NATIONAL OCCUPATIONAL RESEARCH AGENDA (NORA)

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NATIONAL SERVICES AGENDA

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

Developed by the NORA Services Sector Council

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National Occupational Research Agenda: Services Sector

The NORA Services Sector comprises workers who are employed in eleven NAICS industry groups. These include 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; and Government aka Public Administration. In 2006, the Bureau of Labor Statistics estimated approximately 67.1 million workers in these industries. (This total includes approximately 3 million public safety workers; separate goals have been developed for them.) The work environments in these industries include offices, hotel rooms, outdoor and indoor entertainment facilities, restaurant kitchens, classrooms, automotive garages, public roads, and private households. 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. 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.

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 10 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
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
10. Waste Collection and Disposal
11. Musculoskeletal Disorders
12. Surveillance

Resources

U.S. Department of Labor, Bureau of Labor Statistics, Occupational Employment Statistics, http://www.bls.gov/oes/current/oessrci.htm#72, accessed on February 20, 2008.

U.S. Department of Labor, Bureau of Labor Statistics, 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, 2005, http://www.bls.gov/iif/oshwc/osh/case/ostb1664.pdf, accessed on February 20, 2008. (Many similar tables for 2003 to 2006 are available for the services sector.)

U.S. Department of Labor, Bureau of Labor Statistics, Occupational Outlook Handbook, http://www.bls.gov/oco/home.htm, 2007 – 2008 Edition, accessed on February 22, 2008.

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**, included in the NAICS industry codes for the NORA Services Sector, have been established by a Sub Council and appear in a separate document.

AUTOMOTIVE REPAIR AND MAINTENANCE

The number of service technicians and mechanics employed in the U.S. automotive repair industry is estimated to be 890,000. The majority of these workers are employed by auto repair shops and automotive dealers (approximately 29% each), with others being employed by stores, gasoline stations, government agencies, and self-employment. Technicians frequently work with dirty and greasy parts, and in awkward positions. They often lift heavy parts and tools. Auto body repairers often work in awkward or cramped positions, and much of their work is strenuous and dirty. Auto mechanics and autobody technicians 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 chemical burns, bodily pain, carpal tunnel syndrome, bruises, cuts, and fractures.

Strategic Goal 1: By 2015, 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.

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.

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.

Surveillance Goal 1.3: By 2011, produce periodic summary reports of trends, emerging issues and intervention needs for the automotive repair industry through work with professional associations and state based surveillance programs.

Intermediate Goal 1.4: 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 through collaboration of employers, professional associations, labor unions and government agencies.

> Translation Goal 1.4.1: By 2011, identify the higher risk tasks or operations and effective communication channels for interventions by convening a workshop of stakeholders from the automotive repair industry, insurance carriers and government agencies.
>
> Translation Goal 1.4.2**:** By 2012, develop effective health communication products that target exposures, tasks, operations or organizational factors associated with elevated risks for traumatic injuries in the automotive repair industry.

Intermediate Goal 1.5: Develop and test effective training materials, controls and comprehensive safety and health programs that reduce the risk of illness among automotive repair workers through work with product manufacturers, trade associations, labor unions, and other organizations in the automotive repair industry.

Research Goal 1.5.1**:** By 2010, conduct thorough investigations of potentially hazardous exposures to chemical and physical agents in automotive repair establishments, including body shops.

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.

Research Goal 1.5.3**:** By 2011, evaluate the effectiveness of personal protective equipment that is commonly available and survey and identify reasons for non-use by workers in the automotive repair industry.

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.

Translation Goal 1.5.5**:** By 2012, develop hazard identification tools, checklists, and simple solution brochures that can be implemented with minimal training of employers, supervisors and workers through work with key partners who are familiar with higher risk hazards in automotive repair establishments.

Research Goal 1.5.6**:** By 2013, evaluate the effectiveness of interventions that are intended to reduce health effects associated with work organization and job and task designs in the automotive repair industry.

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

Approximately 1.75 million workers are employed in jobs classified as Building Services. 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. Fatalities 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: By 2015, 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.

