solvent vapors, engine exhaust (carbon monoxide and diesel particulate), noise, asbestos fibers (during brake repair), isocyanates (during painting), epoxies, and cleaning agents. Injuries sustained by the workers include sprains and strains, chemical burns, bodily pain, carpal tunnel syndrome, bruises, cuts, and fractures (BLS 2011).

Strategic Goal 1: Reduce serious occupational illnesses and fatal occupational traumatic injuries by 30% in the automotive repair industry with an emphasis on events that are due to vehicle and equipment related incidents.

Intermediate Goal 1.1: Develop and test targeted training materials and other intervention methods for the automotive repair industry to prevent traumatic injuries resulting from contact with objects and equipment.

Intermediate Goal 1.2: Develop and test effective training materials, controls and comprehensive safety and health programs that reduce the risk of illness among automotive repair workers.

BUILDING SERVICES

Approximately 2.5 million workers are employed in jobs classified in the building and landscape services industries (BLS 2012b). Building custodial services are often completed on evening and night shifts when building occupancy is low and building ventilation may be reduced to conserve energy expenditures. Workers who maintain building systems may complete construction-like tasks and are exposed to solvents, asbestos, microbial agents, and lead; janitors are exposed to chemicals in cleaning agents and physical strain; and landscapers are exposed to noise, pesticides and temperature extremes. Numerous safety hazards are present in this industry. The most common injuries are bodily pain, musculoskeletal disorders, and respiratory illnesses and dermatitis for janitors and falls and machinery-related injuries for maintenance and landscape workers. Nearly 200 fatalities occur in these industries each year (Utterback et al., 2012) and are associated with falls from heights, vehicle incidents and electrocutions, among others. Many of these workers are immigrants whose exposures and health outcomes are exacerbated due to factors such as lack

of access to health care and worker's compensation benefits, poor housing, and limited income.

Strategic Goal 2: Reduce the incidence and severity of occupational illnesses and injuries by 20% as measured in number of occupational fatalities or lost work days among building services workers such as janitors, window washers, general building maintenance, and landscape services workers.

Intermediate Goal 2.1: Develop guidelines and training materials for effective injury interventions for building services workers.

Intermediate Goal 2.2: Create and disseminate information that will reduce risks for skin and respiratory disorders associated with building cleaning and maintenance work.

Strategic Goal 3: Eliminate health disparities for priority population workers in building services industries.

Intermediate Goal 3.1: Work with stakeholders in the building services industries to develop training materials for supervisors and workers that address environmental, organizational and behavioral factors associated with health disparities, if any are found to exist.

EDUCATION AND SCHOOLS

The educational services industry is the second largest U.S. industry with approximately 12.9 million workers (BLS, 2012b). The majority of workers are employed in elementary and secondary schools and post-secondary institutions and other education services employ approximately 4.4 million. Educational workers spend a significant amount of time in school buildings and in direct contact with students. As a result, they are potentially exposed to several hazards such as mold and microbial contaminants, infectious agents, hazardous volatile organic compounds emitted from construction materials and furniture, asbestos, and lead. Diesel exhaust is a common exposure from school buses. Work organization issues are challenging. Workers are at increased risk of respiratory illnesses, infectious diseases, other chronic diseases, voice disorders, stress and violence (Alexander, 2006).

Strategic Goal 4: Reduce the frequency and severity of injuries and illnesses by 30% among workers in public and private education.

Intermediate Goal 4.1 [Retired]

Intermediate Goal 4.2: Create guidance documents for hazard identification and control and indoor air quality in public and private schools.

Intermediate Goal 4.3: Identify essential components of effective occupational health and safety programs in public and private education.

HOTELS AND MOTELS

The number of workers employed in the hotel industry is estimated to be 1.8 million (BLS, 2012b). This industry employs a variety of workers – many are younger than 25 years, immigrants, first-time job holders, and may be employed part-time or on a seasonal basis. Hotel and motel workers are potentially exposed to several occupational physical and psychological stressors. Nearly all hotels and motels have continuous operations requiring shift work. Hotel room cleaners are at high risk of dermatitis and respiratory diseases due to exposure to cleaning agents and microbial agents in water damaged buildings. They are at high risk of musculoskeletal disorders due to awkward postures and frequent bending and lifting of heavy beds, linen, and carts. Work-loads may increase the risks for injuries (Buchanan et al., 2010).

Strategic Goal 5: Reduce the incidence and severity of occupational injuries by 20% as measured in lost work days among hotel and motel workers.

Intermediate Goal 5.1: Establish programs for collection and analysis of illness and injury event information, including standard elements for severity, in order to identify trends, emerging issues and intervention needs among hotel and motel employees through collaboration among employers, employees, workers' compensation insurance carriers, labor, academic, and government agencies.

Intermediate Goal 5.2: Develop guidelines and training materials for effective injury interventions for hotel and motel workers.

Strategic Goal 6: Reduce by 20% the incidence and severity of occupational illness and morbidity that result in lost work days among hotel and motel workers.

Intermediate Goal 6.1: Create and disseminate information to reduce risk for skin disorders, respiratory disease, stress-related disorders, adverse reproductive health outcomes, and musculoskeletal disorders associated with working conditions in hotels and motels.

Strategic Goal 7: Eliminate health disparities for priority population workers in the hotel and motel industry.

Intermediate Goal 7.1: Develop training materials for supervisors and workers that address environmental, organizational, and behavioral factors associated with health disparities, if any are found to exist, among hotel and motel workers.

PUBLIC ADMINISTRATION (Except Public Safety)

Workers in the public administration include employees in the executive and legislative bodies, general government support, and American Indian Tribal government. Excluding public safety workers, there are over 4 million public administration workers in the U.S. (BLS, 2012b). In many states, the state government is the single largest employer. Information on numbers of occupational injuries to workers in public administration is very limited and state and local workers are frequently exempted from Federal occupational safety and health standards. The limited available surveillance information indicates that these workers may be at risk for respiratory illnesses, musculoskeletal disorders, and vehicle incidents. Public buildings are often less well maintained than private buildings, leading to indoor environmental quality concerns. Many government functions are continuous and involve contact with the public and extensive shift work.

Strategic Goal 8: Reduce by 30% the frequency and severity of injuries and illnesses among government workers.

Intermediate Goal 8.1 [Retired]

Intermediate Goal 8.2: Create guidance documents for hazard identification and control, indoor air quality, occupational stress, and workplace violence in government work environments.

RECREATION AND ENTERTAINMENT

It is estimated that 3.0 million persons are employed in the recreation and entertainment industry (BLS, 2012b). A large proportion of this worker population is under 35 years of age, and many are part-time and/or seasonal workers. Persons are employed in various industries such as spectator sports, amusement parks, gambling, live performances/events, exhibits (cultural or educational), and recreation or leisure-time activities. Many entertainment and recreation facilities operate multiple shifts. The overall rate of injuries in these workers is higher than for the entire U.S. private sector. The workers are potentially exposed to noise, engine exhaust, cleaning agents, environmental tobacco smoke and various safety risks such as falls, contact with objects and equipment, and violence (BLS, 2011).

Strategic Goal 9: Reduce traumatic injuries and fatalities by 30% in the recreation and entertainment industries.

Intermediate Goal 9.1: Develop and promote best practice guidelines to prevent injuries from over exertion, adverse bodily reaction, falls, and contact with equipment and objects in the recreation and entertainment industry.

RESTAURANTS AND FOOD SERVICES

Approximately 8.7 million persons are employed in full-service and limited-service restaurants (BLS, 2012b). Many of these workers are young (i.e., <18 years of age), and in certain locations, the majority includes minorities or immigrants. Increasingly, workers with disabilities are being employed. Restaurants frequently operate with multiple shifts and some are open continuously. Waiters, cooks and food preparation workers experience a large proportion of injuries. The most common injuries include cuts and lacerations; burns caused by steam, grease, hot liquid, flame, or hot surfaces; and falls which are related to floor surface contamination. Violence is the most common cause of fatalities in the industry (Utterback et al., 2012) and accounted for 315 deaths between 2008 and 2011. Musculoskeletal disorders in this industry are associated with slips and trips and with overexertion (BLS, 2011).

Strategic Goal 10: Reduce the frequency of injuries by 30% among food service workers.

Intermediate Goal 10.1: Promote the development of comprehensive occupational safety and health programs for restaurants and other food service establishments.

Strategic Goal 11: Reduce the frequency of workplace violence events by 20% in restaurants and food delivery services.

Intermediate Goal 11.1: Create and promote acceptable and effective violence prevention strategies for restaurants and for food delivery services.

TELECOMMUNICATIONS

Workers in the telecommunications industry number about 1.0 million (BLS, 2012b) and include line and equipment installers and repairers, telephone operators, information processing clerks, managers, and administrative workers (BLS, 2012a). Line installers and repairers work in all kinds of weather and are in close proximity with electrical wires. Injuries include minor burns and electrical shock (BLS, 2011). Telephone operators and information processing clerks are exposed to work organizational issues such as fast pace of job and micro-management.

Strategic Goal 12: Reduce the incidence of serious occupational illnesses and injuries by 70% within the telecommunications industry.

Intermediate Goal 12.1: Develop and promote guidelines for reducing illnesses and injuries in the telecommunications industry that are associated with work organization factors, physical hazards associated with musculoskeletal disorders, shift work, work load, work pace, training, and indoor air quality.

Strategic Goal 13: Reduce occupational traumatic injuries and fatalities by 70% in the telecommunications industries.

Intermediate Goal 13.1: Identify and prevent occupational fatalities in the telecommunications industries and develop evidence based recommendations and best practices guidelines.

TEMPORARY LABOR INDUSTRY

Little surveillance information on temporary workers is available. It is estimated that employment services employ 2.3 million persons (Luo et al., 2010). Occupational hazards in this industry include work organization issues, psychosocial factors, and violence among young workers. Other hazards are dependent on the work environment at the host establishment. There is inadequate safety and health training in this population of workers where socioeconomic and racial/ethnic disparities exist. Due to the temporary nature of the jobs, it is difficult to ascertain illness or injury rates.

Strategic Goal 14: Reduce the incidence by 30% and severity of injuries and illnesses among workers who are employees of temporary labor agencies or otherwise employed as contractors or contingent workers at host employer locations.

Intermediate Goal 14.1: Produce peer-reviewed journal articles on differences in exposures or health conditions that may be attributable to employment status for temporary or contingent workers and promote a set of best practice recommendations to reduce any differences.

WASTE COLLECTION AND DISPOSAL

There are an estimated 518,000 workers employed in waste collection, treatment and disposal, and waste remediation, all in the private sector (BLS, 2012b). Waste collection and disposal employees include private sector and public sector (municipal) workers but population estimates for the latter are not available. Waste collectors work on public roadways, often at night or in extreme weather conditions, have physically demanding workloads, and are potentially exposed to hazardous substances. Waste collection and disposal workers are at risk for occupational injuries including fractures and sprains, bodily pain, musculoskeletal disorders, and traumatic injuries from being struck by objects, their own equipment or vehicles driven by members of the public (NIOSH, 2012).

Strategic Goal 15: Reduce the incidence and severity of injuries in the waste collection, disposal and recycling industries by 30%.

Intermediate Goal 15.1: Create an industry-wide council, including management and worker representatives, to collaborate on developing comprehensive health and safety guidelines or standards for the solid waste industry.

Intermediate Goal 15.2: Create, disseminate, and evaluate the effectiveness of best practices guidance documents for the solid waste industry.

Intermediate Goal 15.3: Identify, develop and incorporate engineering solutions to eliminate hazards for solid waste collection and disposal operations through partnerships with Federal and State regulators, vehicle manufacturers and equipment manufacturers.

MUSCULOSKELETAL DISORDERS

Workers across many services sub sectors are engaged in tasks that have been associated with musculoskeletal disorders (MSDs). MSDs are injuries or inflammation of the nerves, tendons, muscles and support structures of the upper and lower limbs, neck, and lower back. The disorders are caused, precipitated or exacerbated by sudden exertion or prolonged exposure to physical factors such as repetition, force, vibration, or awkward posture. Many services sector workers are required to complete repetitive tasks and often exert considerable force in sometimes awkward positions.

Strategic Goal 16: Reduce by 30% the incidence of musculoskeletal disorders that result in one or more lost work days in services industry subsectors with elevated rates or counts or where effective intervention methods should be adopted.

Intermediate Goal 16.1 [Retired]

Intermediate Goal 16.2: Develop, test, and disseminate effective intervention programs for services industries with higher risks for musculoskeletal disorders.

Intermediate Goal 16.3: Complete research projects with detailed analytical reports on the relationships between musculoskeletal disorders and working conditions for services sector industries and related occupations.

SURVEILLANCE

Public health surveillance is the ongoing systematic collection, analysis, and interpretation of health data for purposes of improving health and safety (NIOSH, 2013). Occupational health surveillance can be viewed as the tracking of occupational injuries, illnesses, hazards, and exposures. Occupational surveillance data are used to guide efforts to improve worker safety and health, and to monitor trends and progress over time. Increased collection and analysis of data for surveillance purposes are needed across the services sector for the purpose of identifying priorities and tracking progress on all goals. The need is particularly important for occupational illness and exposure surveillance data.

Strategic Goal 17: Support the creation of additional surveillance systems and utilize existing surveillance data to increase knowledge about trends, emerging issues and priorities for occupational illnesses, injuries and fatalities among services sector workers.

Intermediate Goal 17.1: Evaluate illnesses, injuries, and fatalities that may be due to working conditions and identify opportunities for interventions in the services sector by working collaboratively with the Bureau of Labor Statistics, the Occupational Safety and Health Administration, the National Center for Health Statistics and state occupational surveillance programs.

Intermediate Goal 17.2: Collaborate with workers' compensation and other insurance programs to collect and systematically analyze occupational illness and injury surveillance information to identify health and safety intervention needs for services sector workers.

Intermediate Goal 17.3: Design and pilot test new methods of surveillance for occupational illness and injury among services sector workers through collaboration of insurance carriers, management, labor, academic institutions and government agencies.

HAIR AND NAIL SALONS

Personal care services employ approximately 1.45 million workers (BLS, 2012b). Most are employed in hair and nail salons. These workers are exposed to a wide variety of chemicals that are contained in the products they use to service clients. The chemicals potentially cause respiratory and dermal health effects and many may be allergenic. The workers also experience repetitive motion as well as awkward body positions. Remarkably, occupational fatalities among these workers are almost all violence related.

Strategic Goal 18: Reduce incidence of occupational illnesses and injuries by 20% in nail and hair salon workers.

Intermediate Goal 18.1: Establish programs for systematic collection and analysis of data on occupational illnesses and injuries in nail and hair salon workers and publish results in the open literature through collaboration of State and Federal programs.

Intermediate Goal 18.2: Minimize workplace exposures of harmful chemicals for nail and hair salon workers through the collaborative efforts of product manufacturers, suppliers, employers, employees and their representatives, and government agencies.

Intermediate Goal 18.3: Assess the quality of nail and hair care product information available to nail and hair salon workers.

Intermediate Goal 18.4: Disseminate occupational injury prevention information for hair and nail salon establishments through collaborative efforts of product manufacturers, suppliers, employers, employees and their representatives, and government agencies.

ACCOMPLISHMENTS – NATIONAL SERVICES AGENDA

This section lists all the goals that have been retired from the Services Sector Research Agenda. Upon review of the literature shown in the appendix of this document, the Services Sector Council reviewed the research goals and determined which ones could be retired.

The goal numbers in this section are associated with earlier versions of the National Services Agenda, such as, the April 2013 version available from <http://www.cdc.gov/niosh/nora/comment/agendas/>.

AUTOMOTIVE REPAIR AND MAINTENANCE

Accomplished – Surveillance Goal 1.1: By 2011, establish programs for the systematic collection and analysis of detailed fatality and serious injury investigation information in the automotive repair industry through the collaboration of employers, employees, workers' compensation insurance carriers, labor, academic institutions, and government agencies.

Accomplished – Surveillance Goal 1.2: By 2011, develop data systems to support the ongoing analysis of illnesses and traumatic injury risks and to identify issues for targeted intervention strategies through work with research and regulatory organizations and state based surveillance programs.

Accomplished – Research Goal 1.5.1: By 2013, conduct thorough investigations of potentially hazardous exposures to chemical and physical agents in automotive repair establishments, including body shops.

Accomplished – Research Goal 1.5.2: By 2011, identify compounds and processes that reduce the release of toxic agents in the workplace and in the waste stream which can be successfully used in automotive repair.

Accomplished – Research Goal 1.5.4: By 2012, ensure that new technologies in automotive products and automotive repair are appropriately vetted for occupational safety and health impact prior to marketing and dissemination.

Accomplished – Dissemination Goal 1.5.7: By 2013, disseminate information on effective interventions in the automotive repair industry such as hazardous material control technologies and training programs.

BUILDING SERVICES

Accomplished – Research Goal 2.3.1: By 2011, identify agents such as cleaning compounds, pesticides, environmental tobacco smoke, and heat and the allied tasks or operations that may be associated with skin disorders or respiratory disease among various job titles for building cleaning and maintenance workers.

EDUCATION AND SCHOOLS

Accomplished – Surveillance Goal 4.1: Ensure that health and safety surveillance systems are developed, implemented, and utilized to identify and track risks for injuries and illnesses among public and private education employees.

Accomplished – Translation Goal 4.4.2: By 2012, develop protocols for chemical, biological, and physical hazard assessment in education facilities that may be used with minimal training by school staff.

Accomplished – Translation Goal 4.4.3: By 2013, characterize the school building environment, develop best practices for building architecture and construction, and support wide utilization of these practices for new facilities and renovation of existing facilities. (For example, identify the best type of ventilation for teaching workshops or the best designed classrooms for students with special needs that promote learning while protecting worker health.)

Accomplished – Dissemination Goal 4.4.4: By 2014, deliver best practice guidelines for school construction and renovations through collaboration with the American Institute of Architects and the Sheet Metal and Air Conditioning Contractors' National Association.

HOTELS AND MOTELS

Accomplished – Intermediate Goal 6.1: Create and disseminate information to reduce risk for skin disorders, respiratory disease, stress-related disorders, adverse reproductive health outcomes, and musculoskeletal disorders associated with working conditions in hotels and motels.

Accomplished - Research Goal 6.1.1: By 2016, conduct exposure assessment and recommend substitutions and/or controls, as needed, for agents such as cleaning compounds, pesticides, environmental tobacco smoke, heat and the allied tasks, operations, and work conditions or organizations that may be associated with worker skin disorders, respiratory disease or stress-related disorders.

Accomplished – Research Goal 6.1.2. By 2016, determine if some “environmentally sound” cleaning agents used in hotels and motels are hazardous to users or require increased physical exertion to obtain acceptable levels of cleanliness. Identify effective cleaning agents which minimize impact on health and the environment.

PUBLIC ADMINISTRATION

Accomplished – Surveillance Goal 8.1: Ensure that health and safety surveillance systems are developed, implemented, and utilized to identify and track risks for illnesses and injuries among government employees.

RECREATION AND ENTERTAINMENT

Accomplished – Surveillance Goal 9.1: Identify and analyze sources of information that may be used to develop estimates of traumatic injury rates for workers in the recreation and entertainment industries. Estimate the risk of injury for youth, immigrant, and temporary workers in the recreation and entertainment industry.

Accomplished – Intermediate Goal 9.3: Develop and promote guidelines to reduce exposures to hazardous agents associated with internal combustion engines and other sources in the recreation and entertainment industry.

Accomplished – Research Goal 9.3.1: By 2012, identify effective interventions to reduce exposures to engine exhaust from performance vehicles and maintenance equipment that are operated indoors.

Accomplished – Research Goal 9.3.2: By 2013, evaluate noise exposures for workers in the recreation and entertainment industry and develop guidelines for control of excessive noise exposures.

RESTAURANTS AND FOOD SERVICES

Accomplished – Surveillance Goal 10.1: Identify sources of information that can be used to estimate the frequency of injuries to populations of youth, immigrant and disabled workers in the food service industry.

Accomplished – Research Goal 10.3.1: By 2011, complete benchmarks of comprehensive occupational safety and health programs for small business food service establishments and identify best practices that lead to reduced frequencies of injuries, with particular attention paid to youth, immigrant and disabled worker training methods.

Accomplished – Translation Goal 10.3.4: By 2012, create guidance for small business food service establishments on occupational safety and health programs to be disseminated through trade associations and government agencies.

Accomplished – Translation Goal 10.3.6: By 2010, develop and disseminate effective disaster response plans for food service and drinking establishments.

TELECOMMUNICATION

Accomplished – Research Goal 12.1.8: By 2012, determined the relationship between environmental conditions that are associated with good indoor air quality and the operational characteristics of building systems that control temperature, humidity, and atmospheric gases and particulate for various building types.

WASTE COLLECTION AND DISPOSAL

Accomplished – Translation Goal 15.2.1: By 2011, create and disseminate health communication material promoting, adherence to safety and health requirements, e.g. ANSI

DOT (hours of service, driver qualification, and drug and alcohol testing) and Federal and State OSHA through trade associations, labor unions, and government agencies.

Accomplished – Research Goal 15.3.3: By 2010, evaluate waste collection worker safety and health public education campaigns for roadway hazards such as “Slow Down to Get Around” that are designed to increase public cooperation.

Accomplished – Dissemination Goal 15.3.6: By 2013, provide effective training materials for the solid waste industry through trade associations, labor unions, insurance companies, and government agencies.

Accomplished – Research Goal 15.4.1: By 2011, evaluate the leading causes of injury risk to waste collection and disposal workers and develop reports on alternative designs to mitigate the recognized hazards.

Accomplished – Translation Goal 15.4.2: By 2013, collaborate with equipment and vehicle manufacturers to evaluate alternative designs intended to reduce the injury for solid waste collection and disposal workers.

Accomplished – Translation Goal 15.4.3: By 2014, incorporate effective equipment and vehicle design into industry guidelines and national or international standards for waste collection and disposal.

MUSCULOSKELETAL DISORDERS

Accomplished – Surveillance Goal 16.2: By 2014, evaluate existing data sets such as the National Health Interview Survey (NHIS), the Survey of Occupational Injuries and Illnesses (SOII) and state-based surveillance systems to identify industries or worker populations in the services sector with elevated risks for repetitive strain, upper extremity, lower extremity, lower back or other forms of musculoskeletal disorders.

Accomplished – Intermediate Goal 16.3: By 2013, ensure that reliable exposure assessment tools and strategies are developed and utilized to reduce musculoskeletal disorders through collaboration of academic institutions, management, labor, trade associations and government agencies.

Accomplished – Research Goal 16.3.1: By 2012, develop tools such as questionnaires and checklists for use in state and national surveys, hazard assessments, recognized “problem” work areas, and injury and symptom surveillance for musculoskeletal disorders in services sector industries.

Accomplished – Research Goal 16.3.2: By 2013, develop hazard surveillance checklists and similar tools that require minimal training for use by health and safety committees, and medical personnel and validate them through field studies, exposure assessments, medical screenings and worker interviews.

Accomplished – Research Goal 16.5.3: By 2013, examine the risk of work-related musculoskeletal disorders for computer users with repetitive jobs associated with low-level static exertions and mental demands.

SURVEILLANCE

Accomplished – Research Goal 17.1.1: By 2008, develop a comprehensive list of recognized surveillance systems that have been or may be used to evaluate numbers and rates of illnesses, injuries, and fatalities by services industry or occupation.

Accomplished – Research Goal 17.1.2: By 2009, utilize state and national employment data to estimate the demographic and employment characteristics of the workers in the service sector.

Accomplished – Research Goal 17.1.3: Beginning in 2009, provide surveillance data analysis reports at least biannually to support priorities, and identify trends and emerging issues in the services sector.

Accomplished – Research Goal 17.1.4: By 2013, complete an analysis of occupational safety and health surveillance systems to determine the reliability of counts and rates for more serious injuries and illnesses.

Accomplished – Research Goal 17.1.5: By 2013, create recommendations to enhance the systematic collection of occupational illness and disease incidence data and injury data for populations who are not included in current national surveys such as public administration workers and many education sector employees.

Accomplished – Research Goal 17.2.1: By 2010, evaluate strategies that may be used to develop standard elements for injury severity in addition to frequency and duration of days-away-from-work events.

Accomplished – Research Goal 17.2.2: By 2011, collaborate with state health and labor departments where they have direct relationships with state-managed workers' compensation programs to develop strategies for data sharing, analysis and reporting with a primary interest in identifying needs for effective interventions.

APPENDIX: LITERATURE REVIEW BY GOAL

Summary list of published materials related to NORA Service Sector Agenda Goals

April 2015

The list below identifies research article citations and intervention materials links that have been produced since about 2007 which address goals in the National Services Agenda. The purpose for the list is to identify continuing gaps in research and intervention activities related to the services sector goals as well as to indicate where sufficient knowledge has been gained related to goals so they may no longer be a priority for the sector.

The method used to compile the list included a search of PubMed using a variety of key words related to services industries and topic identifiers related to occupational safety and health. In addition, announcements of the OSHA Susan Harwood Grant awardees were reviewed for years 2007 to 2013. Finally, the NIOSH surveillance page for State-based Occupational Health Surveillance Clearinghouse (<http://wwwn.cdc.gov/niosh-survapps/statedocs/default.aspx>) was searched for materials produced by state partners related to the services sector goals.

Finally, in the summer of 2014, the sector council, working in small groups, reviewed the literature and added additional documents. This method is not exhaustive. There may be many more scientific products that relate to the Services Sector goals. However, the list is an indication of the research and intervention activities by a large number of organizations that address the goals. Some products address more than a single goal and are listed in each location. Additional publications and intervention activities are likely to exist and the program is interested in learning about them. You may contact the program coordinator, Cheryl Estill, with any products that should be added to the list at clf4@cdc.gov.

Automotive Repair and Maintenance

Strategic Goal 1: Reduce serious occupational illnesses and fatal occupational traumatic injuries by 30% in the automotive repair industry with an emphasis on events that are due to vehicle and equipment related incidents.

Michigan State University. Respiratory Hazards in the Automotive Industry. Project S. E.N.S.O.R. News. Volume 19, No. 2, Spring 2008. <http://www.oem.msu.edu/userfiles/file/News/Sv19n2.pdf>. Accessed July 25, 2013

Smith SM. Occupational Injuries, Illnesses, and Fatalities to Automotive Service Technicians and Mechanics, 2003 to 2005. U.S. Bureau of Labor Statistics, Washington DC, May 23, 2007. <http://www.bls.gov/opub/mlr/cwc/occupational-injuries-illnesses-and-fatalities-to-automotive-service-technicians-and-mechanics-2003-to-2005.pdf>. Accessed February 24, 2014

Washington State Department of Labor & Industries. Preventing Injury and Illness in Auto Body Shops. Report# 69-5-2006, Safety & Health Assessment & Research for Prevention

(SHARP), May 2006. <http://www.lni.wa.gov/Safety/Research/Files/AutoBody.pdf>. Accessed July 25, 2013

National Institute for Occupational Safety and Health (NIOSH). Fact Sheet: Automotive Repair & Maintenance Services. DHHS (NIOSH) Publication No. 2012-114, 2012. <http://www.cdc.gov/niosh/docs/2012-114/pdfs/2012-114.pdf>. Accessed July 25, 2013

Massachusetts Department of Public Health. Mechanic Repairing a Multi Terrain Loader Pinned between the Loader's Lift Arm and Frame – Massachusetts. Occupational Health Surveillance Program, Investigation: # 09-MA-044-01, 2011. <http://www.mass.gov/eohhs/docs/dph/occupational-health/lift-arm.pdf>. Accessed June 3, 2013

California Fatality Assessment and Control Evaluation (CA/FACE) Program. A Mechanic Dies When He is Crushed by the Hydraulic Arm of a Recyclable Refuse Collection Truck. California FACE Report #10CA005, February 3, 2011. <http://www.cdph.ca.gov/programs/ohb-face/Documents/10CA005.pdf>. Accessed June 3, 2013

Mirabelli MC, London SJ, Charles LE, Pompeii LA, Wagenknecht LE. Occupation and three-year incidence of respiratory symptoms and lung function decline: the ARIC Study. *Respir Res.* 2012 Mar 20;13:24. doi: 10.1186/1465-9921-13-24.

Massachusetts Department of Public Health, Occupational Health Surveillance Program. Mechanic Dies while Changing a Tire Mounted on a Multi-piece Split Rim Wheel - Massachusetts. Investigation: # 07-MA-058-01, October 20, 2009. <http://www.mass.gov/eohhs/docs/dph/occupational-health/fatal-reports/fatal-report-split-rim.pdf>. Accessed June 3, 2013

Intermediate Goal 1.1: Develop and test targeted training materials and other intervention methods for the automotive repair industry to prevent traumatic injuries resulting from contact with objects and equipment.

Park Nicollet and Environmental Health Sciences Division University of Minnesota. Collision Auto Repair Safety Study (CARSS). <http://www.repairsafety.com/>. Accessed July 25, 2013

Health and Safety Executive (UK). Health and safety in motor vehicle repair and associated industries. HSG261, 2009. <http://www.hse.gov.uk/pubns/books/hsg261.htm>. Accessed June 4, 2013

Occupational Safety and Health Administration (OSHA). Autobody Repair and Refinishing. <http://www.osha.gov/SLTC/autobody/index.html>. Accessed June 4, 2013

National Institute for Occupational Safety and Health (NIOSH). Fact Sheet: Automotive Repair & Maintenance Services. DHHS (NIOSH) Publication No. 2012-114, 2012. <http://www.cdc.gov/niosh/docs/2012-114/pdfs/2012-114.pdf>. Accessed July 25, 2013

Intermediate Goal 1.2: Develop and test effective training materials, controls and comprehensive safety and health programs that reduce the risk of illness among automotive repair workers.

Health and Safety Executive (UK). Health and safety in motor vehicle repair and associated industries. HSG261, 2009. <http://www.hse.gov.uk/pubns/books/hsg261.htm>. Accessed June 4, 2013

Reeb-Whitaker C, Whittaker SG, Ceballos DM, Weiland EC, Flack SL, Fent KW, Thomasen JM, Trelles Gaines LG, Nylander-French LA. Airborne isocyanate exposures in the collision repair industry and a comparison to occupational exposure limits. *J Occup Environ Hyg.* 2012;9(5):329-39. doi: [10.1080/15459624.2012.672871](https://doi.org/10.1080/15459624.2012.672871).

Christopher Y, Van Tongeren M, Urbanus J, Cherrie JW. An assessment of dermal exposure to heavy fuel oil (HFO) in occupational settings. *Ann Occup Hyg.* 2011 Apr;55(3):319-28. doi: [10.1093/annhyg/mer002](https://doi.org/10.1093/annhyg/mer002).

Flack SL, Ball LM, Nylander-French LA. Occupational exposure to HDI: progress and challenges in biomarker analysis. *J Chromatogr B Analyt Technol Biomed Life Sci.* 2010 Oct 1;878(27):2635-42. doi: [10.1016/j.jchromb.2010.01.012](https://doi.org/10.1016/j.jchromb.2010.01.012).

Liu Y, Stowe MH, Bello D, Sparer J, Gore RJ, Cullen MR, Redlich CA, Woskie SR. Skin exposure to aliphatic polyisocyanates in the auto body repair and refinishing industry: III. A personal exposure algorithm. *Ann Occup Hyg.* 2009 Jan;53(1):33-40. doi: [10.1093/annhyg/men070](https://doi.org/10.1093/annhyg/men070).

Bello D, Redlich CA, Stowe MH, Sparer J, Woskie SR, Streicher RP, Hosgood HD, Liu Y. Skin exposure to aliphatic polyisocyanates in the auto body repair and refinishing industry: II. A quantitative assessment. *Ann Occup Hyg.* 2008 Mar;52(2):117-24. doi: [10.1093/annhyg/mem066](https://doi.org/10.1093/annhyg/mem066).

Woskie SR, Bello D, Gore RJ, Stowe MH, Eisen EA, Liu Y, Sparer JA, Redlich CA, Cullen MR. Comparison of task-based exposure metrics for an epidemiologic study of isocyanate inhalation exposures among autobody shop workers. *J Occup Environ Hyg.* 2008 Sep;5(9):588-98. doi: [10.1080/15459620802275429](https://doi.org/10.1080/15459620802275429).

