Office of Health and Safety

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U.S. Department of Energy
Office of Health, Safety and Security
Illness and Injury Surveillance Program
Worker Health at a Glance, 2000-2009

HSS
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Illness and Injury Surveillance Program

Worker Health At A Glance, 2000-2009

Questions or comments about this report or the Department of Energy's (DOE) Illness and Injury Surveillance Program (IISP) within the office of Health, Safety and Security may be directed to:

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Additional information about the DOE's Office of Domestic and International Health Studies, the IISP, and reports for DOE sites participating in this program can be found at:

http://www.hss.energy.gov/healthsafety/WSHP/epi/surv/

2012

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Office of Health, Safety and Security

Foreword

A core value of the Department of Energy (DOE) is to ensure the health and safety of the current contractor workforce across the DOE complex. The Office of Health, Safety and Security (HSS) provides corporate level expertise in the area of worker health surveillance through the Illness and Injury Surveillance Program (IISP). Epidemiological surveillance is the discipline of continuously gathering, analyzing, and interpreting data about diseases, and disseminating information about these analyses to the DOE workforce, safety and health managers, and site occupational medicine physicians.

The purpose of epidemiologic surveillance is to: 1) describe the magnitude of illness and injury among the workforce; 2) to assess changes in illness and injury trends; and 3) to identify specific work groups at risk. The results of this program may be used to monitor the implementation of health programs and to assess the impact of various safety interventions.

The IISP has monitored the health of contractor workers at selected DOE sites since 1990. In 2006, the IISP program had sufficient data to describe, in a collective manner, the health trends occurring among workers at a number of DOE sites during the 10-year period 1995 through 2004. With the addition of the next 5 years of data, this second report assesses health trends among workers for the next 10-year period, from 2000 through 2009. During the recent 10-year period covered by this report, over 136,000 individual contractor workers were employed at the 16 sites participating in the IISP. The previous report (and other site specific reports) is available online at:

http://www.hss.energy.gov/healthsafety/WSHP/epi/surv/

Work site occupational medicine programs have the potential to modify risk factors for many diseases that contribute to absenteeism across the DOE complex. Programs could be targeted

to reduce those conditions that result in the highest levels of absenteeism. Preventive health care programs that reduce illness and injury can result in lower health care costs and an overall increase in worker productivity. The effectiveness of Integrated Safety Management can also be measured by examining illness and injury metrics. DOE is committed to the continued protection of the health of the workforce by identifying those areas that may benefit most from a public health focus on prevention. The data may be used to identify areas where additional safety training, worker education, or facility improvements might reduce occupationally related events.

Patricia R. Worthington, PhD
Director, Office of Health and Safety
Office of Health, Safety and Security

Overview and Executive Summary

Background

The health of the contractor workforce is a corporate responsibility of the Department of Energy (DOE). DOE strives to ensure that work is safely conducted at every site. Collecting and analyzing information on illness and injury is a good way to evaluate how safely work is being performed across the complex.

The Worker Health at a Glance, 2000 – 2009 provides an overview of selected illness and injury patterns among the current DOE contractor workforce that have emerged over the 10-years covered by this report. This report is a roll-up of data from 16 individual DOE sites, assigned to one of three program offices (Office of Environmental Management, Office of Science and the National Nuclear Security Administration).

The Injury and Illness Surveillance Program (IISP) was established in 1990. It uses health and demographic information already collected from occupational medicine and safety programs at participating facilities to maximize the use of current data, thus limiting IISP costs. These data are sent by a site data coordinator to the IISP data center at the Oak Ridge Institute for Science and Education (ORISE), in Oak Ridge, TN.

Occupational medicine departments across the DOE complex routinely collect illness and injury data. When an employee does not report to work for 5 or more consecutive workdays, that employee should be cleared through the site occupational medicine department before returning to work (DOE Rule 10 CFR 851). Information on shorter term health-related absences is also available. Illness and injury data are linked to other occupational information, such as job title and participation in specialized exposure monitoring programs (e.g. lead exposure monitoring or respiratory protection). This information is collected, verified, and analyzed at the IISP data center at ORISE. The surveillance program staff closely reviews the data to identify unfavorable health trends or unusual health occurrences.

DOE takes privacy and confidentiality issues concerning worker health very seriously. The information analyzed by the IISP is not linked to any individual by name, Social Security number, or any other identifiable information. All identifiers remain in the site's Occupational Medicine Department. No identified worker data are ever transmitted off site. All data transmitted to the IISP data center are accompanied only by encrypted identifiers, and only site personnel who are directly involved with the IISP at each participating site can identify data for an individual at their site using these identifiers. Each site assigns its own encrypted identifiers to records using an encryption algorithm known only to the site. The results of our analyses are presented in summarized or grouped format.

In this report, an absences is defined as 40 or more consecutive work hours (5+ calendar days) off the job. Shorter absences were not included, although data on absences of 1 to 4 days may be available for selected sites.

This report differs from the previous version, as absence rates are "age-adjusted." This is a statistical method used to eliminate the differences between groups of workers due solely to differences in the age structure of the population being compared.

Findings and Recommendations

The following findings are highlights and data trends from the analyses of the Illness and Injury Surveillance Program (IISP) data from 2000 – 2009.

Respiratory diseases were the most frequently reported conditions among Department of Energy (DOE) contractor workers, accounting for 23% of all reported absences. The majority of these conditions were due to respiratory infections, pneumonia and influenza. Programs that encourage basic public health practices (e.g. hand washing, appropriate sneezing, and seasonal flu immunizations) may result in fewer lost work days.

Musculoskeletal conditions were the second most reported diagnoses related to absenteeism. Among these, back disorders were most common. Workers aged 40 or older were 2-3 times more like to be absent due to a musculoskeletal condition compared to younger workers. Healthy back programs that give workers tips and advice on how to limit or stop low back pain (through exercise) and treatment options could be encouraged in the occupational medicine programs.

Injuries (those not the result of an occupational accident) were the third leading cause of absence and have a significant impact on worker productivity. Not only do they cause employees to lose time from work, but they can restrict a workers ability to do their job. Contractor service workers, line operators, and security and fire fighters had the highest rates of absence due to injuries. The most common type of injury was sprains, especially back sprains, followed by bone fractures and dislocations. Analyses of these injuries showed that 25% were due to transportation accidents and 22% due to falls.

The report also examined the impact of two chronic diseases, hypertension and diabetes, on absenteeism. Absence rates among workers with hypertension increased dramatically among workers during the past 10-years, but remained unchanged among workers without hypertension. More than half of all workers reporting hypertension had 4 or more absences of 5 or more calendar days. The increase in absenteeism occurred among all age groups and especially

among workers ages 16- 29. Workers with hypertension were more likely to report absences due to other concomitant conditions (e.g. other circulatory diseases, endocrine/metabolic disorders and other unspecified conditions).

Absence rates among workers with diabetes were at least 3-5 times greater than absence rates of workers not reporting diabetes. On average, workers reporting diabetes missed 143 calendar days of work compared with only 19 calendar days reported by workers without diabetes over the 10-year period.

Although the IISP does not collect information on weight, obesity is highly associated with the development of hypertension and diabetes, as well as many other chronic diseases, including cancer. In addition to traditional clinical approaches to hypertension and diabetes, it is recommended that occupational medicine and human resource departments focus on educational and counseling programs on weight loss, nutrition and exercise.

This report also analyzed data on illnesses and injuries that were the direct result of a work-related event. Over the 10-year period, the number or work-related events have decreased. This may be attributed to the success of DOE's Integrated Safety Management Program. Injuries, primarily sprains and strains, and open wounds accounted for the majority of work- related diagnoses. The highest rates were among Service and Craft Workers. Most of these injuries were the result of accidents, such as overexertion or being struck by an object. Falls also accounted for many of these injuries.

In addition to this 10-year overview, annual reports are available for 16 individual DOE sites. These reports can be found at:

http://www.hss.doe.gov/healthsafety/WSHP/epi/surv/index.html

This report presents an overview of the health of the DOE work force at 16 participating sites from 2000 through 2009.

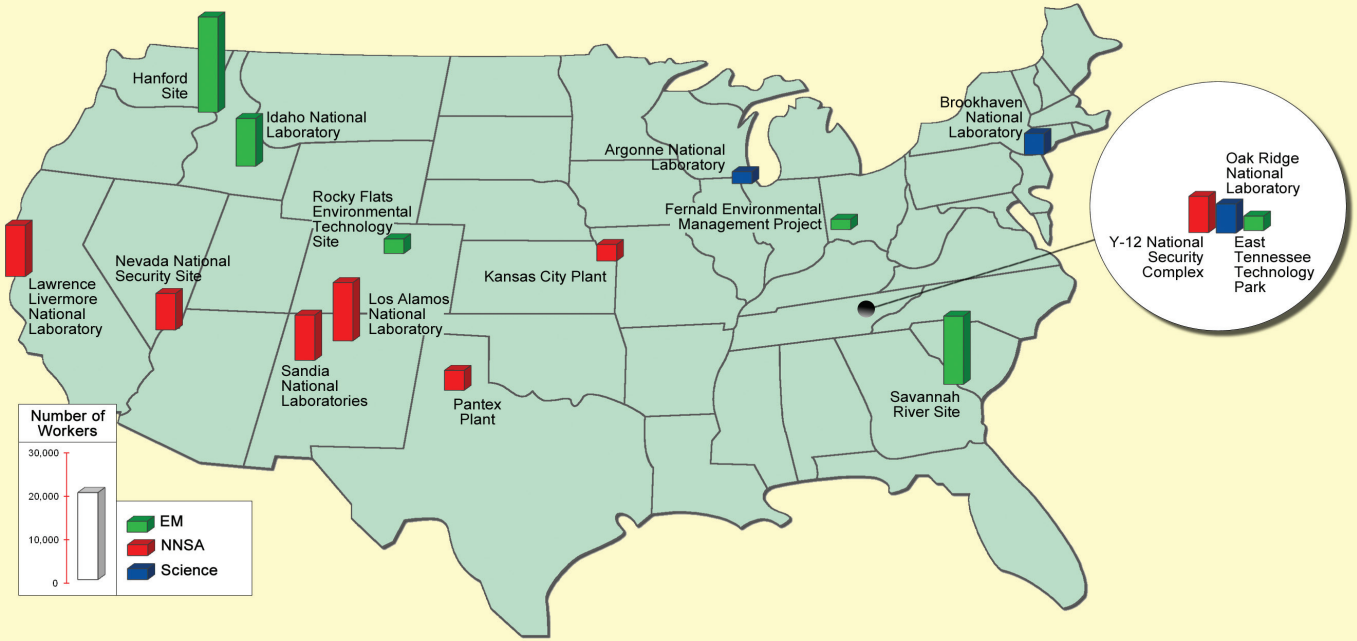
Each DOE participating site is assigned to one of three program offices responsible for that site's management. Although some sites may have multiple programs, they are categorized by their primary affiliation.

Environmental Management's (EM) mission is to complete the cleanup of the environmental legacy brought about from nuclear weapons development and nuclear energy research. Activities include: operating facilities to treat radioactive liquid tank waste; securing and storing nuclear material in a stable, safe configuration; disposing of transuranic and low-level wastes; decontaminating and decommissioning facilities; and remediating soil and ground water contaminated with the radioactive and hazardous constituents.

Science manages fundamental scientific research for energy and is the Nation's largest supporter of basic research in the physical sciences. It has a research portfolio in 6 areas: advanced scientific computer research; basic energy sciences; biological and environmental research; fusion energy science; high energy physics; and nuclear physics.

National Nuclear Security Administration (NNSA) is responsible for the management and security of the nation's nuclear weapons, nuclear nonproliferation and naval reactor programs. It also responds to nuclear and radiological emergencies in the United States and abroad. Additionally, NNSA federal agents provide safe and secure transportation of nuclear weapons and components and special nuclear materials along with other missions supporting national security.

Distribution Of Contractor Work Force By Program Office and Primary Affiliation At Sites Participating In The IISP



* Not all sites participated in the IISP for the entire 10-year period.

Sixteen sites participated from 2000 through 2009; 9 sites participated for the full 10 years.