Surveillance Goal 2.1: Establish programs for collection and analysis of injury and illness event information, with standard elements for severity, among building services workers so that trends, emerging issues and intervention needs can be identified through collaboration among employers, employees, workers' compensation insurance carriers, labor, and government agencies by 2011.

Intermediate Goal 2.2: Develop guidelines and training materials for effective injury interventions for building services workers through collaborative efforts of management, labor unions, workers, insurance companies, government agencies, and community-based organizations.

Research Goal 2.2.1**:** By 2011, evaluate the effectiveness of intervention strategies and components of comprehensive health and safety programs to reduce injury risks for slips, trips and falls, falls from heights, and contact with equipment and objects among building cleaning and maintenance and landscape services employees.

Intermediate Goal 2.3: Create and disseminate information that will reduce risks for skin and respiratory disorders associated with building cleaning and maintenance work through collaboration of management, labor, workers, manufacturers, government agencies and research organizations.

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.

Research Goal 2.3.2**:** By 2011, conduct exposure assessments for jobs, tasks or cleaning operations during the use of potentially hazardous agents such as chlorine, ammonia, and glycol ethers inside building spaces.

Research Goal 2.3.3**:** By 2012, determine if some "environmentally sound" cleaning agents are less effective and may require increased physical effort to obtain acceptable levels of cleanliness. Identify effective cleaning agents which minimize effects on health and the environment.

Research Goal 2.3.4**:** By 2012, partner with EPA and GSA on best practices for building cleaning with inclusion of concepts such as adequate off-hours ventilation, evaluation of possible increased physical force requirements needed for "green" chemical cleaning agents, and reduction or control of toxic materials in cleaning agents such as glycol ethers in strong detergents and floor strippers.

Translation Goal 2.3.5**:** By 2013, ensure that recommendations and guidance products that are provided to building cleaning and maintenance workers are appropriate to the language(s) and literacy level of the workforce.

Dissemination Goal 2.3.6**:** By 2014, disseminate effective health communication materials to ensure that building cleaning and maintenance workers understand their rights to safe and healthy work environments as well as the need to report occupational injuries and illnesses to their employer in order to possibly qualify for workers' compensation insurance coverage.

Strategic Goal 3: Eliminate health disparities for priority population workers in building services industries by 2015.

Surveillance Goal 3.1: Ensure that employment, injury, illness and exposure assessment information is collected in sufficient detail for characterization of disparities in health status, if they exist, among building cleaning and maintenance workers.

Intermediate Goal 3.2: 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.

Research Goal 3.2.1**:** By 2013, complete etiologic studies to characterize exposures and behavioral, organizational, and economic factors that may be related to health disparities among building services workers.

Translation Goal 3.2.2**:** By 2014, evaluate the effectiveness of training materials that address exposures and behavioral and organizational factors associated with disparities in health status among building services workers.

EDUCATION AND SCHOOLS

The educational services industry is the second largest U.S. industry with approximately 13.3 million workers. The majority of workers are employed in elementary and secondary schools and post-secondary institutions employ approximately 2.5 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, stress and violence.

Strategic Goal 4: By 2015, 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.

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 through partnerships with local, state and federal government agencies, labor unions, and professional associations by 2012.

Surveillance Goal 4.2: By 2010, develop recommendations for a voluntary web-based health and hazard surveillance system for education employees through collaboration of labor unions, education administrators, and state and federal government agencies.

Surveillance Goal 4.3: By 2013, evaluate incidence and prevalence of occupational respiratory disease, autoimmune diseases and reproductive health among public and private education staff.

Intermediate Goal 4.4: Create guidance documents for hazard identification and control and indoor air quality in public and private schools through collaboration of school boards, school administrations, labor unions, government agencies, insurance companies, academic researchers, and other stakeholders.

Research Goal 4.4.1**:** By 2011, characterize chemical, biological and physical hazards in school environments such as science laboratories, art studios, music rooms, hallways, classrooms, offices, sport arenas, transportation facilities, cafeterias and traffic and parking areas. Focus on special education and technical programs, such as auto and HVAC shops.