Blake CL, Dotson GS, Harbison RD. Evaluation of asbestos exposure within the automotive repair industry: a study involving removal of asbestos-containing body sealants and drive clutch replacement. *Regul Toxicol Pharmacol.* 2008 Dec;52(3):324-31. doi: [10.1016/j.yrtph.2008.09.001](https://doi.org/10.1016/j.yrtph.2008.09.001).

NIOSH. Health Hazard Evaluation Report: Evaluation of employee exposure in a bus maintenance shop, Huntington Station, New York: Cincinnati, OH: USDHHS, CDC, NIOSH, NIOSH HETA No. 2007-0055-3073, 2008. <http://www.cdc.gov/niosh/hhe/reports/pdfs/2007-0055-3073.pdf>. Accessed June 22, 2015

NIOSH. Health Hazard Evaluation Report: Evaluation of exposure to carbon monoxide and surface metals in Department of Transportation district garage, Wilmington, Ohio. Cincinnati, OH:USDHHS, CDC, NIOSH, NIOSH HETA No. 2006-0336-3059, 2008. <http://www.cdc.gov/niosh/hhe/reports/pdfs/2006-0336-3059.pdf>. Accessed June 22, 2015

Velázquez L, Bello D, Munguia N, Zavala A, Marin A, Moure-Eraso R. A survey of environmental and occupational work practices in the automotive refinishing industry of a developing country: Sonora, Mexico. *Int J Occup Environ Health.* 2008 Apr-Jun;14(2):104-11. <http://www.ncbi.nlm.nih.gov/pubmed/18507286>.

Coordinating Committee for Automotive Repair (CCAR). Safety, Environmental & Hazardous Material Training. <http://ccar-greenlink.org/> (Subscription service). Accessed July 25, 2013

Yakut Y, Uçmak D, Akkurt ZM, Akdeniz S, Palanci Y, Sula B. Occupational skin diseases in automotive industry workers. *Cutan Ocul Toxicol*, 2014 Mar;33(1):11-15. doi: [10.3109/15569527.2013.787088](https://doi.org/10.3109/15569527.2013.787088).

Labrecque M. Irritant-induced asthma. *Curr Opin Allergy Clin Immunol*. 2012 Apr;12(2):140-4. doi: [10.1097/ACI.0b013e32835143b8](https://doi.org/10.1097/ACI.0b013e32835143b8).

Ceballos DM, Yost MG, Whittaker SG, Reeb-Whitaker C, Camp J, Dills R. Development of a permeation panel to test dermal protective clothing against sprayed coatings. *Ann Occup Hyg*. 2011 Mar;55(2):214-27. doi: [10.1093/annhyg/meq081](https://doi.org/10.1093/annhyg/meq081).

Brosselin P, Rudant J, Orsi L, Leverger G, Baruchel A, Bertrand Y, Nelken B, Robert A, Michel G, Margueritte G, Perel Y, Mechinaud F, Bordigoni P, Hémon D, Clavel J. Acute childhood leukaemia and residence next to petrol stations and automotive repair garages: the ESCALE study (SFCE). *Occup Environ Med*. 2009 Sep;66(9):598-606. doi: [10.1136/oem.2008.042432](https://doi.org/10.1136/oem.2008.042432).

Ceballos DM, Yost MG, Whittaker SG, Camp J, Dills R. Objective color scale for the SWYPE surface sampling technique using computerized image analysis tools. *J Occup Environ Hyg*. 2009 Oct;6(10):604-11. doi: [10.1080/15459620903117710](https://doi.org/10.1080/15459620903117710).

Finkelstein MM. Asbestos fibre concentrations in the lungs of brake workers: another look. *Ann Occup Hyg*. 2008 Aug;52(6):455-61. doi: [10.1093/annhyg/men036](https://doi.org/10.1093/annhyg/men036).

Boeniger M, Neumeister C, Booth-Jones A. Sampling and analytical method development and hand wipe measurements of dermal exposures to polycyclic aromatic hydrocarbons. *J Occup Environ Hyg*. 2008 Jul;5(7):417-25. doi: [10.1080/15459620802111319](https://doi.org/10.1080/15459620802111319).

Bello D, Herrick CA, Smith TJ, Woskie SR, Streicher RP, Cullen MR, Liu Y, Redlich CA. Skin exposure to isocyanates: reasons for concern. *Environ Health Perspect*. 2007 Mar;115(3):328-35. doi: [10.1289/ehp.9557](https://doi.org/10.1289/ehp.9557).

Occupational Safety and Health Administration (OSHA). Autobody Repair and Refinishing. <http://www.osha.gov/SLTC/autobody/index.html>. Accessed May 29, 2013

Park Nicollet and Environmental Health Sciences Division University of Minnesota. Collision Auto Repair Safety Study (CARSS). <http://www.repairsafety.com/>. Accessed July 25, 2013

National Institute for Occupational Safety and Health (NIOSH). Fact Sheet: Automotive Repair & Maintenance Services. DHHS (NIOSH) Publication No. 2012-114, 2012. <http://www.cdc.gov/niosh/docs/2012-114/pdfs/2012-114.pdf>. Accessed July 25, 2013

Parker DL, Bejan A, Brosseau LM. A qualitative evaluation of owner and worker health and safety beliefs in small auto collision repair shops. *Am J Ind Med*. 2012 May;55(5):474-82. doi: [10.1002/ajim.22027](https://doi.org/10.1002/ajim.22027).

Ceballos DM, Fent KW, Whittaker SG, Gaines LG, Thomasen JM, Flack SL, Nylander-French LA, Yost MG, Reeb-Whitaker CK. Survey of dermal protection in Washington State

collision repair industry. *J Occup Environ Hyg.* 2011 Sep;8(9):551-60. doi: [10.1080/15459624.2011.602623](https://doi.org/10.1080/15459624.2011.602623).

Bejan A, Brosseau LM, Parker DL. Exposure assessment in auto collision repair shops. *J Occup Environ Hyg.* 2011 Jul;8(7):401-8. doi: [10.1080/15459624.2011.585117](https://doi.org/10.1080/15459624.2011.585117).

U.S. Environmental Protection Agency, Design for the Environment. Auto Refinish Project Best Practices Kit. <http://www.epa.gov/oppt/dfe/pubs/auto/trainers/>. Accessed May 29, 2013

Roelofs C, Shoemaker P, Skogstrom T, Acevedo P, Kendrick J, Nguyen N. The Boston Safe Shops model: an integrated approach to community environmental and occupational health. *Am J Public Health.* 2010 Apr 1;100 Suppl 1:S52-5. doi: [10.2105/AJPH.2009.176511](https://doi.org/10.2105/AJPH.2009.176511).

Whittaker SG, Reeb-Whitaker C. Characterizing the health and safety needs of the collision repair industry. *J Occup Environ Hyg.* 2009 May;6(5):273-82. doi: [10.1080/15459620902775609](https://doi.org/10.1080/15459620902775609).

Shoemaker PA, Skogstrom T, Shea J, Bethune L. The Boston Safe Shops Project-- preliminary findings of a case study in applying the 10 essential services of public health to building environmental health capacity. *J Environ Health.* 2007 Jul-Aug;70(1):22-8, 63. <http://www.ncbi.nlm.nih.gov/pubmed/17802812>.

Occupational Safety and Health Administration. FY2012 Developmental Follow-on Susan Harwood Grant to Regents of the University of California at Los Angeles, Los Angeles, CA, \$181,390. The grantee will offer culturally and language appropriate training to low wage immigrant workers in the hotel, car wash and waste industries. Training and materials will target the large Southern California Spanish-speaking workforce. Classes will provide training on topics such as hazard identification, chemical hazards, ergonomics, worker rights, and effective health and safety committees. https://www.osha.gov/dte/sharwood/2012_grant_recipients.html. Accessed July 25, 2013

Building Services

Strategic Goal 2: Reduce the incidence and severity of occupational illnesses and injuries by 20% as measured in number of occupational fatalities or lost work days among building services workers such as janitors, window washers, general building maintenance, and landscape services workers.

Rubinstein S, Wang C, Qu W. Occupational risk and chronic kidney disease: a population-based study in the United States adult population. *Int J Nephrol Renovasc Dis.* 2013 Mar 9;6:53-9. doi: [10.2147/IJNRD.S39522](https://doi.org/10.2147/IJNRD.S39522).

Vizcaya D, Mirabelli MC, Orriols R, Antó JM, Barreiro E, Burgos F, Arjona L, Gomez F, Zock JP. Functional and biological characteristics of asthma in cleaning workers. *Respir Med.* 2013 May;107(5):673-83. doi: [10.1016/j.rmed.2013.01.011](https://doi.org/10.1016/j.rmed.2013.01.011).

Lillienberg L, Andersson E, Janson C, Dahlman-Höglund A, Forsberg B, Holm M, Glslason T, Jögi R, Omenaas E, Schlünssen V, Sigsgaard T, Svanes C, Torén K. Occupational exposure and new-onset asthma in a population-based study in Northern Europe (RHINE). *Ann Occup Hyg.* 2013 May;57(4):482-92. doi: [10.1093/annhyg/mes083](https://doi.org/10.1093/annhyg/mes083).

Ghosh RE, Cullinan P, Fishwick D, Hoyle J, Warburton CJ, Strachan DP, Butland BK, Jarvis D. Asthma and occupation in the 1958 birth cohort. *Thorax*. 2013 Apr;68(4):365-71. doi: [10.1136/thoraxjnl-2012-202151](https://doi.org/10.1136/thoraxjnl-2012-202151).

Lin S, Herdt-Losavio ML, Chapman BR, Munsie JP, Olshan AF, Druschel CM. National Birth Defects Prevention Study. Maternal occupation and the risk of major birth defects: a follow-up analysis from the National Birth Defects Prevention Study. *Int J Hyg Environ Health*. 2013 Jun;216(3):317-23. doi: [10.1016/j.ijheh.2012.05.006](https://doi.org/10.1016/j.ijheh.2012.05.006).

Perrotta C, Staines A, Codd M, Kleefeld S, Crowley D, T' Mannetje A, Becker N, Brennan P, De Sanjosé S, Foretova L, Maynadié M, Nieters A, Boffetta P, Cocco P. Multiple Myeloma and lifetime occupation: results from the EPILYMPH study. *J Occup Med Toxicol*. 2012 Dec 14;7(1):25. doi: [10.1186/1745-6673-7-25](https://doi.org/10.1186/1745-6673-7-25).

Baur X, Bakehe P, Vellguth H. Bronchial asthma and COPD due to irritants in the workplace - an evidence-based approach. *J Occup Med Toxicol*. 2012 Sep 26;7(1):19. doi: [10.1186/1745-6673-7-19](https://doi.org/10.1186/1745-6673-7-19).

Karami S, Colt JS, Schwartz K, Davis FG, Ruterbusch JJ, Munuo SS, Wacholder S, Stewart PA, Graubard BI, Rothman N, Chow WH, Purdue MP. A case-control study of occupation/industry and renal cell carcinoma risk. *BMC Cancer*. 2012 Aug 8;12:344. doi: [10.1186/1471-2407-12-344](https://doi.org/10.1186/1471-2407-12-344).

Fan ZJ, Bonauto DK, Foley MP, Anderson NJ, Yragui NL, Silverstein BA. Occupation and the prevalence of current depression and frequent mental distress, WA BRFSS 2006 and 2008. *Am J Ind Med*. 2012 Oct;55(10):893-903. doi: [10.1002/ajim.22094](https://doi.org/10.1002/ajim.22094).

Anderson NJ, Bonauto DK, Fan ZJ, Spector JT. Distribution of influenza-like illness (ILI) by occupation in Washington State, September 2009-August 2010. *PLoS One*. 2012;7(11):e48806. doi: [10.1371/journal.pone.0048806](https://doi.org/10.1371/journal.pone.0048806).

Mirabelli MC, London SJ, Charles LE, Pompeii LA, Wagenknecht LE. Occupation and three-year incidence of respiratory symptoms and lung function decline: the ARIC Study. *Respir Res*. 2012 Mar 20;13:24. doi: [10.1186/1465-9921-13-24](https://doi.org/10.1186/1465-9921-13-24).

Mirabelli MC, Vizcaya D, Martí Margarit A, Antó JM, Arjona L, Barreiro E, Orriols R, Gimenez-Arnau A, Zock JP. Occupational risk factors for hand dermatitis among professional cleaners in Spain. *Contact Dermatitis*. 2012 Apr;66(4):188-96. doi: [10.1111/j.1600-0536.2011.02023.x](https://doi.org/10.1111/j.1600-0536.2011.02023.x).

Gany F, Dobslaw R, Ramirez J, Tonda J, Lobach I, Leng J. Mexican urban occupational health in the US: a population at risk. *J Community Health*. 2011 Apr;36(2):175-9. doi: [10.1007/s10900-010-9295-9](https://doi.org/10.1007/s10900-010-9295-9).

Liskowsky J, Geier J, Bauer A. Contact allergy in the cleaning industry: analysis of contact allergy surveillance data of the Information Network of Departments of Dermatology. *Contact Dermatitis*. 2011 Sep;65(3):159-66. doi: [10.1111/j.1600-0536.2011.01937.x](https://doi.org/10.1111/j.1600-0536.2011.01937.x).

Colt JS, Karagas MR, Schwenn M, Baris D, Johnson A, Stewart P, Verrill C, Moore LE, Lubin J, Ward MH, Samanic C, Rothman N, Cantor KP, Beane Freeman LE, Schned A, Cherala S, Silverman DT. Occupation and bladder cancer in a population-based case-control study in Northern New England. *Occup Environ Med*. 2011 Apr;68(4):239-49. doi: [10.1136/oem.2009.052571](https://doi.org/10.1136/oem.2009.052571).

- Wang TN, Lin MC, Wu CC, Leung SY, Huang MS, Chuang HY, Lee CH, Wu DC, Ho PS, Ko AM, Chang PY, Ko YC. Risks of exposure to occupational asthmogens in atopic and nonatopic asthma: a case-control study in Taiwan. *Am J Respir Crit Care Med*. 2010 Dec 1;182(11):1369-76. [doi: 10.1164/rccm.200906-0969OC](https://doi.org/10.1164/rccm.200906-0969OC).
- Rui F, Bovenzi M, Prodi A, Fortina AB, Romano I, Peserico A, Corradin MT, Carrabba E, Filon FL. Nickel, cobalt and chromate sensitization and occupation. *Contact Dermatitis*. 2010 Apr;62(4):225-31. [doi: 10.1111/j.1600-0536.2009.01650.x](https://doi.org/10.1111/j.1600-0536.2009.01650.x).
- Pedersen BH, Hannerz H, Tüchsen F, Mikkelsen KL, Dyreborg J. Industry and injury related hospital contacts: a follow-up study of injuries among working men in Denmark. *J Occup Health*. 2010;52(3):147-54. <http://www.ncbi.nlm.nih.gov/pubmed/20299761>.
- Zock JP, Vizcaya D, Le Moual N. Update on asthma and cleaners. *Curr Opin Allergy Clin Immunol*. 2010 Apr;10(2):114-20. [doi: 10.1097/ACI.0b013e32833733fe](https://doi.org/10.1097/ACI.0b013e32833733fe).
- Herd-Losavio ML, Lin S, Chapman BR, Hooiveld M, Olshan A, Liu X, DePersis RD, Zhu J, Druschel CM. Maternal occupation and the risk of birth defects: an overview from the National Birth Defects Prevention Study. *Occup Environ Med*. 2010 Jan;67(1):58-66. [doi: 10.1136/oem.2009.048256](https://doi.org/10.1136/oem.2009.048256).
- Lynde CB, Obadia M, Liss GM, Ribeiro M, Holness DL, Tarlo SM. Cutaneous and respiratory symptoms among professional cleaners. *Occup Med (Lond)*. 2009 Jun;59(4):249-54. [doi: 10.1093/occmed/kqp051](https://doi.org/10.1093/occmed/kqp051).
- Village J, Koehoorn M, Hossain S, Ostry A. Quantifying tasks, ergonomic exposures and injury rates among school custodial workers. *Ergonomics*. 2009 Jun;52(6):723-34. [doi: 10.1080/00140130802524633](https://doi.org/10.1080/00140130802524633).
- Bernstein JA, Brandt D, Rezvani M, Abbott C, Levin L. Evaluation of cleaning activities on respiratory symptoms in asthmatic female homemakers. *Ann Allergy Asthma Immunol*. 2009 Jan;102(1):41-6. [doi: 10.1016/S1081-1206\(10\)60106-8](https://doi.org/10.1016/S1081-1206(10)60106-8).
- Leigh JP, Wiatrowski WJ, Gillen M, Steenland NK. Characteristics of persons and jobs with needlestick injuries in a national data set. *Am J Infect Control*. 2008 Aug;36(6):414-20. [doi: 10.1016/j.ajic.2007.07.020](https://doi.org/10.1016/j.ajic.2007.07.020).
- Arif AA, Hughes PC, Delclos GL. Occupational exposures among domestic and industrial professional cleaners. *Occup Med (Lond)*. 2008 Oct;58(7):458-63. [doi: 10.1093/occmed/kqn082](https://doi.org/10.1093/occmed/kqn082).
- Kines P, Hannerz H, Mikkelsen KL, Tüchsen F. Industrial sectors with high risk of women's hospital-treated injuries. *Am J Ind Med*. 2007 Jan;50(1):13-21. <http://www.ncbi.nlm.nih.gov/pubmed/17096369>.
- Boulet LP, Lemièrre C, Gautrin D, Cartier A. New insights into occupational asthma. *Curr Opin Allergy Clin Immunol*. 2007 Feb;7(1):96-101. <http://www.ncbi.nlm.nih.gov/pubmed/17218818>.
- Rosenman KD, Reilly MJ, Schill DP et al. Cleaning Products and Work-Related Asthma. *JOEM*. 2003 May; 45(5):556-563. <http://www.ncbi.nlm.nih.gov/pubmed/12762081>.

Intermediate Goal 2.1: Develop guidelines and training materials for effective injury interventions for building services workers.

Occupational Safety and Health Administration. FY2013 Developmental Follow-on Susan Harwood Grant to Make the Road New York, Brooklyn, NY, \$159,600. The grantee will present one-hour training sessions on hazard identification for the cleaning industry, mold hazards and protection, chemical hazards, ergonomics, and construction Focus Four to workers located in the Greater New York City area and Long Island. The target audience will be hard-to-reach immigrant workers, with emphasis on Latino workers.

https://www.osha.gov/dte/sharwood/2013_grant_recipients.html. Accessed June 16, 2014

Occupational Safety and Health Administration. FY2013 Developmental Follow-on Susan Harwood Grant to Hispanic Resource Center of Larchmont and Mamaroneck, Mamaroneck, NY, \$87,000. The grantee will offer workplace safety training to new immigrant, limited English speakers and low literacy immigrant workers, mostly day laborers and domestic workers. Training topics will include the recognition of landscaping, construction, and chemical hazards; lead and asbestos removal hazards; and an introduction to OSHA and worker rights. Training and materials will be offered in Spanish.

https://www.osha.gov/dte/sharwood/2013_grant_recipients.html. Accessed June 16, 2014

Occupational Safety and Health Administration. FY2013 Developmental Follow-on Susan Harwood Grant to Casa Latina, Seattle, WA, \$144,000. The grantee will deliver training to Latino immigrant day laborers in the construction, gardening/landscaping, and moving industries in King County, Washington. Topics will include lifting heavy objects, eye hazards, airborne chemicals/dust, noise, other chemicals, falling objects, working at heights, weather protection, and working in unsanitary conditions.

https://www.osha.gov/dte/sharwood/2013_grant_recipients.html. Accessed June 16, 2014

Occupational Safety and Health Administration. FY2013 Developmental Follow-on Susan Harwood Grant to CASA de Maryland, Inc., Hyattsville, MD, \$181,390. The grantee will deliver training to workers in construction, building and grounds maintenance, warehouse work and moving, housekeeping and agriculture. The training will target non-English speaking/limited English proficient workers, non-literate and low-literacy workers, immigrant and minority workers, other hard-to-reach workers in Maryland. Training will include the identification and control of electrical-landscaping hazards.

https://www.osha.gov/dte/sharwood/2013_grant_recipients.html. Accessed June 16, 2014

Occupational Safety and Health Administration. Tree Care Work: Falls and Falling Object Hazards (OSHA Hazard Bulletin). <https://www.osha.gov/Publications/OSHAHB3731.pdf>. Accessed June 16, 2014

California Department of Public Health. Prevención de fatalidades de podadores de palmeras (Preventing Palm Tree Trimmer Fatalities). <https://www.youtube.com/watch?v=6ThlQJ-W42w&list=PL43A44D61109073BC>. Accessed June 16, 2014

Massachusetts Department of Public Health. Arborists dies in fall from a tree after being hoisted by a crane to the tree. MA FACE; September 25, 2013.

<http://www.cdc.gov/niosh/face/pdfs/11MA031.pdf>. Accessed June 16, 2014

California Department of Public Health. A tree trimmer dies when he falls from a tree. California FACE; February 12, 2014. <http://www.cdc.gov/niosh/face/pdfs/12CA010.pdf>. Accessed June 16, 2014

Occupational Safety and Health Administration. FY2012 Developmental Follow-on Susan Harwood Grant to Interfaith Worker Justice, Chicago, IL, \$181,388. The grantee will provide worker and train-the-trainer training that addresses specific health and safety hazards in construction, cleaning service, poultry/meat packing, restaurants, landscaping, and home care. Training will target non-English speaking/limited English proficiency workers, non-literate and low literacy workers, young workers, and hard-to-reach workers. Training and materials will be available in English and Spanish. https://www.osha.gov/dte/sharwood/2012_grant_recipients.html. Accessed July 29, 2013

Occupational Safety and Health Administration. FY2012 Developmental Follow-on Susan Harwood Grant to Hispanic Resource Center of Larchmont and Mamaroneck, Mamaroneck, NY, \$88,350. The grantee will provide training in each of four topics: landscaping, falls in the workplace, chemical hazards, lead and asbestos removal. Training targets new immigrant, limited English speakers and low literacy immigrant workers including day laborers and domestic workers. Training and materials will be available in English and Spanish. https://www.osha.gov/dte/sharwood/2012_grant_recipients.html. Accessed July 29, 2013

Occupational Safety and Health Administration. FY2012 Developmental Follow-on Susan Harwood Grant to Casa Latina, Seattle, WA, \$152,000. The grantee will offer 4-hour health and safety training for day laborers working in the construction, moving, and gardening/landscaping industries in King County, Washington. Topics will include lifting heavy objects, eye hazards, airborne chemicals/dust, noise, chemicals, working at heights, and weather protection. https://www.osha.gov/dte/sharwood/2012_grant_recipients.html. Accessed July 29, 2013

Occupational Safety and Health Administration. FY2012 Developmental Follow-on Susan Harwood Grant to CASA de Maryland, Inc., Hyattsville, MD, \$181,390. The grantee will provide health and safety training to workers in the construction, building and ground maintenance, and warehouse industries. Training will target non-English speaking/limited English proficient, non-literate and low-literacy, and hard-to-reach workers in the state of Maryland. Training topics will include construction focus four hazards and heat and cold exposure hazards. https://www.osha.gov/dte/sharwood/2012_grant_recipients.html. Accessed July 29, 2013

Occupational Safety and Health Administration. 2010 Developmental Susan Harwood Grant to CASA de Maryland, Inc. (Central American Solidarity Association), Hyattsville, MD, \$220,000. The grantee will provide training for high-risk Latino workers in the construction, building and grounds maintenance, agricultural, and warehouse industries in Maryland. Training will be offered through local community colleges and employment centers. Training will include a train-the-trainer module. The training and/or materials will be offered in English and Spanish. https://www.osha.gov/dte/sharwood/2010_grant_recipients.html. Accessed July 29, 2013

Occupational Safety and Health Administration. FY2011 Developmental Follow-on Susan Harwood Grant to Regents of the University of California, The - Berkeley, Berkeley, CA, \$187,000. The grantee will provide training to low-income, immigrant and youth workers

employed in small businesses in Northern California. The target audiences are workers in nail salons, restaurants, janitorial services, residential care, and landscaping services. The training and/or materials will be offered in English, Vietnamese, and Spanish.

https://www.osha.gov/dte/sharwood/2011_grant_recipients.html. Accessed July 29, 2013

Occupational Safety and Health Administration. FY2011 Developmental Follow-on Susan Harwood Grant to National Council for Occupational Safety and Health, Raleigh, NC, \$663,000. The grantee will conduct training that targets high-risk vulnerable workers, especially those with limited English proficiency. Training will be provided by participating COSH groups. Training will include classes on hazards associated with maintenance, housekeeping, custodial, agricultural, and restaurant work. The training and/or materials will be offered in English and Spanish.

https://www.osha.gov/dte/sharwood/2011_grant_recipients.html. Accessed July 29, 2013

Occupational Safety and Health Administration. FY2011 Developmental Follow-on Susan Harwood Grant to Interfaith Worker Justice, Chicago, IL, \$186,998. The grantee will develop and provide safety training that targets low-wage, immigrant workers in construction, landscaping, poultry/meatpacking, restaurants, and cleaning services. The employer training will include how to develop or improve a safety and health program. The training and/or materials will be offered in English, Spanish and Polish.

https://www.osha.gov/dte/sharwood/2011_grant_recipients.html. Accessed July 29, 2013

Occupational Safety and Health Administration. FY2011 Developmental Susan Harwood Grant to Hispanic Resource Center for Larchmont and Mamaroneck, Mamaroneck, NY, \$93,000. The grantee will build long term health and safety capacity and provide safety training to workers in New York. Training topics will include fall protection, electrical safety, confined space, heat exposure, machine safety and chemical hazards. Training will target new immigrant Hispanic workers and day laborers in the construction and landscaping industries. Training and materials will be provided in Spanish.

https://www.osha.gov/dte/sharwood/2011_grant_recipients.html. Accessed July 29, 2013

Occupational Safety and Health Administration. 2009 Susan Harwood Grant to The University of Georgia, Athens, GA, \$250,000. The University will utilize training materials developed under a previous Harwood grant to provide bilingual training to landscape workers at workplaces and managers at trade shows. The University will also enhance their bilingual online video landscape safety training series by adding pictorial questions and evaluation components for online training. Four bilingual hands-on training sessions will be conducted for Atlanta-area tree service workers on chain saws, tree climbing and equipment, tree rigging and removal, and safe ground operations.

https://www.osha.gov/dte/sharwood/2009_grant_recipients.html. Accessed July 29, 2013

Occupational Safety and Health Administration. 2009 Susan Harwood Grant to Kansas State University, Manhattan, KS, \$153,762. The University will use grant training materials developed under a previous Harwood training grant. The materials were developed at an eighth-grade reading level in English/Spanish and include two-way dialogue, problem solving, demonstrations, hands-on and case studies. Twenty classes will be conducted at workplaces, trade shows, and other venues. The training length and content will vary to address needs of each trainee group. Available topics include hearing protection, tree-trimming safety,

mowing safety, safety program management; and additional training topics can be added. https://www.osha.gov/dte/sharwood/2009_grant_recipients.html. Accessed July 29, 2013

Koehoorn M, Ostry A, Hossain S, Village J. Injury risk associated with physical demands and school environment characteristics among a cohort of custodial workers. *Ergonomics*. 2011 Aug;54(8):767-75. doi: [10.1080/00140139.2011.592603](https://doi.org/10.1080/00140139.2011.592603).

Jørgensen MB, Rasmussen CD, Carneiro IG, Flyvholm MA, Olesen K, Ekner D, Søgaaard K, Holtermann A. Health disparities between immigrant and Danish cleaners. *Int Arch Occup Environ Health*. 2011 Aug;84(6):665-74. doi: [10.1007/s00420-010-0607-2](https://doi.org/10.1007/s00420-010-0607-2).

Beemsterboer W, Stewart R, Groothoff J, Nijhuis F. On regional differences in determinants of sick leave frequency for cleaning workers in two regions of the Netherlands: a comparative study. *Int J Occup Med Environ Health*. 2009;22(3):203-14. doi: [10.2478/v10001-009-0023-6](https://doi.org/10.2478/v10001-009-0023-6).

Intermediate Goal 2.2: Create and disseminate information that will reduce risks for skin and respiratory disorders associated with building cleaning and maintenance work.

Loddé B, Paul M, Roguedas-Contios AM, Eniafe-Eveillard MO, Misery L, Dewitte JD. Occupational dermatitis in workers exposed to detergents, disinfectants, and antiseptics. *Skinmed*. 2012 May-Jun;10(3):144-50. <http://www.ncbi.nlm.nih.gov/pubmed/22783559>.

Rui F, Bovenzi M, Prodi A, Fortina AB, Romano I, Corradin MT, Filon FL. Concurrent sensitization to metals and occupation. *Contact Dermatitis*. 2012 Dec;67(6):359-66. doi: [10.1111/j.1600-0536.2012.02100.x](https://doi.org/10.1111/j.1600-0536.2012.02100.x).

Le Moual N, Varraso R, Siroux V, Dumas O, Nadif R, Pin I, Zock JP, Kauffmann F. Epidemiological Study on the Genetics and Environment of Asthma. Domestic use of cleaning sprays and asthma activity in females. *Eur Respir J*. 2012 Dec; 40(6):1381-9. doi: [10.1183/09031936.00197611](https://doi.org/10.1183/09031936.00197611).

Laborde-Castérot H, Villa AF, Rosenberg N, Dupont P, Lee HM, Garnier R. Occupational rhinitis and asthma due to EDTA-containing detergents or disinfectants. *Am J Ind Med*. 2012 Aug;55(8):677-82. doi: [10.1002/ajim.22036](https://doi.org/10.1002/ajim.22036).

Anderson SE, Franko J, Jackson LG, Wells JR, Ham JE, Meade BJ. Irritancy and allergic responses induced by exposure to the indoor air chemical 4-oxopentanal. *Toxicol Sci*. 2012 Jun;127(2):371-81. doi: [10.1093/toxsci/kfs102](https://doi.org/10.1093/toxsci/kfs102).

Vizcaya D, Mirabelli MC, Antó JM, Orriols R, Burgos F, Arjona L, Zock JP. A workforce-based study of occupational exposures and asthma symptoms in cleaning workers. *Occup Environ Med*. 2011 Dec;68(12):914-9. doi: [10.1136/oem.2010.063271](https://doi.org/10.1136/oem.2010.063271).

Sartorelli P, Kezic S, Larese Filon F, John SM. Prevention of occupational dermatitis. *Int J Immunopathol Pharmacol*. 2011 Jan-Mar;24(1 Suppl):89S-93S. <http://www.ncbi.nlm.nih.gov/pubmed/21329572>.

Mäkelä R, Kauppi P, Suuronen K, Tuppurainen M, Hannu T. Occupational asthma in professional cleaning work: a clinical study. *Occup Med (Lond)*. 2011 Mar;61(2):121-6. doi: [10.1093/occmed/kqq192](https://doi.org/10.1093/occmed/kqq192).

Dunagan SC, Dodson RE, Rudel RA, Brody JG. Toxics Use Reduction in the Home: Lessons Learned from Household Exposure Studies. *J Clean Prod.* 2011 Mar 1;19(5):438-444. <http://www.ncbi.nlm.nih.gov/pubmed/21516227>.

Forester CD, Wells JR. Hydroxyl radical yields from reactions of terpene mixtures with ozone. *Indoor Air.* 2011 Oct;21(5):400-9. doi: [10.1111/j.1600-0668.2011.00718.x](https://doi.org/10.1111/j.1600-0668.2011.00718.x).

Quirce S, Barranco P. Cleaning agents and asthma. *J Investig Allergol Clin Immunol.* 2010;20(7):542-50. <http://www.jiacci.org/issues/vol20issue7/1.pdf>. Accessed July 25, 2013

Ham JE, Wells JR. Surface chemistry of a pine-oil cleaner and other terpene mixtures with ozone on vinyl flooring tiles. *Chemosphere.* 2011 Apr;83(3):327-33. doi: [10.1016/j.chemosphere.2010.12.036](https://doi.org/10.1016/j.chemosphere.2010.12.036).

Sarlo K, Kirchner DB, Troyano E, Smith LA, Carr GJ, Rodriguez C. Assessing the risk of type 1 allergy to enzymes present in laundry and cleaning products: evidence from the clinical data. *Toxicology.* 2010 May 27;271(3):87-93. doi: [10.1016/j.tox.2010.03.007](https://doi.org/10.1016/j.tox.2010.03.007).