- The Illness and Injury Surveillance Program (IISP) was established in 1990. The program is administered by the Office of Health, Safety and Security.
- Sites recruited for this voluntary program expressed a willingness to participate, could assemble and transmit necessary health and demographic data, had a work force of sufficient size to permit effective use of the analytical tools, and had resources that permitted the transfer of de-identified data.

Participation Sites by Program Office and Years of Participation

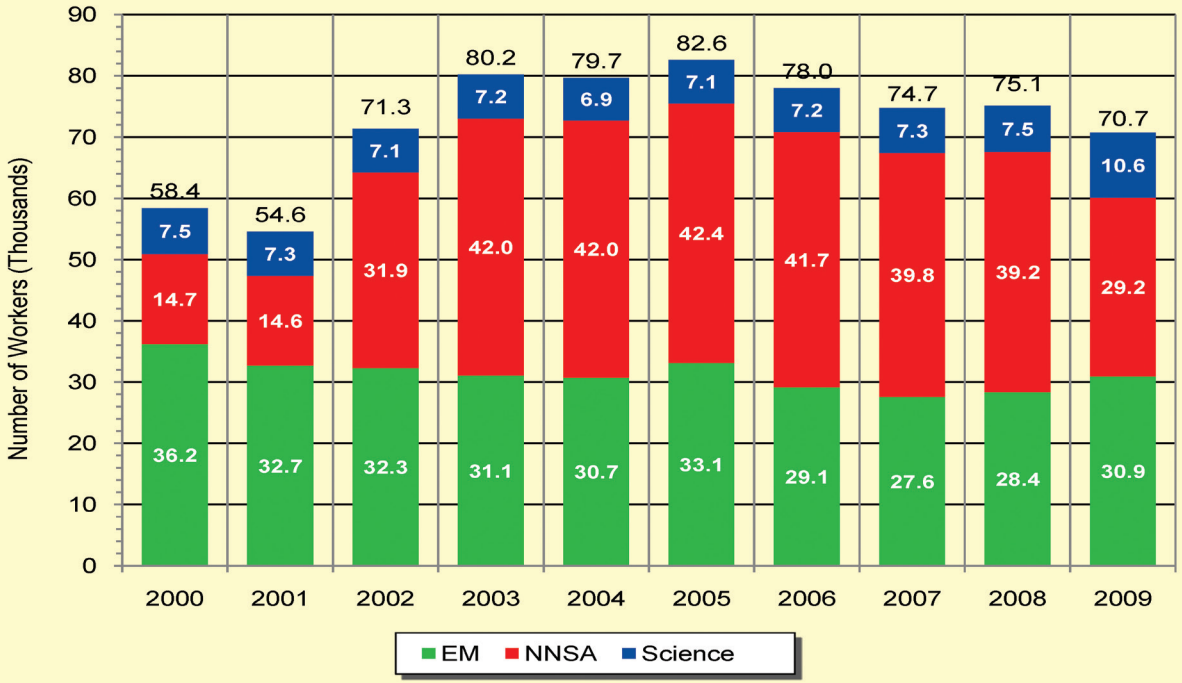
Environmental Management	
East Tennessee Technology Park	1999-2009
Fernald Environmental Management Project	1995-2004
Hanford Site	1995-2009
Idaho National Laboratory*	1995-2009
Rocky Flats Environmental Technology Site	1995-2000
Savannah River Site (and NNSA)	1995-2009
National Nuclear Security Administration (NNSA)	
Kansas City Plant	2002-2009
Lawrence Livermore National Laboratory	2002-2009
Los Alamos National Laboratory	2003-2008
Nevada National Security Site	2002-2009
Pantex Plant	1995-2009
Sandia National Laboratories	1995-2009
Y-12 National Security Complex	1998-2009
Science	
Argonne National Laboratory	2009-2009
Brookhaven National Laboratory	1995-2009
Oak Ridge National Laboratory	1999-2009

*Provides core mission in science and technology research to the Office of Nuclear Energy.

The IISP examined health information for more than 136,000 workers from 2000 through 2009.

- The size of the work force at the DOE sites covered by the IISP ranged from 54,000 to 82,000 individuals per year.
- NNSA facilities had the most workers, averaging 33,000 workers per year, while the Science sites had the fewest, averaging 7,500 workers each year.
- Four additional NNSA sites (Kansas City Plant, Lawrence Livermore National Laboratory, Los Alamos National Laboratory, and Nevada National Security Site) were added in 2002 and 2003 and one additional Science site (Argonne National Laboratory) joined the program in 2009. Three sites, two EM (Fernald Environmental Management Project and Rocky Flats Environmental Technology Site) and one NNSA (Los Alamos National Laboratory), stopped participation in the program during the 10-year period.

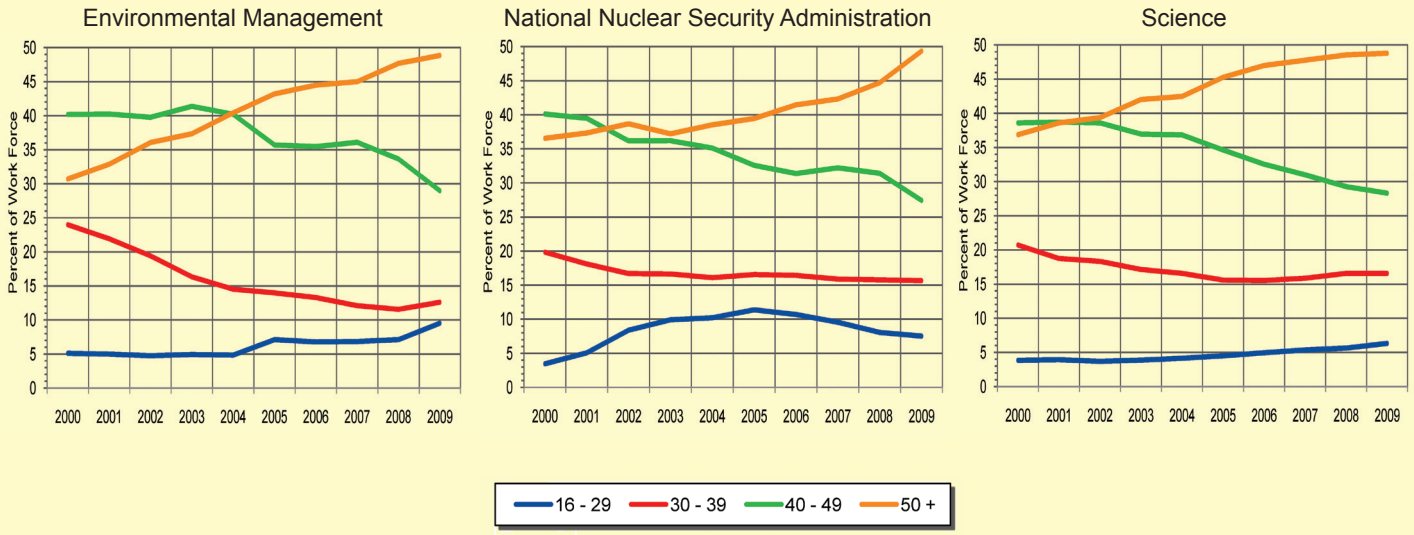
Total Number of Workers by Primary Program Office by Year



The DOE work force is growing older. From 2000 through 2009, there was an 80 percent increase in the number of workers aged 50 or older.

- The median age of the work force was 45 in 2000 and increased to 49 in 2009, which means that 50 percent of the workers were older and 50 percent of workers were younger than age 49 in 2009. The age distribution of workers was similar across all program offices.
- The number of workers aged 16-29 more than doubled during the period, even though the least number of workers was in that age group. The number of workers aged 30 to 49 decreased 32 percent.
- Most workers in all occupational groups were 50 years or older except those in Technical Support, Security and Fire, and Line Operators.

Age Distribution by Program Office

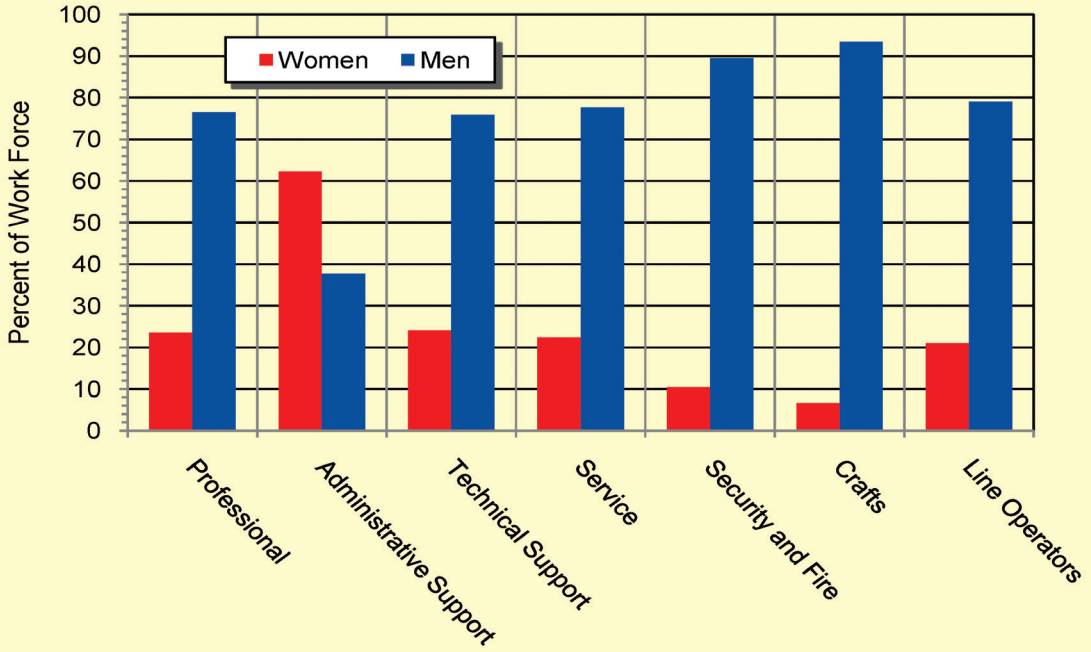


Men represent about 72 percent of the work force over the 10-year period.

- Men accounted for at least three-fourths of workers in 6 of the 7 occupational groups. Administrative Support Workers were the exception, as women accounted for almost two-thirds of the Administrative Support employees.

- The Security and Fire and Crafts occupational groups had the lowest percentage of women. In both groups, no more than 10 percent of workers were women.

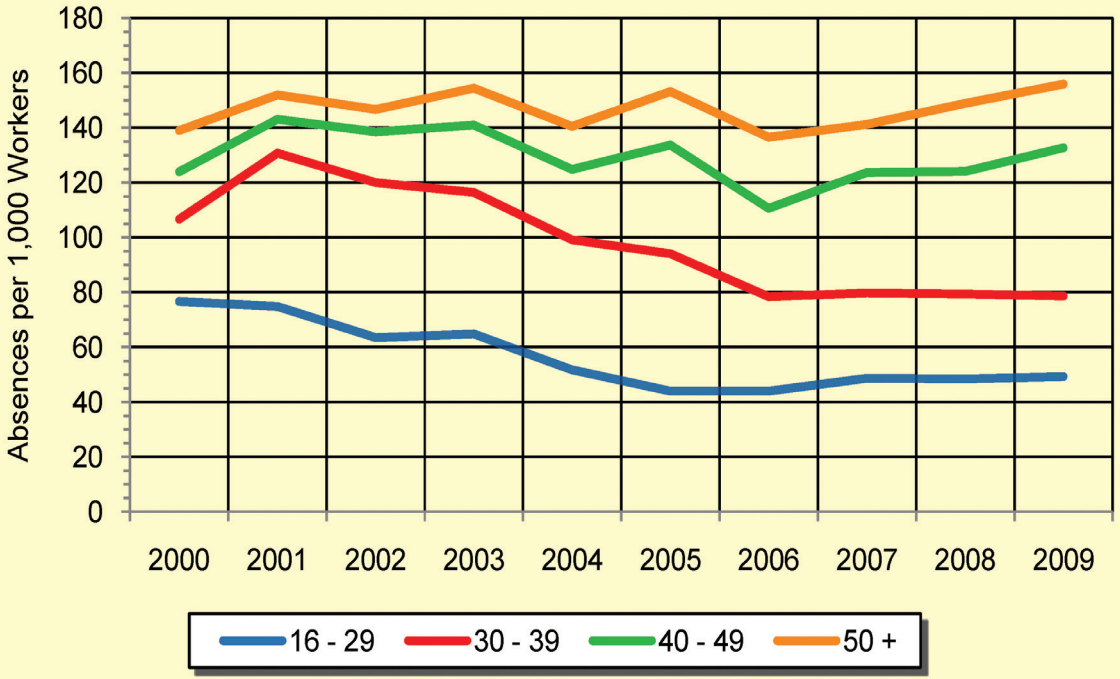
Gender Distribution by Occupational Group



Absence rates for illness and injury were higher among older workers.