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.

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.)

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.

Research Goal 4.4.5**:** By 2014, characterize the organization of work including stressors such as communication methods, violence, and lack of job control and define the essential elements of a healthy school work environment.

Intermediate Goal 4.5: Identify essential components of effective occupational health and safety programs in public and private education through partnerships with local, state and federal government agencies, labor unions, academic researchers, and professional associations.

Research Goal 4.5.1**:** By 2012, evaluate the effectiveness of existing occupational health and safety programs in public and private education and identify best practices.

Dissemination Goal 4.5.2**:** By 2013, disseminate best practice guidelines for occupational health and safety programs in public and private education systems through labor unions, trade associations, professional organizations and governmental agencies.

Research Goal 4.5.3**:** By 2014, evaluate the impact of effective occupational health and safety programs on employee health, overall education productivity, and costs.

HOTELS AND MOTELS

The number of workers employed in the hotel industry is estimated to be 1.8 million. 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, microbial agents in water damaged buildings; and to musculoskeletal disorders due to frequent bending and lifting of heavy beds, linen, and carts, and awkward postures. Work loads may increase the risks for injuries.

Strategic Goal 5: By 2015, reduce the incidence and severity of occupational injuries by 20% as measured in lost work days among hotel and motel workers.

Surveillance 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 through collaborative efforts of management, labor, workers and other stakeholders in the hotel and motel industry.

Research Goal 5.2.1**:** By 2011, evaluate the effectiveness of intervention strategies and components of comprehensive health and safety programs to reduce the risk of violence-related injuries and fatalities in the hotel industry.

Translation Goal 5.2.2**:** By 2011, develop guidelines for effective worker and supervisor training programs to reduce the risk of cuts and puncture wounds from hypodermic needles, broken glass and other sharp objects that may be present in hotel rooms and service areas.

Translation Goal 5.2.3**:** By 2011, develop implementation guidelines for programs that reduce the leading causes of slips, trips and falls among hotel employees.

Dissemination Goal 5.2.4: By 2012, disseminate guidelines for injury prevention among hotel and motel workers through trade associations, labor unions, and government agencies.

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 by 2015.

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 through collaboration of management, labor, workers, manufacturers, government agencies, and research and community based organizations.

Research Goal 6.1.1**:** By 2011, 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.

Research Goal 6.1.2**:** By 2012, 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.

Dissemination Goal 6.1.3**:** By 2012, ensure that recommendations, training materials and guidance products to reduce hazardous exposures among hotel and motel workers are language and literacy appropriate.

Dissemination Goal 6.1.4**:** By 2012, disseminate effective health communication materials to hotel industry workers at risk for musculoskeletal disorders to reduce exposures or to otherwise improve work practices, and document changes in knowledge and behaviors among employers, supervisors and employees.

Dissemination Goal 6.1.5**:** By 2012, disseminate effective health communication materials to ensure that workers understand their rights to safe and healthy work environments as well as the right to report occupational injuries and illnesses to their employer in order to possibly qualify for workers' compensation insurance coverage.

Strategic Goal 7: Eliminate health disparities for priority population workers in the hotel and motel industry by 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 through collaboration of employers, employees, labor unions, and community-based organizations.

Research Goal 7.1.1**:** By 2013, complete etiologic studies among hotel and motel workers to characterize exposures and behavioral, organizational, and economic factors that may be related to health disparities.

Translation Goal 7.1.2**:** By 2014, evaluate the effectiveness of training materials that address exposures and behavioral and organizational factors associated with disparities in health status among hotel and motel workers to ensure that they are appropriate to the language(s) and literacy level of the workforce.

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. The Federal Government is the single largest employer in the U.S. with approximately 1.8 million civilian workers (excluding the Postal Services and several national security agencies). In some states, the state government is similarly 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 extensive shift work.

Strategic Goal 8: Reduce by 30% the frequency and severity of injuries and illnesses among government workers by 2015.