Charles LE, Loomis D, Demissie Z. Occupational hazards experienced by cleaning workers and janitors: A review of the epidemiologic literature. *Work.* 2009;34(1):105-16. doi: [10.3233/WOR-2009-0907](https://doi.org/10.3233/WOR-2009-0907).

Minov J, Karadzinska-Bislimovska J, Vasilevska K, Risteska-Kuc S, Stoleski S. Effects of passive smoking at work on respiratory symptoms, lung function, and bronchial responsiveness in never-smoking office cleaning women. *Arh Hig Rada Toksikol.* 2009 Sep;60(3):327-34. doi: [10.2478/10004-1254-60-2009-1941](https://doi.org/10.2478/10004-1254-60-2009-1941).

Cherry N, Beach J, Burstyn I, Fan X, Guo N, Kapur N. Data linkage to estimate the extent and distribution of occupational disease: new onset adult asthma in Alberta, Canada. *Am J Ind Med.* 2009 Nov;52(11):831-40. doi: [10.1002/ajim.20753](https://doi.org/10.1002/ajim.20753).

Fang F, Quinlan P, Ye W, Barber MK, Umbach DM, Sandler DP, Kamel F. Workplace exposures and the risk of amyotrophic lateral sclerosis. *Environ Health Perspect.* 2009 Sep;117(9):1387-92. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2737014/>. Accessed July 26, 2013

Obadia M, Liss GM, Lou W, Purdham J, Tarlo SM. Relationships between asthma and work exposures among non-domestic cleaners in Ontario. *Am J Ind Med.* 2009 Sep;52(9):716-23. doi: [10.1002/ajim.20730](https://doi.org/10.1002/ajim.20730).

Forester CD, Wells JR. Yields of carbonyl products from gas-phase reactions of fragrance compounds with OH radical and ozone. *Environ Sci Technol.* 2009 May 15;43(10):3561-8. doi: [10.1021/es803465v](https://doi.org/10.1021/es803465v).

Feveile H, Christensen KB, Flyvholm MA. Self-reported occupational skin contact with cleaning agents and the risk of disability pension. *Contact Dermatitis.* 2009 Mar;60(3):131-5. doi: [10.1111/j.1600-0536.2008.01495.x](https://doi.org/10.1111/j.1600-0536.2008.01495.x).

Anderson SE, Ham JE, Munson AE. Irritancy and sensitization potential of glyoxylic acid. *J Immunotoxicol.* 2008 Apr;5(2):93-8. doi: [10.1080/15476910802085681](https://doi.org/10.1080/15476910802085681).

Kogevinas M, Zock JP, Jarvis D, Kromhout H, Lillienberg L, Plana E, et al. Exposure to substances in the workplace and new-onset asthma: an international prospective population-

- based study (ECRHS-II). *Lancet*. 2007 Jul 28;370(9584):336-41. doi: [10.1016/S0140-6736\(07\)61164-7](https://doi.org/10.1016/S0140-6736(07)61164-7).
- Soder S, Diepgen TL, Radulescu M, Apfelbacher CJ, Bruckner T, Weisshaar E. Occupational skin diseases in cleaning and kitchen employees: course and quality of life after measures of secondary individual prevention. *J Dtsch Dermatol Ges*. 2007 Aug;5(8):670-6. doi: [10.1111/j.1610-0387.2007.06419.x](https://doi.org/10.1111/j.1610-0387.2007.06419.x).
- Nielsen GD, Larsen ST, Olsen O, Løvik M, Poulsen LK, Glue C, Wolkoff P. Do indoor chemicals promote development of airway allergy? *Indoor Air*. 2007 Jun;17(3):236-55. doi: [10.1111/j.1600-0668.2006.00468.x](https://doi.org/10.1111/j.1600-0668.2006.00468.x).
- de Fátima Maçãira E, Algranti E, Medina Coeli Mendonça E, Antônio Bussacos M. Rhinitis and asthma symptoms in non-domestic cleaners from the Sao Paulo metropolitan area, Brazil. *Occup Environ Med*. 2007 Jul;64(7):446-53. doi: [10.1136/oem.2006.032094](https://doi.org/10.1136/oem.2006.032094).
- Jeebhay MF, Quirce S. Occupational asthma in the developing and industrialised world: a review. *Int J Tuberc Lung Dis*. 2007 Feb;11(2):122-33. <http://www.ncbi.nlm.nih.gov/pubmed/17263280>.
- Earnest CM, Corsi RL. Inhalation exposure to cleaning products: application of a two-zone model. *J Occup Environ Hyg*. 2013 Jun;10(6):328-35. doi: [10.1080/15459624.2013.782198](https://doi.org/10.1080/15459624.2013.782198).
- Bello A, Quinn MM, Milton DK, Perry MJ. Determinants of exposure to 2-butoxyethanol from cleaning tasks: a quasi-experimental study. *Ann Occup Hyg*. 2013 Jan;57(1):125-35. doi: [10.1093/annhyg/mes054](https://doi.org/10.1093/annhyg/mes054).
- Rella R, Sturaro A, Vianello A. 2-Butoxyethanol from cleaning products responsible for complaints in workplaces: a case study. *J Environ Monit*. 2012 Oct 26;14(10):2659-62. doi: [10.1039/C2EM30499F](https://doi.org/10.1039/C2EM30499F).
- Bello A, Quinn MM, Perry MJ, Milton DK. Quantitative assessment of airborne exposures generated during common cleaning tasks: a pilot study. *Environ Health*. 2010 Nov 30;9:76. doi: [10.1186/1476-069X-9-76](https://doi.org/10.1186/1476-069X-9-76).
- Sastre J, Madero MF, Fernández-Nieto M, Sastre B, del Pozo V, Potro MG, Quirce S. Airway response to chlorine inhalation (bleach) among cleaning workers with and without bronchial hyperresponsiveness. *Am J Ind Med*. 2011 Apr;54(4):293-9. doi: [10.1002/ajim.20912](https://doi.org/10.1002/ajim.20912).
- Environmental Working Group. Greener School Cleaning Supplies. November 3, 2009. <http://www.ewg.org/research/greener-school-cleaning-supplies>. Accessed June 5, 2012
- Charles LE, Loomis D, Demissie Z. Occupational hazards experienced by cleaning workers and janitors: A review of the epidemiologic literature. *Work*. 2009;34(1):105-16. doi: [10.3233/WOR-2009-0907](https://doi.org/10.3233/WOR-2009-0907).
- Plaisance H, Desmettres P, Leonardis T, Pennequin-Cardinal A, Locoge N, Galloo JC. Passive sampling of glycol ethers and their acetates in indoor air. *J Environ Monit*. 2008 Apr;10(4):517-26. doi: [10.1039/b802189a](https://doi.org/10.1039/b802189a).
- ECOLOGO. Cleaning, Sanitary Paper, and Personal Care Products. <http://www.ul.com/global/eng/pages/offerings/businesses/environment/services/ELmark/index.jsp#cleaning>. Accessed June 16, 2014

Green Seal. Institutional Cleaning Products.

<http://www.green Seal.org/FindGreenSealProductsandServices.aspx?vid=ViewProductDetail&cid=16>. Accessed May 28, 2013

U.S. Environmental Protection Agency, Design for the Environment. Labeled Products and Our Partners. <http://www.epa.gov/dfe/pubs/projects/formulat/formpart.htm>. Accessed May 28, 2013

ISSA (formerly International Sanitary Supply Association). Cleaning Industry Management Standard (CIMS). http://www.issa.com/?id=cleaning_industry_management_standard_cims. Accessed May 28, 2013

Simcox N, Wakai S, Welsh L, Westinghouse C, Morse T. Transitioning from traditional to green cleaners: an analysis of custodian and manager focus groups. *New Solut.* 2012;22(4):449-71. <http://www.ncbi.nlm.nih.gov/pubmed/23380255>.

Chang JH, Wu JD, Liu CY, Hsu DJ. Prevalence of musculoskeletal disorders and ergonomic assessments of cleaners. *Am J Ind Med.* 2012 Jul;55(7):593-604. [doi: 10.1002/ajim.22064](https://doi.org/10.1002/ajim.22064).

Jørgensen MB, Faber A, Jespersen T, Hansen K, Ektor-Andersen J, Hansen JV, Holtermann A, Sjøgaard K. Implementation of physical coordination training and cognitive behavioural training interventions at cleaning workplaces--secondary analyses of a randomised controlled trial. *Ergonomics.* 2012;55(7):762-72. [doi: 10.1080/00140139.2012.665946](https://doi.org/10.1080/00140139.2012.665946).

Village J, Koehoorn M, Hossain S, Ostry A. Quantifying tasks, ergonomic exposures and injury rates among school custodial workers. *Ergonomics.* 2009 Jun;52(6):723-34. [doi: 10.1080/00140130802524633](https://doi.org/10.1080/00140130802524633).

Light E. Efficacy of "green" cleaning products with respect to common respiratory viruses and mold growth. *J Environ Health.* 2009 May;71(9):24-7; quiz 35. <http://www.ncbi.nlm.nih.gov/pubmed/19452831>.

Weinburg J, Harrison R, Flattery J. Letter published in *Journal of Environmental Health* in response to the article "Efficacy of Green Cleaning Products". *Journal of Environmental Health.* 2009 July/August;72(1):58. <http://www.cdph.ca.gov/programs/ohsep/Documents/JEHLetter0709.pdf>. Accessed on June 6, 2013

Öhrling T, Kumar R, Abrahamsson L. Assessment of the development and implementation of tools in contract cleaning. *Appl Ergon.* 2012 Jul;43(4):687-94. [doi: 10.1016/j.apergo.2011.11.006](https://doi.org/10.1016/j.apergo.2011.11.006).

Rasmussen CD, Jørgensen MB, Carneiro IG, Flyvholm MA, Olesen K, Sjøgaard K, Holtermann A. Participation of Danish and immigrant cleaners in a 1-year worksite intervention preventing physical deterioration. *Ergonomics.* 2012;55(2):256-64. [doi: 10.1080/00140139.2011.592651](https://doi.org/10.1080/00140139.2011.592651).

Bell AF, Steele JR. Risk of musculoskeletal injury among cleaners during vacuuming. *Ergonomics.* 2012;55(2):237-47. [doi: 10.1080/00140139.2011.592605](https://doi.org/10.1080/00140139.2011.592605).

Pechter E, Azaroff LS, López I, Goldstein-Gelb M. Reducing hazardous cleaning product use: a collaborative effort. *Public Health Rep.* 2009 Jul-Aug;124 Suppl 1:45-52. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2708656/>. Accessed July 26, 2013

Okumura K. The use of third-party review to reduce health and environmental hazards from surfactants and cleaning products in the janitorial industry. J Environ Health. 2009 May;71(9):20-3. <http://www.ncbi.nlm.nih.gov/pubmed/19452830>.

NIOSH/OSHA. Protecting Workers Who Use Cleaning Chemicals. DHHS (NIOSH) Publication Number 2012-126; July 2012. <http://www.cdc.gov/niosh/docs/2012-126/>. Accessed July 26, 2013

NIOSH/OSHA. Protect Yourself: Cleaning Chemicals and Your Health. DHHS (NIOSH) Publication Number 2012-125; March 2012. <http://www.cdc.gov/niosh/docs/2012-125/>. Available in English, Spanish, Chinese and Tagalog. Accessed July 26, 2013

California Department of Public Health. Prevencion de fatalidades de podadores de palmeras (Preventing Palm Tree Trimmer Fatalities). <https://www.youtube.com/watch?v=6ThlQJ-W42w&list=PL43A44D61109073BC>. Accessed June 16, 2014

Massachusetts Department of Public Health Occupational Health Surveillance Program. A Asma e os Produtos de Limpeza no Ambiente de Trabalho. Boston, 2010. <http://www.mass.gov/eohhs/docs/dph/occupational-health/asthma-cleaning-products-portuguese.pdf>. Portuguese. Accessed July 26, 2013

New Jersey Public Health Services Branch. Los Productos de Limpieza el Asma: Informacion Imprescindible para del trabajador. http://www.state.nj.us/health/eoh/survweb/wra/documents/wra_cleaning_products_sp.pdf, Spanish. Accessed May 28, 2013

New Mexico Department of Health, Environmental Health Epidemiology. Cleaning Products and Work-Related Asthma. November 2012. http://nmhealth.org/eheb/documents/NMDOHWRA_CleaningProducts_rev010413.pdf. Accessed May 28, 2013

Washington Department of Labor and Industries. Safety and Health Alert for Corrosive Cleaning Products. January 2011. <http://www.lni.wa.gov/Safety/Research/Files/DndHazAlert2011.pdf>. Accessed May 28, 2013

California Department of Public Health. Cleaning Products and Work-Related Asthma. 2010. <http://www.cdph.ca.gov/programs/ohsep/Documents/WRA-CleaningProd.pdf>. Accessed May 28, 2013

Weisshaar E, Radulescu M, Soder S, Apfelbacher CJ, Bock M, Grundmann JU, Albrecht U, Diepgen TL. Secondary individual prevention of occupational skin diseases in health care workers, cleaners and kitchen employees: aims, experiences and descriptive results. Int Arch Occup Environ Health. 2007 May;80(6):477-84. [doi: 10.1007/s00420-006-0154-z](https://doi.org/10.1007/s00420-006-0154-z).

Strategic Goal 3: Eliminate health disparities for priority population workers in building services industries.

Rosenman KD, Reilly MJ, Schill DP et al. Cleaning Products and Work-Related Asthma. JOEM. 2003 May; 45(5):556-563. <http://www.ncbi.nlm.nih.gov/pubmed/12762081>.

Locke SI, Colt JS, Stewart PA et al. Identifying gender differences in reported occupational information from three US population-based case-control studies. *Occup Environ Med*. 2014 Dec;71(12):855-64. [doi: 10.1136/oemed-2013-101801](https://doi.org/10.1136/oemed-2013-101801).

Intermediate Goal 3.1: Work with stakeholders in the building services industries to develop training materials for supervisors and workers that address environmental, organizational and behavioral factors associated with health disparities, if any are found to exist.

Stanbury M, Rosenman KD. Occupational health disparities: A state public health-based approach. *AJIM* 2014 May; 57(5):596-604. [doi: 10.1002/ajim.22292](https://doi.org/10.1002/ajim.22292).

Jørgensen MB, Rasmussen CD, Carneiro IG, Flyvholm MA, Olesen K, Ekner D, Søgaaard K, Holtermann A. Health disparities between immigrant and Danish cleaners. *Int Arch Occup Environ Health*. 2011 Aug;84(6):665-74. [doi: 10.1007/s00420-010-0607-2](https://doi.org/10.1007/s00420-010-0607-2).

Gany F, Dobslaw R, Ramirez J, Tonda J, Lobach I, Leng J. Mexican urban occupational health in the US: a population at risk. *J Community Health*. 2011 Apr;36(2):175-9. [doi: 10.1007/s10900-010-9295-9](https://doi.org/10.1007/s10900-010-9295-9).

Sanders MJ, McCready J. A qualitative study of two older workers' adaptation to physically demanding work. *Work*. 2009;32(2):111-22. [doi: 10.3233/WOR-2009-0797](https://doi.org/10.3233/WOR-2009-0797).

Kines P, Hannerz H, Mikkelsen KL, Tüchsen F. Industrial sectors with high risk of women's hospital-treated injuries. *Am J Ind Med*. 2007 Jan;50(1):13-21. [doi: 10.1002/ajim.20408](https://doi.org/10.1002/ajim.20408).

Occupational Safety and Health Administration. FY2013 Developmental Follow-on Susan Harwood Grant to Make the Road New York, Brooklyn, NY, \$159,600. The grantee will present one-hour training sessions on hazard identification for the cleaning industry, mold hazards and protection, chemical hazards, ergonomics, and construction Focus Four to workers located in the Greater New York City area and Long Island. The target audience will be hard-to-reach immigrant workers, with emphasis on Latino workers.

https://www.osha.gov/dte/sharwood/2013_grant_recipients.html. Accessed June 16, 2014

Occupational Safety and Health Administration. FY2013 Developmental Follow-on Susan Harwood Grant to Hispanic Resource Center of Larchmont and Mamaroneck, Mamaroneck, NY, \$87,000. The grantee will offer workplace safety training to new immigrant, limited English speakers and low literacy immigrant workers, mostly day laborers and domestic workers. Training topics will include the recognition of landscaping, construction, and chemical hazards; lead and asbestos removal hazards; and an introduction to OSHA and worker rights. Training and materials will be offered in Spanish.

https://www.osha.gov/dte/sharwood/2013_grant_recipients.html. Accessed June 16, 2014

Occupational Safety and Health Administration. FY2013 Developmental Follow-on Susan Harwood Grant to Casa Latina, Seattle, WA, \$144,000. The grantee will deliver training to Latino immigrant day laborers in the construction, gardening/landscaping, and moving industries in King County, Washington. Topics will include lifting heavy objects, eye hazards, airborne chemicals/dust, noise, other chemicals, falling objects, working at heights, weather protection, and working in unsanitary conditions.

https://www.osha.gov/dte/sharwood/2013_grant_recipients.html. Accessed June 16, 2014

Occupational Safety and Health Administration. FY2013 Developmental Follow-on Susan Harwood Grant to CASA de Maryland, Inc., Hyattsville, MD, \$181,390. The grantee will deliver training to workers in construction, building and grounds maintenance, warehouse work and moving, housekeeping and agriculture. The training will target non-English speaking/limited English proficient workers, non-literate and low-literacy workers, immigrant and minority workers, other hard-to-reach workers in Maryland. Training will include the identification and control of electrical-landscaping hazards.

https://www.osha.gov/dte/sharwood/2013_grant_recipients.html. Accessed June 16, 2014

Occupational Safety and Health Administration. FY2012 Developmental Follow-on Susan Harwood Grant to Interfaith Worker Justice, Chicago, IL, \$181,388. The grantee will provide worker and train-the-trainer training that addresses specific health and safety hazards in construction, cleaning service, poultry/meat packing, restaurants, landscaping, and home care. Training will target non-English speaking/limited English proficiency workers, non-literate and low literacy workers, young workers, and hard-to-reach workers. Training and materials will be available in English and Spanish.

https://www.osha.gov/dte/sharwood/2012_grant_recipients.html. Accessed July 29, 2013

Occupational Safety and Health Administration. FY2012 Developmental Follow-on Susan Harwood Grant to Hispanic Resource Center of Larchmont and Mamaroneck, Mamaroneck, NY, \$88,350. The grantee will provide training in each of four topics: landscaping, falls in the workplace, chemical hazards, lead and asbestos removal. Training targets new immigrant, limited English speakers and low literacy immigrant workers including day laborers and domestic workers. Training and materials will be available in English and Spanish.

https://www.osha.gov/dte/sharwood/2012_grant_recipients.html. Accessed July 29, 2013

Occupational Safety and Health Administration. FY2012 Developmental Follow-on Susan Harwood Grant to Casa Latina, Seattle, WA, \$152,000. The grantee will offer 4-hour health and safety training for day laborers working in the construction, moving, and gardening/landscaping industries in King County, Washington. Topics will include lifting heavy objects, eye hazards, airborne chemicals/dust, noise, chemicals, working at heights, and weather protection. https://www.osha.gov/dte/sharwood/2012_grant_recipients.html. Accessed July 29, 2013

Occupational Safety and Health Administration. FY2012 Developmental Follow-on Susan Harwood Grant to CASA de Maryland, Inc., Hyattsville, MD, \$181,390. The grantee will provide health and safety training to workers in the construction, building and ground maintenance, and warehouse industries. Training will target non-English speaking/limited English proficient, non-literate and low-literacy, and hard-to-reach workers in the state of Maryland. Training topics will include construction focus four hazards and heat and cold exposure hazards. https://www.osha.gov/dte/sharwood/2012_grant_recipients.html. Accessed July 29, 2013

Occupational Safety and Health Administration. 2010 Developmental Susan Harwood Grant to CASA de Maryland, Inc. (Central American Solidarity Association), Hyattsville, MD, \$220,000. The grantee will provide training for high-risk Latino workers in the construction, building and grounds maintenance, agricultural, and warehouse industries in Maryland. Training will be offered through local community colleges and employment centers. Training will include a train-the-trainer module. The training and/or materials will be offered in

English and Spanish. https://www.osha.gov/dte/sharwood/2010_grant_recipients.html. Accessed July 29, 2013

Occupational Safety and Health Administration. FY2011 Developmental Follow-on Susan Harwood Grant to Regents of the University of California, The - Berkeley, Berkeley, CA, \$187,000. The grantee will provide training to low-income, immigrant and youth workers employed in small businesses in Northern California. The target audiences are workers in nail salons, restaurants, janitorial services, residential care, and landscaping services. The training and/or materials will be offered in English, Vietnamese, and Spanish. https://www.osha.gov/dte/sharwood/2011_grant_recipients.html. Accessed July 29, 2013

Occupational Safety and Health Administration. FY2011 Developmental Follow-on Susan Harwood Grant to National Council for Occupational Safety and Health, Raleigh, NC, \$663,000. The grantee will conduct training that targets high-risk vulnerable workers, especially those with limited English proficiency. Training will be provided by participating COSH groups. Training will include classes on hazards associated with maintenance, housekeeping, custodial, agricultural, and restaurant work. The training and/or materials will be offered in English and Spanish. https://www.osha.gov/dte/sharwood/2011_grant_recipients.html. Accessed July 29, 2013

Occupational Safety and Health Administration. FY2011 Developmental Follow-on Susan Harwood Grant to Interfaith Worker Justice, Chicago, IL, \$186,998. The grantee will develop and provide safety training that targets low-wage, immigrant workers in construction, landscaping, poultry/meatpacking, restaurants, and cleaning services. The employer training will include how to develop or improve a safety and health program. The training and/or materials will be offered in English, Spanish and Polish. https://www.osha.gov/dte/sharwood/2011_grant_recipients.html. Accessed July 29, 2013

Occupational Safety and Health Administration. FY2011 Developmental Susan Harwood Grant to Hispanic Resource Center for Larchmont and Mamaroneck, Mamaroneck, NY, \$93,000. The grantee will build long term health and safety capacity and provide safety training to workers in New York. Training topics will include fall protection, electrical safety, confined space, heat exposure, machine safety and chemical hazards. Training will target new immigrant Hispanic workers and day laborers in the construction and landscaping industries. Training and materials will be provided in Spanish. https://www.osha.gov/dte/sharwood/2011_grant_recipients.html. Accessed July 29, 2013

Education and Schools

Strategic Goal 4: Reduce the frequency and severity of injuries and illnesses by 30% among workers in public and private education including teachers, custodians, food service workers, nurses, security, support staff, garage mechanics, bus drivers and office workers.

Occupational Disease in Connecticut, 2013. Available at: http://www.oehe.uche.edu/pubs/OD_2013.pdf.

Hurley S, Goldberg D, Nelson DO, Lu Y, Henderson K, Bernstein L, Reynolds P. Risks of colorectal cancer associated with active smoking among female teachers. *Cancer Causes Control*. 2013 Jul;24(7):1291-304. [doi: 10.1007/s12355-013-0207-z](https://doi.org/10.1007/s12355-013-0207-z).

Ervasti J, Kivimäki M, Kawachi I, Subramanian SV, Pentti J, Ahola K, Oksanen T, Pohjonen T, Vahtera J, Virtanen M. Pupils with special educational needs in basic education schools and teachers' sickness absences--a register-linkage study. *Scand J Work Environ Health*. 2012 May;38(3):209-17. [doi: 10.5271/sjweh.3281](https://doi.org/10.5271/sjweh.3281).

Ervasti J, Kivimäki M, Kawachi I, Subramanian SV, Pentti J, Oksanen T, Puusniekka R, Pohjonen T, Vahtera J, Virtanen M. School environment as predictor of teacher sick leave: data-linked prospective cohort study. *BMC Public Health*. 2012 Sep 11;12:770. [doi: 10.1186/1471-2458-12-770](https://doi.org/10.1186/1471-2458-12-770).

Chia SE, Wong KY, Tai BC. Occupation and risk of non-Hodgkin's lymphoma in Singapore. *Occup Med (Lond)*. 2012 Jan;62(1):29-33. [doi: 10.1093/occmed/kqr188](https://doi.org/10.1093/occmed/kqr188).

Tak S, Groenewold M, Alterman T, Park RM, Calvert GM. Excess risk of head and chest colds among teachers and other school workers. *J Sch Health*. 2011 Sep;81(9):560-5. [doi: 10.1111/j.1746-1561.2011.00627.x](https://doi.org/10.1111/j.1746-1561.2011.00627.x).

Suarthana E, McFadden JD, Laney AS, Kreiss K, Anderson HA, Hunt DC, Neises D, Goodin K, Thomas A, Vandermeer M, Storey E. Occupational distribution of persons with confirmed 2009 H1N1 influenza. *J Occup Environ Med*. 2010 Dec;52(12):1212-6. [doi: 10.1097/JOM.0b013e3181fd32e4](https://doi.org/10.1097/JOM.0b013e3181fd32e4).

Obadia M, Liss GM, Lou W, Purdham J, Tarlo SM. Relationships between asthma and work exposures among non-domestic cleaners in Ontario. *Am J Ind Med*. 2009 Sep;52(9):716-23. [doi: 10.1002/ajim.20730](https://doi.org/10.1002/ajim.20730).

BLS. Occupational Injuries and Illnesses (Annual) News Release, OS NR 10/29/2009 News Release: Workplace injuries and illnesses—2008. http://www.bls.gov/news.release/archives/osh_10292009.htm. Accessed Jun 3, 2013

Davis LK, Phillip Hunt P, Pechter E, Baldwin M. Assessing Work-related Respiratory Problems among Massachusetts Elementary School Staff: Results of a Pilot Survey. Massachusetts Department of Public Health, Boston, 2007. <http://170.63.28.40/eohhs/docs/dph/occupational-health/school-staff-respiratory-health.pdf>. Accessed July 26, 2013

Mazurek JM, Filios M, Willis R, Rosenman KD, Reilly MJ, McGreevy K, Schill DP, Valiante D, Pechter E, Davis L, Flattery J, Harrison R. Work-related asthma in the educational services industry: California, Massachusetts, Michigan, and New Jersey, 1993-2000. *Am J Ind Med*. 2008 Jan;51(1):47-59. [doi: 10.1002/ajim.20539](https://doi.org/10.1002/ajim.20539).

Boffetta P, de Vocht F. Occupation and the risk of non-Hodgkin lymphoma. *Cancer Epidemiol Biomarkers Prev*. 2007 Mar;16(3):369-72. [doi: 10.1158/1055-9965.EPI-06-1055](https://doi.org/10.1158/1055-9965.EPI-06-1055).

Intermediate Goal 4.1: Create guidance documents for hazard identification and control and indoor air quality in public and private schools.

SAIF. School and education employee safety. Available at: www.saif.com/saifcomapps/print.aspx?Content=/employer/safety/printPage/safety2690.htm. Accessed June 17, 2015

New Jersey School Board Association. March 2014 Conference on Indoor Air Quality Management. Available at: www.njsba.org/news/sbn/20140219/march-conference-on-improving-indoor-air-quality-in-schools.php. Accessed June 17, 2015

Intermediate Goal 4.2. Identify essential components of effective of health and safety programs in public and private education.

Wigmore, D. "We can't give up. It's too important." Health and safety stories from Canadian and U.S. schools. *New Solut.* 2010; 20(1):81-93. doi: [10.2190/NS.20.1.f](https://doi.org/10.2190/NS.20.1.f).

Hadzi-Nikolova M, Mirakovski D, Zdravkovska M, Angelovska B, Doneva N, Noise Exposure of School Teachers - Exposure Levels and Health Effects, *Archives of Acoustics*, 2013 Jun;38(2):259-264. doi: [10.2478/aoa-2013-0031](https://doi.org/10.2478/aoa-2013-0031).

Annesi-Maesano I, Baiz N, Banerjee S, Rudnai P, Rive S, Indoor air quality and sources in schools and related health effects, *Journal of Toxicology & Environmental Health Part B: Critical Reviews*, 2013 16(8):491-550. doi: [10.1080/10937404.2013.853609](https://doi.org/10.1080/10937404.2013.853609).

Environmental and Occupational Health Sciences Institute. Safe Schools Manual. New Jersey Department of Education, Office of Career and Technical Education, 1992 with semi-annual updates. http://sph.rutgers.edu/training/NJ_Safe_Schools/manual/index.html. Accessed June 18, 2015

The Commission on Health and Safety and Workers' Compensation. School Action for Safety and Health. 2010. http://www.dir.ca.gov/chswc/SASH/Publications/SASH_Binder.pdf. Accessed July 26, 2013

Koehoorn M, Ostry A, Hossain S, Village J. Injury risk associated with physical demands and school environment characteristics among a cohort of custodial workers. *Ergonomics*. 2011 Aug;54(8):767-75. doi: [10.1080/00140139.2011.592603](https://doi.org/10.1080/00140139.2011.592603).

Erick PN, Smith DR. A systematic review of musculoskeletal disorders among school teachers. *BMC Musculoskelet Disord*. 2011 Nov 17;12:260. doi: [10.1186/1471-2474-12-260](https://doi.org/10.1186/1471-2474-12-260).

Village J, Koehoorn M, Hossain S, Ostry A. Quantifying tasks, ergonomic exposures and injury rates among school custodial workers. *Ergonomics*. 2009 Jun;52(6):723-34. doi: [10.1080/00140130802524633](https://doi.org/10.1080/00140130802524633).

Hannu T, Riihimäki V, Piirilä P. Reactive airway dysfunction syndrome (RADS) in a chemistry teacher induced by fumes of mixed iodine compounds. *Ind Health*. 2009 Dec;47(6):681-4. <http://www.ncbi.nlm.nih.gov/pubmed/19996546>.

Sauni R, Uitti J, Jauhiainen M, Kreiss K, Sigsgaard T, Verbeek JH. Remediating buildings damaged by dampness and mould for preventing or reducing respiratory tract symptoms, infections and asthma (Review). *Evid Based Child Health*. 2013 May;8(3):944-1000. doi: [10.1002/ebch.1914](https://doi.org/10.1002/ebch.1914).

Sauni R, Verbeek JH, Uitti J, Jauhiainen M, Kreiss K, Sigsgaard T. Remediating buildings damaged by dampness and mould for preventing or reducing respiratory tract symptoms, infections and asthma. *Cochrane Database of Systematic Reviews* 2015, Issue 2. Art. No.: CD007897. doi: [10.1002/14651858.CD007897.pub3](https://doi.org/10.1002/14651858.CD007897.pub3).

USEPA. IAQ Design Tools for Schools: Heating, Ventilation and Air-Conditioning (HVAC) Systems. <http://www.epa.gov/iaq/schooldesign/hvac.html>. Accessed June 5, 2013

Haverinen-Shaughnessy U1, Borrás-Santos A, Turunen M, Zock JP, Jacobs J, Krop EJ, Casas L, Shaughnessy R, Täubel M, Heederik D, Hyvärinen A, Pekkanen J, Nevalainen A; HITEA study group. Occurrence of moisture problems in schools in three countries from different climatic regions of Europe based on questionnaires and building inspections - the HITEA study. *Indoor Air*. 2012 Dec;22(6):457-66. doi: [10.1111/j.1600-0668.2012.00780.x](https://doi.org/10.1111/j.1600-0668.2012.00780.x).

ASHRAE. Ventilation for Acceptable Indoor Air Quality. Atlanta, GA; 2010.

The Sheet Metal and Air Conditioning Contractor's National Association (SMACNA). IAQ Guidelines for Occupied Buildings under Construction, 2nd ed. 2007. www.smacna.org. (Available for purchase) Accessed July 26, 2013

Al Alooia NA, Naik-Panvelkar P, Nissen L, Saini B. Asthma interventions in primary schools – a review. *J Asthma*, 2014 May 19:1-20. doi: [10.3109/02770903.2014.914534](https://doi.org/10.3109/02770903.2014.914534).

Bozkurt, T., Demirok, M., - Perception of Pre-School Teachers to Mobbing in Terms of Psycho-Violence. 4th World Conference on Psychology, Counseling and Guidance, Procedia Social and Behavioral Sciences, 2014 Feb;114:446-451. doi: [10.1016/j.sbspro.2013.12.727](https://doi.org/10.1016/j.sbspro.2013.12.727).