- Absence rates increased slightly among workers 40-49 years old and 50+ years old.
- Absence rates among workers aged 16-29 and 30-39 years old decreased at least 26 percent over the 10-year period.

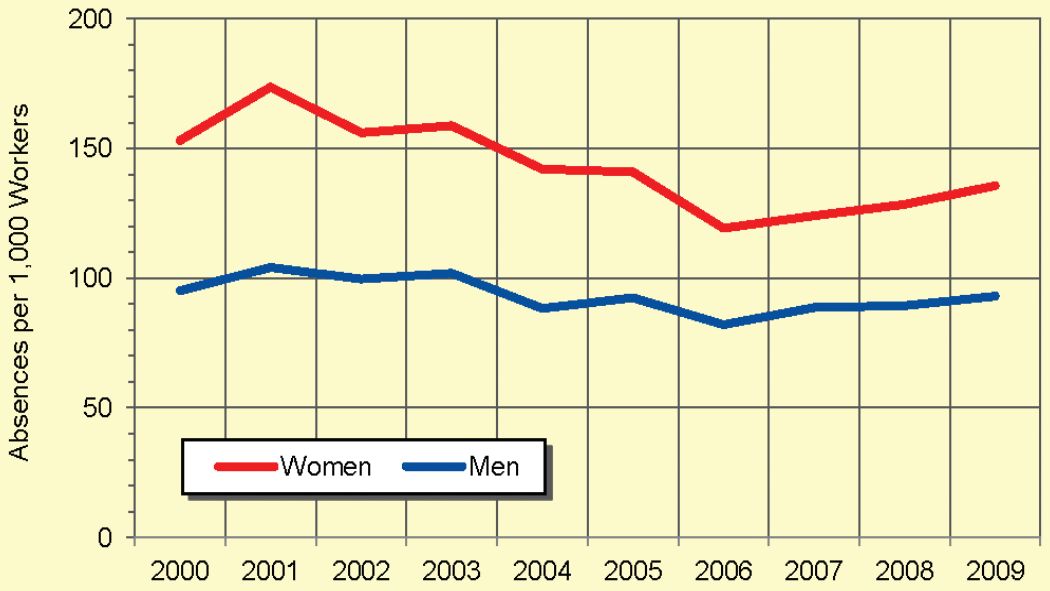
Absence Rates by Age Group



The age-adjusted absence rates for women were at least 40 percent higher than for men.

- There were 91,536 absences of 5 or more calendar days reported. There were 33,691 absences reported by 12,860 women and 57,845 absences reported by 25,765 men.
- Age-adjusted absence rates decreased faster for women than for men from 2000 to 2009.
- Over the 10-year period women had 975,170 calendar days and men had 1,677,684 calendar days absent from work.
- The average number of calendar days absent was 29 days for both men and women. The median was 13 days for men and 14 days for women.

Age-Adjusted Absence Rates by Gender

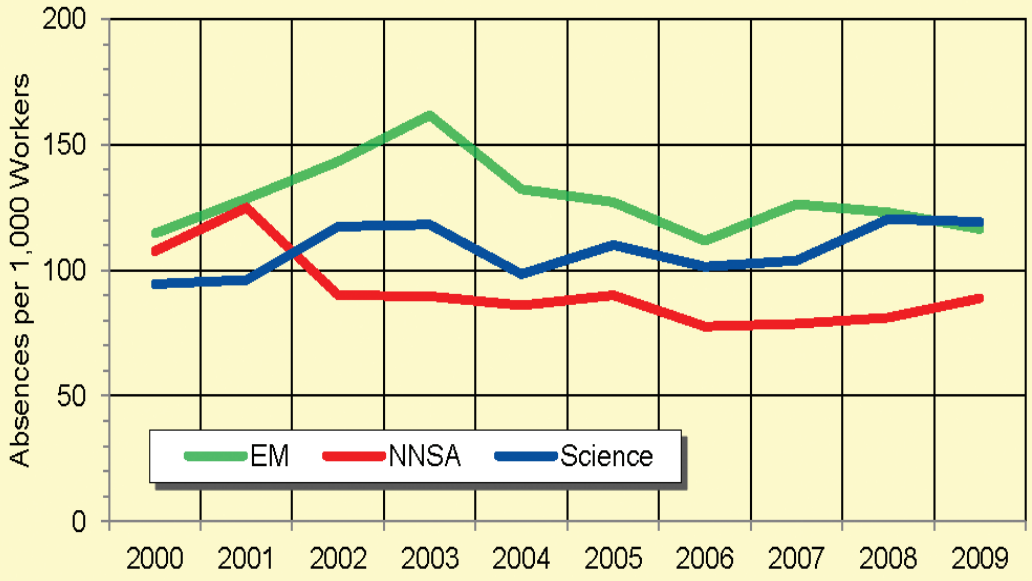


*Standardized to age distribution of 2000 U.S. population.

The trend in age-adjusted absence rates differed among DOE program offices during the period 2000 to 2009.

- The age-adjusted absence rate among NNSA contractor workers decreased throughout the period and was consistently less than 100 absences per 1,000 workers from 2002 onward. The large decrease in the rate from 2001 to 2002 may be the result of the addition of 3 new NNSA sites to the IISP program in 2002.
- The age-adjusted absence rate increased slightly over the 10-years for the Office of Science contractor work force.
- The age-adjusted absence rate among EM contractor workers slightly increased from 115/1000 workers in 2000 to 162/1000 workers in 2003 and decreased back to 116/1000 workers in 2009. EM program sites generally had the highest age-adjusted absence rates compared with NNSA and Science sites.

Age-Adjusted Absence Rates by Program Office



*Standardized to age distribution of 2000 U.S. population.

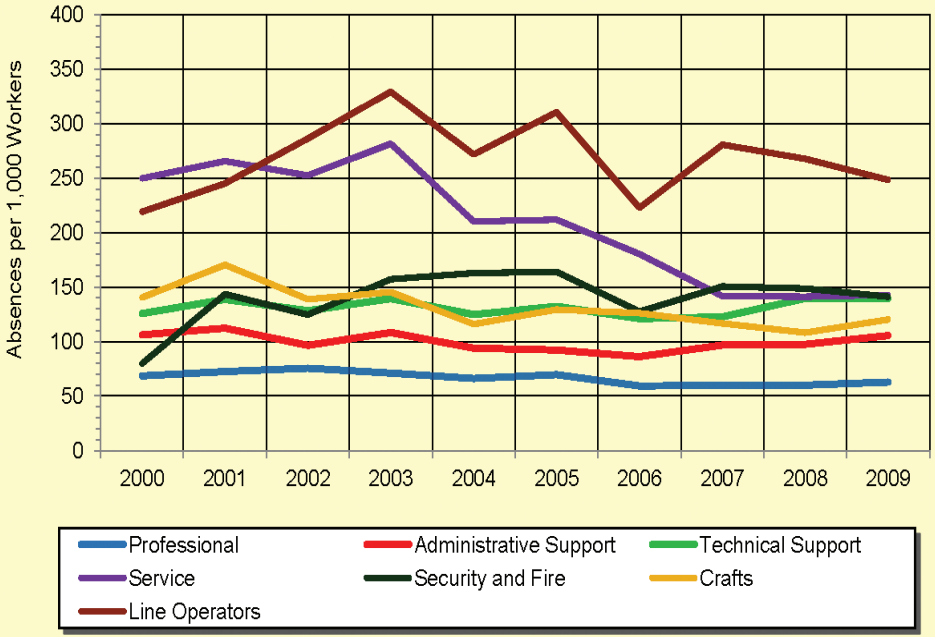
Age-adjusted absence rates increased for 3 of the 7 occupational groups.

- Service Workers and Line Operators had the highest age-adjusted absence rates in 2000. By 2009, rates for Line Operators increased 13 percent, while rates for Service Workers declined 43 percent.

- Security and Fire Workers, who had one of the lowest age-adjusted absence rates in 2000, experienced a 77 percent increase in age-adjusted absence rate by 2009.

- The remaining occupational groups had stable age-adjusted absence rates over the period. Professional Workers had the lowest age-adjusted absence rates throughout the period.

Age-Adjusted Absence Rates by Occupational Group

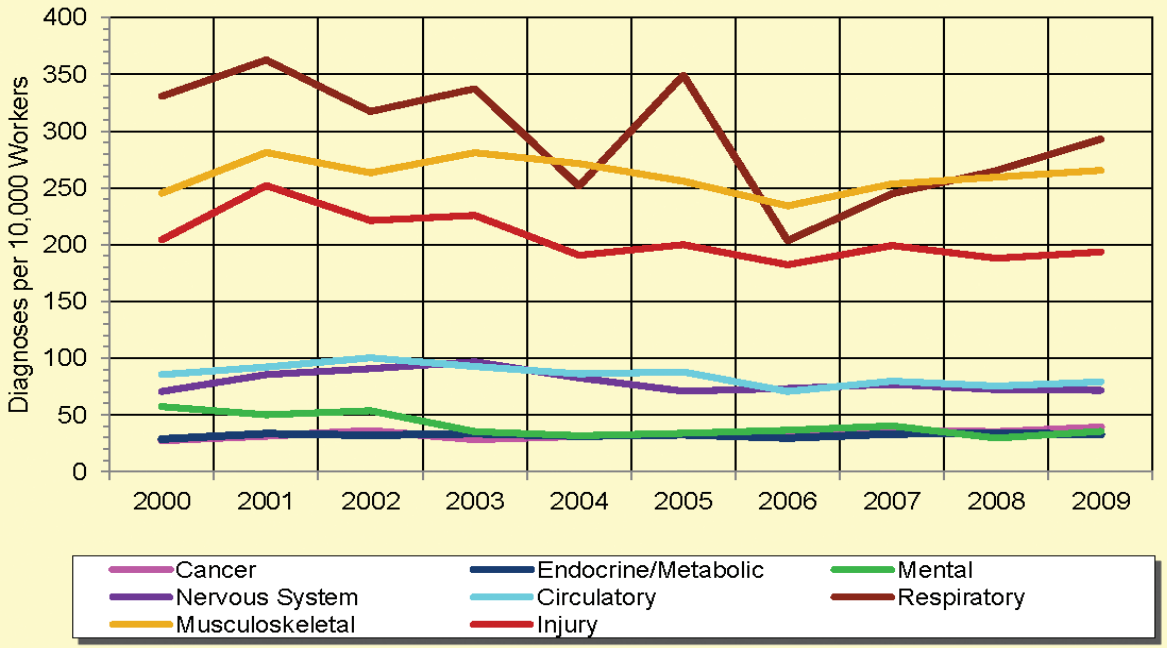


* Standardized to age distribution of 2000 U.S. population.

DOE contract workers must report to the site's medical clinic upon returning to work after an illness or injury and provide a medical diagnosis related to the absence.

- Multiple diagnoses may be reported for each absence. On average, 1.5 diagnoses were reported per absence. Fifty percent of all reported diagnoses were for 3 disease categories: respiratory diseases, musculoskeletal conditions, and injuries.
- Upper respiratory conditions were the most frequently reported diagnoses among respiratory diseases, back disorders among musculoskeletal conditions, and sprains and strains among injuries.
- The lowest age-adjusted diagnosis rates were for the cancer and endocrine/metabolic diagnosis groups.