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 through partnerships with local, state and federal government agencies, labor unions, trade organizations, academic institutions, and professional associations.

Surveillance Goal 8.2: By 2013, evaluate incidence, prevalence and severity of musculoskeletal disorders and the physical hazards that are associated with the disorders among public administration employees.

Intermediate Goal 8.3: Create guidance documents for hazard identification and control, indoor air quality, occupational stress, and workplace violence in government work environments through collaboration of labor unions, government agencies, and other stakeholders.

Research Goal 8.3.1: On an ongoing basis, characterize chemical, biological and physical hazards including potential reproductive toxins in governmental work environments such as science laboratories, transportation facilities, office buildings, cafeterias and traffic and parking areas.

Translation Goal 8.3.2: By 2012, develop protocols for chemical, biological, and physical hazard assessment in government facilities that may be used with minimal training by staff.

Research Goal 8.3.3: By 2012, evaluate existing violence prevention programs for government facilities and determine best practices for dissemination to all government agencies.

Research Goal 8.3.4: By 2013, characterize the relationship between occupational stress, work organization factors, shift work, psychological demands, decision latitude, social support, job insecurity and physical demands among government employees and measures of absenteeism and presenteeism (i.e. working while ill or injured).

Translation Goal 8.3.5: On an ongoing basis, ensure that health-risk implications of completed research projects are clearly understood by other research organizations, government agencies and professional organizations through peer-reviewed publications, presentations at national and international meetings, and guidance provided to health and safety practitioners.

RECREATION AND ENTERTAINMENT

It is estimated that 1.9 million persons are employed in the recreation and entertainment industry. 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 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.

Strategic Goal 9: By 2015, reduce traumatic injuries and fatalities by 30% in the recreation and entertainment industries.

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.

Intermediate Goal 9.2: 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 through collaboration of employers, employees, labor unions, trade associations, government agencies and workers' compensation insurance carriers.

Research Goal 9.2.1: By 2010, analyze injury surveillance data to identify causal patterns and the leading tasks or operations that are associated with injuries from over exertion, adverse bodily reactions, falls, and contact with equipment and objects that lead to serious traumatic injuries or fatalities in the recreation and entertainment industry.

Research Goal 9.2.2: By 2011, evaluate youth worker risks for traumatic injuries from over exertion and heat stress in the recreation and entertainment industry.

Research Goal 9.2.3: By 2012, conduct workshops, industry surveys, and literature review to determine the concerns and issues from industry experts in order to create best practices and recommendations.

Translation Goal 9.2.4: By 2012, develop evidence-based recommendations and/or best practice guidelines to prevent injuries due to over exertion, adverse bodily reaction, falls, and contact with equipment and objects and disseminate the guidelines through trade associations, employers, and labor unions.

Research Goal 9.2.5: By 2013, pilot and test interventions aimed at reducing injuries from over exertion, adverse bodily reaction, falls, and contact with equipment and objects in the recreation and entertainment industry.

Translation Goal 9.2.6: By 2013, develop evidence based recommendations and best practices for equipment operations to reduce the risks for injuries in the recreation and entertainment industries.

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 through collaboration of management, labor, trade associations, professional organizations and government agencies.

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.

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

Approximately 8.1 million persons are employed in full-service and limited-service restaurants. 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 and accounted for 353 deaths between 2003 and 2006. Musculoskeletal disorders in this industry are associated with slips and trips and with overexertion.

Strategic Goal 10: By 2015, reduce the frequency of injuries by 30% among food service workers.

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.

Surveillance Goal 10.2: By 2012, evaluate differences in injury frequencies, rates, and severity for youth, immigrant and disabled employees in restaurants and other food service establishments when compared with the total workforce.

Intermediate Goal 10.3: Promote the development of comprehensive occupational safety and health programs for restaurants and other food service establishments through collaboration of employers, employees, labor unions, workers compensation insurance companies, government agencies, and safety and health professionals.

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.

Research Goal 10.3.2**:** By 2012, create and test training materials that are appropriate for the learning and retention skills of youth, immigrant, and disabled workers in the food service industry.