Fahie D, Devine D, The Impact of Workplace Bullying on Primary School Teachers and Principals, *Scandinavian Journal of Educational Research*, 2014 58(2):235-252. doi: [10.1080/00313831.2012.725099](https://doi.org/10.1080/00313831.2012.725099).

Figl-Hertleina, A. Horsak, B. Dean, E. Schoeny, W. Stamm, T. A physiotherapy-directed occupational health programme for Austrian school teachers: a cluster randomised pilot study. *Physiotherapy*, 2014 Mar;100(1):20-26. doi: [10.1016/j.physio.2013.03.003](https://doi.org/10.1016/j.physio.2013.03.003).

Ling SO, Cooper CL, Phillips DR. Intervention studies on enhancing work well-being, reducing burnout, and improving recovery experiences among Hong Kong health care workers and teachers. *International Journal of Stress Management*: 2014 Feb;21(1):69-84. doi: [10.1037/a0033291](https://doi.org/10.1037/a0033291).

Schultes MT, Stefanek E, van de Schoot R, Strohmeier D, Spiel C, Measuring Implementation of a School-Based Violence Prevention Program Fidelity and Teachers' Responsiveness as Predictors of Proximal Outcomes. *Journal of Psychology*. 2014 222(1):49–57. doi: [10.1027/2151-2604/a000165](https://doi.org/10.1027/2151-2604/a000165).

Tiesman HM, Hendricks S, Konda S, Hartley D. 2014. Physical assaults among education workers: findings from a statewide study. *J Occup Environ Med*; 56(6):621-627. doi: [10.1097/JOM.0000000000000147](https://doi.org/10.1097/JOM.0000000000000147).

Ahtola A, Haataja A, Karna A, Poskiparta E, Salmivalli C, Implementation of anti-bullying lessons in primary classrooms: How important is head teacher support?, *Educational Research*. 2013 55(4):376-392. doi: [10.1080/00131881.2013.844941](https://doi.org/10.1080/00131881.2013.844941).

Allen KP, Students' and staff members' understanding of the features, forms, and functions of bullying in a high school setting. University of Rochester. 2012. <http://hdl.handle.net/1802/21227>. Accessed June 18, 2015

Ashley L, O'Connor DB, Jones F. A randomized trial of written emotional disclosure interventions in school teachers: Controlling for positive expectancies and effects on health

and job satisfaction. *Psychology, Health, and Medicine*. 2013 18(5):588-600. doi: [10.1080/13548506.2012.756536](https://doi.org/10.1080/13548506.2012.756536).

Bentea CC, Teachers' perceptions towards school violence phenomenon, Fourth International Conference Psycho-Social Perspectives in the Quasi-Coercive Treatment of Offenders: Social Control and Vulnerable Groups. 2013; UR - <Go to ISI>://WOS:000320783600029. (May require Web of Science subscription.)

California Department of Public Health, Occupational Health Branch. Cleaning for Asthma-Safe Schools. <http://www.cdph.ca.gov/programs/ohsep/Pages/class.aspx>. Accessed July 26, 2013.

Capingana DP, Magalhães P, Silva AB, Gonçalves MA, et al. Prevalence of cardiovascular risk factors and socioeconomic level among public-sector workers in Angola. *BMC Public Health*. 2013;13:732. doi: [10.1186/1471-2458-13-732](https://doi.org/10.1186/1471-2458-13-732).

Cerit Y, The relationship between paternalistic leadership and bullying behaviours towards classroom teachers. *Educational Sciences: Theory & Practice*. 2013 13(2):847-851. <http://eric.ed.gov/?id=EJ1017367>. Accessed June 18, 2015

Charmaraman L, Jones AE, Stein N, Espelage DL. Is it bullying or sexual harassment? Knowledge, attitudes, and professional development experiences of middle school staff. *J Sch Health* 2013 Jun;3(6):438-44. doi: [10.1111/josh.12048](https://doi.org/10.1111/josh.12048).

Erturk A. Mobbing behaviour: Victims and the affected. *Educational Sciences: Theory and Practice*. 2013 13(1):169-173. <http://eric.ed.gov/?id=EJ1016740>. Accessed June 18, 2015

Espelage D, Anderman EM, Brown VE, Jones A, Lane KL, et. al. Understanding and preventing violence directed against teachers: Recommendations for a national research, practice, and policy agenda. *American Psychologist*. 2013.Feb;68(2):75-87. <http://eric.ed.gov/?id=EJ1005456>. Accessed June 18, 2015

Espelage D, Anderman EM, Brown VE, Jones A, Lane KL, McMahon SD, Reddy LA, Reynolds CR. Understanding and preventing violence directed against teachers: Recommendations for a national research, practice, and policy agenda. *American Psychologist*. 2013 68(2):75-87. doi: [10.1037/a0031307](https://doi.org/10.1037/a0031307).

Maring EF and Koblinsky SA. Teachers' challenges, strategies, and support needs in schools affected by community violence: A qualitative study. *Journal of School Health*. 2013 Jun;83(6):379-388. doi: [10.1111/josh.12041](https://doi.org/10.1111/josh.12041).

Martin D, Mackenzie N, Healy J. Balancing risk and professional identity, secondary school teachers' narratives of violence. *Criminology and Criminal Justice*. 2013 Sep;13(4):398-414. doi: [10.1177/1748895812454859](https://doi.org/10.1177/1748895812454859).

Naghich A, Montgomery P, Bonell CP, Thompson M, Aber JL. Organisational interventions for improving wellbeing and reducing work-related stress in teachers. *Cochrane Occupational Safety and Health Group*. *Cochrane Database of Systematic Reviews*. 2015 Issue 4. Art. No.: CD010306. doi: [10.1002/14651858.CD010306.pub2](https://doi.org/10.1002/14651858.CD010306.pub2).

Page K, A grounded theory study into the effects of bullying on the school community. Northcentral University. <http://library.ncu.edu/diss/GetAbstract/1084>. Abstract accessed June 18, 2015

Rose L, Westinghouse C. Cleaning for Healthier Schools – Infection Control Handbook. National Cleaning for Healthier Schools and Infection Control Workgroup. 2010. <http://www.cdph.ca.gov/programs/ohsep/Documents/CleanSchoolsHandbook.pdf>. Accessed July 26, 2013

Shendell DG, Lewis A, Kelly SW, Murtha A, Mapou A. Interdisciplinary safety and health training for teachers of students/young adult workers with special health care needs. Presentation at APHA, November 3, 2013. http://www.researchgate.net/publication/266812797_Interdisciplinary_safety_and_health_training_for_teachers_of_studentsyoung_adult_workers_with_special_health_care_needs. Abstract accessed June 18, 2015

Tiesman H, Konda S, Hendricks S, Mercer D, Amandus H. Workplace violence among Pennsylvania education workers: differences among occupations. *J Safety Res.* 2013 Feb;44:65-71. doi: [10.1016/j.jsr.2012.09.006](https://doi.org/10.1016/j.jsr.2012.09.006).

Wei C, Gerberich SG, Alexander BH, Ryan AD, Nachreiner NM, Mongin SJ. Work-related violence against educators in Minnesota: rates and risks based on hours exposed. *J Safety Res.* 2013 Feb;44:73-85. doi: [10.1016/j.jsr.2012.12.005](https://doi.org/10.1016/j.jsr.2012.12.005).

CDC: The School Health Policies and Programs Study (SHIPPS) 2012 Website: <http://www.cdc.gov/HealthyYouth/shpps/index.htm>. Overview report: http://www.cdc.gov/healthyouth/shpps/2012/factsheets/pdf/FS_Overview_SHPPS2012.pdf Full report: http://www.cdc.gov/healthyouth/shpps/2012/pdf/shpps-results_2012.pdf. (Chapter 10 is about faculty and staff health promotion). Accessed June 18, 2015

Da Costa V, Prada E, Roberts A, Cohen S. Voice disorders in primary school teachers and barriers to care. *J Voice.* 2012 Jan;26(1):69-76. doi: [10.1016/j.jvoice.2010.09.001](https://doi.org/10.1016/j.jvoice.2010.09.001).

Ervasti J, Kivimäki M, Pentti J, Salmi V, Suominen S, Vahtera J, Virtanen M. Work-related violence, lifestyle, and health among special education teachers working in Finnish basic education. *J Sch Health.* 2012 Jul;82(7):336-43. doi: [10.1111/j.1746-1561.2012.00707.x](https://doi.org/10.1111/j.1746-1561.2012.00707.x).

Gaskill CS, O'Brien SG, Tinter SR. The effect of voice amplification on occupational vocal dose in elementary school teachers. *J Voice.* 2012 Sep;26(5):667.e19-27. doi: [10.1016/j.jvoice.2011.10.010](https://doi.org/10.1016/j.jvoice.2011.10.010).

Nachreiner NM, Gerberich SG, Ryan AD, Erkal S, McGovern PM, Church TR, Mongin SJ, Fedra DM. Risk of physical assault against school educators with histories of occupational and other violence: a case-control study. *Work.* 2012; 42(1):39-46. doi: [10.3233/WOR-2012-1331](https://doi.org/10.3233/WOR-2012-1331).

Ohlsson AC, Andersson EM, Södersten M, Simberg S, Barregård L. Prevalence of voice symptoms and risk factors in teacher students. *J Voice.* 2012 Sep;26(5):629-34. doi: [10.1016/j.jvoice.2011.11.002](https://doi.org/10.1016/j.jvoice.2011.11.002)

Sampaio MC, dos Reis EJ, Carvalho FM, Porto LA, Araújo TM. Vocal effort and voice handicap among teachers. *J Voice.* 2012 Nov;26(6):820.e15-8. doi: [10.1016/j.jvoice.2012.06.003](https://doi.org/10.1016/j.jvoice.2012.06.003).

- Seibt R, Matz A, Hegewald J, Spitzer S. Working conditions of female part-time and full-time teachers in relation to health status. *Int Arch Occup Environ Health*. 2012 Aug;85(6):675-87. doi: [10.1007/s00420-011-0715-7](https://doi.org/10.1007/s00420-011-0715-7).
- Timmermans B, Coveliers Y, Wuyts FL, Van Looy L. Voice training in teacher education: the effect of adding an individualized microteaching session of 30 minutes to the regular 6-hour voice training program. *J Voice*. 2012 Sep;26(5):669.e1-9. doi: [10.1016/j.jvoice.2011.03.001](https://doi.org/10.1016/j.jvoice.2011.03.001).
- Van der Elst W, Van Boxtel MP, Jolles J. Occupational activity and cognitive aging: a case-control study based on the Maastricht Aging Study. *Exp Aging Res*. 2012 38(3):315-29. doi: [10.1080/0361073X.2012.672137](https://doi.org/10.1080/0361073X.2012.672137).
- van Houtte E, Claeys S, Wuyts F, van Lierde K. Voice disorders in teachers: occupational risk factors and psycho-emotional factors. *Logoped Phoniatr Vocol*. 2012 Oct;37(3):107-16. doi: [10.3109/14015439.2012.660499](https://doi.org/10.3109/14015439.2012.660499).
- Zimmermann L, Unterbrink T, Pfeifer R, Wirsching M, Rose U, Stöbel U, Nübling M, Buhl-Grießhaber V, Frommhold M, Schaarschmidt U, Bauer J. Mental health and patterns of work-related coping behaviour in a German sample of student teachers: a cross-sectional study. *Int Arch Occup Environ Health*. 2012 Nov;85(8):865-76. doi: [10.1007/s00420-011-0731-7](https://doi.org/10.1007/s00420-011-0731-7).
- Gerberich S G, Nachreiner NN, Ryan AD, Church TR, McGovern PM, Geisser MS, et al. Violence against educators: a population-based study. *J Occup Environ Med*. 2011 Mar;53(3):294–302. doi: [10.1097/JOM.0b013e31820c3fa1](https://doi.org/10.1097/JOM.0b013e31820c3fa1),
- Souza CL, Carvalho FM, Araújo TM, Reis EJ, Lima VM, Porto LA. Factors associated with vocal fold pathologies in teachers. *Rev Saude Publica*. 2011 Oct;45(5):914-21. English, Portuguese. <http://www.ncbi.nlm.nih.gov/pubmed/21829977>.
- Sun W, Wu H, Wang L. Occupational stress and its related factors among university teachers in China. *J Occup Health*. 2011 53(4):280-6. <http://www.ncbi.nlm.nih.gov/pubmed/21691036>.
- Van Houtte E, Claeys S, Wuyts F, Van Lierde K. The impact of voice disorders among teachers: vocal complaints, treatment-seeking behavior, knowledge of vocal care, and voice-related absenteeism. *J Voice*. 2011 Sep;25(5):570-5. doi: [10.1016/j.jvoice.2010.04.008](https://doi.org/10.1016/j.jvoice.2010.04.008).
- Wegner R, Berger P, Poschadel B, Manuwald U, Baur X. Burnout hazard in teachers results of a clinical-psychological intervention study. *J Occup Med Toxicol*. 2011 Dec 22;6(1):37. doi: [10.1186/1745-6673-6-37](https://doi.org/10.1186/1745-6673-6-37).
- Yang X, Wang L, Ge C, Hu B, Chi T. Factors associated with occupational strain among Chinese teachers: a cross-sectional study. *Public Health*. 2011 Feb;125(2):106-13. doi: [10.1016/j.puhe.2010.10.012](https://doi.org/10.1016/j.puhe.2010.10.012).
- Lee MB, Greig JD. A review of gastrointestinal outbreaks in schools: effective infection control interventions. *J Sch Health*. 2010 Dec;80(12):588-98. doi: [10.1111/j.1746-1561.2010.00546.x](https://doi.org/10.1111/j.1746-1561.2010.00546.x).
- Paulson J, Barnett C. Who's in charge of children's environmental health at school? *New Solut*. 2010 20(1):3-23. doi: [10.2190/NS.20.1.b](https://doi.org/10.2190/NS.20.1.b).

Sage SK, Gerberich SG, Ryan AD, Nachreiner NM, Church TR, Alexander BH, Mongin SJ. School resources, resource allocation, and risk of physical assault against Minnesota educators. *Accid Anal Prev*. 2010 Jan;42(1):1-9. doi: [10.1016/j.aap.2009.04.019](https://doi.org/10.1016/j.aap.2009.04.019).

The Commission on Health and Safety and Workers' Compensation. School Action for Safety and Health (SASH). 2010. http://www.dir.ca.gov/chswc/SASH/Publications/SASH_Binder.pdf. Accessed July 26, 2013

Zurlo MC, Pes D, Siegrist J. Validity and reliability of the effort-reward imbalance questionnaire in a sample of 673 Italian teachers. *Int Arch Occup Environ Health*. 2010 Aug;83(6):665-74. doi: [10.1007/s00420-010-0512-8](https://doi.org/10.1007/s00420-010-0512-8).

Verdonk P, Hooftman WE, van Veldhoven MJ, Boelens LR, Koppes LL. Work-related fatigue: the specific case of highly educated women in the Netherlands. *Int Arch Occup Environ Health*. 2010 Mar;83(3):309-21. doi: [10.1007/s00420-009-0481-y](https://doi.org/10.1007/s00420-009-0481-y).

Zurlo MC, Pes D, Siegrist J. Validity and reliability of the effort-reward imbalance questionnaire in a sample of 673 Italian teachers. *Int Arch Occup Environ Health*. 2010 Aug;83(6):665-74. doi: [10.1007/s00420-010-0512-8](https://doi.org/10.1007/s00420-010-0512-8).

Angelillo M, Di Maio G, Costa G, Angelillo N, Barillari U. Prevalence of occupational voice disorders in teachers. *J Prev Med Hyg*. 2009 Mar;50(1):26-32. <http://www.ncbi.nlm.nih.gov/pubmed/19771757>.

Casteel C, Peek-Asa C, Limbos MA. Predictors of nonfatal assault injury to public school teachers in Los Angeles City. *Am J Ind Med*. 2007 Dec;50(12):932-9. doi: [10.1002/ajim.20520](https://doi.org/10.1002/ajim.20520).

Unterbrink T, Hack A, Pfeifer R, Buhl-Griesshaber V, Müller U, Wesche H, Frommhold M, Scheuch K, Seibt R, Wirsching M, Bauer J. Burnout and effort-reward-imbalance in a sample of 949 German teachers. *Int Arch Occup Environ Health*. 2007 Apr;80(5):433-41. doi: [10.1007/s00420-007-0169-0](https://doi.org/10.1007/s00420-007-0169-0).

Bauer J, Unterbrink T, Hack A, Pfeifer R, Buhl-Griesshaber V, Müller U, Wesche H, Frommhold M, Seibt R, Scheuch K, Wirsching M. Working conditions, adverse events and mental health problems in a sample of 949 German teachers. *Int Arch Occup Environ Health*. 2007 Apr;80(5):442-9. doi: [10.1007/s00420-007-0170-7](https://doi.org/10.1007/s00420-007-0170-7).

Chiu TT, Lam PK. The prevalence of and risk factors for neck pain and upper limb pain among secondary school teachers in Hong Kong. *J Occup Rehabil*. 2007 Mar;17(1):19-32. doi: [10.1007/s10926-006-9046-z](https://doi.org/10.1007/s10926-006-9046-z).

Kann L, Brener ND, Wechsler H. 2007. Overview and summary: School Health Policies and Programs Study 2006. *J Sch. Health*. Oct;77(8):385-97. doi: [10.1111/j.1746-1561.2007.00226.x](https://doi.org/10.1111/j.1746-1561.2007.00226.x).

Lemoyne J, Laurencelle L, Lirette M, Trudeau F. Occupational health problems and injuries among Quebec's physical educators. *Appl Ergon*. 2007 Sep; 38(5):625-34. doi: [10.1016/j.apergo.2006.06.004](https://doi.org/10.1016/j.apergo.2006.06.004).

Levin PF, Martinez MQ, Walcott-McQuigg J, Chen SP, Amman M, Guenette C. Injuries associated with teacher assaults: magnitude, nature, cost, and outcome. *AAOHN J.* 2006 May;54(5):210-6. <http://www.ncbi.nlm.nih.gov/pubmed/16729657>.

Smolander S, Huttunen K. Voice problems experienced by Finnish comprehensive school teachers and realization of occupational health care. *Logoped Phoniatr Vocol.* 2006; 31(4):166-71. [doi: 10.1080/14015430600576097](https://doi.org/10.1080/14015430600576097).

Claus M, Kimbel R, Spahn D, Dudenhofer S, Rose D, Letzel S. Prevalence and influencing factors of chronic back pain among staff at special schools with multiple and severely handicapped children in Germany: results of a cross-sectional study. *Bmc Musculoskeletal Disorders.* 2014, 15:55. [doi: 10.1186/1471-2474-15-55](https://doi.org/10.1186/1471-2474-15-55).

Occupational Safety and Health Administration. FY2011 Developmental Follow-on Susan Harwood Grant to American Federation of Teachers Educational Foundation, Washington, DC, \$187,000. The grantee will expand the capacity of its safety and health program to prevent work-related illnesses and injuries among school and university employees, and health care workers. Topics will include workplace violence, ergonomics and walking and working surfaces. https://www.osha.gov/dte/sharwood/2011_grant_recipients.html. Accessed July 29, 2013

Occupational Safety and Health Administration. FY2011 Developmental Follow-on Susan Harwood Grant to American Federation of Teachers Educational Foundation, Washington, DC, \$181,390. The grantee will provide basic hazard awareness training to workers and administrators in multiple states. The grantee will expand its health and safety trainer network, facilitate the building of effective health and safety committees, and provide technical support and training. https://www.osha.gov/dte/sharwood/2012_grant_recipients.html. Accessed July 29, 2013

Hotels and Motels

Strategic Goal 5: Reduce the incidence and severity of occupational injuries by 20% as measured in lost work days among hotel and motel workers.

Intermediate Goal 5.1. Establish programs for collection and analysis of illness and injury event information, including standard elements for severity in order to identify trends, emerging issues and intervention needs among hotel and motel employees through collaboration among employers, employees, workers' compensation insurance carriers, labor, academic, and government agencies.

Intermediate Goal 5.2: Develop guidelines and training materials for effective injury interventions for hotel and motel workers.

Clean sweep: Molly Maid brushes up its approach to health and safety. *Safety mosaic.* 2001 4(1):4-5.

Crum AJ, Langer EJ. Mind-set matters: exercise and the placebo effect. *Psychol Sci.* 2007 18(2):165–171. doi: [10.1111/j.1467-9280.2007.01867.x](https://doi.org/10.1111/j.1467-9280.2007.01867.x).

Empowering the housekeeper. *Lodging Hospitality.* 2003 59(10):48.

Intilli H. The effects of converting wheels on housekeeping carts in a large urban hotel. program evaluation. *Am Assoc Occup Health Nurs J.* 1999 47(10):466–469. <http://www.ncbi.nlm.nih.gov/pubmed/10818826>.

Landers M, Maguire L. Effects of a work injury prevention program for housekeeping in the hotel industry. *Work.* 2004 22(3):239-246. <http://www.ncbi.nlm.nih.gov/pubmed/15156089>.

Lee PT, Krause N. The impact of a worker health study on working conditions. *J Public Health Policy.* 2002 23(3):268-285. <http://www.ncbi.nlm.nih.gov/pubmed/12325285>.

Maginini VP, Lee G, Kim B. The cascading affective consequences of exercise among hotel workers. *Int J Contemporary Hospitality Management.* 2011 23(5):624-643. doi: [10.1108/09596111111143377](https://doi.org/10.1108/09596111111143377).

Michaud J. Training helps housekeepers tackle big job. *Hotel and Motel Management.* 2006 221(16):24. <http://connection.ebscohost.com/c/articles/22379754/training-helps-housekeepers-tackle-big-job>. Accessed June 18, 2015

Stanislaw D. How to reduce housekeeping injuries. *Lodging Hospitality.* 2005 61(5):76.

Strategic Goal 6: Reduce by 20% the incidence and severity of occupational illness and morbidity that result in lost work days among hotel and motel workers.

Intermediate Goal 6.1: Create and disseminate information to reduce risk for skin disorders, respiratory disease, stress-related disorders and musculoskeletal disorders associated with working conditions in hotels and motels.

Silva JS Jr, Correa LR, Morrone LC. Evaluation of lumbar overload in hotel maids. *Work.* 2012;41 Suppl 1:2496-8. doi: [10.3233/WOR-2012-0488-2496](https://doi.org/10.3233/WOR-2012-0488-2496).

Bell AF, Steele JR. Risk of musculoskeletal injury among cleaners during vacuuming. *Ergonomics.* 2012;55(2):237-47. doi: [10.1080/00140139.2011.592605](https://doi.org/10.1080/00140139.2011.592605).

Norbäck D, Cai GH. Fungal DNA in hotel rooms in Europe and Asia--associations with latitude, precipitation, building data, room characteristics and hotel ranking. *J Environ Monit.* 2011 Oct;13(10):2895-903. doi: [10.1039/c1em10439j](https://doi.org/10.1039/c1em10439j).

Burgel BJ, White MC, Gillen M, Krause N. Psychosocial work factors and shoulder pain in hotel room cleaners. *Am J Ind Med.* 2010 Jul;53(7):743-56. doi: [10.1002/ajim.20832](https://doi.org/10.1002/ajim.20832).

Dang B, Chen L, Mueller C, Dunn KH, Almaguer D, Roberts JL, Otto CS. Ocular and respiratory symptoms among lifeguards at a hotel indoor waterpark resort. *J Occup Environ Med.* 2010 Feb;52(2):207-13. doi: [10.1097/JOM.0b013e3181cf00d5](https://doi.org/10.1097/JOM.0b013e3181cf00d5).

Centers for Disease Control and Prevention (CDC). Respiratory and ocular symptoms among employees of a hotel indoor waterpark resort--Ohio, 2007. *MMWR Morb Mortal Wkly Rep.* 2009 Feb 6;58(4):81-5. <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5804a3.htm>. Accessed July 26, 2013

Rugulies R, Scherzer T, Krause N. Associations between psychological demands, decision latitude, and job strain with smoking in female hotel room cleaners in Las Vegas. *Int J Behav Med.* 2008 Jan-Mar;15(1):34-43. doi: [10.1007/BF03003072](https://doi.org/10.1007/BF03003072).

Muraca G, Martino LB, Abbate A, De Pasquale D, Barbuzza O, Brecciaroli R. [The risk of manual handling loads in the hotel sector]. *G Ital Med Lav Ergon.* 2007 Jul-Sep;29(3 Suppl):569-70. Italian. <http://www.ncbi.nlm.nih.gov/pubmed/18409837>.

Desciak, EB, Marks, JG Jr. Dermatitis among housekeeping personnel. *Am J Contact Dermat.* 1997 8(1):32-34. <http://www.ncbi.nlm.nih.gov/pubmed/7749973>.

Lee-Ross D. Attitudes and work motivation of subgroups of seasonal hotel workers. *Services Industries J.* 1995 15(3):295-313.

Strategic Goal 7: Eliminate health disparities for priority population workers in the hotel and motel industry.

Wial, H, Rickert J. US hotels and their workers: room for improvement. Washington, DC:AFL-CIO working for America Institute, 2002. http://www.hotel-online.com/News/PR2002_3rd/Aug02_HotelJobs.html. Accessed June 18, 2015

Intermediate Goal 7.1: Develop training materials for supervisors and workers that address environmental, organizational, and behavioral factors associated with health disparities, if any are found to exist, among hotel and motel workers.

Buchanan, S, Vossen, P, Krause, N, Moriarty, J, Frumin, E, et al. Occupational injury disparities in the US Hotel Industry. *Am J Ind Md.* 2010 53:116-125. doi: [10.1002/ajim.20724](https://doi.org/10.1002/ajim.20724).

Lugwe LY. Room attendants training programs as a prerequisite to job satisfaction (Master's Thesis). 1994 Providence RI: Johnson and Wales University.

McNamara M, Bohle P, Quinlan M. Precarious employment, working hours, work-life conflict and health in hotel work. *Applied Ergonomics.* 2011 42:225-232. doi: [10.1016/j.apergo.2010.06.013](https://doi.org/10.1016/j.apergo.2010.06.013).

Nyberg A, Holmberg I, Bernin P, Alderling M, Åkerblom S, Widerszal-Bazyl M, Magrin ME, Hasselhorn HM, Milczarek M, D'Angelo G, Denk M, Westerlund H, Theorell T. Destructive managerial leadership and psychological well-being among employees in Swedish, Polish, and Italian hotels. *Work.* 2011;39(3):267-81. doi: [10.3233/WOR-2011-1175](https://doi.org/10.3233/WOR-2011-1175).

Premji S, Krause N. Disparities by ethnicity, language, and immigrant status in occupational health experiences among Las Vegas hotel room cleaners. *Am J Ind Med.* 2010 Oct;53(10):960-75. doi: [10.1002/ajim.20860](https://doi.org/10.1002/ajim.20860).

Nigg CR, Albright C, Williams R, Nichols C, Renda G, Stevens VJ, Vogt TM. Are physical activity and nutrition indicators of the checklist of health promotion environments at worksites (CHEW) associated with employee obesity among hotel workers? *J Occup Environ Med.* 2010 Jan;52 Suppl 1:S4-7. doi: [10.1097/JOM.0b013e3181c78a3a](https://doi.org/10.1097/JOM.0b013e3181c78a3a).

Krause N, Rugulies R, Maslach C. Effort-reward imbalance at work and self-rated health of Las Vegas hotel room cleaners. *Am J Ind Med.* 2010 Apr;53(4):372-86. doi: [10.1002/ajim.20732](https://doi.org/10.1002/ajim.20732).

Liladrie S. “Do not disturb/please clean room”: hotel housekeepers in Greater Toronto. *Race & Class* 2010 52(1):57-69. <http://rac.sagepub.com/content/52/1/57.abstract>. Accessed June 18, 2015

O’Neill J, Davis K. Differences in work and family stress experienced by managers and hourly employees in the hotel industry. Amherst, MA: University of Massachusetts. 2009 ICHRIE Conference. <http://scholarworks.umass.edu/cgi/viewcontent.cgi?article=1075&context=refereed>. Accessed June 18, 2015

Shani A, Pizam A. Work-related depression among hotel employees. *Cornell Hospitality Quarterly* 2009 50(4):446-459. doi: [10.1177/1938965509344294](https://doi.org/10.1177/1938965509344294).

Rugulies R, Scherzer T, Krause N. Associations between psychological demands, decision latitude, and job strain with smoking in female hotel room cleaners in Las Vegas. *Int J Behav Med.* 2008 Jan-Mar;15(1):34-43. doi: [10.1007/BF03003072](https://doi.org/10.1007/BF03003072).

Muraca G, Martino LB, Abbate A, De Pasquale D, Barbuzza O, Brecciaroli R. The risk of manual handling loads in the hotel sector. *G Ital Med Lav Ergon.* 2007 3:569-570. <http://www.ncbi.nlm.nih.gov/pubmed/18409837>.

Pearson D, Angulo A, Bourcier E, Freeman E, Valdez R. Hospitality workers' attitudes and exposure to secondhand smoke, hazardous chemicals, and working conditions. *Public Health Reports.* 2007 122(5):670–678. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1936964/>.

Pollert A, Wright T. The experience of ethnic minority workers in the hotel and catering industry: routes to support and advice on workplace problems. London: 2006 Working Lives Research Institute. http://www.researchgate.net/publication/241516376_The_Experience_of_Ethnic_Minority_Workers_in_the_Hotel_and_Catering_Industry_Routes_to_Support_and_Advice_on_Workplace_Problems. Accessed June 18, 2015

Krause N, Scherzer T, Rugulies R. Physical workload, work intensification, and prevalence of pain in low wage workers: results from a participatory research project with hotel room cleaners in Las Vegas. *Am J Ind Med* 2005 48(5):326–337. <http://www.ncbi.nlm.nih.gov/pubmed/16193494>.

Lo K, Lamm F. Occupational stress in the hospitality industry – an employment relations perspective. *New Zealand J Employment Relations* 2005 30(1):23-47. <http://aut.researchgateway.ac.nz/handle/10292/7353>. Accessed June 18, 2015

Mei-Lien C, Wan-Ping L, Hsin-Yi C, Bey-Rong G, I-Fang M. Biomonitoring of alkylphenols exposure for textile and housekeeping workers. *Int J Environ Anal Chem.* 2005 85(4/5):335-347. doi: [10.1080/03067310412331315575](https://doi.org/10.1080/03067310412331315575).

Scherzer T, Rugulies R, Krause N. Work-related pain and injury and barriers to workers' compensation among Las Vegas hotel room cleaners. *Am J Public Health* 2005 95(3):483–488. doi: [10.2105/AJPH.2003.033266](https://doi.org/10.2105/AJPH.2003.033266).

Bohle P, Quinlan M, Kennedy D, Williamson A. Working hours, work-life conflict, and health in precarious and “permanent” employment. *Rev Saude Pública* 2004 38(Suppl):19–25. doi: [10.1016/j.apergo.2010.06.013](https://doi.org/10.1016/j.apergo.2010.06.013).

Repace J. Respirable particles and carcinogens in the air of Delaware hospitality venues before and after a smoking ban. *J Occup Environ Med* 2004 46(9):887–905. <http://www.ncbi.nlm.nih.gov/pubmed/15354053>.

Krause N, Lee PT, Scherzer T, Rugulies R., Sinnott P, Baker RL Health and working conditions of hotel guest room attendants in Las Vegas. Report to the Culinary Workers' Union, Local 226, Las Vegas. 2002 San Francisco, CA, p. 112. <http://www.lohp.org/docs/pubs/vegasrpt.pdf>. Accessed June 18, 2015

Krause N, Tau Lee P, Thompson P, Rugulies R, Baker L. Working conditions and health of San Francisco hotel room cleaners. Report to the Hotel Employees and Restaurant Employees International Union. Berkeley, CA: University of California, School of Public Health, 1999: p. 79.

Faulkner B, Patiar A. Workplace-induced stress among operational staff in the hotel industry. *Int J Hospitality Management*. 1997 16(1):99-117. doi: [10.1016/S0278-4319\(96\)00053-9](https://doi.org/10.1016/S0278-4319(96)00053-9).