Age-Adjusted Diagnosis Rates for Selected Disease Categories

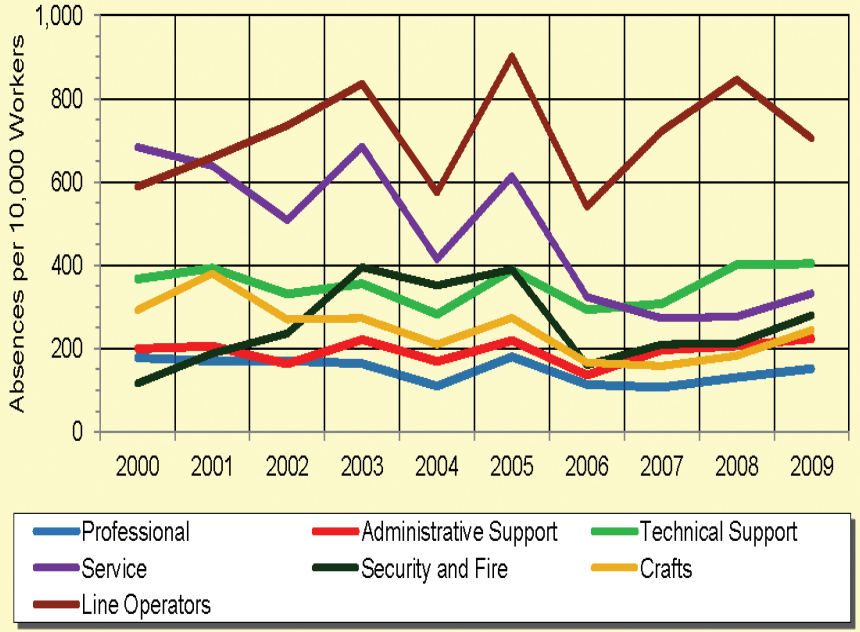


* Standardized to age distribution of 2000 U.S. population.

Respiratory conditions were the most commonly reported reason for absences.

- About 23 percent of all absences were due to respiratory disorders.
- Line Operators had the highest age-adjusted absence rates related to respiratory disorders throughout the 10-year period. Among the other occupational groups, the rate remained steady throughout the period, except for Service Workers, whose rate dropped by half.
- The majority of respiratory disorders involved upper respiratory infections, and pneumonia and influenza.
- Other respiratory absences were reported to be caused by exposure to various external agents thought to be occupational. Thirty-six workers reported chronic beryllium disease due to exposure to beryllium.

Age-Adjusted Absence Rates for Respiratory Conditions by Occupational Group

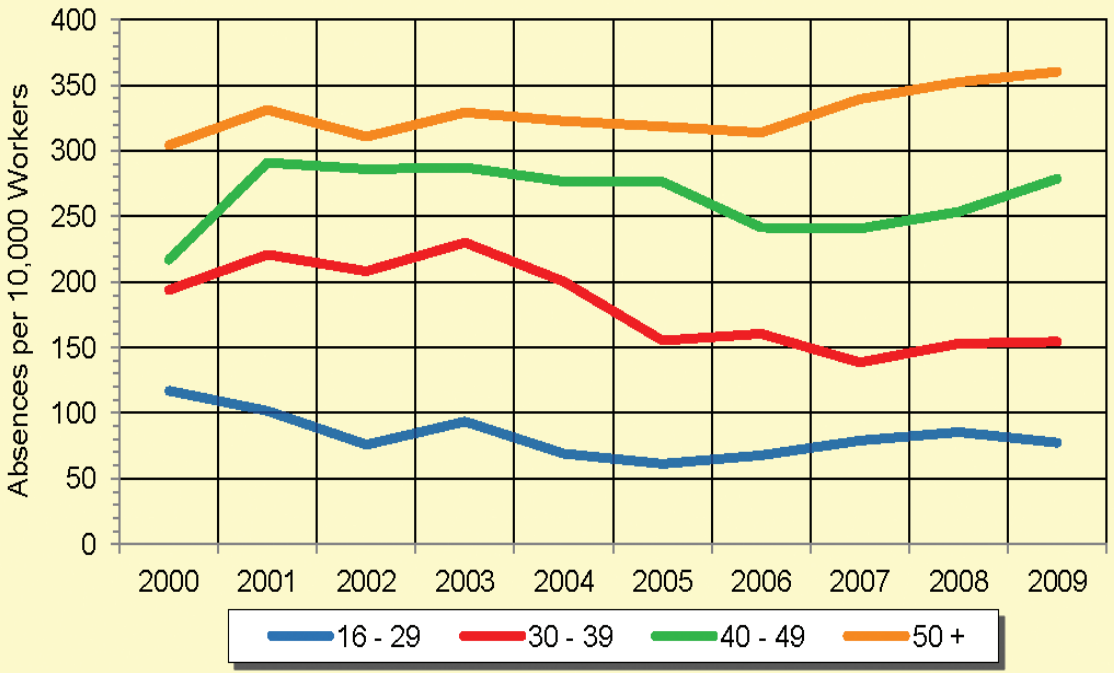


* Standardized to age distribution of 2000 U.S. population.

Musculoskeletal disorders were the second most common reason for absence.

- Absence rates for musculoskeletal disorders strongly differed by age group.
- Workers 40 years of age and older had absence rates 2-3 times greater than younger workers.
- Back disorders were the most common musculoskeletal condition reported by all contractor workers.

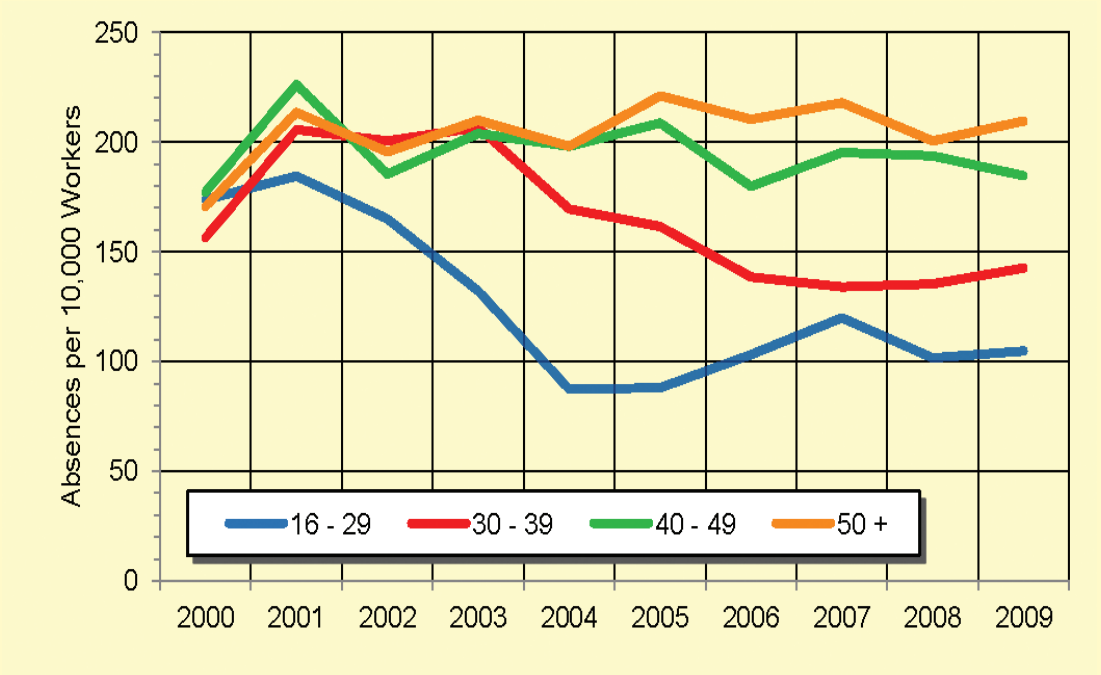
Absence Rates for Musculoskeletal Conditions by Age Group



Injuries were the third most common reason for absences.

- Injuries that are a result of occupational incidents are recorded on the OSHA 300 Log. The injuries represented in the graph are considered to be non-occupational; however, they have a significant impact on productivity. Injuries not only cause employees to lose time from work but can also restrict their ability to do their job.
- Over the 10-year period, absence rates for the youngest workers (under age 30) decreased 60 percent.
- Each injury absence lasted an average of 39 calendar days.

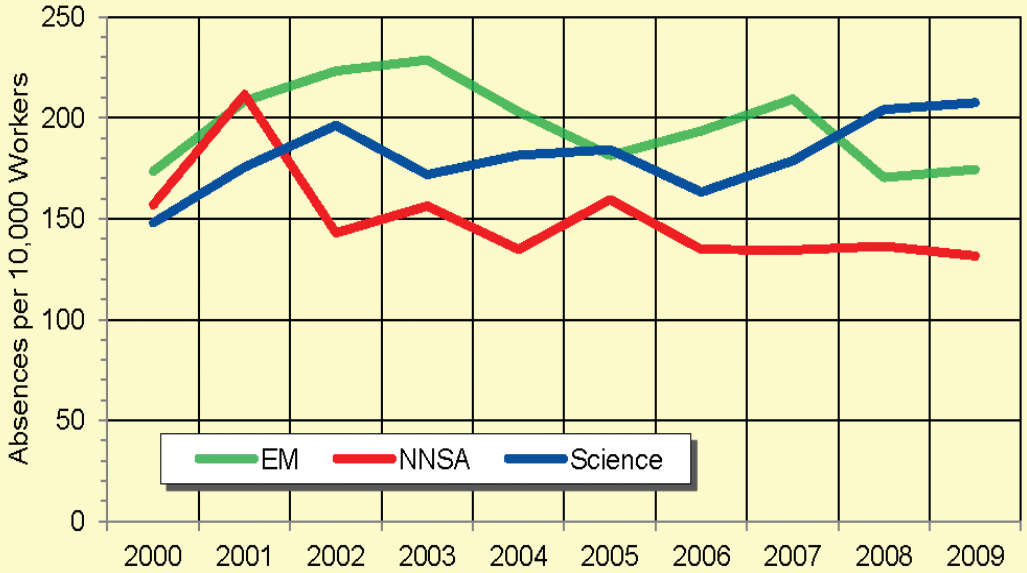
Absence Rates for Injuries by Age Group



The age-adjusted absence rate for injuries was similar for each program office in 2000, but their trends differed somewhat over the period.

- Contract workers at the NNSA sites generally had the lowest age-adjusted absence rates, which slightly declined over the 10-year period.
- Age-adjusted absence rates were fairly steady at the EM sites, but this group had the highest age-adjusted absence rates for most years.
- The age adjusted absence rate at the Science sites was generally between the NNSA and EM trends; however, there was a slight increase beginning in 2006.

Age-Adjusted Absence Rates for Injuries by Program Office



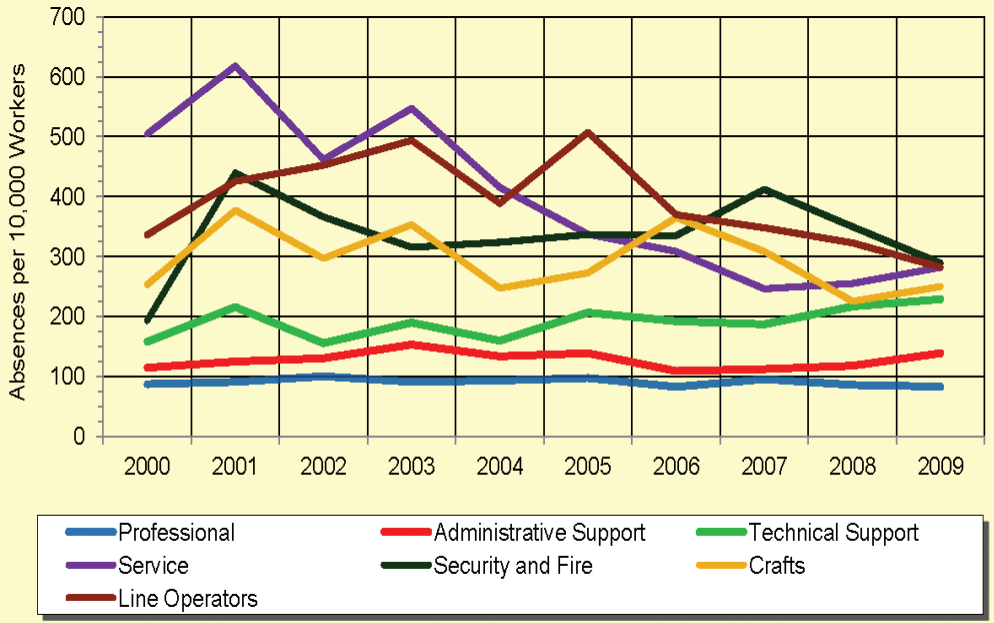
* Standardized to age distribution of 2000 U.S. population.