Research Goal 10.3.3**:** By 2012, complete field studies of exposures to temperature extremes and noise among food service workers and create recommendations for effective controls of these occupational hazards, as needed.

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.

Dissemination Goal 10.3.5**:** By 2013, collaborate with food service inspection organizations or agencies as partners to provide information to restaurants and other food service establishments on effective occupational safety and health programs.

Translation Goal 10.3.6**:** by 2010, develop and disseminate effective disaster response plans for food service and drinking establishments.

Strategic Goal 11: By 2015, 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 through collaboration with trade associations, owners, management, employees, labor unions, safety and health professionals, academic institutions, and insurance companies.

Research Goal 11.1.1**:** By 2011, evaluate barriers to the adoption of violence prevention strategies by restaurants and develop alternative interventions to overcome the barriers.

Research Goal 11.1.2**:** By 2013, test the effectiveness of violence prevention programs for food delivery services.

Dissemination Goal 11.1.3**:** By 2014, deliver effective violence intervention information to owners, managers and employees of restaurants and drinking establishments by working through trade associations, labor unions, government agencies, and insurance companies.

TELECOMMUNICATIONS

Workers in the telecommunications industry number about 1 million and include line and equipment installers and repairers, telephone operators, information processing clerks, managers, and administrative workers. 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. 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 by 2012.

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 in collaboration with management, employees, labor unions, government agencies, and trade associations.

Research Goal 12.1.1**:** By 2011, characterize the relationship between occupational stress, worker productivity, work organization, shift work, psychological demands, decision latitude, social support, job insecurity and physical demands in the telecommunications industry and measures of absenteeism and presenteeism (i.e. working while ill or injured).

Dissemination Goal 12.1.2**:** By 2011, create and disseminate health communication documents about musculoskeletal disorder symptoms emphasizing the need for recording information for workers who complete repetitive tasks in office settings.

Translation Goal 12.1.3**:** By 2012, create guidelines for reducing occupational stress among workers in the telecommunications industry who complete repetitive tasks in office settings.

Research Goal 12.1.4**:** By 2012, evaluate the interactions among work organizations, physical and psychosocial factors, and non-work exposures in the development of non-traumatic musculoskeletal disorders and possible adverse reproductive health outcomes in the telecommunications industry.

Translation Goal 12.1.5: By 2013, create health communication documents that inform workers in the telecommunications industry about the possible roles of work organization and physical ergonomics in the development of occupational stress and its relationship with musculoskeletal disorders and symptoms.

Translation Goal 12.1.6: By 2013, ensure that health communication documents about work organization, shift work, physical ergonomics, job stress and musculoskeletal disorders in the telecommunications industry emphasize the need to

report, record, and maintain information about worker tasks, exposures and symptoms or medical diagnoses.

Dissemination Goal 12.1.7: By 2013, disseminate all health communication documents to telecommunications industry employees and employers through trade associations, labor unions, government agencies, and employers.

Research Goal 12.1.8**:** By 2012, determine the relationships 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.

Translation Goal 12.1.9**:** By 2011, establish guidelines based on research evidence and identified best practices such as the ASHRAE Indoor Air Quality Guidelines for maintaining or improving indoor air quality in office settings.

Strategic Goal 13: By 2014, 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 through work with government agencies, employers, employees, labor unions, and trade associations, and academic researchers.

Research Goal 13.1.1**:** By 2010, identify causal factors for and implement interventions to reduce falls from elevation, contact with electric power and vehicle and equipment incidents.

Translation Goal 13.1.2**:** By 2012, develop best practice guidelines for prevention of falls and contact with and/or exposure to electrical power, and safe vehicle and equipment operations and disseminate the documents through employers, labor unions, trade associations, government agencies, and equipment manufacturers and distributors.

TEMPORARY LABOR INDUSTRY

Little surveillance information on temporary workers is available. It is estimated that employment services employ 3.5 million persons with about 2.6 million in temporary jobs. 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 by 2015.