Shani A, Pizam A. Work-related depression among hotel employees. *Cornell Hospitality Quarterly* 2009 50(4):446-459. doi: [10.1177/1938965509344294](https://doi.org/10.1177/1938965509344294).

Occupational Safety and Health Administration. FY2012 Developmental Follow-on Susan Harwood Grant to Regents of the University of California at Los Angeles, Los Angeles, CA, \$181,390. The grantee will offer culturally and language appropriate training to low wage immigrant workers in the hotel, car wash and waste industries. Training and materials will target the large Southern California Spanish-speaking workforce. Classes will provide training on topics such as hazard identification, chemical hazards, ergonomics, worker rights, and effective health and safety committees. http://www.osha.gov/dte/sharwood/2012_grant_recipients.html. Accessed July 29, 2013

Public Administration (Except Public Safety)

Strategic Goal 8: Reduce by 30% the frequency and severity of injuries and illnesses among government workers.

Intermediate Goal 8.1: Create guidance documents for hazard identification and control, indoor air quality, occupational stress, and workplace violence in government work environments.

BLS. Occupational Injuries and Illnesses (Annual) News Release, OS NR 10/29/2009 News Release: Workplace injuries and illnesses—2008. http://www.bls.gov/news.release/archives/osh_10292009.htm. Accessed Jun 3, 2013

Recreation and Entertainment

Strategic Goal 9: Reduce traumatic injuries and fatalities by 30% in the recreation and entertainment industries.

Intermediate Goal 9.1: Develop and promote best practice guidelines to prevent injuries from over exertion, adverse bodily reaction, falls, and contact with equipment and objects in the recreation and entertainment industry.

Oughton N. Managing occupational risk in creative practice: a new perspective for occupational health and safety. *Arch Environ Occup Health*. 2013;68(1):47-54. doi: [10.1080/19338244.2011.639818](https://doi.org/10.1080/19338244.2011.639818).

Hamilton GM, Meeuwisse WH, Emery CA, Shrier I. Examining the effect of the injury definition on risk factor analysis in circus artists. *Scand J Med Sci Sports*. 2012 Jun;22(3):330-4. doi: [10.1111/j.1600-0838.2010.01245.x](https://doi.org/10.1111/j.1600-0838.2010.01245.x).

Wanke EM, McCormack M, Koch F, Wanke A, Groneberg DA. Acute injuries in student circus artists with regard to gender specific differences. *Asian J Sports Med*. 2012 Sep;3(3):153-60. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3445642/>. Accessed July 26, 2013

Paarup HM, Baelum J, Manniche C, Holm JW, Wedderkopp N. Occurrence and co-existence of localized musculoskeletal symptoms and findings in work-attending orchestra musicians - an exploratory cross-sectional study. *BMC Res Notes*. 2012 Oct 1;5:541. doi: [10.1186/1756-0500-5-541](https://doi.org/10.1186/1756-0500-5-541).

Wanke EM, Groneberg DA, Quarcoo D. [Analysis and evaluation of acute injuries in musical performers]. *Sportverletz Sportschaden*. 2011 Sep;25(3):179-83. German. doi: [10.1055/s-0029-1245911](https://doi.org/10.1055/s-0029-1245911).

Papandreou M, Vervainioti A. Work-related musculoskeletal disorders among percussionists in Greece: a pilot study. *Med Probl Perform Art*. 2010 Sep;25(3):116-9. <http://www.ncbi.nlm.nih.gov/pubmed/21120269>.

Fried, G. Fitness facility safety: How safe are fitness facilities for workers? *J Legal Aspects of Sport*. 2009 Vol 19(1):1-66.

Woodcock K. Content analysis of 100 consecutive media reports of amusement ride accidents. *Accid Anal Prev*. 2008 Jan;40(1):89-96. doi: [10.1016/j.aap.2007.04.007](https://doi.org/10.1016/j.aap.2007.04.007).

Cranston CJ, Brazile WJ, Sandfort DR, Gotshall RW. Occupational and recreational noise exposure from indoor arena hockey games. *J Occup Environ Hyg*. 2013;10(1):11-16. doi: [10.1080/15459624.2012.736341](https://doi.org/10.1080/15459624.2012.736341).

Flamme GA, Williams N. Sports officials' hearing status: whistle use as a factor contributing to hearing trouble. *J Occup Environ Hyg*. 2013;10(1):1-10. doi: [10.1080/15459624.2012.736340](https://doi.org/10.1080/15459624.2012.736340).

ASHRAE. *Ventilation for Acceptable Indoor Air Quality*. Atlanta, GA; 2010.

Centers for Disease Control and Prevention (CDC). Exposure to nitrogen dioxide in an indoor ice arena - New Hampshire, 2011. *MMWR Morb Mortal Wkly Rep*. 2012 Mar

2;61(8):139-42. <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6108a2.htm>. Accessed July 26, 2013

Kim T, Wagner J. PM2.5 and CO concentrations inside an indoor go-kart facility. *J Occup Environ Hyg.* 2010 Jul;7(7):397-406. doi: [10.1080/15459621003791628](https://doi.org/10.1080/15459621003791628).

Salonen RO, Pennanen AS, Vahteristo M, Korkeila P, Alm S, Randell JT. Health risk assessment of indoor air pollution in Finnish ice arenas. *Environ Int.* 2008 Jan;34(1):51-7. doi: [10.1016/j.envint.2007.06.012](https://doi.org/10.1016/j.envint.2007.06.012).

Jezewska A, Szewczyńska M. [Chemical hazards in the workplace environment of painting restorer]. *Med Pr.* 2012;63(5):547-58. Polish. <http://www.ncbi.nlm.nih.gov/pubmed/23373323>.

Gribovich A, Lacey S, Franke J, Hinkamp D. Assessment of arsenic surface contamination in a museum anthropology department. *J Occup Environ Med.* 2013 Feb;55(2):164-7. doi: [10.1097/JOM.0b013e3182717e51](https://doi.org/10.1097/JOM.0b013e3182717e51).

Carneiro GL, Braz D, de Jesus EF, Santos SM, Cardoso K, Hecht AA, Dias da Cunha MK. Radon in indoor concentrations and indoor concentrations of metal dust particles in museums and other public buildings. *Environ Geochem Health.* 2013 Jun;35(3):333-40. doi: [10.1007/s10653-012-9497-4](https://doi.org/10.1007/s10653-012-9497-4).

Wanke EM, Kunath EK, Koch F, Davenport J, Weisser B, Groneberg DA, Mache S, Endres E, Vitzthum K. Survey of health problems in musical theater students: a pilot study. *Med Probl Perform Art.* 2012 Dec;27(4):205-11. <http://www.ncbi.nlm.nih.gov/pubmed/23247877>.

Schaefer PT, Speier J. Common medical problems of instrumental athletes. *Curr Sports Med Rep.* 2012 Nov-Dec;11(6):316-22. <http://www.ncbi.nlm.nih.gov/pubmed/23147020>.

Su YH, Lin YJ, Tang HY, Su MJ, Chen HS. Effectiveness of an e-learning curriculum on occupational health for music performers. *Telemed J E Health.* 2012 Sep;18(7):538-43. doi: [10.1089/tmj.2011.0215](https://doi.org/10.1089/tmj.2011.0215).

Janev Holcer N, Pucarín-Cvetković J, Mustajbegović J, Zuškin E. [Dance as a risk factor for injuries and development of occupational diseases]. *Arh Hig Rada Toksikol.* 2012 Jun 1;63(2):239-46. Review. Croatian. doi: [10.2478/10004-1254-63-2012-2170](https://doi.org/10.2478/10004-1254-63-2012-2170).

Hildebrandt H, Nübling M, Candia V. Increment of fatigue, depression, and stage fright during the first year of high-level education in music students. *Med Probl Perform Art.* 2012 Mar;27(1):43-8. <http://www.ncbi.nlm.nih.gov/pubmed/22543322>.

Zosso A, Schoeb V. Musicians' social representations of health and illness: a qualitative case study about focal dystonia. *Work.* 2012;41(1):53-9. doi: [10.3233/WOR-2012-1243](https://doi.org/10.3233/WOR-2012-1243).

Mullen R, Davis JA, Polatajko HJ. Passion in the performing arts: clarifying active occupational participation. *Work.* 2012;41(1):15-25. doi: [10.3233/WOR-2012-1236](https://doi.org/10.3233/WOR-2012-1236).

Lehman EJ, Hein MJ, Baron SL, Gersic CM. Neurodegenerative causes of death among retired National Football League players. *Neurology.* 2012 Nov 6;79(19):1970-4. doi: [10.1212/WNL.0b013e31826daf50](https://doi.org/10.1212/WNL.0b013e31826daf50).

- Erickson SM, Letendre MA, Shaarawy KM, Overlin AJ. Caring for umpires, officials, and referees. *Curr Sports Med Rep*. 2012 Sep-Oct;11(5):262-4. <http://www.ncbi.nlm.nih.gov/pubmed/22965350>.
- Sliwinska-Kowalska M, Davis A. Noise-induced hearing loss. *Noise Health*. 2012 Nov-Dec;14(61):274-80. Review. doi: [10.4103/1463-1741.104893](https://doi.org/10.4103/1463-1741.104893).
- Bonner R, O'Hagan JB, Khazova M. Assessment of personal exposures to optical radiation in large entertainment venues. *Radiat Prot Dosimetry*. 2012 Apr;149(3):225-37. doi: [10.1093/rpd/ncr232](https://doi.org/10.1093/rpd/ncr232).
- Andersen PA, Buller DB, Walkosz BJ, Scott MD, Kane IL, Cutter GR, Dignan MB, Liu X. Expanding occupational sun safety to an outdoor recreation industry: a translational study of the Go Sun Smart program. *Transl Behav Med*. 2012 Mar;2(1):10-18. doi: [10.1007/s13142-011-0101-8](https://doi.org/10.1007/s13142-011-0101-8).
- Buller DB, Walkosz BJ, Andersen PA, Scott MD, Dignan MB, Cutter GR, Zhang X, Kane IL. Sustainability of the dissemination of an occupational sun protection program in a randomized trial. *Health Educ Behav*. 2012 Aug;39(4):498-502. doi: [10.1177/1090198111420287](https://doi.org/10.1177/1090198111420287).
- Guptill C. The lived experience of working as a musician with an injury. *Work*. 2011;40(3):269-80. doi: [10.3233/WOR-2011-1230](https://doi.org/10.3233/WOR-2011-1230).
- Ambegaonkar JP, Caswell SV. Development and implementation of an in-house healthcare program for university-level performing artists. *Work*. 2011;40(3):261-8. doi: [10.3233/WOR-2011-1228](https://doi.org/10.3233/WOR-2011-1228).
- Goulart BN, Vilanova JR. Professional theatre actors: environmental and socio-occupational use of voice. *J Soc Bras Fonoaudiol*. 2011 Sep;23(3):271-6. English, Portuguese. <http://www.ncbi.nlm.nih.gov/pubmed/22012163>.
- Di Leone G, Nicoletti S, Monopoli L, Montomoli L, Colombini D. [Use of premapping of risks data sheet in artistic ceramics industries]. *Med Lav*. 2011 Jan-Feb;102(1):43-53. Italian. <http://www.ncbi.nlm.nih.gov/pubmed/21485485>.
- Rietveld AB. Genees & kunst 10: tenth symposium on medical problems of dancers & musicians, universitair medisch centrum, Utrecht, March 27, 2010. *Med Probl Perform Art*. 2011 Mar;26(1):56-61. <http://www.ncbi.nlm.nih.gov/pubmed/21442139>.
- Levy JJ, Castille CM, Farley JA. An investigation of musical performance anxiety in the marching arts. *Med Probl Perform Art*. 2011 Mar;26(1):30-4. <http://www.ncbi.nlm.nih.gov/pubmed/21442134>.
- Wanke EM, Groneberg DA, Quarcoo D. [Analysis and evaluation of occupational accidents in dancers of the dance theatre]. *Sportverletz Sportschaden*. 2011 Mar;25(1):56-61. German. doi: [10.1055/s-0029-1245855](https://doi.org/10.1055/s-0029-1245855).
- Qian CL, Behar A, Wong W. Noise exposure of musicians of a ballet orchestra. *Noise Health*. 2011 Jan-Feb;13(50):59-63. doi: [10.4103/1463-1741.74002](https://doi.org/10.4103/1463-1741.74002).
- Vernez D, Wognin B, Tomicic C, Plateel G, Charrière N, Bruhin S. Cyclododecane exposure in the field of conservation and restoration of art objects. *Int Arch Occup Environ Health*. 2011 Apr;84(4):371-4. doi: [10.1007/s00420-010-0596-1](https://doi.org/10.1007/s00420-010-0596-1).

Varnai VM, Macan J, Ljubicić Calusić A, Prester Lj, Kanceljak Macan B. Upper respiratory impairment in restorers of cultural heritage. *Occup Med (Lond)*. 2011 Jan;61(1):45-52. doi: [10.1093/occmed/kqq170](https://doi.org/10.1093/occmed/kqq170).

Idota N, Horie S, Tsutsui T, Inoue J. Temporary threshold shifts at 1500 and 2000 Hz induced by loud voice signals communicated through earphones in the pinball industry. *Ann Occup Hyg*. 2010 Oct;54(7):842-9. doi: [10.1093/annhyg/meq048](https://doi.org/10.1093/annhyg/meq048).

Waldron-Lynch F, Murray BF, Brady JJ, McKenna MJ, McGoldrick A, Warrington G, O'Loughlin G, Barragry JM. High bone turnover in Irish professional jockeys. *Osteoporos Int*. 2010 Mar;21(3):521-5. doi: [10.1007/s00198-009-0887-0](https://doi.org/10.1007/s00198-009-0887-0).

Shan G, Visentin P. A prisoner's dilemma with asymmetrical payoffs: revealing the challenges faced by performing arts health and wellness practitioners. *Med Probl Perform Art*. 2010 Mar;25(1):39-42. <http://www.ncbi.nlm.nih.gov/pubmed/20795379>.

Baker J, Scott D, Watkins K, Keegan-Turcotte S, Wyon M. Self-reported and reported injury patterns in contemporary dance students. *Med Probl Perform Art*. 2010 Mar;25(1):10-5. <http://www.ncbi.nlm.nih.gov/pubmed/20795374>.

Twitchett E, Angioi M, Koutedakis Y, Wyon M. The demands of a working day among female professional ballet dancers. *J Dance Med Sci*. 2010;14(4):127-32. <http://www.ncbi.nlm.nih.gov/pubmed/21703083>.

Mensi C, Garberi A, Bordini L, Sieno C, Riboldi L. Asbestos-related diseases in entertainment workers. *Med Lav*. 2010 Nov-Dec;101(6):416-8. <http://www.ncbi.nlm.nih.gov/pubmed/21141346>.

Engard DJ, Sandfort DR, Gotshall RW, Brazile WJ. Noise exposure, characterization, and comparison of three football stadiums. *J Occup Environ Hyg*. 2010 Nov;7(11):616-21. doi: [10.1080/15459624.2010.510107](https://doi.org/10.1080/15459624.2010.510107).

Girard SA, Picard M, Davis AC, Simard M, Larocque R, Leroux T, Turcotte F. Multiple work-related accidents: tracing the role of hearing status and noise exposure. *Occup Environ Med*. 2009 May;66(5):319-24. doi: [10.1136/oem.2007.037713](https://doi.org/10.1136/oem.2007.037713).

Dudek W, Wittczak T, Swierczyńska-Machura D, Walusiak-Skorupa J, Pałczyński C. Occupational asthma due to turpentine in art painter--case report. *Int J Occup Med Environ Health*. 2009;22(3):293-5. doi: [10.2478/v10001-009-0022-7](https://doi.org/10.2478/v10001-009-0022-7).

Dommerholt J. Performing arts medicine - instrumentalist musicians part I - general considerations. *J Bodyw Mov Ther*. 2009 Oct;13(4):311-9. doi: [10.1016/j.jbmt.2009.02.003](https://doi.org/10.1016/j.jbmt.2009.02.003).

Thomas H, Tarr J. Dancers' perceptions of pain and injury: positive and negative effects. *J Dance Med Sci*. 2009;13(2):51-9. <http://www.ncbi.nlm.nih.gov/pubmed/19508809>.

Gambichler T, Uzun A, Boms S, Altmeyer P, Altenmüller E. Skin conditions in instrumental musicians: a self-reported survey. *Contact Dermatitis*. 2008 Apr;58(4):217-22. doi: [10.1111/j.1600-0536.2007.01310.x](https://doi.org/10.1111/j.1600-0536.2007.01310.x).

Bové MJ, Kansal S, Rosen CA. Influenza and the vocal performer: update on prevention and treatment. *J Voice*. 2008 May;22(3):326-32. Review. doi: [10.1016/j.jvoice.2006.09.012](https://doi.org/10.1016/j.jvoice.2006.09.012).

Tak S, Roscoe RJ, Alarcon W, Ju J, Sestito JP, Sussell AL, Calvert GM. Characteristics of US workers whose blood lead levels trigger the medical removal protection provision, and conformity with biological monitoring requirements, 2003-2005. *Am J Ind Med.* 2008 Sep;51(9):691-700. doi: [10.1002/ajim.20603](https://doi.org/10.1002/ajim.20603).

Petrescu N. Loud music listening. *Mcgill J Med.* 2008 Jul;11(2):169-76. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2582665/>. Accessed July 26, 2013

Isaksson M, Möller H, Pontén A. Occupational allergic contact dermatitis from epoxy resin in a golf club repairman. *Dermatitis.* 2008 Sep-Oct;19(5):E30-2. <http://www.ncbi.nlm.nih.gov/pubmed/18845108>.

Walkosz BJ, Buller DB, Andersen PA, Scott MD, Dignan MB, Cutter GR, Maloy JA. Increasing sun protection in winter outdoor recreation a theory-based health communication program. *Am J Prev Med.* 2008 Jun;34(6):502-9. doi: [10.1016/j.amepre.2008.02.011](https://doi.org/10.1016/j.amepre.2008.02.011).

Fuller CW, Ward CJ. An empirical approach for defining acceptable levels of risk: a case study in team sports. *Inj Prev.* 2008 Aug;14(4):256-61. doi: [10.1136/ip.2008.018739](https://doi.org/10.1136/ip.2008.018739).

Cowley S, Bowman B, Lawrance M. Injuries in the Victorian thoroughbred racing industry. *Br J Sports Med.* 2007 Oct;41(10):639-43; discussion 643. Review. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2465182/>. Accessed July 26, 2013

Woodcock K. Rider errors and amusement ride safety: observation at three carnival midways. *Accid Anal Prev.* 2007 Mar;39(2):390-7. doi: [10.1016/j.aap.2006.08.009](https://doi.org/10.1016/j.aap.2006.08.009).

Zuskin E, Schachter EN, Mustajbegović J, Pucarín-Cvetković J, Lipozencić J. Occupational health hazards of artists. *Acta Dermatovenerol Croat.* 2007;15(3):167-77. Review. <http://www.ncbi.nlm.nih.gov/pubmed/17868543>.

Witcombe B, Meyer D. Sword swallowing and its side effects. *BMJ.* 2006 Dec 23;333(7582):1285-7. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1761150/>. Accessed July 26, 2013

Restaurants and Food Services

Strategic Goal 10: Reduce the frequency of injuries by 30% among food service workers.

Utterback DF, Charles LE, Schnorr TM, Tiesman HM, Storey E, Vossen P. Occupational Injuries, Illnesses and Fatalities among Workers in the Services Sector Industries: 2003 – 2007. *Am J Ind Med.* 2012;54:31–41. doi: [10.1097/JOM.0b013e3182398e36](https://doi.org/10.1097/JOM.0b013e3182398e36).

Heat Related Burn Injuries in Restaurant Industry workers in Washington State, 2006-2012. Data from the Safety and Health Assessment and Research for Prevention (SHARP) program at the Washington State Department of Labor and Industries. April 2014. SHARP Publication #86-9-2014. <http://www.lni.wa.gov/safety/research/pubs/search.asp?S=%20scalds>. Accessed June 19, 2015

Fact Sheet: Food Service Non-Fatal Work-Related Injuries to Massachusetts Teens. Teens at Work: Injury Surveillance and Prevention Project, Occupational Health Surveillance Program, Massachusetts Department of Public Health. 2013.

<http://www.mass.gov/eohhs/docs/dph/occupational-health/18-and-under/work-relate-injury-teens-grocerystores.pdf>. Accessed June 19, 2015

Injured Young Worker Hazard Alert: (2014). Part-Time Fast Food Employee Suffers a Chemical Burn – “It was just so much pain”. Safety and Health Assessment and Research for Prevention (SHARP) program at the Washington State Department of Labor and Industries. SHARP Publication #91-18-2014.

<http://www.lni.wa.gov/safety/research/pubs/search.asp?S=Food%20service>. Accessed June 19, 2015

Restaurant Co-owner Fatally Crushed by a Dumbwaiter Car. Case Report 12NY033. FACE: New York State Department of Health. Available at

<http://www.health.ny.gov/environmental/investigations/face/docs/12ny033.pdf>.

Accessed June 19, 2015

Intermediate Goal 10.1: Promote the development of comprehensive occupational safety and health programs for restaurants and other food service establishments.

Balanay JA, Adesina A, Kearney GD, Richards SL. 2014. Assessment of occupational health and safety hazard exposures among working college students. *Am J Ind Med*, 57(1):114-124. doi: [10.1002/ajim.22256](https://doi.org/10.1002/ajim.22256).

Caban-Martinez AJ, Courtney TK, Chang W, Lombardi D, Huang Y, Brennan M, Perry M, Katz J, Verma S. Preventing slips and falls through leisure-time physical activity: findings from a study of limited-service restaurants. *PLoS One*. 2014 16(9). doi: [10.1371/journal.pone.0110248](https://doi.org/10.1371/journal.pone.0110248).

El-Turkey M. Occupational hazards and access to health care among Latino, immigrant restaurant workers in Philadelphia. Presentation at APHA, New Orleans, LA. 2014. <https://apha.confex.com/apha/142am/webprogram/Paper314687.html>. Accessed June 19, 2015

Green DR. Occupational noise exposures of college town restaurant employees. Masters of Science Thesis. University of Iowa, Occupational and Environmental Health. 2014. <http://ir.uiowa.edu/etd/1330/>. Accessed June 19, 2015

Kim H, Jayaraman S, Landsbergis P, Markowitz S, Kim S, Dropkin J. 2013. Perceived discrimination from management and musculoskeletal symptoms among New York City restaurant workers. *Int J Occup and Env Health* 19(3):196-206. doi: [10.1179/2049396713Y.0000000031](https://doi.org/10.1179/2049396713Y.0000000031).

Luckhaupt SE, Dahlhamer JM, Ward BW, Sweeney MH, Sestito JP, Calvert GM. Prevalence and work-relatedness of carpal tunnel syndrome in the working population, United States, 2010 National Health Interview Survey. *Am J Ind Med* 2013 Jun;56(6):615-624. doi: [10.1002/ajim.22048](https://doi.org/10.1002/ajim.22048).

Tomita S, Muto T, Matsuzuki H, Haruyama Y, Ito A, Muto S, Haratani T, Seo A, Ayabe M, Katamoto S. Risk Factors for frequent work-related burn and cut injuries and low back pain among commercial kitchen workers in Japan. *Ind Health*. 2013 51(3):297-306. <http://www.ncbi.nlm.nih.gov/pubmed/23385436>.

Verma SK, Zhao Z, Courtney TK, Chang WR, Lombardi DA, Huang E, Melanye J. Duration of slip-resistant shoe usage and the rate of slipping in limited-service restaurant workers: Results from a prospective and crossover study. Presentation at APHA, New Orleans, LA. 2014. <https://apha.confex.com/apha/142am/webprogram/Paper307883.html>. Accessed June 22, 2015

Verma SK, Zhao Z, Courtney TK, Chang WR, Lombardi DA, Huang YH, Brennan MJ, Perry MJ. Duration of slip-resistant shoe usage and the rate of slipping in limited-service restaurants: results from a prospective and crossover study. *Ergonomics*. 2014 Dec;57(12):1919-26. [doi: 10.1080/00140139.2014.952348](https://doi.org/10.1080/00140139.2014.952348).

Courtney TK, Verma SK, Chang WR, Huang YH, Lombardi DA, Brennan MJ, Perry MJ. Perception of slipperiness and prospective risk of slipping at work. *Occup Environ Med*. 2013 Jan;70(1):35-40. [doi: 10.1136/oemed-2012-100831](https://doi.org/10.1136/oemed-2012-100831).

Petree RD, Broome KM, Bennett JB. Exploring and reducing stress in young restaurant workers: results of a randomized field trial. *Am J Health Promot*. 2012 Mar-Apr;26(4):217-24. [doi: 10.4278/ajhp.091001-QUAN-321](https://doi.org/10.4278/ajhp.091001-QUAN-321).

Newman KLS, Leon J, Newman LS. Estimating occupational illness, injury, and mortality in food production: A farm-to-table analysis. Presentation at APHA, Boston, MA. 2013.

Gentzler MD, Smither JA. Using practical ergonomic evaluations in the restaurant industry to enhance safety and comfort: a case study. *Work*. 2012;41 Suppl 1:5529-31. [doi: 10.3233/WOR-2012-0872-5529](https://doi.org/10.3233/WOR-2012-0872-5529).

Gleeson S. Leveraging health capital at the workplace: An examination of health reporting behavior among Latino immigrant restaurant workers in the United States. *Social Science and Medicine*. 2012 75(12):2291-2298. [doi: 10.1016/j.socscimed.2012.08.031](https://doi.org/10.1016/j.socscimed.2012.08.031).

Kica J, Rosenman KD. Multisource Surveillance System for Work-Related Burns. *JOEM*, 2012 54(5):642-647. [doi: 10.1097/JOM.0b013e31824ed31a](https://doi.org/10.1097/JOM.0b013e31824ed31a).

Huang YH, Verma SK, Chang WR, Courtney TK, Lombardi DA, Brennan MJ, Perry MJ. Management commitment to safety vs. employee perceived safety training and association with future injury. *Accident Analysis and Prevention*. 2012 47:94-101. [doi: 10.1016/j.aap.2011.12.001](https://doi.org/10.1016/j.aap.2011.12.001).

Huang YH1, Verma SK, Chang WR, Courtney TK, Lombardi DA, Brennan MJ, Perry MJ. Supervisor vs. employee safety perceptions and association with future injury in US limited-service restaurant workers. *Accident Analysis & Prevention*. 2012 47:45–51. [doi: 10.1016/j.aap.2011.11.023](https://doi.org/10.1016/j.aap.2011.11.023).

Verma SK, Courtney TK, Corns HL, Huang YH, Lombardi DA, Chang WR, Brennan MJ, Perry MJ. Factors associated with use of slip-resistant shoes in US limited-service restaurant workers. *Inj Prev*. 2012 Jun;18(3):176-81. [doi: 10.1136/injuryprev-2011-040094](https://doi.org/10.1136/injuryprev-2011-040094).

Jayaraman S, Dropkin J, Siby S, Alston LR, Markowitz S. Dangerous dining: health and safety in the New York City restaurant industry. *J Occup Environ Med*. 2011 Dec;53(12):1418-24. [doi: 10.1097/JOM.0b013e3182363b9f](https://doi.org/10.1097/JOM.0b013e3182363b9f).

- Wong TW, Wong AH, Lee FS, Qiu H. Respiratory health and lung function in Chinese restaurant kitchen workers. *Occup Environ Med.* 2011 Oct;68(10):746-52. doi: [10.1136/oem.2010.059378](https://doi.org/10.1136/oem.2010.059378).
- Verma SK, Lombardi DA, Chang WR, Courtney TK, Huang YH, Brennan MJ, Mittleman MA, Ware JH, Perry MJ. Rushing, distraction, walking on contaminated floors and risk of slipping in limited-service restaurants: a case--crossover study. *Occup Environ Med.* 2011 Aug;68(8):575-81. doi: [10.1136/oem.2010.056226](https://doi.org/10.1136/oem.2010.056226).
- Verma SK, Chang WR, Courtney TK, Lombardi DA, Huang YH, Brennan MJ, Mittleman MA, Ware JH, Perry MJ. A prospective study of floor surface, shoes, floor cleaning and slipping in US limited-service restaurant workers. *Occup Environ Med.* 2011 Apr;68(4):279-85. doi: [10.1136/oem.2010.056218](https://doi.org/10.1136/oem.2010.056218).
- Gany F, Dobslaw R, Ramirez J, Tonda J, Lobach I, Leng J. Mexican urban occupational health in the US: a population at risk. *J Community Health.* 2011 Apr;36(2):175-9. doi: [10.1007/s10900-010-9295-9](https://doi.org/10.1007/s10900-010-9295-9).
- Klein EG, Forster JL, Erickson DJ, Lytle LA, Schillo B. Economic effects of clean indoor air policies on bar and restaurant employment in Minneapolis and St Paul, Minnesota. *J Public Health Manag Pract.* 2010 Jul-Aug;16(4):285-93. doi: [10.1097/PHH.0b013e3181c60ea9](https://doi.org/10.1097/PHH.0b013e3181c60ea9).
- Verma SK, Chang WR, Courtney TK, Lombardi DA, Huang YH, Brennan MJ, Mittleman MA, Perry MJ. Workers' experience of slipping in U.S. limited-service restaurants. *J Occup Environ Hyg.* 2010 Sep;7(9):491-500. doi: [10.1080/15459624.2010.486693](https://doi.org/10.1080/15459624.2010.486693).
- York NL, Lee K. A baseline evaluation of casino air quality after enactment of Nevada's Clean Indoor Air Act. *Public Health Nurs.* 2010 Mar-Apr;27(2):158-63. doi: [10.1111/j.1525-1446.2010.00843.x](https://doi.org/10.1111/j.1525-1446.2010.00843.x).
- Courtney TK, Verma SK, Huang YH, Chang WR, Li KW, Filiaggi AJ. Factors associated with worker slipping in limited-service restaurants. *Inj Prev.* 2010 Feb;16(1):36-41. doi: [10.1136/ip.2009.022749](https://doi.org/10.1136/ip.2009.022749).
- Minkler M, Lee PT, Tom A, Chang C, Morales A, Liu SS, Salvatore A, Baker R, Chen F, Bhatia R, Krause N. Using community-based participatory research to design and initiate a study on immigrant worker health and safety in San Francisco's Chinatown restaurants. *Am J Ind Med.* 2010 Apr;53(4):361-71. doi: [10.1002/ajim.20791](https://doi.org/10.1002/ajim.20791).
- Tsai JH. Chinese immigrant restaurant workers' injury and illness experiences. *Arch Environ Occup Health.* 2009 Summer;64(2):107-14. doi: [10.3200/AEOH.64.2.107-114](https://doi.org/10.3200/AEOH.64.2.107-114).
- Tsai J, Bruck A. Sociocultural contexts and worker safety and health: findings of a study with Chinese immigrant restaurant workers. *AAOHN J.* 2009 Feb;57(2):51-8. Erratum in: *AAOHN J.* 2009 May;57(5):189. <http://www.ncbi.nlm.nih.gov/pubmed/19283933>.
- Cann AP, MacEachen E, Vandervoort AA. Lay versus expert understandings of workplace risk in the food service industry: a multi-dimensional model with implications for participatory ergonomics. *Work.* 2008;30(3):219-28. <http://www.ncbi.nlm.nih.gov/pubmed/18525146>.

Casteel C, Peek-Asa C, Greenland S, Chu LD, Kraus JF. A study of the effectiveness of a workplace violence intervention for small retail and service establishments. *J Occup Environ Med.* 2008 Dec;50(12):1365-70. doi: [10.1097/JOM.0b013e3181845fcf](https://doi.org/10.1097/JOM.0b013e3181845fcf).

Chang C, Salvatore AL, Lee PT, Liu SS, Tom AT, Morales A, Baker R, Minkler M. Adapting to context in community-based participatory research: "participatory starting points" in a Chinese immigrant worker community. *Am J Community Psychol.* 2013 Jun;51(3-4):480-91. doi: [10.1007/s10464-012-9565-z](https://doi.org/10.1007/s10464-012-9565-z).

Ledoux E, Cloutier E, Fournier PS. The influence of flexible management practices on the sharing of experiential knowledge in the workplace: a case study of food service helpers. *Work.* 2012;41 Suppl 1:5172-6. doi: [10.3233/WOR-2012-0805-5172](https://doi.org/10.3233/WOR-2012-0805-5172).