Service Workers, Line Operators, and Security and Fire Workers had the highest age-adjusted absence rates for injuries throughout the period.

- The age-adjusted absence rates among all occupational groups remained steady or increased slightly with the exception of Service Workers, whose rates decreased 45 percent over the 10-year period.

- Professional and Administrative Support Workers reported the lowest age-adjusted absence rates for the 10-year period.

Age-Adjusted Absence Rates for Injuries by Occupational Group

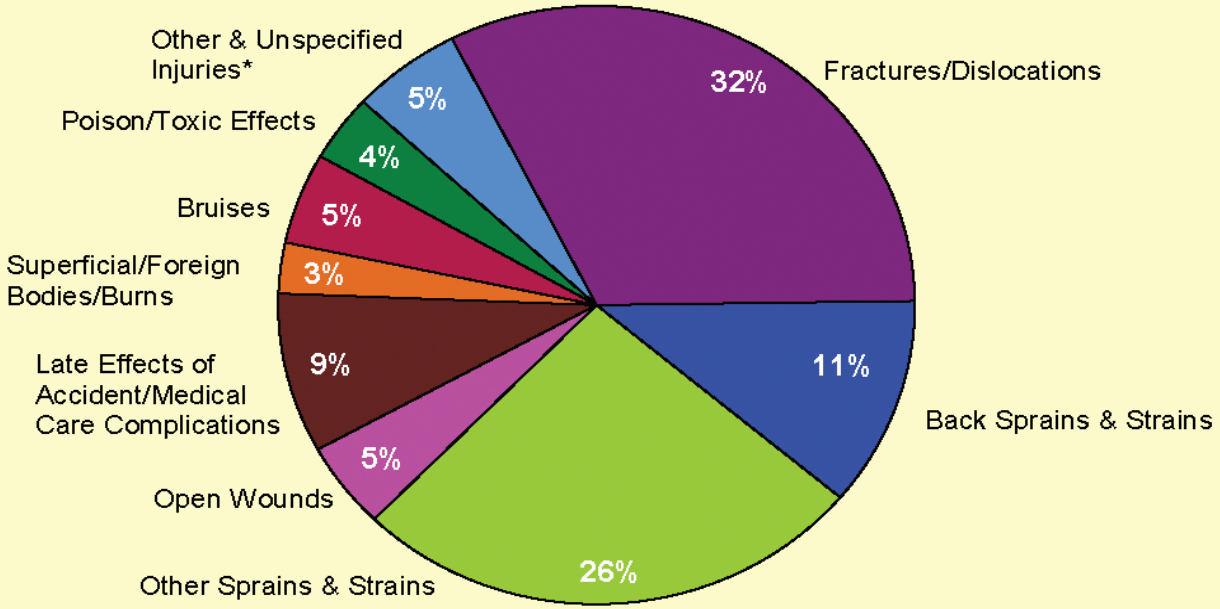


* Standardized to age distribution of 2000 U.S. population.

The most common injuries were sprains and strains (37 percent of all injuries).

- Among all sprains and strains, back sprains and strains accounted for 30 percent.
- The age-adjusted absence rates for back sprains and strains declined over the period, while other sprains and strains increased.
- Fractures/dislocations made up 32 percent of all injuries.

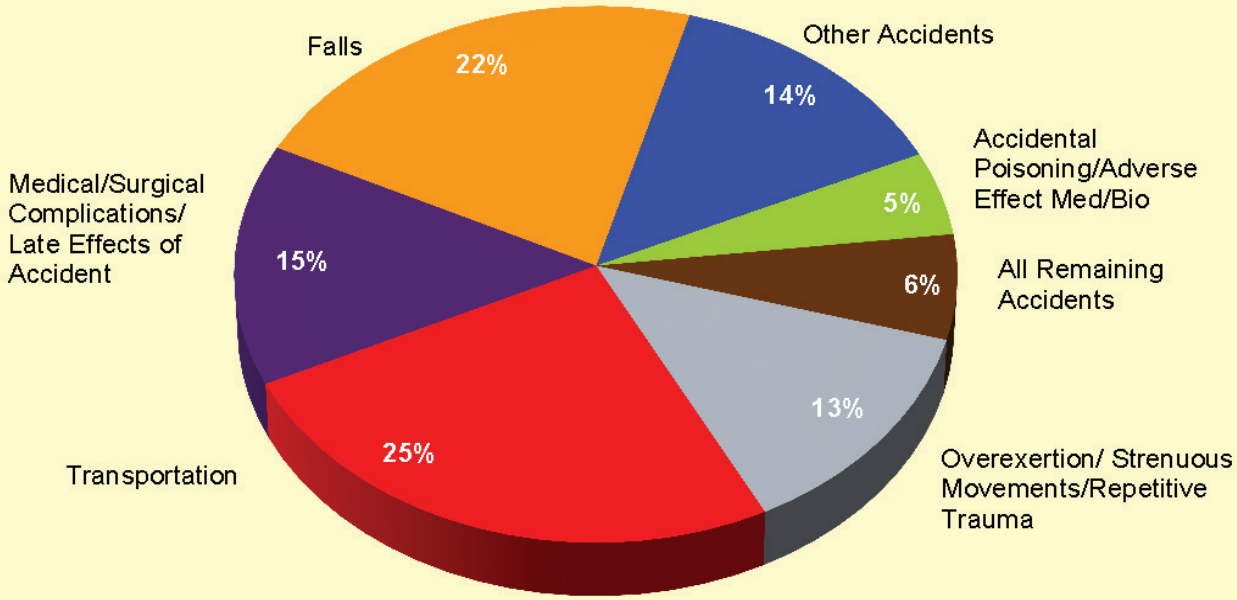
Distribution of Selected Types of Injuries



Transportation accidents accounted for 25 percent of all events resulting in an injury. Falls were the second leading cause resulting in an injury among the contractor workforce.

- There were 1,167 transportation accidents that occurred in the 10-year period and resulted in at least one injury. Injuries were also reported as a result of more than 1,000 falls that occurred in the workforce.
- Eighty-two percent of transportation incidents were due to motor vehicle traffic accidents. These do not include any job-related motor vehicle accidents (which are discussed in the OSHA section of this report).
- The average length of absence for transportation accidents was 39 days and for falls was 36 days.

Distribution of Types of Accidents Resulting in Injuries

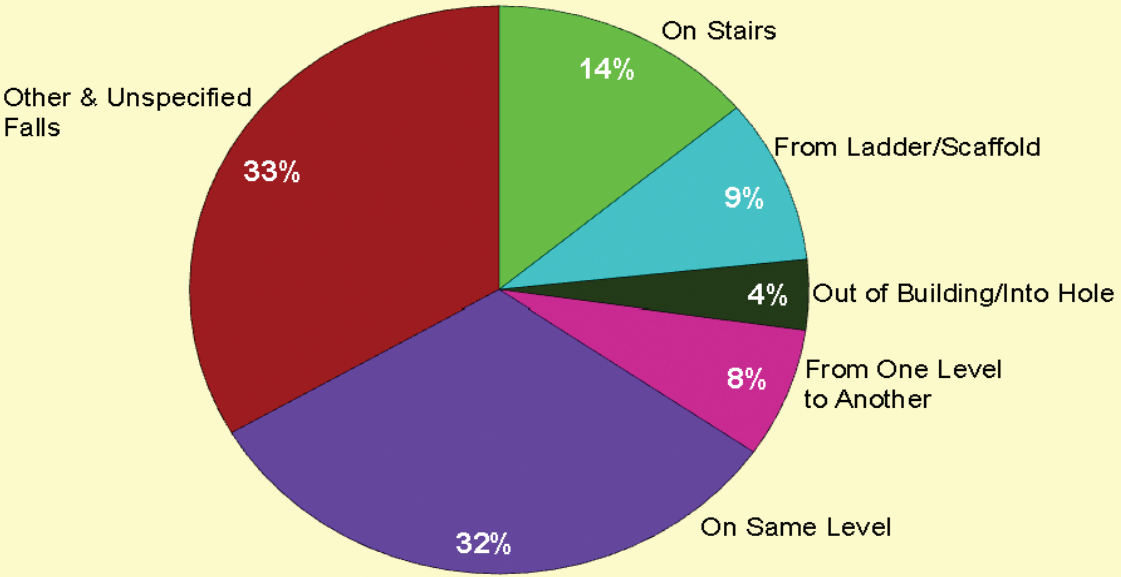


Note: Other accidents inclludes struck by object, cut, crushed, corrosive materials, steam exposure.
All Remaining Accicents includes fire, drowning, suffocation, undetermined.

Falls were the third most common type of accident resulting in injury.

- Falls accounted for 22 percent of all reported accidents.
- One-third of falls were the result of slips and trips.
- On average, a worker lost 38 calendar days as a result of a fall.
- Fractures and sprains and strains other than the back were the most frequent injuries from falls.

Distribution of Types of Falls Resulting in Injuries



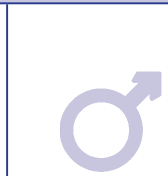
The distribution of reported cancers among the DOE work force was similar to the U.S. population.

- Age-adjusted rate for all cancer was lower for the DOE workforce compared with the U.S. population. Rates were also lower for the most frequently reported cancers: colon and rectum, prostate, and lung and bronchus. Breast cancer rates which were similar to or slightly higher than rates for U.S. women may be due to increased screening and awareness programs.

- Prostate cancer was most common among men and breast cancer among women. Colorectal cancer was the second most reported for men and women.

- The frequency of tobacco-related cancers was different between DOE workers and the U.S. population. Lung cancer was especially low. However, oral cancer, which is more common among smokeless tobacco users, was higher. This may be an area for stronger intervention and more focused prevention programs.

Distribution of the 10 Most Frequently Reported Cancers for the U.S. Population (2009) Compared with the IISP Population*

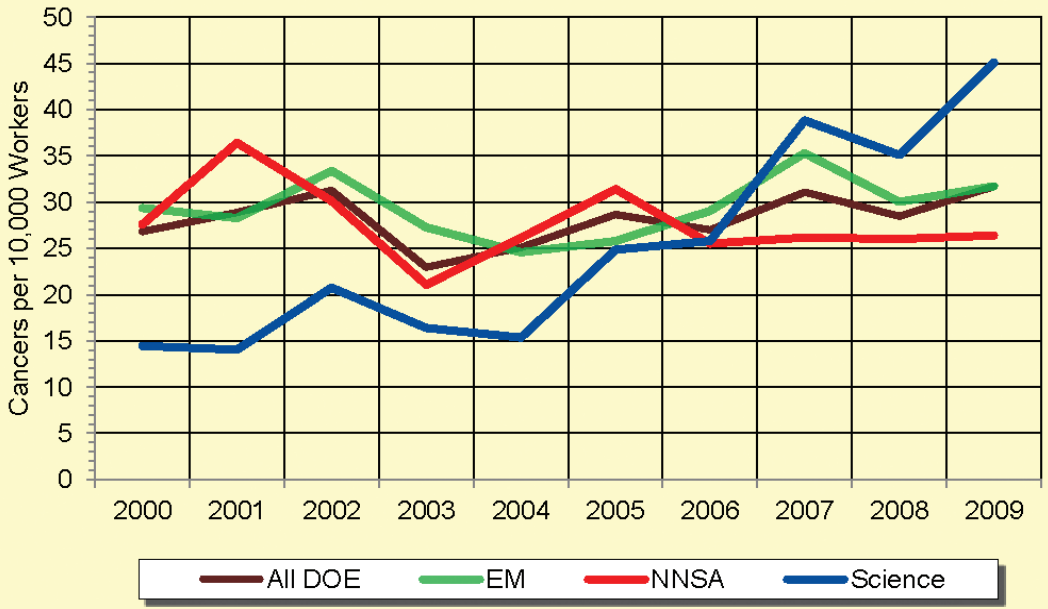
US Population**		Illness and Injury Surveillance Program
Men		
Prostate		Prostate
Lung & Bronchus		Colon & Rectum
Colon & Rectum		Kidney
Urinary Bladder		Oral Cavity
Melanoma of the Skin		Lung & Bronchus
Non-Hodgkin Lymphoma		Melanoma of the Skin
Kidney		Urinary Bladder
Leukemia		Non-Hodgkin Lymphoma
Oral Cavity		Thyroid
Pancreas		Testis
Women		
Breast		Breast
Lung & Bronchus		Colon & Rectum
Colon & Rectum		Thyroid
Uterus		Ovary
Non-Hodgkin Lymphoma		Uterus
Melanoma of the Skin		Non-Hodgkin Lymphoma
Thyroid		Melanoma of the Skin
Kidney		Lung & Bronchus
Ovary		Oral Cavity
Pancreas		Cervix

**Excludes basal and squamous cell skin cancers and in situ carcinoma except urinary bladder.*
***American Cancer Society estimates of new cancer cases by gender, U.S. 2009. Source: American Cancer Society. Cancer Facts and Figures, 2009. p10.*

Cancer was reported by 1.5 percent of the DOE contractor work force.