Surveillance Goal 14.1: Identify sources of information that can be used to estimate the number or proportion of workers in industry sectors who are employed in a temporary or other contingent status at host employer locations.

Surveillance Goal 14.2: Determine if differences are present in health status between temporary or contingent workers and the remaining workers in selected industries based on available surveillance data.

Intermediate Goal 14.3: 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 through collaborative investigations by government agencies, research organizations, insurance carriers, and labor groups.

Research Goal 14.3.1**:** By 2013, assess safety and health practices in the temporary labor industry such as pre-employment functional capacity evaluation, agency employer and host employer training programs, record keeping practices, and provision of personal protective and safety equipment, and develop model contractual language that addresses these issues.

Research Goal 14.3.2**:** By 2013, conduct investigations of comprehensive safety and health programs in industries with substantial populations of temporary or contingent workers and identify best practices for the shared occupational health and safety responsibilities of the temporary agency and the host employer.

Research Goal 14.3.3**:** By 2013, identify the more common language, literacy and cultural barriers to the success of health and safety training materials for temporary or contingent workers and identify best practices to ensure effective training methods.

Translation Goal 14.3.4**:** On an ongoing basis, develop and test targeted educational tools for temporary workers in jobs with greater risks and explain employee rights to a safe and healthful workplace.

WASTE COLLECTION AND DISPOSAL

There are an estimated 122,000 workers employed in waste collection, 106,000 employed in waste treatment and disposal, and 107,000 employed in waste remediation. Waste collection and disposal employees include private sector and public sector (municipal) workers. 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.

Strategic Goal 15: Reduce the incidence and severity of injuries in the waste collection, disposal and recycling industries by 30%. (Stakeholders include large private haulers, regional and local haulers, public and private employee representatives, vehicle and equipment manufacturers, large and small municipalities, waste disposal organizations, and waste processing organizations.)

Surveillance Goal 15.1: Establish an industry-wide program for collection and analysis of injury event information, including standard elements for severity, for systematic submission to a central location**.**

Intermediate Goal 15.2: 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.

Translation Goal 15.2.1**:** By 2011, create and disseminate health communication materials 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.

Translation Goal 15.2.2: On an ongoing basis, promote adoption of automated services for collection of solid wastes from residential areas wherever feasible or the adoption of automated lift systems on rear-load trucks.

Intermediate Goal 15.3: Create, disseminate, and evaluate the effectiveness of best practices guidance documents for the solid waste industry through collaboration with management, labor unions, workers compensation insurance companies, and government agencies.

Research Goal 15.3.1**:** By 2012, identify the leading barriers to adoption of health and safety guidelines and standards, such as costs, communication methods or acceptance by management, employees, or the general public.

Translation Goal 15.3.2**:** By 2012, document success stories, describe the most effective intervention methods such as training programs, and disseminate the health communication materials through trade associations, labor unions, equipment manufacturers, workers compensation insurance carriers and government agencies.

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.

Translation Goal 15.3.4**:** By 2012, develop a national public education campaign to emphasize the need for drivers to be alert and to exercise caution when moving past waste collection vehicles operating on or near public roadways.

Research Goal 15.3.5**:** By 2013, test the effectiveness of existing injury prevention programs and develop training curricula for new employees (regular and temporary) and refresher courses, by job task, for the hauling, collection, disposal, and recycling industry segments.

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.

Translation Goal 15.3.7**:** By 2012, promote the use of standard contract language for temporary workers to ensure that effective health and safety training and provision of necessary personal protective equipment is the responsibility of the host employer.

Intermediate Goal 15.4: 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.

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.

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

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

Workers across many services sub sectors are engaged in tasks that have been associated with musculoskeletal disorders. 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: By 2015, 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.

Surveillance Goal 16.1: Develop and utilize state and federal injury, illness and disability surveillance systems on an ongoing basis and promote additional data analysis to increase knowledge about trends, emerging issues and priorities for occupational musculoskeletal disorders among services sector workers.

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.

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.

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.