Zierold KM, Welsh EC, McGeeney TJ. Attitudes of teenagers towards workplace safety training. *J Community Health.* 2012 Dec;37(6):1289-95. doi: [10.1007/s10900-012-9570-z](https://doi.org/10.1007/s10900-012-9570-z).

Huang YH, Verma SK, Chang WR, Courtney TK, Lombardi DA, Brennan MJ, Perry MJ. Management commitment to safety vs. employee perceived safety training and association with future injury. *Accid Anal Prev.* 2012 Jul;47:94-101. doi: [10.1016/j.aap.2011.12.001](https://doi.org/10.1016/j.aap.2011.12.001).

Washington State Department of Labor & Industries. Injured Young Worker Hazard Alert: Bicycle Delivery Driver Dies after Colliding with Car. June 1, 2012. <http://www.lni.wa.gov/Safety/Research/Files/91132012YoungWorkerBikeMessenger.pdf>. Accessed June 6, 2013

Michigan State University: MIFACE Case 277. 37-year-old prep cook at a restaurant died from complications of heat stress. Undated. http://www.oem.msu.edu/MIFACE_Constr_Div/Case277.pdf. Accessed July 29, 2013

Bennett JB, Aden CA, Broome K, Mitchell K, Rigdon WD. Team resilience for young restaurant workers: research-to-practice adaptation and assessment. *J Occup Health Psychol.* 2010 Jul;15(3):223-36. doi: [/10.1037/a0019379](https://doi.org/10.1037/a0019379).

Ward JA, de Castro AB, Tsai JH, Linker D, Hildahl L, Miller ME. An injury prevention strategy for teen restaurant workers. Washington State's ProSafety project. *AAOHN J.* 2010 Feb;58(2):57-65; quiz 65-7. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3061567/>.

Oklahoma State Department of Health Injury Prevention Service. Burn Injuries in Teen Restaurant Workers. May 2009. http://www.ok.gov/health/Disease_Prevention_Preparedness/Injury_Prevention_Service/Fact_Sheets/IPS-FShtm_Burns_among_Teen_Restaurant_Workers_English.html. Accessed June 6, 2013

Oklahoma State Department of Health Injury Prevention Service. Safety in Eating and Drinking Establishments. February 2009. http://www.ok.gov/health/Disease_Prevention_Preparedness/Injury_Prevention_Service/Fact_Sheets/IPS-FShtm_Burns_among_Restaurant_Workers_English.html. Accessed June 6, 2013

Washington State Department of Labor & Industries. Burn Injury Facts - Scald Burns in Restaurant Workers. Report # 86-7-2009, April 2009. <http://www.lni.wa.gov/Safety/Research/Files/RestaurantScaldBurns.pdf>. Accessed June 6, 2013

Bush D, Paleo L, Baker R, Dewey R, Toktogonova N, Cornelio D. Restaurant supervisor safety training: evaluating a small business training intervention. Public Health Rep. 2009 Jul-Aug;124 Suppl 1:152-9. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2708666/>.

Oklahoma State Department of Health Injury Prevention Service. Work-Related Burns among Restaurant and Food Service Workers, Oklahoma, 1988-2006. March 6, 2009. http://www.ok.gov/health2/documents/Restaurant_Worker_Burns.pdf. Accessed June 6, 2013

Washington State Department of Labor & Industries. Young cook seriously burned by boiling water. Burn Injury Narrative, SHARP Report # 86-5-2008, April 2008. <http://www.lni.wa.gov/Safety/Research/Files/HotWaterScaldBurn.pdf>. Accessed June 6, 2013

Washington State Department of Labor & Industries. Young man seriously burned while cleaning deep fryer. Burn Injury Narrative, SHARP Report # 86-4-2008, February 2008. <http://www.lni.wa.gov/Safety/Research/Files/86-4-2008DeepFryerBurn.pdf>. Accessed June 6, 2013

Washington State Department of Labor & Industries. Information for restaurant owners and workers about diacetyl: Do you cook with butter-flavored oils or butter substitutes? SHARP Technical Report 64-10-2008, February 2008. <http://www.lni.wa.gov/Safety/Research/Files/DiacetylFactSheet.pdf>. Accessed June 6, 2013

Soder S, Diepgen TL, Radulescu M, Apfelbacher CJ, Bruckner T, Weisshaar E. Occupational skin diseases in cleaning and kitchen employees: course and quality of life after measures of secondary individual prevention. J Dtsch Dermatol Ges. 2007 Aug;5(8):670-6. [doi: 10.1111/j.1610-0387.2007.06419.x](https://doi.org/10.1111/j.1610-0387.2007.06419.x).

Connecticut Department of Public Health Environmental Health Section. Fact Sheet: Working Safely In Restaurants. April 1, 2007. http://www.ct.gov/dph/LIB/dph/environmental_health/eoha/pdf/Restaurant_Safety.pdf. Accessed June 6, 2013

Massachusetts Department of Public Health; Occupational Health Surveillance Program. Restaurant Employer Resources for Keeping Teens Safe at Work. Undated. <http://www.mass.gov/eohhs/docs/dph/occupational-health/18-and-under/teen-rest-empl-resources.pdf>. Accessed July 29, 2013

McCall BP, Horwitz IB, Carr BS. Adolescent occupational injuries and workplace risks: an analysis of Oregon workers' compensation data 1990-1997. J Adolesc Health. 2007 Sep;41(3):248-55. [doi: 10.1016/j.jadohealth.2007.02.004](https://doi.org/10.1016/j.jadohealth.2007.02.004).

Susan Harwood Grant, University of Puerto Rico, Medical Sciences Campus, San Juan PR. The grantee will provide training in ergonomic hazards and the Hazard Communication Standard to food service workers and supervisors in Puerto Rico. Training topics will include the symptoms of musculoskeletal disorders, ergonomic hazard identification and control, hazardous substances, and exposure prevention. Training materials will include case studies and hazard identification checklists. Training will be provided in Spanish.

Susan Harwood Grant, Voces de la Frontera, Milwaukee WI. The grantee will provide ergonomics training to hard-to-reach immigrant workers in southeast Wisconsin and

Chicago. Training will cover best practices for preventing musculoskeletal disorders (MSD), worksite and workstation reorganization for workers in the manufacturing, construction, and restaurant industries. Existing materials will be used but they will be translated from English into Hmong and Burmes.

Susan Harwood Grant, MinKwon (Young Korean American Service and Education Center, Inc.), Flushing NY. The grantee will provide culturally- and linguistically-appropriate educational materials and training to Korean, Nepali, and Latino immigrant workers in Queens, New York. Topics will include worker rights under the OSH Act, common injuries and workplace hazards and prevention in the nail salon, construction, retail, and restaurant industries. Training will be provided in Spanish, Nepali, and Korean.

Occupational Safety and Health Administration. FY2012 Developmental Follow-on Susan Harwood Grant to Regents of the University of California at Berkeley, Berkeley, CA, \$181,330. The grantee will conduct training that addresses a variety of safety and health hazards facing hard-to-reach workers, immigrants, and young workers concentrated in the restaurant, nail salon, and recycling industries. Training will take place in California. Training and materials will be available in English and Spanish. A select number of materials will be available in Chinese.

https://www.osha.gov/dte/sharwood/2012_grant_recipients.html. Accessed July 29, 2013

Occupational Safety and Health Administration. FY2012 Developmental Follow-on Susan Harwood Grant to Interfaith Worker Justice, Chicago, IL, \$181,388. The grantee will provide worker and train-the-trainer training that addresses specific health and safety hazards in construction, cleaning service, poultry/meat packing, restaurants, landscaping, and home care. Training will target non-English speaking/limited English proficiency workers, non-literate and low literacy workers, young workers, and hard-to-reach workers. Training and materials will be available in English and Spanish.

https://www.osha.gov/dte/sharwood/2012_grant_recipients.html. Accessed July 29, 2013

Occupational Safety and Health Administration. FY2012 Developmental Follow-on Susan Harwood Grant to Georgia Tech Applied Research Corporation, Atlanta, GA, \$181,350. The grantee will provide training on workplace hazards targeting young workers and employers of young workers specifically in the healthcare, cosmetology, culinary and construction industries. Training will be focused in the South and Southeast including Texas, Louisiana, South Carolina, North Carolina, Tennessee and Kentucky.

https://www.osha.gov/dte/sharwood/2012_grant_recipients.html. Accessed July 29, 2013

Occupational Safety and Health Administration. FY2011 Developmental Follow-on Susan Harwood Grant to Regents of the University of California - Berkeley, Berkeley, CA, \$187,000. The grantee will provide training to low-income, immigrant and youth workers employed in small businesses in Northern California. The target audiences are workers in nail salons, restaurants, janitorial services, residential care, and landscaping services. The training and/or materials will be offered in English, Vietnamese, and Spanish.

https://www.osha.gov/dte/sharwood/2011_grant_recipients.html. Accessed July 29, 2013

Occupational Safety and Health Administration. FY2012 Developmental Follow-on Susan Harwood Grant to Regents of the University of California at Los Angeles, Los Angeles, CA, \$181,390. The grantee will offer culturally and language appropriate training to low wage immigrant workers in the hotel, car wash and waste industries. Training and materials will

target the large Southern California Spanish-speaking workforce. Classes will provide training on topics such as hazard identification, chemical hazards, ergonomics, worker rights, and effective health and safety committees.

https://www.osha.gov/dte/sharwood/2012_grant_recipients.html. Accessed July 29, 2013

Occupational Safety and Health Administration. FY2011 Developmental Follow-on Susan Harwood Grant to National Council for Occupational Safety and Health, Raleigh, NC, \$663,000. The grantee will conduct training that targets high-risk vulnerable workers, especially those with limited English proficiency. Training will be provided by participating COSH groups. Training will include classes on hazards associated with maintenance, housekeeping, custodial, agricultural, and restaurant work. The training and/or materials will be offered in English and Spanish.

https://www.osha.gov/dte/sharwood/2011_grant_recipients.html. Accessed July 29, 2013

Occupational Safety and Health Administration. FY2011 Developmental Follow-on Susan Harwood Grant to Interfaith Worker Justice, Chicago, IL, \$186,998. The grantee will develop and provide safety training that targets low-wage, immigrant workers in construction, landscaping, poultry/meatpacking, restaurants, and cleaning services. The employer training will include how to develop or improve a safety and health program. The training and/or materials will be offered in English, Spanish and Polish.

https://www.osha.gov/dte/sharwood/2011_grant_recipients.html. Accessed July 29, 2013

Occupational Safety and Health Administration. 2010 Pilot Susan Harwood Grant to Make the Road New York Inc., Brooklyn, NY, \$85,000. The grantee will conduct a needs assessment to identify workplace hazards in small businesses located in New York City. Training will be developed for Latino immigrant workers and employers engaged in low-wage industries including restaurants, manufacturing, commercial laundry, and garment. The plan calls for integrating the safety materials into ESOL and job skills training classes.

https://www.osha.gov/dte/sharwood/2010_grant_recipients.html. Accessed July 28, 2013

Occupational Safety and Health Administration. 2010 Pilot Susan Harwood Grant to Center for Human Services, Bethesda, MD, \$85,000. The grantee will develop a training program targeting immigrant and low literacy Hispanic/Latino workers in Pennsylvania's food service industry. Training materials will be modified for low literacy and second language learners. Training will include OSHA, worker rights and reducing workplace injuries. The training and/or materials will be offered in English and Spanish.

https://www.osha.gov/dte/sharwood/2010_grant_recipients.html. Accessed July 29, 2013

Occupational Safety and Health Administration. 2009 Susan Harwood Grant to Restaurant Opportunities Centers United, New York, NY, \$275,000. Restaurant Opportunities Centers United plans to provide training to small restaurant employers in various locations including Chicago, New York, Detroit, Los Angeles, Miami, and Washington, DC. The proposed work plan includes conducting train-the-trainer curriculum in multiple languages, a peer education program, and an employer education program as well as developing local health and safety committees for ongoing workers and employer education. It is projected that 50 small restaurant employers and 2,000 restaurant workers will receive training addressing ergonomic guidelines for the restaurant industry.

https://www.osha.gov/dte/sharwood/2009_grant_recipients.html. Accessed July 29, 2013

Luckhaupt SE, Sweeney MH, Funk R, Calvert GM, Nowell M, D'Mello T, Reingold A, Meek J, Yousey-Hindes K, Arnold KE, Ryan P, Lynfield R, Morin C, Baumbach J, Zansky S, Bennett NM, Thomas A, Schaffner W, Jones T. Influenza-associated hospitalizations by industry, 2009-10 influenza season, United States. *Emerg Infect Dis*. 2012 Apr;18(4):556-62. doi: [10.3201/eid1804.110337](https://doi.org/10.3201/eid1804.110337).

New England Culinary Institute. Emergency Response, Evacuation Procedures and Recovery Plan. <http://www.neci.edu/college-disclosure/campus-security/emergency-response-evacuation-procedures-and-recovery-plan/>. Accessed June 19, 2015

Florida Restaurant and Lodging Association. Emergency and Disaster Preparedness. <http://www.frla.org/tools-and-solutions/emergency-a-disaster-preparedness>. Accessed May 31, 2013

Michigan Department of Agriculture and Rural Development. Emergency Action Plans for Retail Food Establishments. <http://www.michigan.gov/mdard/0,4610,7-125-1568-105442--,00.html>. Accessed May 31, 2013

Strategic Goal 11: Reduce the frequency of workplace violence events by 20% in restaurants and food delivery services.

Intermediate Goal 11.1: Create, promote and deliver acceptable and effective violence prevention strategies for restaurants and for food delivery services.

Pridemore WA, Grubestic TH. Community organization moderates the effect of alcohol outlet density on violence. *Br J Sociol*. 2012 Dec;63(4):680-703. doi: [10.1111/j.1468-4446.2012.01432.x](https://doi.org/10.1111/j.1468-4446.2012.01432.x).

Mair C, Gruenewald PJ, Ponicki WR, Remer L. Varying impacts of alcohol outlet densities on violent assaults: explaining differences across neighborhoods. *J Stud Alcohol Drugs*. 2013 Jan;74(1):50-8. <http://www.ncbi.nlm.nih.gov/pubmed/23200150>.

Casteel C, Peek-Asa C, Greenland S, Chu LD, Kraus JF. A study of the effectiveness of a workplace violence intervention for small retail and service establishments. *J Occup Environ Med*. 2008 Dec;50(12):1365-70. doi: [10.1097/JOM.0b013e3181845fcf](https://doi.org/10.1097/JOM.0b013e3181845fcf).

Kelly AC, Boyd SM, Henahan GT, Chambers G. Occupational noise exposure of nightclub bar employees in Ireland. *Noise Health*. 2012 Jul-Aug;14(59):148-54. doi: [10.4103/1463-1741.99868](https://doi.org/10.4103/1463-1741.99868).

Barlow C, Castilla-Sanchez F. Occupational noise exposure and regulatory adherence in music venues in the United Kingdom. *Noise Health*. 2012 Mar-Apr;14(57):86-90. doi: [10.4103/1463-1741.95137](https://doi.org/10.4103/1463-1741.95137).

Vester L, Thyssen JP, Menné T, Johansen JD. Consequences of occupational food-related hand dermatoses with a focus on protein contact dermatitis. *Contact Dermatitis*. 2012 Dec;67(6):328-33. doi: [10.1111/j.1600-0536.2012.02101.x](https://doi.org/10.1111/j.1600-0536.2012.02101.x).

Reijula JP, Johnsson TS, Kaleva PS, Reijula KE. Exposure to tobacco smoke and prevalence of symptoms decreased among Finnish restaurant workers after the smoke-free law. *Am J Ind Med*. 2012 Jan;55(1):37-43. doi: [10.1002/ajim.21006](https://doi.org/10.1002/ajim.21006).

Davila EP, Florez H, Fleming LE, Lee DJ, Goodman E, LeBlanc WG, Caban-Martinez AJ, Arheart KL, McCollister KE, Christ SL, Clark JC 3rd, Clarke T. Prevalence of the metabolic syndrome among U.S. workers. *Diabetes Care*. 2010 Nov;33(11):2390-5. [doi: 10.2337/dc10-0681](https://doi.org/10.2337/dc10-0681).

Wilson MD, McGlothlin JD, Rosenthal FS, Black DR, Zimmerman NJ, Bridges CD. Ergonomics. The effect of occupational exposure to environmental tobacco smoke on the heart rate variability of bar and restaurant workers. *J Occup Environ Hyg*. 2010 Jul;7(7):D44-9. [doi: 10.1080/15459624.2010.483980](https://doi.org/10.1080/15459624.2010.483980).

Sjaastad AK, Jørgensen RB, Svendsen K. Exposure to polycyclic aromatic hydrocarbons (PAHs), mutagenic aldehydes and particulate matter during pan frying of beefsteak. *Occup Environ Med*. 2010 Apr;67(4):228-32. [doi: 10.1136/oem.2009.046144](https://doi.org/10.1136/oem.2009.046144).

Hall JC, Bernert JT, Hall DB, St Helen G, Kudon LH, Naeher LP. Assessment of exposure to secondhand smoke at outdoor bars and family restaurants in Athens, Georgia, using salivary cotinine. *J Occup Environ Hyg*. 2009 Nov;6(11):698-704. [doi: 10.1080/15459620903249893](https://doi.org/10.1080/15459620903249893).

Klein EG, Forster JL, Erickson DJ, Lytle LA, Schillo B. Does the type of CIA policy significantly affect bar and restaurant employment in Minnesota cities? *Prev Sci*. 2009 Jun;10(2):168-74. [doi: 10.1007/s11121-009-0122-4](https://doi.org/10.1007/s11121-009-0122-4).

Stanbury M, Chester D, Hanna EA, Rosenman KD. How many deaths will it take? A death from asthma associated with work-related environmental tobacco smoke. *Am J Ind Med*. 2008 Feb;51(2):111-6. [doi: 10.1002/ajim.20538](https://doi.org/10.1002/ajim.20538).

Okoli CT, Hall LA, Rayens MK, Hahn EJ. Measuring tobacco smoke exposure among smoking and nonsmoking bar and restaurant workers. *Biol Res Nurs*. 2007 Jul;9(1):81-9. [doi: 10.1177/1099800407300852](https://doi.org/10.1177/1099800407300852).

Stark MJ, Rohde K, Maher JE, Pizacani BA, Dent CW, Bard R, Carmella SG, Benoit AR, Thomson NM, Hecht SS. The impact of clean indoor air exemptions and preemption policies on the prevalence of a tobacco-specific lung carcinogen among nonsmoking bar and restaurant workers. *Am J Public Health*. 2007 Aug;97(8):1457-63. [doi: 10.2105/AJPH.2006.094086](https://doi.org/10.2105/AJPH.2006.094086).

Milz S, Akbar-Khanzadeh F, Ames A, Spino S, Tex C, Lanza K. Indoor air quality in restaurants with and without designated smoking rooms. *J Occup Environ Hyg*. 2007 Apr;4(4):246-52. [doi: 10.1080/15459620701204801](https://doi.org/10.1080/15459620701204801).

Okoli CT, Rayens MK, Hahn EJ. Behavioral effects of nicotine exposure from secondhand tobacco smoke among bar and restaurant workers. *Addict Behav*. 2007 Sep;32(9):1922-8. [doi: 10.1016/j.addbeh.2006.12.013](https://doi.org/10.1016/j.addbeh.2006.12.013).

Telecommunications

Strategic Goal 12: Reduce the incidence of serious occupational illnesses and injuries by 70% within the telecommunications industry.

Intermediate Goal 12.1: Develop and promote guidelines for reducing illnesses and injuries in the telecommunications industry that are associated with work organization factors, physical hazards associated with musculoskeletal disorders, shift work, work load, work pace, training, and indoor air quality.

Kirk E, Strong J, Burgess-Limerick R. Developing computer competencies for eWorkers within call centres. *Work*. 2013 Jan;46(3):283-95. [doi: 10.3233/WOR-121533](https://doi.org/10.3233/WOR-121533).

Wagner KC, Yates D, Walcott Q. Engaging men and women as allies: a workplace curriculum module to challenge gender norms about domestic violence, male bullying and workplace violence and encourage ally behavior. *Work*. 2012;42(1):107-13. [doi: 10.3233/WOR-2012-1334](https://doi.org/10.3233/WOR-2012-1334).

Trompette N, Chatillon J. Survey of noise exposure and background noise in call centers using headphones. *J Occup Environ Hyg*. 2012 9(6):381-6. [doi: 10.1080/15459624.2012.680852](https://doi.org/10.1080/15459624.2012.680852).

Schneider-Stickler B, Knell C, Aichstill B, Jocher W. Biofeedback on voice use in call center agents in order to prevent occupational voice disorders. *J Voice*. 2012 Jan;26(1):51-62. [doi: 10.1016/j.jvoice.2010.10.001](https://doi.org/10.1016/j.jvoice.2010.10.001).

Conway PM, Aquilina T, Campanini P, Camerino D, Punzi S, Fichera GP, Francioli L, Neri L, Costa G. [Assessing employees' perceptions of risk factors for job stress using context-specific methods: the case of call-center workers]. *G Ital Med Lav Ergon*. 2011 Jul-Sep;33(3 Suppl):343-7. Italian. <http://www.ncbi.nlm.nih.gov/pubmed/23393872>.

Piwowarczyk TC, Oliveira G, Lourenço L, Behlau M. Vocal symptoms, voice activity, and participation profile and professional performance of call center operators. *J Voice*. 2012 Mar;26(2):194-200. [doi: 10.1016/j.jvoice.2011.02.006](https://doi.org/10.1016/j.jvoice.2011.02.006).

Lacaze DH, Sacco Ide C, Rocha LE, Pereira CA, Casarotto RA. Stretching and joint mobilization exercises reduce call-center operators' musculoskeletal discomfort and fatigue. *Clinics (Sao Paulo)*. 2010 Jul;65(7):657-62. [doi: 10.1590/S1807-59322010000700003](https://doi.org/10.1590/S1807-59322010000700003).

Lin YH, Chen CY, Hong WH, Lin YC. Perceived job stress and health complaints at a bank call center: comparison between inbound and outbound services. *Ind Health*. 2010;48(3):349-56. [doi: 10.2486/indhealth.48.349](https://doi.org/10.2486/indhealth.48.349).

Krajewski J, Wieland R, Sauerland M. Regulating strain states by using the recovery potential of lunch breaks. *J Occup Health Psychol*. 2010 Apr;15(2):131-9. [doi: 10.1037/a0018830](https://doi.org/10.1037/a0018830).

d'Errico A, Caputo P, Falcone U, Fubini L, Gilardi L, Mamo C, Migliardi A, Quarta D, Coffano E. Risk factors for upper extremity musculoskeletal symptoms among call center employees. *J Occup Health*. 2010;52(2):115-24. [doi: 10.1539/joh.L9117](https://doi.org/10.1539/joh.L9117).

Krause N, Burgel B, Rempel D. Effort-reward imbalance and one-year change in neck-shoulder and upper extremity pain among call center computer operators. *Scand J Work Environ Health*. 2010 Jan;36(1):42-53. [doi: 10.5271/sjweh.2881](https://doi.org/10.5271/sjweh.2881).

Charbotel B, Croidieu S, Vohito M, Guerin AC, Renaud L, Jaussaud J, Bourboul C, Imbard I, Ardiet D, Bergeret A. Working conditions in call-centers, the impact on employee health: a

transversal study. Part II. *Int Arch Occup Environ Health*. 2009 May;82(6):747-56. doi: [10.1007/s00420-008-0351-z](https://doi.org/10.1007/s00420-008-0351-z).

Croidieu S, Charbotel B, Vohito M, Renaud L, Jaussaud J, Bourboul C, Ardiet D, Imbard I, Guerin AC, Bergeret A. Call-handlers' working conditions and their subjective experience of work: a transversal study. *Int Arch Occup Environ Health*. 2008 Oct;82(1):67-77. doi: [10.1007/s00420-008-0308-2](https://doi.org/10.1007/s00420-008-0308-2).

Scarone M, Cedillo LA. Psychosocial risk factors among telephone service workers: a study of the interaction between customer and worker. *New Solut*. 2007;17(1-2):137-50. <http://www.ncbi.nlm.nih.gov/pubmed/17434865>.

ASHRAE. *Ventilation for Acceptable Indoor Air Quality*. Atlanta, GA; 2010.

Federspiel CC, Fisk WJ, Price PN, Liu G, Faulkner D, Dibartolomeo DL, Sullivan DP, Lahiff M. Worker performance and ventilation in a call center: analyses of work performance data for registered nurses. *Indoor Air*. 2004;14 Suppl 8:41-50. doi: [10.1111/j.1600-0668.2004.00299.x](https://doi.org/10.1111/j.1600-0668.2004.00299.x).

Strategic Goal 13: Reduce occupational traumatic injuries and fatalities by 70% in the telecommunications industries.

Intermediate Goal 13.1: Identify and prevent occupational fatalities in the telecommunications industries and develop evidence based recommendations and best practices guidelines.

Michigan State University. MIFACE Case 264. 46-year-old male data technician/field operations supervisor/safety officer for a telecommunications company was electrocuted when he contacted 277 volts of electricity while relocating television monitors and associated cabling. Undated. http://www.oem.msu.edu/MIFACE_Constr_Div/Case264.pdf. Accessed June 6, 2013

Washington State Department of Labor & Industries. Fatality Narrative: Journeyman Telecommunications Technician Electrocuted After Contacting Overhead Power Line. Release Date: April 1, 2008. Case No.: 07WA03501. SHARP Report No.: 71-70-2008. <http://www.lni.wa.gov/Safety/Research/Face/Files/TelecomTechElectrocuted.pdf>. Accessed July 30, 2013

Michigan State University. MIFACE Case 239. 41-year-old male lineman for a telecommunications company died while he was servicing and connecting a U-Verse cable system on a 40-foot utility pole located in a residential neighborhood. Undated. http://www.oem.msu.edu/MIFACE_Constr_Div/Case239.pdf. Accessed June 6, 2013

Occupational Safety and Health Administration. FY2011 Pilot Follow-on Susan Harwood Grant to Western Iowa Tech Community College, Sioux City, IA, \$76,500. The grantee will provide tower erection training targeting the high-hazard communications tower erection and wind turbine construction industries. Training will include qualified climber, fall protection equipment usage, confined spaces, and vertical safety hazards. https://www.osha.gov/dte/sharwood/2011_grant_recipients.html. Accessed July 29, 2013

Occupational Safety and Health Administration. 2010 Developmental Susan Harwood Grant to Steelworkers Charitable and Educational Organization, Pittsburgh, PA, \$207,000. The grantee will develop culturally and linguistically appropriate health and safety education and technical assistance that address the needs of USW and CWA members. The targeted audiences are high-risk, underserved, immigrants, Spanish-speaking, and limited English proficiency workers. https://www.osha.gov/dte/sharwood/2010_grant_recipients.html. Accessed July 29, 2013

Temporary Labor Industry

Strategic Goal 14: Reduce the incidence by 30% and severity of injuries and illnesses among workers who are employees of temporary labor agencies or otherwise employed as contractors or contingent workers by 2015.

Alterman T, Luckhaupt SE, Dahlhamer JM, Ward BW, Calvert GM. Prevalence rates of work organization characteristics among workers in the U.S.: Data from the 2010 National Health Interview Survey. *Am J Ind Med.* 2013 June;56(6):647-59. doi: [10.1002/ajim.22108](https://doi.org/10.1002/ajim.22108).

Lowry SJ, Blecker H, Camp J, De Castro B, Hecker S, Arbabi S, Traven N, Seixas NS. Possibilities and challenges in occupational injury surveillance of day laborers. *Am J Ind Med.* 2010 Feb;53(2):126-34. doi: [10.1002/ajim.20741](https://doi.org/10.1002/ajim.20741).

Smith CK, Silverstein BA, Bonauto DK, Adams D, Fan ZJ. Temporary workers in Washington state. *Am J Ind Med.* 2010 Feb;53(2):135-45. doi: [10.1002/ajim.20728](https://doi.org/10.1002/ajim.20728).

Nicholson VJ, Bunn TL, Costich JF. Disparities in work-related injuries associated with worker compensation coverage status. *Am J Ind Med.* 2008 Jun;51(6):393-8. doi: [10.1002/ajim.20565](https://doi.org/10.1002/ajim.20565).

Intermediate Goal 14.1: Produce peer-reviewed journal articles on differences in exposures or health conditions that may be attributable to employment status for temporary or contingent workers and promote a set of best practice recommendations to reduce any differences.

Roquelaure Y, LeManach AP, Ha C, Poisnel C, Bodin J, Descatha A, Imbernon E. Working in temporary employment and exposure to musculoskeletal constraints. *Occup Med (Lond).* 2012 Oct;62(7):514-8. doi: [10.1093/occmed/kqs004](https://doi.org/10.1093/occmed/kqs004).

Massachusetts Department of Public Health, Occupational Health Surveillance Program. Temporary Agencies and Worksite Employers Share Responsibility for Keeping Temporary Workers Safe. April 2012. <http://www.mass.gov/eohhs/docs/dph/occupational-health/temp-workers.pdf>. Also, <http://www.mass.gov/eohhs/gov/departments/dph/programs/health-stats/ohsp/fatal-injury/educational-materials/fatality-assessment-and-control-evaluation-facts.html> for versions in Portuguese and Spanish. Accessed June 3, 2013

Leclere OA, López RA. The jornalero: perceptions of health care resources of immigrant day laborers. *J Immigr Minor Health.* 2012 Aug;14(4):691-7. doi: [10.1007/s10903-011-9516-z](https://doi.org/10.1007/s10903-011-9516-z).

Guerrina RT, Burns CM, Conlon H. Contingent workers. *AAOHN J.* 2011 Mar;59(3):107-9. <http://www.ncbi.nlm.nih.gov/pubmed/21366200>.

Quinlan M, Sokas RK. Community campaigns, supply chains, and protecting the health and well-being of workers. *Am J Public Health*. 2009 Nov;99 Suppl 3:S538-46. doi: [/10.2105/AJPH.2008.149120](https://doi.org/10.2105/AJPH.2008.149120).

Kawachi I. Globalization and workers' health. *Ind Health*. 2008 Oct;46(5):421-3. Review. doi: [10.2486/indhealth.46.421](https://doi.org/10.2486/indhealth.46.421).

Massachusetts Department of Public Health, Occupational Health Surveillance Program. Temporary Laborer was Fatally Injured when Caught between an Idler Pulley and Conveyor Belt at a Recycling Facility – Massachusetts. Massachusetts Case Report: 05-MA-018, September 10, 2007. <http://www.cdc.gov/niosh/face/stateface/ma/05MA018.html>. Accessed June 3, 2013

Waste Collection and Disposal

Strategic Goal 15: Reduce the incidence and severity of injuries in the waste collection, disposal and recycling industries by 30%.

Intermediate Goal 15.1: Create an industry-wide council, including management and worker representatives, to collaborate on developing comprehensive health and safety guidelines or standards for the solid waste industry.

Public Works Magazine. Waste industry releases revised standard. October 1, 2012. <http://www.pwmag.com/solid-waste/waste-industry-releases-revised-standard.aspx>. Accessed June 3, 2013

NIOSH. NIOSH Factsheet: Solid Waste Industry. DHHS (NIOSH) Document No. 2012-140. <http://www.cdc.gov/niosh/docs/2012-140/>. Accessed June 3, 2013

Utterback, DF. Solid Waste Industry Reduces Fatalities and Injuries. *WasteAdvantage Magazine*, September 2011. <http://wasteadvantagemag.com/solid-waste-industry-reduces-fatalities-and-injuries/>. Accessed June 3, 2013

Biderman D. Safety First: NIOSH Numbers. *Waste 360 Magazine*. June 24, 2012. <http://waste360.com/blog/safety-first-niosh-numbers>. Accessed June 3, 2013

Waste Age Staff. NSWMA, NIOSH Team Up for Safety Bill Stuffer (with video). May 17, 2011. <http://waste360.com/safety/nswma-niosh-team-safety-bill-stuffer-video>. Accessed June 3, 2013

Grzeskowiak J. Improving Safety in Solid Waste Operations. *Waste Age Magazine*. June 1, 2011. <http://waste360.com/safety/improving-safety-solid-waste-operations-related-video>. Accessed June 3, 2013

Anonymous. NSWMA Offers Safety Videos in Spanish. *Waste Age Magazine*. January 15, 2009. http://waste360.com/news/NSWMA_safety_videos_Spanish. Accessed June 3, 2013

Intermediate Goal 15.2: Create, disseminate, and evaluate the effectiveness of best practices guidance documents for the solid waste industry.