- The age-adjusted cancer rate for all DOE sites participating in the IISP increased 18 percent between 2000 and 2009.
- The age-adjusted cancer rates tripled among Science sites from 2000 to 2009. Most of the increase resulted from higher rates of prostate cancer and metastatic cancers of the respiratory and digestive system. Cancer rates at ORNL were higher than rates at Brookhaven. Argonne rates could not be compared as the site only began submitting data in 2009.
- The age-adjusted cancer rates for EM and NNSA sites did not generally fluctuate.

Age-Adjusted Cancer Rates by Program Office

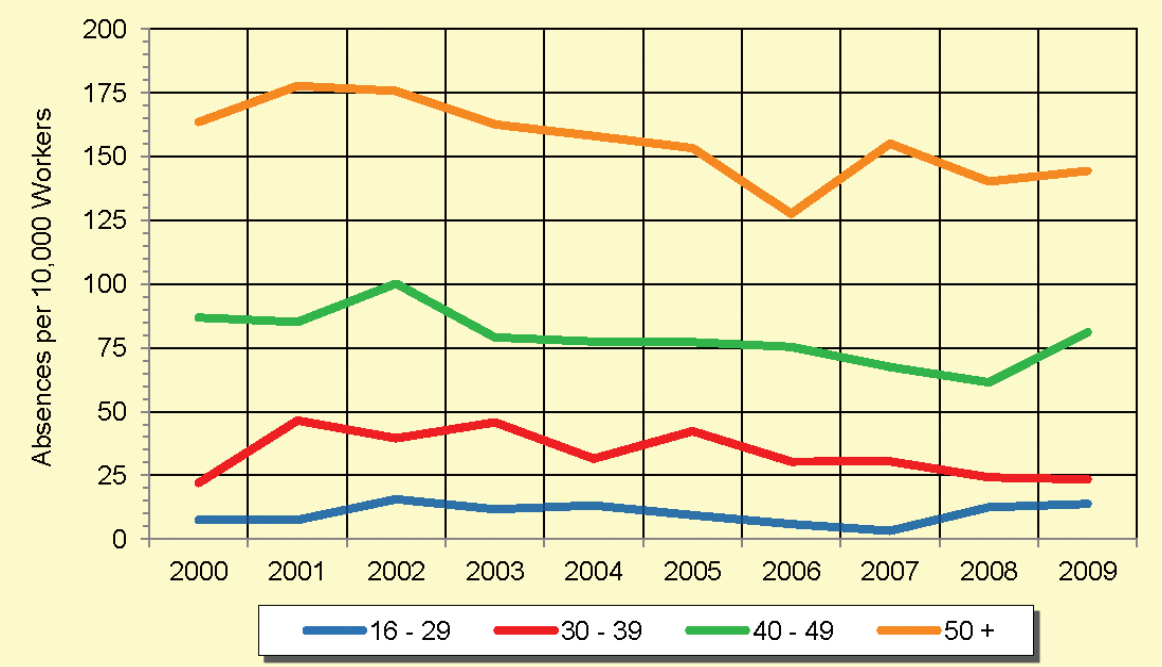


* Standardized to age distribution of 2000 U.S. population.

The absence rate for circulatory disorders increased with age.

- The circulatory disease rates over the 10-year period generally decreased for workers in all age groups.
- In 2000, the age-adjusted absence rate of circulatory disorders among men was about 50 percent higher than the rate among women. By 2009, the women's rate was slightly higher than the men's rate.
- Among men, age-adjusted absence rates were generally highest for ischemic heart disease (e.g., heart attack, angina, blockage of coronary arteries), followed by hypertensive disease (high blood pressure). Among women, hypertension was the most commonly reported followed by diseases of the veins (e.g., phlebitis, thrombosis, varicose veins, hemorrhoids)

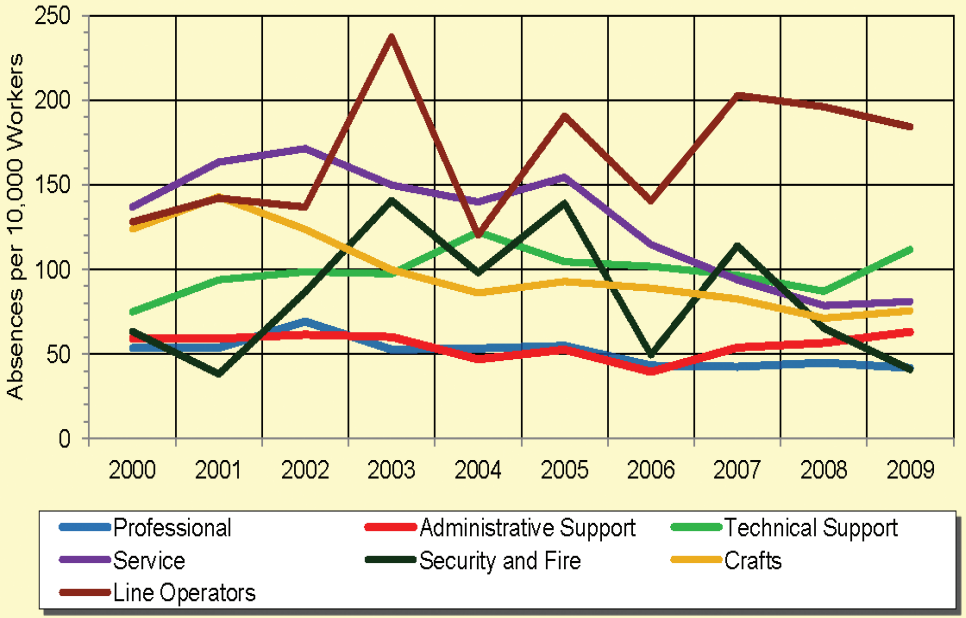
Absence Rates for Circulatory Conditions by Age Group



Age-adjusted absence rates for circulatory disease increased in 3 of the 7 occupational groups.

- Line Operators and Service Workers reported the highest circulatory disease age-adjusted absence rates during the 10-year period
- Professional and Administrative Support Workers generally reported the lowest age-adjusted absence rates, with little change over time.
- The age-adjusted absence rates for circulatory conditions in 2000 were almost the same for the 3 program offices. However, over the 10-year period, age-adjusted absence rates for EM Workers increased, while the age-adjusted absence rates decreased for the NNSA and Science sites.

Age-Adjusted Absence Rates for Circulatory Conditions by Occupational Group

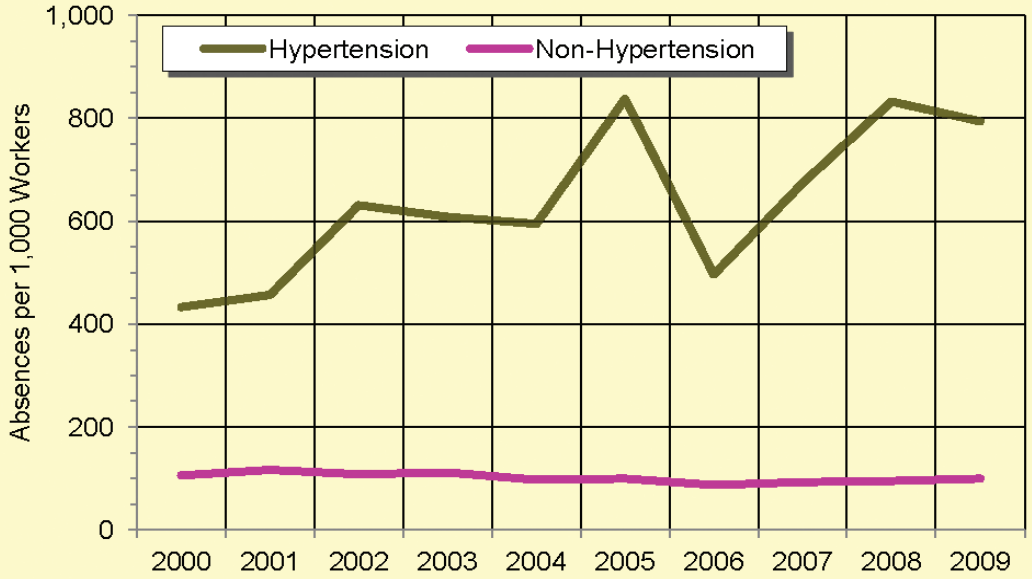


* Standardized to age distribution of 2000 U.S. population.

Age-adjusted absence rates were at least 3 times higher among workers with hypertension (high blood pressure) than among workers without a reported diagnosis of hypertension.

- Age-adjusted absence rates among workers *with* a reported diagnosis of hypertension increased dramatically during the 10-year period but remained unchanged for workers *without* hypertension.
- The Professional and Crafts groups tended to have lower age-adjusted absence rates for reported hypertension compared with other occupational groups. The age-adjusted absence rate for hypertension among Technical Support Workers was among the highest.

Age-Adjusted Absence Rates Among Workers Reporting Hypertension Versus Workers Not Reporting Hypertension

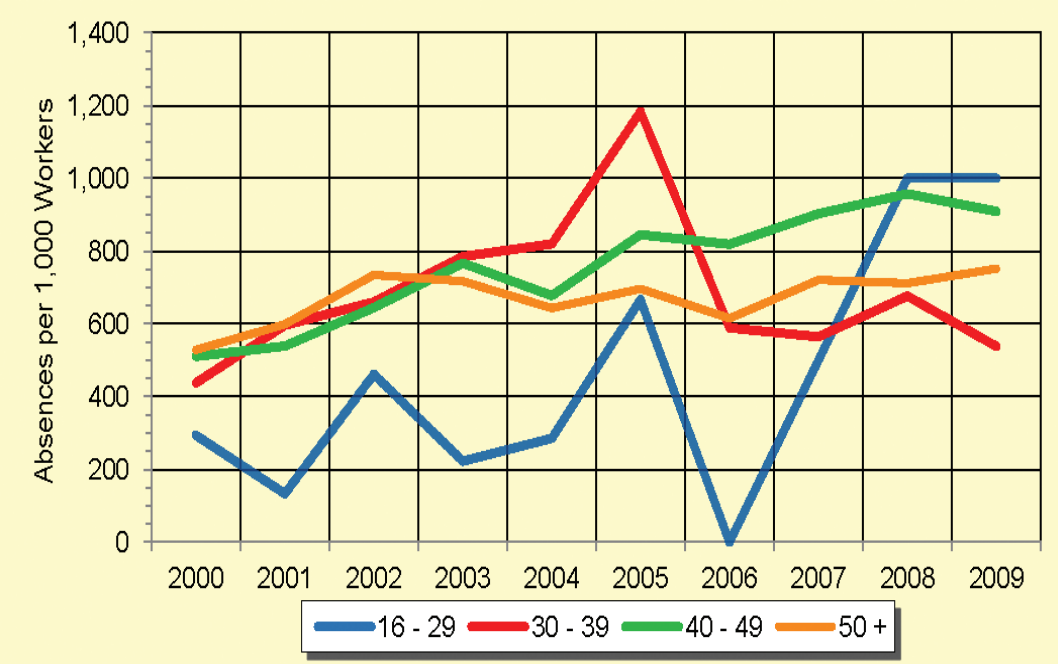


* Standardized to age distribution of 2000 U.S. population.

The absences rates among workers reporting hypertension differed by age group.