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, employees, and medical personnel and validate them through field studies, exposure assessments, medical screenings and worker interviews.

Intermediate Goal 16.4: Develop, test, and disseminate effective intervention programs for services industries with higher risks for musculoskeletal disorders through collaboration among employers, labor organizations, workers' compensation and other insurance carriers, and research organizations.

Research Goal 16.4.1**:** By 2012, evaluate associations between specific tasks, operations or work organization factors and the incidence of acute and chronic musculoskeletal disorders in at least 2 services sector industries such as automotive repair, building services, hotel, restaurants, and telecommunications.

Research Goal 16.4.2**:** On an ongoing basis, develop and test the effectiveness of targeted guidance programs for the reduction of repetitive strain and acute and chronic upper extremity, lower extremity, or lower back musculoskeletal disorders that are associated with hazardous tasks or operations in automotive repair, building services, hotel, restaurant, and other services sector industries.

Research Goal 16.4.3**:** On an ongoing basis, create economic analyses such as business case studies that demonstrate the effectiveness of practical solutions for reducing musculoskeletal disorders in services sector industries or occupations.

Translation Goal 16.4.4**:** On an ongoing basis, disseminate health communication campaigns for service sector industries and occupations with elevated risks for musculoskeletal disorders to reduce exposures or to otherwise improve work practices and document changes in knowledge and behaviors among employers, supervisors and employees.

Dissemination Goal 16.4.5**:** On an ongoing basis, support the exchange and use of effective prevention strategies with special emphasis on reaching employers, supervisors and workers in small businesses.

Intermediate Goal 16.5: Complete research projects with detailed analytical reports on the relationships between musculoskeletal disorders and working conditions for services sector industries and related occupations through collaborative support of research organizations, academic institutions, government agencies, and other funding sources.

Research Goal 16.5.1: By 2012, evaluate the risks for occupational musculoskeletal disorders from repeated or sustained exertions among services sector workers such as room cleaners, janitors, automotive mechanics, customer service representatives and others.

Research Goal 16.5.2**:** By 2013, evaluate the roles of overexertion and awkward body position that may lead to occupational musculoskeletal disorders among services sector workers such as landscapers, solid waste collectors, and others.

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.

Research Goal 16.5.4**:** By 2015, evaluate the interaction of work organization and employer safety culture on the occurrence of musculoskeletal symptoms and long-term disability from work-related musculoskeletal disorders in services industries.

Translation Goal 16.5.5: On an ongoing basis, evaluate implementation of evidence based interventions aimed at mitigating physical hazards for work-related musculoskeletal disorders in the service sector workplace.

Translation Goal 16.5.6**:** On an ongoing basis, ensure that health-risk implications of completed research projects are clearly understood by other research organizations, government agencies and professional organizations through peer-reviewed publications, presentations at national and international meetings, and guidance provided to health and safety practitioners.

SURVEILLANCE

Public health surveillance is the ongoing systematic collection, analysis, and interpretation of health data for purposes of improving health and safety. 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.

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.

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.

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.

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.

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.

Research Goal 17.1.6**:** By 2014, develop a program proposal for a population-based occupational illness surveillance system that uses annual questionnaires to collect data.

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.

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.

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.

Research Goal 17.2.3**:** By 2011, promote the collection of occupational injury, illness and disability information by state-managed workers compensation programs that would create reliable estimates of risks for contingent workers.

Research Goal 17.2.4**:** By 2012, develop a strategy to seek collaborative opportunities with private insurance carriers in order to aggregate illness, injury and disability data across states and identify priorities for effective intervention methods in services industries.

Research Goal 17.2.5**:** By 2013, evaluate the suitability of these data sources to identify health disparities and injury and illness rates among priority populations and contingent workers.

Intermediate Goal 17.3: By 2012, 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

Research Goal 17.3.1: By 2012, develop and test web-based survey methods of active surveillance for evidence of occupational illness or injury.

Research Goal 17.3.2: By 2012, develop and test uses of electronic medical records to identify potential occupational illness, e.g. adverse reproductive health outcomes, or injury.