Biderman D. Waste Safety Program Aims at Distracted Drivers. Waste Age Magazine. June 1, 2011. <http://waste360.com/blog/waste-safety-program-aims-distracted-drivers>. Accessed June 3, 2013

National Solid Wastes Management Association (NSWMA). Slow Down to Get Around. <http://www.environmentalistseveryday.org/solid-waste-management/environmental-waste-garbage-safety-first/waste-collection-employee-safety.php>. Accessed June 3, 2013

National Waste & Recycling Association. Slow Down to Get Around. <https://wasterecycling.org/our-work/safety#2-19>. Accessed June 19, 2015

Anonymous. Jagler introduces ‘Slow Down to Get Around’ bill. Columbus Journal. Columbus, WI, May 8, 2013. http://www.wiscnews.com/news/local/article_bd2b7904-adee-11e2-8758-001a4bcf887a.html. Accessed June 3, 2013

Kalamazoo Gazette Staff. Garbage-truck etiquette in summer also makes you safe. Mlive. Grand Rapids, MI, June 16, 2009. http://www.mlive.com/business/west-michigan/index.ssf/2009/06/garbagetruck_etiquette_in_summ.html. Accessed June 3, 2013

Intermediate Goal 15.3: Identify, develop and incorporate engineering solutions to eliminate hazards for solid waste collection and disposal operations through partnerships with Federal and State regulators, vehicle manufacturers and equipment manufacturers.

Occupational Safety and Health Administration. FY2012 Developmental Follow-on Susan Harwood Grant to Regents of the University of California at Berkeley, Berkeley, CA, \$181,330. The grantee will conduct training that addresses a variety of safety and health hazards facing hard-to-reach workers, immigrants, and young workers concentrated in the restaurant, nail salon, and recycling industries. Training will take place in California. Training and materials will be available in English and Spanish. A select number of materials will be available in Chinese.

https://www.osha.gov/dte/sharwood/2012_grant_recipients.html. Accessed July 29, 2013

Occupational Safety and Health Administration. FY2011 Developmental Follow-on Susan Harwood Grant to Regents of the University of California, The - Los Angeles, Los Angeles, CA, \$187,000. The grantee will work with local labor federations and unions to provide health and safety awareness classes for low wage and immigrant workers in Southern California. The target audiences are workers in hotel, car wash and waste/recycling industries. Topics will include chemical safety, material safety data sheets, and noise exposure. The training and/or materials will be offered in English and Spanish.

https://www.osha.gov/dte/sharwood/2011_grant_recipients.html. Accessed July 29, 2013

Occupational Safety and Health Administration. FY2012 Developmental Follow-on Susan Harwood Grant to Regents of the University of California at Los Angeles, Los Angeles, CA, \$181,390. The grantee will offer culturally and language appropriate training to low wage immigrant workers in the hotel, car wash and waste industries. Training and materials will target the large Southern California Spanish-speaking workforce. Classes will provide training on topics such as hazard identification, chemical hazards, ergonomics, worker rights, and effective health and safety committees.

https://www.osha.gov/dte/sharwood/2012_grant_recipients.html. Accessed July 29, 2013

Schlosser O, Huyard A, Rybacki D, Do Quang Z. Protection of the vehicle cab environment against bacteria, fungi and endotoxins in composting facilities. *Waste Manag.* 2012 Jun;32(6):1106-15. doi: [10.1016/j.wasman.2012.01.013](https://doi.org/10.1016/j.wasman.2012.01.013).

Utterback DF, Charles LE, Schnorr TM, Tiesman HM, Storey E, Vossen P. Occupational Injuries, Illnesses and Fatalities among Workers in the Services Sector Industries: 2003 – 2007. *Am J Ind Med.* 2012 54:31–41. doi: [10.1097/JOM.0b013e3182398e36](https://doi.org/10.1097/JOM.0b013e3182398e36).

Bunn TL, Slavova S, Tang M. Injuries among solid waste collectors in the private versus public sectors. *Waste Manag Res.* 2011 Oct;29(10):1043-52. doi: [10.1177/0734242X11410115](https://doi.org/10.1177/0734242X11410115).

KY Fatality Assessment & Control Evaluation (FACE) Program, Kentucky Injury Prevention and Research Center. Workers Killed While Collecting Solid Waste. *Kentucky Haz Alert.* Vol. 8, Issue 3, June 2010. <http://www.mc.uky.edu/kiprc/projects/KOSHS/face/pdf/solid%20waste%20collectors%20final.pdf>. Accessed June 6, 2013

Olorunnishola OA, Kidd-Taylor A, Byrd L. Occupational injuries and illnesses in the solid waste industry: a call for action. *New Solut.* 2010 20(2):211-23. doi: [10.2190/NS.20.2.f](https://doi.org/10.2190/NS.20.2.f).

Persoons R, Parat S, Stoklov M, Perdrix A, Maitre A. Critical working tasks and determinants of exposure to bioaerosols and MVOC at composting facilities. *Int J Hyg Environ Health.* 2010 Sep;213(5):338-47. doi: [10.1016/j.ijheh.2010.06.001](https://doi.org/10.1016/j.ijheh.2010.06.001).

California Fatality Assessment and Control Evaluation (CA/FACE) Program. A Mechanic Dies When He is Crushed by the Hydraulic Arm of a Recyclable Refuse Collection Truck. California FACE Report #10CA005, 2011. <http://www.cdph.ca.gov/programs/ohb-face/Documents/10CA005.pdf>. Accessed June 3, 2013

Schlosser O, Huyard A, Cartnick K, Yañez A, Catalán V, Quang ZD. Bioaerosol in composting facilities: occupational health risk assessment. *Water Environ Res.* 2009 Sep-Oct;81(9):866-77. doi: [10.2175/106143009X407258](https://doi.org/10.2175/106143009X407258).

Public Works Magazine. Waste industry releases revised standard. October 1, 2012. <http://www.pwmag.com/solid-waste/waste-industry-releases-revised-standard.aspx>. Accessed June 3, 2013

ANSI Z245.1-2012 Mobile Wastes and Recyclable Materials Collection, Transportation, and Compaction Equipment - Safety Requirements

ANSI Z245.21-2013 Stationary Compactors - Safety Requirements for Manufacturing and Reconstruction

ANSI Z245.30-2008 Equipment Technology and Operations for Wastes and Recyclable Materials - Waste Containers - Safety Requirements

ANSI Z245.41-2008 Facilities for the Processing of Commingled Recyclable Materials -- Safety Requirements

ANSI Z245.42-2012 Waste Transfer Station - Safety Requirements

ANSI Z245.5-2013 Baling Equipment - Safety Requirements for Installation, Maintenance, and Operation

ANSI Z245.51-2013 Baling Equipment - Safety Requirements

ANSI Z245.60-2008 Equipment Technology and Operations for Wastes and Recyclable Materials - Waste Containers - Compatibility Dimensions

Musculoskeletal Disorders

Strategic Goal 16: Reduce by 30% the incidence of musculoskeletal disorders that result in one or more lost work days in services industry subsectors with elevated rates or counts or where effective intervention methods should be adopted.

Intermediate Goal 16.1: Develop, test, and disseminate effective intervention programs for services industries with higher risks for musculoskeletal disorders.

Luckhaupt SE, Burris DL. How Does Work Affect the Health of the U.S. Population? Free Data from the 2010 NHIS-OHS Provides the Answers. National Institute for Occupational Safety and Health. 2013. <http://blogs.cdc.gov/niosh-science-blog/2013/06/24/nhis/>. Accessed on August 20, 2013

Luckhaupt SE, Dahlhamer JM, Ward BW, Sweeney MH, Sestito JP, Calvert-GM. Prevalence and work-relatedness of carpal tunnel syndrome in the working population, United States, 2010 National Health Interview Survey. *Am J Ind Med* 2013 Jun;56(6):615-624 [doi: 10.1002/ajim.22048](https://doi.org/10.1002/ajim.22048).

Beach J, Senthilselvan A, Cherry N. Factors affecting work-related shoulder pain. *Occup Med (Lond)*. 2012 Sep;62(6):451-4. [doi: 10.1093/occmed/kqs130](https://doi.org/10.1093/occmed/kqs130).

Silva JS Jr, Correa LR, Morrone LC. Evaluation of lumbar overload in hotel maids. *Work*. 2012 41 Suppl 1:2496-8. [doi: 10.3233/WOR-2012-0488-2496](https://doi.org/10.3233/WOR-2012-0488-2496).

Chang JH, Wu JD, Liu CY, Hsu DJ. Prevalence of musculoskeletal disorders and ergonomic assessments of cleaners. *Am J Ind Med*. 2012 Jul;55(7):593-604. [doi: 10.1002/ajim.22064](https://doi.org/10.1002/ajim.22064).

Harris-Roberts J, Bowen J, Sumner J, Stocks-Greaves M, Bradshaw L, Fishwick D, Barber CM. Work-related symptoms in nail salon technicians. *Occup Med (Lond)*. 2011 Aug;61(5):335-40. [doi: 10.1093/occmed/kqr096](https://doi.org/10.1093/occmed/kqr096).

Lindegård A, Wahlström J, Hagberg M, Vilhelmsson R, Toomingas A, Tornqvist EW. Perceived exertion, comfort and working technique in professional computer users and associations with the incidence of neck and upper extremity symptoms. *BMC Musculoskeletal Disord*. 2012 Mar 21;13:38. [doi: 10.1186/1471-2474-13-38](https://doi.org/10.1186/1471-2474-13-38).

Costa G. Shift work and health: current problems and preventive actions. *Saf Health Work*. 2010; 1(2):112-23. <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3430894/>. Accessed August 23, 2013

d'Errico A, Caputo P, Falcone U, Fubini L, Gilardi L, Mamo C, Migliardi A, Quarta D, Coffano E. Risk factors for upper extremity musculoskeletal symptoms among call center employees. *J Occup Health*. 2010 52(2):115-24. [doi: 10.1539/joh.L9117](https://doi.org/10.1539/joh.L9117).

Anastassova M, Burkhardt JM. Automotive technicians' training as a community-of-practice: implications for the design of an augmented reality teaching aid. *Appl Ergon*. 2009 Jul;40(4):713-21. doi: [10.1016/j.apergo.2008.06.008](https://doi.org/10.1016/j.apergo.2008.06.008).

Janwantanakul P, Pensri P, Jiamjarasrangsri V, Sinsongsook T. Prevalence of self-reported musculoskeletal symptoms among office workers. *Occup Med (Lond)*. 2008 Sep;58(6):436-8. doi: [10.1093/occmed/kqn072](https://doi.org/10.1093/occmed/kqn072).

Boström M, Dellve L, Thomée S, Hagberg M. Risk factors for generally reduced productivity--a prospective cohort study of young adults with neck or upper-extremity musculoskeletal symptoms. *Scand J Work Environ Health*. 2008 Apr;34(2):120-32. doi: [10.5271/sjweh.1218](https://doi.org/10.5271/sjweh.1218).

Frumin E, Moriarty J, Vossen P, Halpin J, Orris P, Krause N, Punnett L. Workload-related musculoskeletal disorders among hotel housekeepers: employer records reveal a growing national problem. 2006. http://www.researchgate.net/profile/Pamela_Vossen2/publication/237722666_Workload-Related_Musculoskeletal_Disorders_among_Hotel_Housekeepers_Employer_Records_Reveal_a_Growing_National_Problem/links/546f791a0cf24af340c08de5.pdf. Accessed June 19, 2015

Haukka E, Leino-Arjas P, Solovieva S, Ranta R, Viikari-Juntura E, Riihimäki H. Co-occurrence of musculoskeletal pain among female kitchen workers. *Int Arch Occup Environ Health*. 2006 Nov;80(2):141-8. doi: [10.1007/s00420-006-0113-8](https://doi.org/10.1007/s00420-006-0113-8).

Intermediate Goal 16.2. Complete research projects with detailed analytical reports on the relationships between musculoskeletal disorders and working conditions for services sector industries and related occupations.

Albin TJ. Measuring the validity and reliability of ergonomic checklists. *Work* 2012 43(3):381-5. <http://www.ncbi.nlm.nih.gov/pubmed/23023316>.

Joseph C, Imbeau D, Nastasia I. Measurement consistency among observational job analysis methods during an intervention study. *Int J Occup Saf Ergon*. 2011 17(2):139-46. <http://www.ncbi.nlm.nih.gov/pubmed/21679665>.

Matthews RA, Gallus JA, Henning RA. Participatory ergonomics: development of an employee assessment questionnaire. *Accid Anal Prev*. 2011 Jan;43(1):360-9. doi: [10.1016/j.aap.2010.09.004](https://doi.org/10.1016/j.aap.2010.09.004).

Cann AP, Connolly M, Ruuska R, MacNeil M, Birmingham TB, Vandervoort AA, Callaghan JP. Inter-rater reliability of output measures for a posture matching assessment approach: a pilot study with food service workers. *Ergonomics*. 2008 Apr;51(4):556-72. doi: [10.1080/00140130701711455](https://doi.org/10.1080/00140130701711455).

Eyal L, Ribak J, Badihi Y. Remote online ergonomic assessment in the office environment as compared to face-to-face ergonomic assessment. *Work*. 2012 41 Suppl 1:516-23. doi: [10.3233/WOR-2012-0206-516](https://doi.org/10.3233/WOR-2012-0206-516).

Tang K, MacDermid JC, Amick BC 3rd, Beaton DE. The 11-item workplace organizational policies and practices questionnaire (OPP-11): examination of its construct validity, factor

structure, and predictive validity in injured workers with upper-limb disorders. *Am J Ind Med.* 2011 Nov;54(11):834-46. doi: [10.1002/ajim.20994](https://doi.org/10.1002/ajim.20994).

Norman K, Alm H, Wigaeus Tornqvist E, Toomingas A. Reliability of a questionnaire and an ergonomic checklist for assessing working conditions and health at call centres. *Int J Occup Saf Ergon.* 2006 12(1):53-68. <http://www.ncbi.nlm.nih.gov/pubmed/16554000>.

David G, Woods V, Li G, Buckle P. The development of the Quick Exposure Check (QEC) for assessing exposure to risk factors for work-related musculoskeletal disorders. *Appl Ergon.* 2008 Jan;39(1):57-69. doi: [10.1016/j.apergo.2007.03.002](https://doi.org/10.1016/j.apergo.2007.03.002).

Ijmker S, Mikkers J, Blatter BM, van der Beek AJ, van Mechelen W, Bongers PM. Test-retest reliability and concurrent validity of a web-based questionnaire measuring workstation and individual correlates of work postures during computer work. *Appl Ergon.* 2008 Nov;39(6):685-96. doi: [10.1016/j.apergo.2007.12.003](https://doi.org/10.1016/j.apergo.2007.12.003).

Yazdani A, Wells R. Prevention of MSD within OHSMS/IMS: a systematic review of risk assessment strategies. *Work.* 2012 41 Suppl 1:2765-7. doi: [10.3233/WOR-2012-0522-2765](https://doi.org/10.3233/WOR-2012-0522-2765).

Wurzelbacher S, Jin Y. A framework for evaluating OSH program effectiveness using leading and trailing metrics. *J Safety Res.* 2011 Jun;42(3):199-207. doi: [10.1016/j.jsr.2011.04.001](https://doi.org/10.1016/j.jsr.2011.04.001).

Lowe BD, Krieg EF. Relationships between observational estimates and physical measurements of upper limb activity. *Ergonomics.* 2009 May;52(5):569-83. doi: [10.1080/00140130802449682](https://doi.org/10.1080/00140130802449682).

Denis D, St-Vincent M, Imbeau D, Jetté C, Nastasia I. Intervention practices in musculoskeletal disorder prevention: a critical literature review. *Appl Ergon.* 2008 Jan;39(1):1-14. doi: [10.1016/j.apergo.2007.02.002](https://doi.org/10.1016/j.apergo.2007.02.002).

Stover B, Silverstein B, Wickizer T, Martin DP, Kaufman J. Accuracy of a disability instrument to identify workers likely to develop upper extremity musculoskeletal disorders. *J Occup Rehabil.* 2007 Jun;17(2):227-45. doi: [10.1007/s10926-007-9083-2](https://doi.org/10.1007/s10926-007-9083-2).

Gallagher S, Heberger JR. Examining the interaction of force and repetition on musculoskeletal disorder risk: a systematic literature review. *Hum Factors.* 2013 Feb;55(1):108-24. <http://www.ncbi.nlm.nih.gov/pubmed/23516797>.

Beach J, Senthilselvan A, Cherry N. Factors affecting work-related shoulder pain. *Occup Med (Lond).* 2012 Sep;62(6):451-4. doi: [10.1093/occmed/kqs130](https://doi.org/10.1093/occmed/kqs130).

Silva JS Jr, Correa LR, Morrone LC. Evaluation of lumbar overload in hotel maids. *Work.* 2012 41 Suppl 1:2496-8. doi: [10.3233/WOR-2012-0488-2496](https://doi.org/10.3233/WOR-2012-0488-2496).

Fethke NB, Gerr F, Anton D, Cavanaugh JE, Quickel MT. Variability in muscle activity and wrist motion measurements among workers performing non-cyclic work. *J Occup Environ Hyg.* 2012 9(1):25-35. doi: [10.1080/15459624.2012.634361](https://doi.org/10.1080/15459624.2012.634361).

Chang JH, Wu JD, Liu CY et al. Prevalence of musculoskeletal disorders and ergonomic assessments of cleaners. *AJIM.* 2012 55(7):593-604. <http://onlinelibrary.wiley.com/doi/10.1002/ajim.22064/full>

- Bell AF, Steele JR. Risk of musculoskeletal injury among cleaners during vacuuming. *Ergonomics*. 2012 55(2):237-47. doi: [10.1080/00140139.2011.592605](https://doi.org/10.1080/00140139.2011.592605).
- Erick PN, Smith DR. A systematic review of musculoskeletal disorders among school teachers. *BMC Musculoskelet Disord*. 2011 Nov 17;12:260. doi: [10.1186/1471-2474-12-260](https://doi.org/10.1186/1471-2474-12-260).
- Dale AM, Rohn AE, Patton A, Standeven J, Evanoff B. Variability and misclassification of worker estimated hand force. *Appl Ergon*. 2011 Nov;42(6):846-51. doi: [10.1016/j.apergo.2011.01.008](https://doi.org/10.1016/j.apergo.2011.01.008).
- Burgel BJ, White MC, Gillin MG, Krause N. Psychosocial work factors and shoulder pain in hotel room cleaners. *Am J Ind Med*. 2010 53:743-756. doi: [10.1002/ajim.20832](https://doi.org/10.1002/ajim.20832).
- Kim JE, Moon DH. Job characteristics and musculoskeletal symptom prevalence in hotel employees. *Korean J Occup Health Nurs*. 2010 19(2):190-204. English Abstract: <http://koreamed.org/SearchBasic.php?RID=0152KJOHN%2F2010.19.2.190&DT=1>. Accessed June 19, 2015
- Smith CK, Bonauto DK, Silverstein BA, Wilcox D. Inter-rater reliability of physical examinations in a prospective study of upper extremity musculoskeletal disorders. *J Occup Environ Med*. 2010 Oct;52(10):1014-8. doi: [10.1097/JOM.0b013e3181f4396b](https://doi.org/10.1097/JOM.0b013e3181f4396b).
- Cutlip RG, Baker BA, Hollander M, Ensey J. Injury and adaptive mechanisms in skeletal muscle. *J Electromyogr Kinesiol*. 2009 Jun;19(3):358-72. doi: [10.1016/j.jelekin.2008.06.007](https://doi.org/10.1016/j.jelekin.2008.06.007).
- Kumar R and Kumar S. Musculoskeletal risk factors in cleaning occupation- A literature review. *International Journal of Industrial Ergonomics*. 2008 38(2):158-170. doi: [10.1016/j.ergon.2006.04.004](https://doi.org/10.1016/j.ergon.2006.04.004).
- Morse TF, Warren N, Dillon C, Diva U. A population based survey of ergonomic risk factors in Connecticut: distribution by industry, occupation, and demographics. *Conn Med*. 2007 May;71(5):261-8. <http://www.ncbi.nlm.nih.gov/pubmed/17526381>.
- Muraca G, Martino LB, Abbate A, De Pasquale D, Barbuzza O, Brecciaroli R. The risk of manual handling loads in the hotel sector *G Ital Med Lav Ergon*. 2007 3:569-570. Italian.
- Unge J, Ohlsson K, Nordander C et al. Differences in physical workload, psychosocial factors and musculoskeletal disorders between two groups of female hospital cleaners with two divers organizational models. *Int Arch Occup Environ Health*. 2007 81:209-220. doi: [10.1007/s00420-007-0208-x](https://doi.org/10.1007/s00420-007-0208-x).
- Flores L and Deal J. Work-related pain in Mexican American custodial workers. *Hispanic Journal of Behavioral Sciences*. 2003 May;25(2):254-270. doi: [10.1177/0739986303025002007](https://doi.org/10.1177/0739986303025002007).
- Hopsu L, Toivonen R, Louhevaara V, Sjøgaard K. Muscular strain during floor mopping with different cleaning methods. *Proceedings of the IEA2000/HFES2000 Congress*. 521-524. doi: [10.1177/154193120004403033](https://doi.org/10.1177/154193120004403033).
- Milburn PD, Barrett RS. Lumbosacral loads in bedmaking. *Appl Ergon*. 1999 30(3):263-273. <http://www.ncbi.nlm.nih.gov/pubmed/10327090>.

Levanon Y, Gefen A, Lerman Y, Givon U, Ratzon NZ. Reducing musculoskeletal disorders among computer operators: comparison between ergonomics interventions at the workplace. *Ergonomics*. 2012 55(12):1571-85. [doi: 10.1080/00140139.2012.726654](https://doi.org/10.1080/00140139.2012.726654).

Sonne M, Villalta DL, Andrews DM. Development and evaluation of an office ergonomic risk checklist: ROSA--rapid office strain assessment. *Appl Ergon*. 2012 Jan;43(1):98-108. [doi: 10.1016/j.apergo.2011.03.008](https://doi.org/10.1016/j.apergo.2011.03.008).

Lima TM, Coelho DA. Prevention of musculoskeletal disorders (MSDs) in office work: a case study. *Work*. 2011 39(4):397-408. [doi: 10.3233/WOR-2011-1190](https://doi.org/10.3233/WOR-2011-1190).

Levanon Y, Gefen A, Lerman Y, Givon U, Ratzon NZ. Validity and reliability of upper extremity three-dimensional kinematics during a typing task. *Gait Posture*. 2010 Oct;32(4):469-74. [doi: 10.1016/j.gaitpost.2010.07.003](https://doi.org/10.1016/j.gaitpost.2010.07.003).

Tsigonia A, Tanagra D, Linos A, Meekoulias G, Alexopoulos EC. Musculoskeletal disorders among cosmetologists. *Int J Environ Res Public Health*. 2009 Dec; 6(12):2967-79. [doi: 10.3390/ijerph6122967](https://doi.org/10.3390/ijerph6122967).

Klussmann A, Gebhardt H, Liebers F, Rieger MA. Musculoskeletal symptoms of the upper extremities and the neck: a cross-sectional study on prevalence and symptom-predicting factors at visual display terminal (VDT) workstations. *BMC Musculoskelet Disord*. 2008 Jun 27;9:96. [doi: 10.1186/1471-2474-9-96](https://doi.org/10.1186/1471-2474-9-96).

Baker NA, Sussman NB, Redfern MS. Discriminating between individuals with and without musculoskeletal disorders of the upper extremity by means of items related to computer keyboard use. *J Occup Rehabil*. 2008 Jun;18(2):157-65. [doi: 10.1007/s10926-008-9127-2](https://doi.org/10.1007/s10926-008-9127-2).

Fang S, Dropkin J, Herbert R, Triola D, Landsbergis P. Workers' compensation experiences of computer users with musculoskeletal disorders. *Am J Ind Med*. 2007 Jul;50(7):512-8. [doi: 10.1002/ajim.20478](https://doi.org/10.1002/ajim.20478).

Surveillance

Strategic Goal 17. Support the creation of additional surveillance systems and utilize existing surveillance data to increase knowledge about trends, emerging issues and priorities for occupational illnesses, injuries and fatalities among services sector workers.

NIOSH. Workplace Data and Statistics Gateway. <http://www.cdc.gov/niosh/data/>. Accessed June 4, 2013

Intermediate Goal 17.1: Evaluate illnesses, injuries, and fatalities that may be due to working conditions and identify opportunities for interventions in the services sector by working collaboratively with the Bureau of Labor Statistics, the Occupational Safety and Health Administration, the National Center for Health Statistics and state occupational surveillance programs.

Utterback DF, Charles LE, Schnorr TM, Tiesman HM, Storey E, Vossen P. Occupational Injuries, Illnesses and Fatalities among Workers in the Services Sector Industries: 2003 – 2007. *Am J Ind Med*. 2012 54:31–41. [doi: 10.1097/JOM.0b013e3182398e36](https://doi.org/10.1097/JOM.0b013e3182398e36).

Kennedy VC. Public health workforce employment in US public and private sectors. *J Public Health Manag Pract.* 2009 May-Jun;15(3):E1-8.

<http://www.ncbi.nlm.nih.gov/pubmed/19363392>.

Boehmer TK, Jones TS, Ghosh TS, McCammon CS, Vogt RL. Cluster of presumed organic dust toxic syndrome cases among urban landscape workers-Colorado, 2007. *Am J Ind Med.* 2009 Jul;52(7):534-8. doi: [10.1002/ajim.20699](https://doi.org/10.1002/ajim.20699).

Intermediate Goal 17.2: Collaborate with workers' compensation and other insurance programs to collect and systematically analyze occupational illness and injury surveillance information to identify health and safety intervention needs for services sector workers.

Biddle EA. Is the societal burden of fatal occupational injury different among NORA industry sectors? *J Safety Res.* 2013 Feb;44:7-16. doi: [10.1016/j.jsr.2012.09.005](https://doi.org/10.1016/j.jsr.2012.09.005).

Lee-DJ; Davila-EP; LeBlanc-WG; Caban-Martinez-AJ; Fleming-LE; Christ-S; McCollister-K; Arheart-K; Sestito-JP. Morbidity and disability among workers 18 years and older in the Services sector, 1997-2007. Cincinnati, OH: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 2012-160, 2012 Oct;1-116. <http://www.cdc.gov/niosh/docs/2012-160/>. Accessed July 29, 2013

Massachusetts Department of Public Health Occupational Health Surveillance Program. Burden of Asthma among Massachusetts Service Workers, 2010. *SENSOR Occupational Lung Disease Bulletin*, October 2012. <http://www.mass.gov/eohhs/docs/dph/occupational-health/sensor-lung-disease-bulletins/oct2012.pdf>. Accessed June 6, 2013

Pegula S, Utterback DF. Fatal injuries among grounds maintenance workers: United States, 2003--2008. *MMWR Morb Mortal Wkly Rep.* 2011 May 6;60(17):542-6.

<http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6017a3.htm>. Accessed July 29, 2013

Menéndez CK, Havea SA. Temporal patterns in work-related fatalities among foreign-born workers in the US, 1992-2007. *J Immigr Minor Health.* 2011 Oct;13(5):954-62. doi: [10.1007/s10903-010-9379-8](https://doi.org/10.1007/s10903-010-9379-8).

Arcury-Quandt AE, Gentry AL, Marín AJ. Hazardous materials on golf courses: experience and knowledge of golf course superintendents and grounds maintenance workers from seven states. *Am J Ind Med.* 2011 Jun;54(6):474-85. doi: [10.1002/ajim.20942](https://doi.org/10.1002/ajim.20942).

Blanciforti LA. Economic burden of dermatitis in US workers [corrected]. *J Occup Environ Med.* 2010 Nov;52(11):1045-54. doi: [10.1097/JOM.0b013e3181f475b2](https://doi.org/10.1097/JOM.0b013e3181f475b2).

Buckley JP, Sestito JP, Hunting KL. Fatalities in the landscape and horticultural services industry, 1992-2001. *Am J Ind Med.* 2008 Sep;51(9):701-13. doi: [10.1002/ajim.20604](https://doi.org/10.1002/ajim.20604).

Oklahoma State Department of Health Injury Prevention Service. Work-Related Deaths in Oklahoma, 1998-2007. July 31, 2008. http://www.ok.gov/health2/documents/Work-related_Deaths_1998-2007.pdf. Accessed Jun 6, 2013

Lofgren DJ. Results of inspections in health hazard industries in a region of the state of Washington. *J Occup Environ Hyg.* 2008 Jun;5(6):367-79. doi: [10.1080/15459620802066133](https://doi.org/10.1080/15459620802066133).

Morse TF, Warren N, Dillon C, Diva U. A population based survey of ergonomic risk factors in Connecticut: distribution by industry, occupation, and demographics. *Conn Med*. 2007 May;71(5):261-8. <http://www.ncbi.nlm.nih.gov/pubmed/17526381>.

Davis LK, Hunt PR, Hackman HH, McKeown LN, Ozonoff VV. Use of statewide electronic emergency department data for occupational injury surveillance: a feasibility study in Massachusetts. *Am J Ind Med*. 2012 Apr;55(4):344-52. doi: [10.1002/ajim.21035](https://doi.org/10.1002/ajim.21035).

Kica J, Rosenman KD. Multisource surveillance system for work-related burns. *J Occup Environ Med*. 2012 May;54(5):642-7. doi: [10.1097/JOM.0b013e31824ed31a](https://doi.org/10.1097/JOM.0b013e31824ed31a).

Leigh JP. Economic burden of occupational injury and illness in the United States. *Milbank Q*. 2011 Dec;89(4):728-72. doi: [10.1111/j.1468-0009.2011.00648.x](https://doi.org/10.1111/j.1468-0009.2011.00648.x).

Boden LI, Ozonoff A. Researcher judgment and study design: challenges of using administrative data. *Am J Ind Med*. 2010 Jan;53(1):37-41. doi: [10.1002/ajim.20787](https://doi.org/10.1002/ajim.20787).

Oleinick A, Zaidman B. The law and incomplete database information as confounders in epidemiologic research on occupational injuries and illnesses. *Am J Ind Med*. 2010 Jan;53(1):23-36. doi: [10.1002/ajim.20763](https://doi.org/10.1002/ajim.20763).

Friedman L, Krupczak C, Brandt-Rauf S, Forst L. Occupational amputations in Illinois 2000-2007: BLS vs. data linkage of trauma registry, hospital discharge, workers compensation databases and OSHA citations. *Injury*. 2013 May;44(5):667-73. doi: [10.1016/j.injury.2012.01.007](https://doi.org/10.1016/j.injury.2012.01.007).

Boden LI, Ozonoff A. Capture-recapture estimates of nonfatal workplace injuries and illnesses. *Ann Epidemiol*. 2008 Jun;18(6):500-6. doi: [10.1016/j.annepidem.2007.11.003](https://doi.org/10.1016/j.annepidem.2007.11.003).

Ruser JW (2008). Examining evidence on whether BLS undercounts workplace injuries and illnesses. *Monthly Labor Review*. August 2008; 20-32. <http://www.bls.gov/opub/mlr/2008/08/art2full.pdf>. Accessed July 30, 2013

BLS. Occupational Injuries and Illnesses (Annual) News Release OS NR 10/29/2009 News Release: Workplace injuries and illnesses—2008. October 29, 2009. http://www.bls.gov/news.release/archives/osh_10292009.htm. Accessed Jun 3, 2013

Desrosiers TA, Herring AH, Shapira SK, Hooiveld M, Luben TJ, Herdt-Losavio ML, Lin S, Olshan AF. National Birth Defects Prevention Study. Paternal occupation and birth defects: findings from the National Birth Defects Prevention Study. *Occup Environ Med*. 2012 Aug;69(8):534-42. doi: [10.1136/oemed-2011-100372](https://doi.org/10.1136/oemed-2011-100372).