- Absence rates increased in all age groups for workers reporting hypertension over the 10-year period.
- The most dramatic increase in absence rates was among workers age 16-29 who reported hypertension.
- The steep decrease in the absence rate for 2006 among workers who reported hypertension and were less than 40 years old may have resulted from 2 events. One site began a wellness program with a focus on cardiovascular risk factors. Another site changed the way it reported absences resulting in a decrease in health conditions reported.

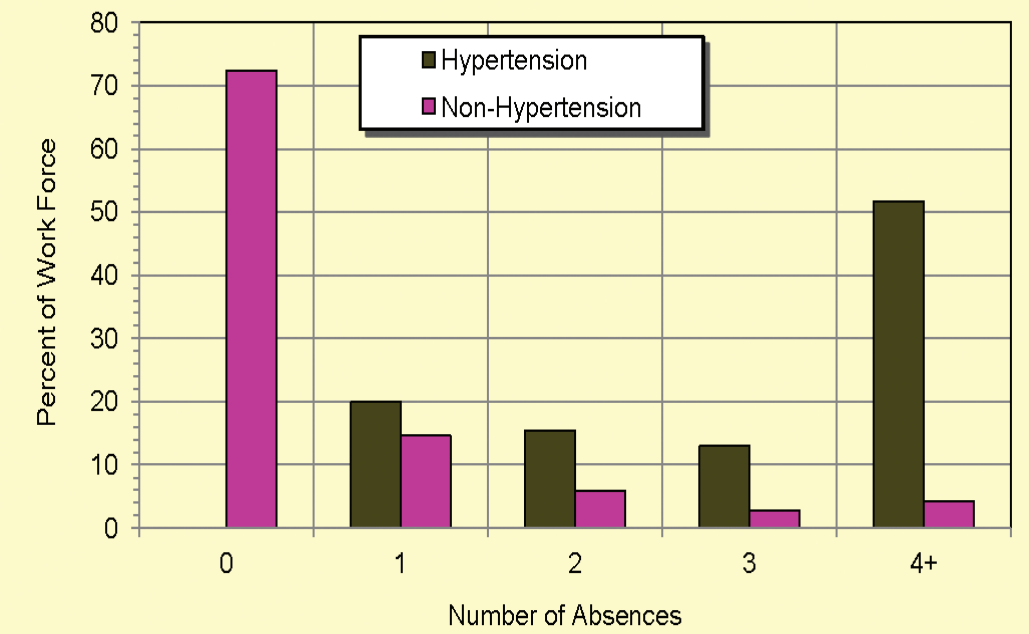
Absence Rates by Age Group Among Workers Reporting Hypertension



Workers who reported hypertension had an average of 132 calendar days absent compared with 18 calendar days for workers who did not report hypertension.

- More than 70 percent of workers who never reported hypertension had no absences during the 10-years. More than half of all workers who reported hypertension had 4 or more absences of 5 or more calendar days.
- Workers with hypertension were more likely to report concomitant diagnoses of circulatory, endocrine/ metabolic, and other unspecified conditions.
- Studies in other populations have found similar results.

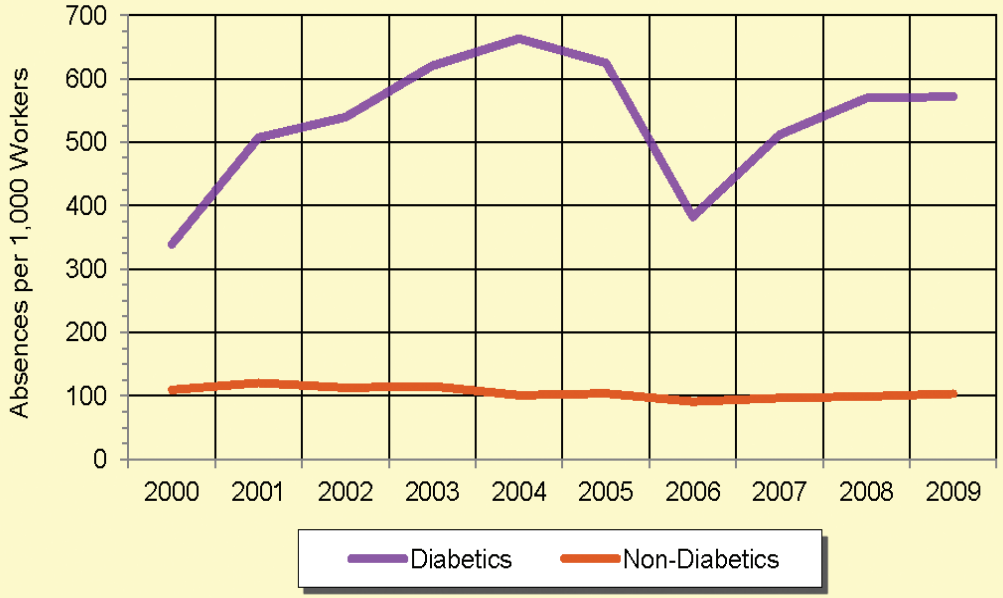
Number of Absences Among Workers Reporting Hypertension Versus Workers Not Reporting Hypertension



Age-adjusted absence rates were at least 3-5 times higher for workers reporting diabetes compared with workers not reporting diabetes.

- Age-adjusted absence rates increased among workers reporting diabetes.
- Age-adjusted absence rates remained steady among workers not reporting diabetes.
- Workers reporting diabetes also had a higher percentage of endocrine/metabolic, heart/circulatory, and nervous system disorders than those not reporting diabetes.
- Studies in other populations have found similar results.

Age-Adjusted Absence Rates Among Workers Reporting Diabetes Versus Workers Not Reporting Diabetes

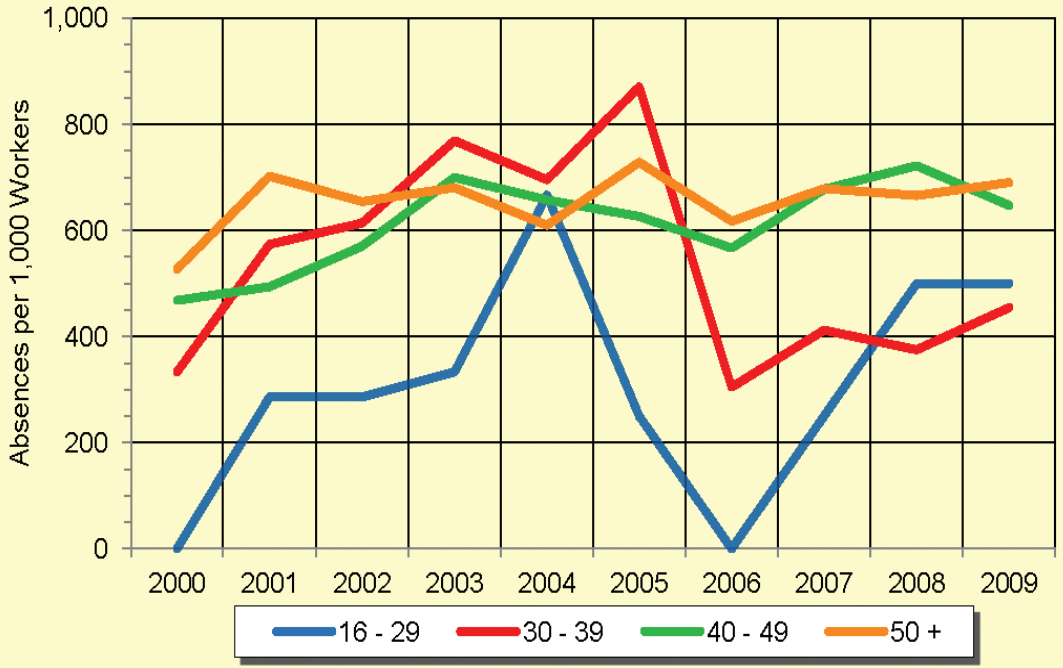


* Standardized to age distribution of 2000 U.S. population.

The absence rate among workers reporting diabetes varied by age group.

- Absence rates increased for workers reporting diabetes aged 40 and above.
- Workers in the oldest group, aged 50+, had the highest absence rates for most years from 2000 to 2009. The greatest increase in absence rates was among the youngest workers (16-29 years old).
- The steep decrease in the absence rate for 2006 among workers who reported diabetes and were less than 40 years old may have resulted from 2 events. One facility began a wellness program with a focus on diabetes. Another facility changed the way it reported absences resulting in a reduction in the number of health conditions reported.

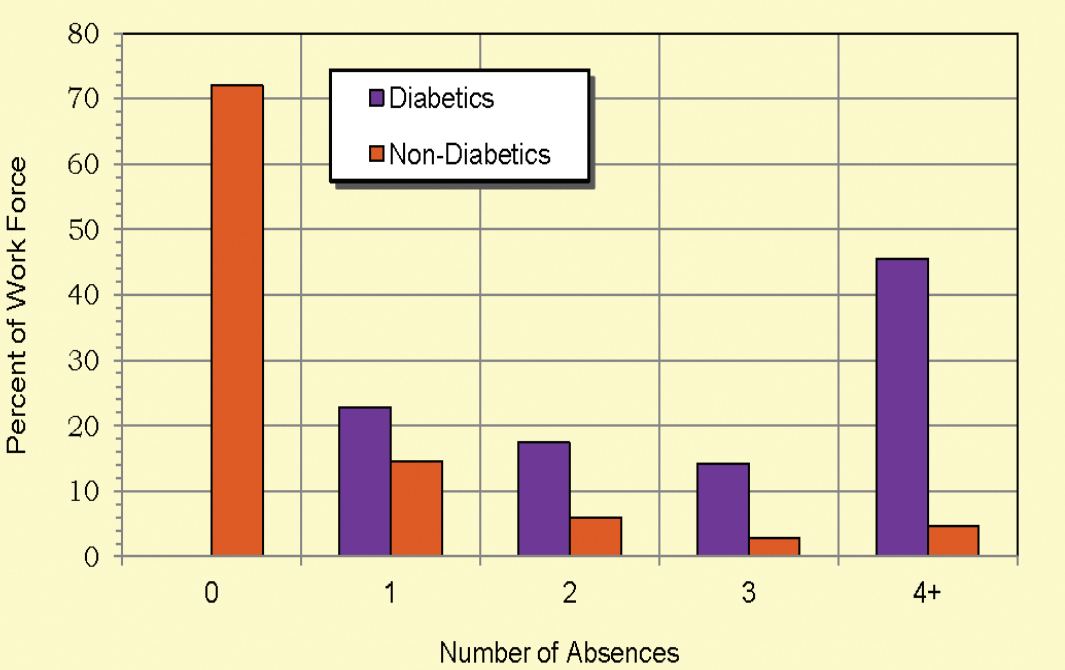
Absence Rates by Age Group Among Workers Reporting Diabetes



Workers reporting diabetes missed more work than workers not reporting diabetes.

- Diabetics missed, on average, 143 calendar days from work over the 10-year period compared with 19 calendar days among workers not reporting diabetes
- Seventy-two percent of workers who did not report diabetes had zero absences during the period, while 46 percent of workers who reported diabetes had 4 or more absences of 5 or more calendar days.

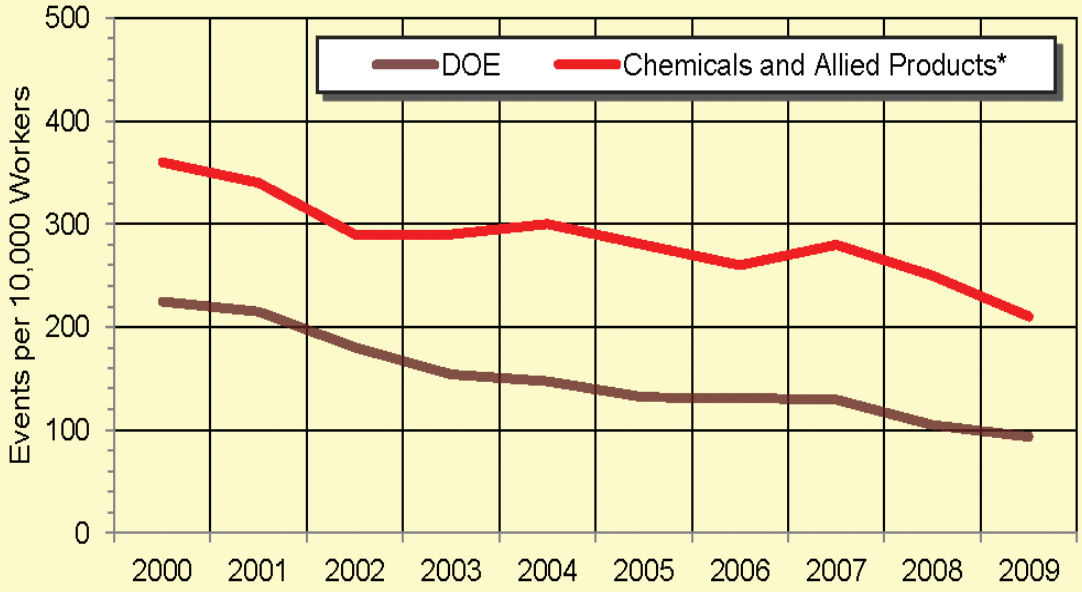
Number of Absences Among Workers Reporting Diabetes Versus Workers Not Reporting Diabetes



This report compares DOE OSHA rates to the Chemical and Allied Products sector (reported by the Bureau of Labor Statistics).