Michigan State University and the Michigan Department of Labor and Economic Growth. 2008 Annual Summary of Occupational Disease Reports to the Michigan Department of Labor and Economic Growth. August 10, 2009. <http://www.oem.msu.edu/userfiles/file/Annual%20Reports/OD/2008%20OD%20Annual%20Report%208-25-09.pdf>. Accessed June 6, 2013

Michigan State University and the Michigan Department of Labor and Economic Growth. 2007 Annual Summary of Occupational Disease Reports to the Michigan Department of Labor and Economic Growth. December 17, 2008. <http://www.oem.msu.edu/userfiles/file/Annual%20Reports/OD/07ODAnnRptFINAL.pdf>. Accessed June 6, 2013

- Sears JM, Blanar L, Bowman SM. Predicting work-related disability and medical cost outcomes: A comparison of injury severity scoring methods. *Injury*. 2014 45(1):16-22. doi: [10.1016/j.injury.2012.12.024](https://doi.org/10.1016/j.injury.2012.12.024).
- Graves JM, Sears JM, Vavilala MS, Rivara FP. The burden of traumatic brain injury among adolescent and young adult workers in Washington State. *J Safety Res*. 2013 Jun;45:133-139. doi: [10.1016/j.jsr.2012.11.001](https://doi.org/10.1016/j.jsr.2012.11.001).
- Friedman L, Krupczak C, Brandt-Rauf S, Forst L. Occupational amputations in Illinois 2000-2007: BLS vs. data linkage of trauma registry, hospital discharge, workers compensation databases and OSHA citations. *Injury*. 2013 May;44(5):667-73. doi: [10.1016/j.injury.2012.01.007](https://doi.org/10.1016/j.injury.2012.01.007).
- Friedman LS, Ruestow P, Forst L. Analysis of ethnic disparities in workers' compensation claims using data linkage. *J Occup Environ Med*. 2012 Oct;54(10):1246-52. doi: [10.1097/JOM.0b013e31825a34d1](https://doi.org/10.1097/JOM.0b013e31825a34d1).
- Sears JM, Blanar L, Bowman SM, Adams D, Silverstein BA. Predicting work-related disability and medical cost outcomes: estimating injury severity scores from workers' compensation data. *J Occup Rehabil* 2013 Mar;23(1):19-31. doi: [10.1007/s10926-012-9377-x](https://doi.org/10.1007/s10926-012-9377-x).
- Asfaw AG, Bushnell PT, Ray TK. Relationship of work injury severity to family member hospitalization. *Am J Ind Med*. 2010 May;53(5):506-13. doi: [10.1002/ajim.20804](https://doi.org/10.1002/ajim.20804).
- Centers for Disease Control and Prevention (CDC). Proportion of workers who were work-injured and payment by workers' compensation systems - 10 states, 2007. *MMWR Morb Mortal Wkly Rep*. 2010 Jul 30;59(29):897-900. <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5929a1.htm>. Accessed June 22, 2015
- Forst L, Erskine T. Farm injuries in Ohio, 2003-2006: a report from the emergency medical services prehospital database. *J Agric Saf Health*. 2009 Apr;15(2):171-83. <http://www.ncbi.nlm.nih.gov/pubmed/19496345>.
- Friedman LS, Forst L. Ethnic disparities in traumatic occupational injury. *J Occup Environ Med*. 2008 Mar;50(3):350-8. doi: [10.1097/JOM.0b013e3181617324](https://doi.org/10.1097/JOM.0b013e3181617324).
- Nicholson VJ, Bunn TL, Costich JF. Disparities in work-related injuries associated with worker compensation coverage status. *Am J Ind Med*. 2008 Jun;51(6):393-8. doi: [10.1002/ajim.20565](https://doi.org/10.1002/ajim.20565).
- Tiesman HM, Peek-Asa CL, Zwerling CS, Sprince NL, Amoroso PJ. Occupational and non-occupational injuries in the United States Army: focus on gender. *Am J Prev Med*. 2007 Dec;33(6):464-70. doi: [10.1016/j.amepre.2007.07.034](https://doi.org/10.1016/j.amepre.2007.07.034).
- Friedman LS, Forst L. Occupational injury surveillance of traumatic injuries in Illinois, using the Illinois trauma registry: 1995-2003. *J Occup Environ Med*. 2007 Apr;49(4):401-10. doi: [10.1097/JOM.0b013e31803b9527](https://doi.org/10.1097/JOM.0b013e31803b9527).

Intermediate Goal 17.3: Design and pilot test new methods of surveillance for occupational illness and injury among services sector workers through collaboration of insurance carriers, management, labor, academic institutions and government agencies.

- Sears JM, Bowman SM, Adams D, Silverstein BA. Who pays for work-related traumatic injuries? payer distribution in Washington State by ethnicity, injury severity, and year (1998-2008). *Am J Ind Med.* 2013 July;56(7):742-54. doi: [10.1002/ajim.22179](https://doi.org/10.1002/ajim.22179).
- Azaroff LS, Davis LK, Naparstek R, Hashimoto D, Laing JR, Wegman DH. Barriers to Use of Workers' Compensation for Patient Care at Massachusetts Community Health Centers. *Health Serv Res.* 2013 Aug;48(4):1375-92. doi: [10.1111/1475-6773.12045](https://doi.org/10.1111/1475-6773.12045).
- Largo TW, Rosenman KD. Michigan work-related amputations, 2008. *J Occup Environ Med.* 2013 Mar;55(3):280-5. doi: [10.1097/JOM.0b013e31827945be](https://doi.org/10.1097/JOM.0b013e31827945be).
- Bertke SJ, Meyers AR, Wurzelbacher SJ, Bell J, Lampl ML, Robins D. Development and evaluation of a Naïve Bayesian model for coding causation of workers' compensation claims. *J Safety Res.* 2012 Dec;43(5-6):327-32. doi: [10.1016/j.jsr.2012.10.012](https://doi.org/10.1016/j.jsr.2012.10.012).
- Sears JM, Bowman SM, Silverstein BA. Trends in the disproportionate burden of work-related traumatic injuries sustained by Latinos. *J Occup Environ Med.* 2012 Oct;54(10):1239-45. doi: [10.1097/JOM.0b013e31825a34ed](https://doi.org/10.1097/JOM.0b013e31825a34ed).
- Sears JM, Bowman SM, Silverstein BA, Adams D. Identification of work-related injuries in a State Trauma Registry. *J Occup Environ Med.* 2012 Mar;54(3):356-62. doi: [10.1097/JOM.0b013e3182444fe7](https://doi.org/10.1097/JOM.0b013e3182444fe7).
- Fan ZJ, Bonauto DK, Foley MP, Anderson NJ, Yragui NL, Silverstein BA. Occupation and the prevalence of current depression and frequent mental distress, WA BRFSS 2006 and 2008. *Am J Ind Med.* 2012 Oct;55(10):893-903. doi: [10.1002/ajim.22094](https://doi.org/10.1002/ajim.22094).
- Davis LK, Hunt PR, Hackman HH, McKeown LN, Ozonoff VV. Use of statewide electronic emergency department data for occupational injury surveillance: a feasibility study in Massachusetts. *Am J Ind Med.* 2012 Apr;55(4):344-52. doi: [10.1002/ajim.21035](https://doi.org/10.1002/ajim.21035).
- Utterback-DF, Schnorr-TM, Silverstein-BA, Spieler-EA, Leamon-TB, Amick-BC III. Occupational health and safety surveillance and research using workers' compensation data. *J Occup Environ Med.* 2012 Feb;54(2):171-176. doi: [10.1097/JOM.0b013e31823c14cb](https://doi.org/10.1097/JOM.0b013e31823c14cb).
- Sears JM, Bowman SM, Adams D, Silverstein BA. Occupational injury surveillance using the Washington State Trauma Registry. *J Occup Environ Med.* 2011 Nov;53(11):1243-50. doi: [10.1097/JOM.0b013e31822cff63](https://doi.org/10.1097/JOM.0b013e31822cff63).
- Centers for Disease Control and Prevention (CDC). Proportion of workers who were work-injured and payment by workers' compensation systems - 10 states, 2007. *MMWR Morb Mortal Wkly Rep.* 2010 Jul 30;59(29):897-900. <http://www.cdc.gov/mmwr/preview/mmwrhtml/mm5929a1.htm>. Accessed July 29, 2013
- Anderson NJ, Bonauto DK, Adams D. Work-related amputations in Washington state, 1997-2005. *Am J Ind Med.* 2010 Jul;53(7):693-705. doi: [10.1002/ajim.20815](https://doi.org/10.1002/ajim.20815).
- Forst L, Avila S, Anozie S, Rubin R. Traumatic occupational injuries in Hispanic and foreign born workers. *Am J Ind Med.* 2010 Apr;53(4):344-51. doi: [10.1002/ajim.20748](https://doi.org/10.1002/ajim.20748).
- Lombardi DA, Matz S, Brennan MJ, Smith GS, Courtney TK. Etiology of work-related electrical injuries: a narrative analysis of workers' compensation claims. *J Occup Environ Hyg.* 2009 Oct;6(10):612-23. doi: [10.1080/15459620903133683](https://doi.org/10.1080/15459620903133683).

Horwitz IB, McCall BP. An epidemiological and risk analysis of Virginia workers' compensation burn claims 1999 to 2002: identifying and prioritizing preventive workplace interventions. *J Occup Environ Med.* 2007 Dec;49(12):1376-85. doi: [10.1097/JOM.0b013e318157d9bc](https://doi.org/10.1097/JOM.0b013e318157d9bc).

2012 Workshop Proceedings and Articles

Use of Workers' Compensation Data for Occupational Safety and Health: Proceedings from June 2012 Workshop, Utterback DF, Schnorr TM, eds. Cincinnati, OH: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 2013-147, 2013 May. <http://www.cdc.gov/niosh/docs/2013-147/>. Accessed July 29, 2013

Relevant Articles:

Armenti K, Vincent H, Nigam R, Berko A. Exploring New Hampshire Workers' Compensation Data for its Utility in Enhancing the State's Occupational Health Surveillance System.

Baker C, Coombe A. Hitting the Mark: Improving Effectiveness of High Hazard Industry Interventions by Modifying Identification and Targeting Methodology.

Bertke SJ, Wurzelbacher SJ, Bell J, Lampl ML, Robins D. Development and evaluation of an auto-coding model for coding unstructured text data among workers' compensation claims.

Bonauto D, Wuellner S, Spann C, Reister N. OSHA recordkeeping practices and workers compensation claims in Washington; results from a survey of Washington BLS respondents.

Bookman JA, Robins D, Mujumdar M, Jepsen SD. Describing Agricultural Occupational Injury in Ohio Using Bureau of Workers' Compensation Claims.

Davis L, Rosenman KD, Shor G, Simms E, Miller-K. State health agencies' access to state workers' compensation data: results of an assessment conducted by the council of state and territorial epidemiologists, 2012.

Foley M, Rauser E, Rappin C, Bonauto D. Using Workers Compensation Data to Conduct OHS Surveillance of Temporary Workers in Washington State.

Forst L, Friedman L. Occupational Amputations in Illinois: Data Linkage to Target Interventions.

Meyers A, Wurzelbacher S, Bertke S, Lampl M, Robbins D, Bell J. Using Workers' Compensation Data for Surveillance of Occupational Injuries and Illnesses - Ohio, 2005-2009.

Roisman R, Joe L, Frederick M, Beckman S, Beckman J, Jones M, Harrison R. Using an Administrative Workers' Compensation Claims Database for Occupational Health Surveillance in California: Validation of a Case Classification Scheme for Amputations.

Rosenman KD, Kica J, Largo-T. Completeness of workers' compensation data in identifying work-related injuries.

Tarawneh I, Lampl M, Robins D, Bentley, D. Injury Trends in the Ohio Workers' Compensation System.

Wurzelbacher SJ, Meyers AR, Bertke SJ, Lampl M, Robins DR, Bushnell TP, Tarawneh A, Childress D, Turnes J. Comparison of cost valuation methods for workers compensation data.

2009 Workshop Proceedings and Articles

Use of Workers' Compensation Data for Occupational Injury and Illness Prevention: Proceedings from September 2009 Workshop, Utterback DF, Schnorr TM, eds. Cincinnati, OH: U.S. Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Institute for Occupational Safety and Health, DHHS (NIOSH) Publication No. 2010-152, 2010 August.

<http://www.cdc.gov/niosh/docs/2010-152/>. Accessed July 29, 2013

Relevant articles:

Silverstein BA. Safety & Health Assessment and Research for Prevention (SHARP) Program. In Use of Workers' Compensation Data for Occupational Injury and Illness Prevention: Proceedings from September 2009 Workshop.

Harrison R, Flattery J. State-Based Occupational Injury and Disease Surveillance.

Bonauto DK. Identifying Vulnerable Populations in Workers' Compensation Data: Limited English Proficiency Workers and Temporary Agency Workers.

Foley MP. Linking Workers' Compensation and Employment Security Data for Occupational Health and Safety Surveillance.

Forst L, Friedman L. Data Linkages for Prevention: Traumatic Injuries in Construction.

Leigh JP. Past, Present and Future Uses of Some Workers' Compensation Data.

Oleinick A, Zaidman B. Harmonizing Existing Databases Counting Workplace Injuries and Illnesses.

Hair and Nail Salons

Strategic Goal 18: Reduce incidence of occupational illnesses and injuries by 20% in nail and hair salon workers.

Intermediate Goal 18.1: Establish programs for systematic collection and analysis of occupational illnesses and injuries in nail and hair salon workers and publish results in the open literature through collaboration of State and Federal programs.

Gallicchio L, Miller SR, Greene T, Zacur H, Flaws JA. Somatic symptoms among cosmetologists compared to women in other occupations. *J Womens Health (Larchmt)*. 2011 Apr;20(4):605-15. [doi: 10.1089/jwh.2010.2342](https://doi.org/10.1089/jwh.2010.2342).

Warsaw EM, Wang MZ, Mathias CG, Maibach HI, Belsito DV, Zug KA, Taylor JS, Zirwas MJ, Fransway AF, Deleo VA, Marks JG Jr, Pratt MD, Storrs FJ, Rietschel RL, Fowler JF Jr,

Sasseville D. Occupational contact dermatitis in hairdressers/cosmetologists: retrospective analysis of north american contact dermatitis group data, 1994 to 2010. *Dermatitis*. 2012 Nov-Dec;23(6):258-68. doi: [10.1097/DER.0b013e318273a3b8](https://doi.org/10.1097/DER.0b013e318273a3b8).

Gallicchio L, Miller SR, Greene T, Zacur H, Flaws JA. Adverse health outcomes among cosmetologists and noncosmetologists in the Reproductive Outcomes of Salon Employees (ROSE) study. *J Toxicol Environ Health A*. 2011 74(1):52-61. doi: [10.1080/15287394.2010.514227](https://doi.org/10.1080/15287394.2010.514227).

Herdt-Losavio ML, Lin S, Druschel CM, Hwang SA, Mauer MP, Carlson GA. A nested case-control study of low birthweight among cosmetologists. *Int Arch Occup Environ Health*. 2011 Aug;84(6):601-8. doi: [10.1007/s00420-010-0585-4](https://doi.org/10.1007/s00420-010-0585-4).

Quach T, Doan-Billing PA, Layefsky M, Nelson D, Nguyen KD, Okahara L, Tran AN, Von Behren J, Reynolds P. Cancer incidence in female cosmetologists and manicurists in California, 1988-2005. *Am J Epidemiol*. 2010 Sep 15;172(6):691-9. doi: [10.1093/aje/kwq190](https://doi.org/10.1093/aje/kwq190).

Gallicchio L, Miller S, Greene T, Zacur H, Flaws JA. Menstrual cycle abnormalities among cosmetologists: the Reproductive Outcomes in Salon Employees (ROSE) study. *Reprod Sci*. 2010 Jan;17(1):20-8. doi: [10.1177/1933719109345163](https://doi.org/10.1177/1933719109345163).

Harling M, Schablon A, Schedlbauer G, Dulon M, Nienhaus A. Bladder cancer among hairdressers: a meta-analysis. *Occup Environ Med*. 2010 May;67(5):351-8. doi: [10.1136/oem.2009.050195](https://doi.org/10.1136/oem.2009.050195).

Takkouche B, Rigueira-Méndez C, Montes-Martínez A. Risk of cancer among hairdressers and related workers: a meta-analysis. *Int J Epidemiol*. 2009 Dec;38(6):1512-31. doi: [10.1093/ije/dyp283](https://doi.org/10.1093/ije/dyp283).

Axmon A, Rylander L. Birth weight and fetal growth in infants born to female hairdressers and their sisters. *Occup Environ Med*. 2009 Mar;66(3):198-204. doi: [10.1136/oem.2008.039784](https://doi.org/10.1136/oem.2008.039784).

Tsigonia A, Lagoudi A, Chandrinou S, Linos A, Evlogias N, Alexopoulos EC. Indoor air in beauty salons and occupational health exposure of cosmetologists to chemical substances. *Int J Environ Res Public Health*. 2010 Jan;7(1):314-24. doi: [10.3390/ijerph7010314](https://doi.org/10.3390/ijerph7010314).

Hines CJ, Nilsen Hopf NB, Deddens JA, et al. Urinary phthalate metabolite concentrations among workers in selected industries: a pilot biomonitoring study. *Ann Occup Hyg*. Jan 2009;53(1):1-17. doi: [10.1093/annhyg/men066](https://doi.org/10.1093/annhyg/men066).

Hiipakka D, Samimi B. Exposure of acrylic fingernail sculptors to organic vapors and methacrylate dusts. *Am Ind Hyg Assoc J*. 1987 48(3):230-237. doi: [10.1080/15298668791384670](https://doi.org/10.1080/15298668791384670).

Kwapniewski R, Kozaczka S, Hauser R, Silva MJ, Calafat AM, Duty SM. Occupational exposure to dibutyl phthalate among manicurists. *J Occup Environ Med*. Jun 2008;50(6):705-711. doi: [10.1097/JOM.0b013e3181651571](https://doi.org/10.1097/JOM.0b013e3181651571).

Department of Toxics Substance Control. Summary of data and findings from testing of a limited number of nail products. California Environmental Protection Agency. April 2012. http://dtsc.ca.gov/PollutionPrevention/upload/NailSalon_Final.pdf. Accessed June 19, 2015

Kronholm Diab K, Jönsson BA, Axmon A, Nielsen J. Work-related airway symptoms, nasal reactivity and health-related quality of life in female hairdressers: a follow-up study during exposure. *Int Arch Occup Environ Health*. 2014 Jan;87(1):61-71. doi: [10.1007/s00420-012-0835-8](https://doi.org/10.1007/s00420-012-0835-8).

Quach T, Gunier R, Tran A, Von Behren J, Doan-Billings PA, Nguyen KD, Okahara L, Lui BY, Nguyen M, Huynh J, Reynolds P. Characterizing workplace exposures in Vietnamese women working in California nail salons. *Am J Public Health*. 2011 Dec;101 Suppl 1:S271-6. doi: [10.2105/AJPH.2010.300099](https://doi.org/10.2105/AJPH.2010.300099).

Quach T, Nguyen KD, Doan-Billings PA, Okahara L, Fan C, Reynolds P. A preliminary survey of Vietnamese nail salon workers in Alameda County, California. *J Community Health*. 2008 Oct;33(5):336-43. doi: [10.1007/s10900-008-9107-7](https://doi.org/10.1007/s10900-008-9107-7).

Roelofs C, Do T. Exposure assessment in nail salons: An indoor air approach. *ISRN Public Health*. 2012 2012(Article ID 962014):7pp. doi: [10.5402/2012/962014](https://doi.org/10.5402/2012/962014).

Maxfield RF, Howe HL. Silica Exposure in Artificial Nail Application Salons. *Epidemiologic Report Series 97:8*. Springfield, IL. Illinois Department of Public Health, Division of Epidemiologic Studies. 1997.

McNary JE, Jackson EM. Inhalation exposure to formaldehyde and toluene in the same occupational and consumer setting. *Inhal Toxicol*. 2007 19(6-7):573-576. <http://www.ncbi.nlm.nih.gov/pubmed/17497535>.

Hollund BE, Moen BE. Chemical exposure in hairdresser salons: effect of local exhaust ventilation. *Ann Occup Hyg*. 1998 42(4):277-282. <http://www.ncbi.nlm.nih.gov/pubmed/9713251>.

Leino T, Kahkonen E, Saarinen L, Henriks-Eckerman ML, Paakkulainen H. Working conditions and health in hairdressing salons. *Appl Occup Environ Hyg*. 1999 14(1):26-33. doi: [10.1080/104732299303386](https://doi.org/10.1080/104732299303386).

Ronda E, Hollund BE, Moen BE. Airborne exposure to chemical substances in hairdresser salons. *Environ Monit Assess*. 2009 153(1-4):83-93. doi: [10.1007/s10661-008-0338-y](https://doi.org/10.1007/s10661-008-0338-y).

Intermediate Goal 18.2: Minimize workplace exposures of harmful chemicals for nail and hair salon workers through the collaborative efforts of product manufacturers, suppliers, employers, employees and their representatives, and government agencies.

Intermediate Goal 18.3: Assess the quality of nail and hair care product information available to nail and hair salon workers.

Peretz J, Gallicchio L, Miller S, Greene T, Zacur H, Flaws JA. Infertility among cosmetologists. *Reprod Toxicol*. 2009 Nov;28(3):359-64. doi: [10.1016/j.reprotox.2009.05.068](https://doi.org/10.1016/j.reprotox.2009.05.068).

Herdt-Losavio ML, Lin S, Druschel CM, Hwang SA, Mauer MP, Carlson GA. The risk of congenital malformations and other neonatal and maternal health outcomes among licensed cosmetologists. *Am J Perinatol*. 2009 Oct;26(9):625-31. doi: [10.1055/s-0029-1220787](https://doi.org/10.1055/s-0029-1220787).

- Gallicchio L, Miller S, Greene T, Zacur H, Flaws JA. Cosmetologists and reproductive outcomes. *Obstet Gynecol.* 2009 May;113(5):1018-26. <http://www.ncbi.nlm.nih.gov/pubmed/19384116>.
- Halliday-Bell JA, Gissler M, Jaakkola JJ. Work as a hairdresser and cosmetologist and adverse pregnancy outcomes. *Occup Med (Lond).* 2009 May;59(3):180-4. doi: [10.1093/occmed/kqp017](https://doi.org/10.1093/occmed/kqp017).
- Herd-LoSavio ML, Lin S, Druschel CM, Hwang SA, Mauer MP, Carlson GA. The risk of having a low birth weight or preterm infant among cosmetologists in New York State. *Matern Child Health J.* 2009 Jan;13(1):90-7. doi: [10.1007/s10995-008-0324-6](https://doi.org/10.1007/s10995-008-0324-6).
- Hougaard MG, Menné T, Søsted H. Occupational eczema and asthma in a hairdresser caused by hair-bleaching products. *Dermatitis.* 2012 Nov-Dec;23(6):284-7. <http://www.ncbi.nlm.nih.gov/pubmed/23169211>.
- Bradshaw L, Harris-Roberts J, Bowen J, Rahman S, Fishwick D. Self-reported work-related symptoms in hairdressers. *Occup Med (Lond).* 2011 Aug;61(5):328-34. doi: [10.1093/occmed/kqr089](https://doi.org/10.1093/occmed/kqr089).
- John EM, Savitz DA, Shy CM. Spontaneous abortions among cosmetologists. *Epidemiology.* 1994 Mar;5(2):147-155. doi: [10.1097/00001648-199403000-00004](https://doi.org/10.1097/00001648-199403000-00004).
- Kersemaekers WM, Roeleveld N, Zielhuis GA. Reproductive disorders due to chemical exposure among hairdressers. *Scand J Work Environ Health.* 1995 21(5):325-334. <http://www.ncbi.nlm.nih.gov/pubmed/8571088>.
- Kersemaekers WM, Roeleveld N, Zielhuis GA. Reproductive disorders among hairdressers. *Epidemiology.* 1997 8(4):396-401. <http://www.ncbi.nlm.nih.gov/pubmed/9209853>.
- Kersemaekers WM, Roeleveld N, Zielhuis GA, Gabreëls FJ. Neurodevelopment in offspring of hairdressers. *Dev Med Child Neurol.* 1997 39(6):358-362. doi: [10.1111/j.1469-8749.1997.tb07446.x](https://doi.org/10.1111/j.1469-8749.1997.tb07446.x).
- LoSasso GL, Rapport LJ, Axelrod BN. Neuropsychological symptoms associated with low-level exposure to solvents and (meth) acrylates among nail technicians. *Neuropsychiatry Neuropsychology and Behavioral Neurology.* 2001 14(3):183-189. <http://www.ncbi.nlm.nih.gov/pubmed/11513102>.
- LoSasso GL, Rapport LJ, Axelrod BN, Whitman RD. Neurocognitive sequelae of exposure to organic solvents and (meth) acrylates among nail-studio technicians. *Neuropsychiatry Neuropsychology and Behavioral Neurology.* 2002 15(1):44-55. <http://www.ncbi.nlm.nih.gov/pubmed/11877551>.
- Markova A, Weinstock MA. Risk of Skin Cancer Associated with the Use of UV Nail Lamp. Letter to the Editor. *Journal of Investigative Dermatology.* 2013 Apr;133(4):1097-9. doi: [10.1038/jid.2012.440](https://doi.org/10.1038/jid.2012.440).
- Leino T, Kahkonen E, Saarinen L, Henriks-Eckerman ML, Paakkulainen H. Working conditions and health in hairdressing salons. *Appl Occup Environ Hyg.* 1999 14(1):26-33. doi: [10.1080/104732299303386](https://doi.org/10.1080/104732299303386).

Intermediate Goal 18.4: Disseminate occupational injury prevention information for hair and nail salon establishments through collaborative efforts of product manufacturers, suppliers, employers, employees and their representatives, and government agencies.

Tsigonia A, Tanagra D, Linos A, Merekoulias G, Alexopoulos EC. Musculoskeletal disorders among cosmetologists. *Int J Environ Res Public Health*. 2009 Dec;6(12):2967-79. [doi: 10.3390/ijerph6122967](https://doi.org/10.3390/ijerph6122967).

Massachusetts Department of Public Health, Occupational Health Surveillance Program. Hair straightening with health risks. *SENSOR Occupational Lung Disease Bulletin*, Winter 2011-2012. <http://www.mass.gov/eohhs/docs/dph/occupational-health/sensor-lung-disease-bulletins/winter2011-2012.pdf>. Accessed June 6, 2013

Federman MN, Harrington DE, Krynski K. Vietnamese Manicurists: Are Immigrants Displacing Natives or Finding New Nails to Polish? *Ind Labor Relat Rev*. 2006 59:302-318. <http://ilr.sagepub.com/content/59/2/302.full.pdf>. Accessed June 19, 2015

Roelofs C, Shoemaker P, Skogstrom T, Acevedo P, Kendrick J, Nguyen N. The Boston Safe Shops model: an integrated approach to community environmental and occupational health. *Am J Public Health*. 2010 Apr 1;100 Suppl 1:S52-5. [doi: 10.2105/AJPH.2009.176511](https://doi.org/10.2105/AJPH.2009.176511).

Quach T, Liou J, Fu L, Mendiratta A, Tong M, Reynolds P. Developing a proactive research agenda to advance nail salon worker health, safety, and rights. *Prog Community Health Partnersh*. 2012 Spring;6(1):75-82. [doi: 10.1353/cpr.2012.0005](https://doi.org/10.1353/cpr.2012.0005).

Quach T, Varshavsky J, Von Behren J, Garcia E, Tong M, Nguyen T, Tran A, Gunier R, Reynolds P. Reducing chemical exposures in nail salons through owner and worker trainings: an exploratory intervention study. *Am J Ind Med*. Jul 2013; 56(7):806-817. [doi: 10.1002/ajim.22146](https://doi.org/10.1002/ajim.22146).

Liou J, Porter CA, Quach T. Policy Recommendations to Reduce Toxic Exposures for Nail Salon Workers. *AAPI Nexus*. 2011; 9(1):1-8. <http://uclajournals.org/doi/abs/10.17953/appc.9.1-2.b48h74316h56v04r?journalCode=appc>. Accessed June 19, 2015

Roelofs C, Azaroff LS, Holcroft C, Nguyen H, Doan T. Results from a community-based occupational health survey of Vietnamese-American nail salon workers. *J Immigr Minor Health*. 2008 Aug;10(4):353-61. [doi: 10.1007/s10903-007-9084-4](https://doi.org/10.1007/s10903-007-9084-4).

Video and other links showing administrative controls for protecting nail and salon workers: <http://www.lhwmp.org/home/health/nail-salons.aspx>

Occupational Safety and Health Administration. FY2011 Developmental Follow-on Susan Harwood Grant to Regents of the University of California - Berkeley, Berkeley, CA, \$187,000. The grantee will provide training to low-income, immigrant and youth workers employed in small businesses in Northern California. The target audiences are workers in nail salons, restaurants, janitorial services, residential care, and landscaping services. The training and/or materials will be offered in English, Vietnamese, and Spanish. https://www.osha.gov/dte/sharwood/2011_grant_recipients.html. Accessed July 29, 2013

Occupational Safety and Health Administration. FY2011 Developmental Follow-on Susan Harwood Grant to Georgia Tech Applied Research Corporation, Atlanta, GA, \$187,000. The grantee will provide training for young workers, employers, teachers and parents in the fields

of healthcare and cosmetology through its Southeast Center for Young Worker Safety and Health Center. Topics will include young worker rights and responsibilities, identification of workplace hazards, respiratory protection, bloodborne pathogens, ergonomics, and workplace violence. https://www.osha.gov/dte/sharwood/2011_grant_recipients.html. Accessed July 29, 2013

Occupational Safety and Health Administration. FY2011 Developmental Susan Harwood Grant to Boat People, SOS Inc., Falls Church, VA, \$175,000. The grantee will build long term health and safety capacity and provide training and educational materials on hazards (including exposure to toxic substances) and means of prevention in the nail care industry. Training will also cover OSHA's hazard communication standard. The target audience includes Vietnamese nail salon workers and owners in California, the District of Columbia, Maryland, Texas, and Virginia.

https://www.osha.gov/dte/sharwood/2011_grant_recipients.html. Accessed July 29, 2013

Occupational Safety and Health Administration. FY2011 Pilot Susan Harwood Grant to MinKwon Center for Community Action, Inc., Flushing, NY, \$78,000. The pilot grantee will develop expertise and provide training to workers on hazards in the nail salon and construction industries. The grantee will provide training to high-risk and limited-English workers. Training and materials will be developed for a low literacy audience and be provided in Korean, Spanish, and Nepali.

https://www.osha.gov/dte/sharwood/2011_grant_recipients.html. Accessed July 29, 2013

Occupational Safety and Health Administration. FY2012 Developmental Follow-on Susan Harwood Grant to Regents of the University of California at Berkeley, Berkeley, CA, \$181,330. The grantee will conduct training that addresses a variety of safety and health hazards facing hard-to-reach workers, immigrants, and young workers concentrated in the restaurant, nail salon, and recycling industries. Training will take place in California. Training and materials will be available in English and Spanish. A select number of materials will be available in Chinese.

https://www.osha.gov/dte/sharwood/2012_grant_recipients.html. Accessed July 29, 2013

Occupational Safety and Health Administration. FY2012 Developmental Follow-on Susan Harwood Grant to Georgia Tech Applied Research Corporation, Atlanta, GA, \$181,350. The grantee will provide training on workplace hazards targeting young workers and employers of young workers specifically in the healthcare, cosmetology, culinary and construction industries. Training will be focused in the South and Southeast including Texas, Louisiana, South Carolina, North Carolina, Tennessee and Kentucky.

https://www.osha.gov/dte/sharwood/2012_grant_recipients.html. Accessed July 29, 2013

Occupational Safety and Health Administration. FY2012 Developmental Follow-on Susan Harwood Grant to Boat People, SOS Inc., Falls Church, VA, \$166,250. The grantee will provide train-the-trainer classes and employer and worker training classes regarding chemical hazards in the nail salon industry. Training will target small business, non-English speaking/limited English speaking, and hard to reach workers. Training materials will be translated into Vietnamese. https://www.osha.gov/dte/sharwood/2012_grant_recipients.html. Accessed July 29, 2013