- DOE is a unique industrial complex. A review of Bureau of Labor Industries identified the Chemical and Allied Products sector as having similar occupational exposures to DOE, and was used as a comparison.
- OSHA-recordable events: (1) are determined to be work-related; (2) are counted even when no calendar days are lost from work; (3) count actual workdays lost or restricted, not calendar days, as with IISP return-to-work data (which include weekends and holidays).
- DOE Workers typically had OSHA-recordable events that were about half the rate of the Chemical and Allied Products sector.
- DOE OSHA-recordable rates declined 58 percent over the 10-year period, compared with a 42 percent decline in the Chemical and Allied Products sector.

Rates of OSHA Events by Industry Type



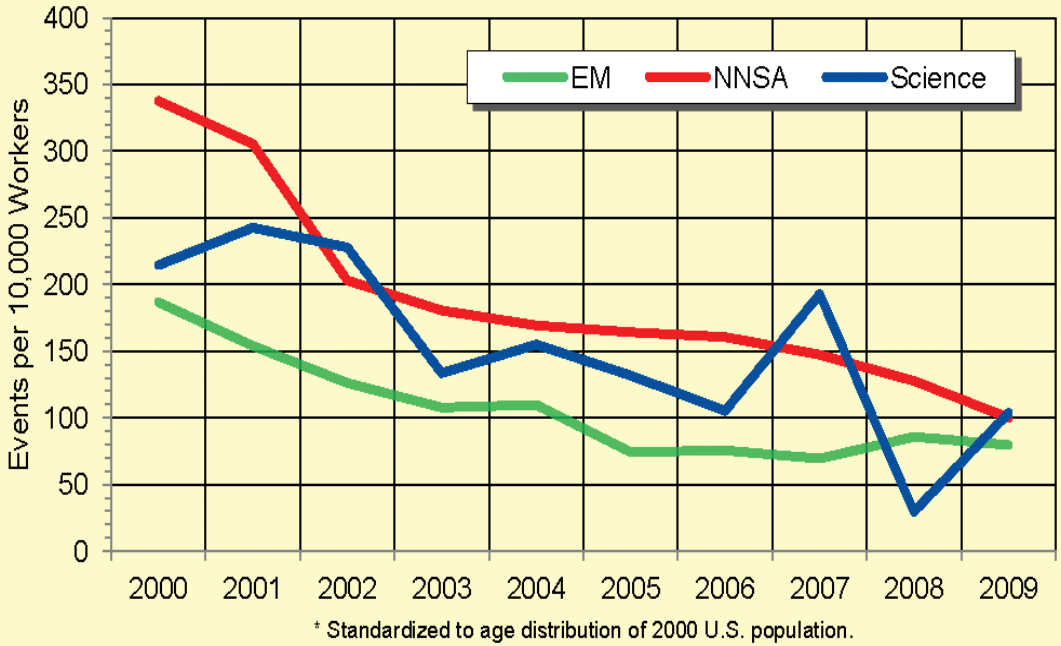
*Source: U.S. Department of Labor, Bureau of Labor Statistics.

OSHA-recordable event rates declined more than 50 percent for all EM, NNSA, and Science program offices from 2000 to 2009.

- The NNSA sites experienced the highest rates but had more than a 3-fold decrease in the rates over the period. The rates for Science sites declined 51 percent. EM sites generally had the lowest OSHA-recordable rates.

- OSHA events were responsible for 66,014 workdays lost and 108,437 workdays of restricted activity from 2000 to 2009.

Age-Adjusted Rates of OSHA Events by Program Office

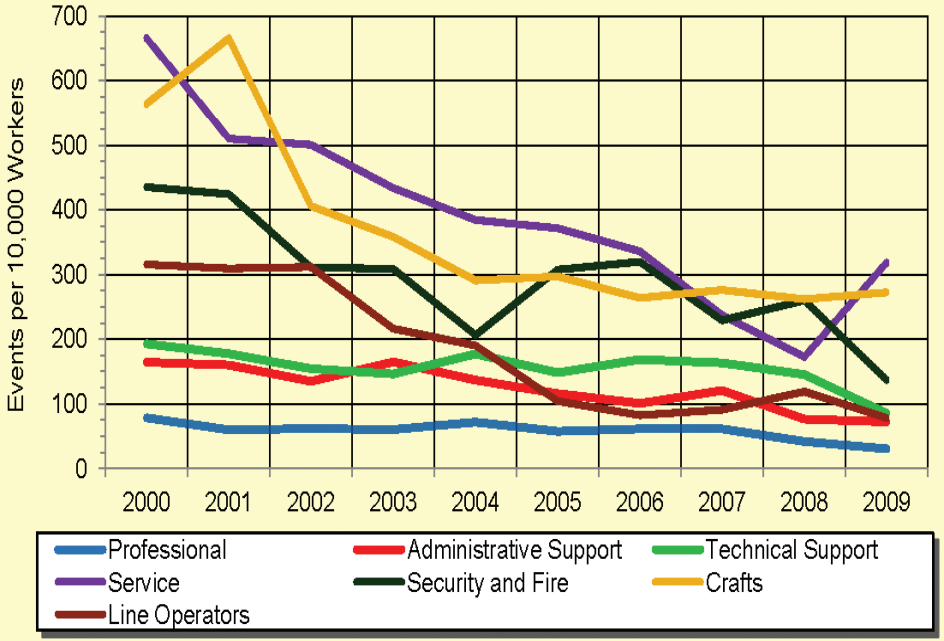


* Standardized to age distribution of 2000 U.S. population.

OSHA event rates declined by at least 50 percent for all DOE occupational groups.

- The highest OSHA event rates were reported by Service and Crafts Workers; however, they decreased by 50 percent over the period.
- The number of lost or restricted work days resulting from OSHA events was 32,844 days among Service Workers and 46,670 days among Craft Workers.
- Professional Workers had the lowest OSHA event rates for the 10-year period. Rates for these workers may be lower because of the nature of assigned job tasks (e.g., primarily desk jobs)
- Professional Workers had 14,796 lost or restricted work days as a result of OSHA events.

Age-Adjusted Rates of OSHA Events by Occupational Group

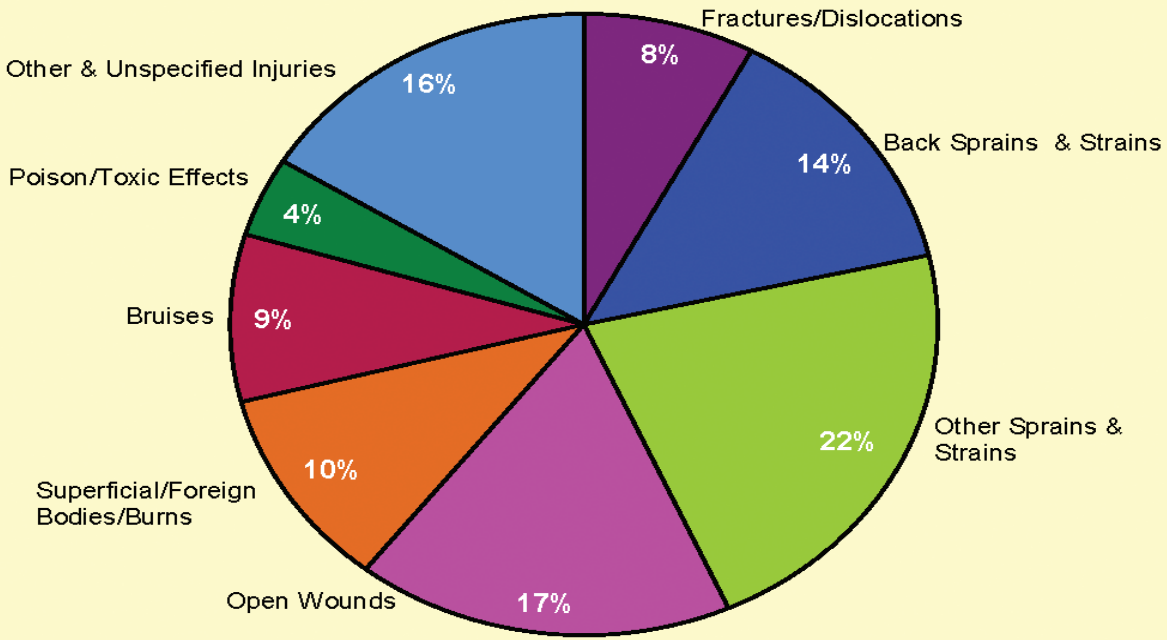


* Standardized to age distribution of 2000 U.S. population.

Injuries accounted for 56 percent of all OSHA-recordable event diagnoses. Sprains and strains and open wounds made up 53 percent of these injuries.

- The rate of OSHA-recordable events due to injuries declined 52 percent over the period.
- Declines in rates were noted in all types of injuries, with the largest declines for back sprains and strains, superficial injuries, bruises, and poison/toxic effects.
- The decline in rate of OSHA-recordable events may be due to the implementation of the DOE complex-wide Integrated Safety Management.

Distribution of Injuries Reported in OSHA Events

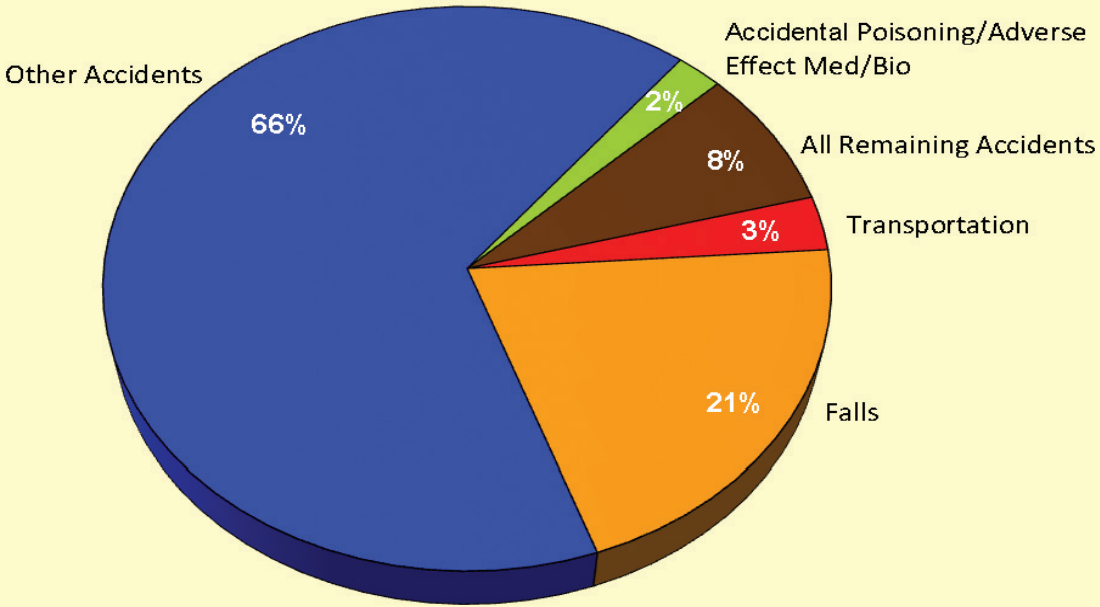


Two-thirds of the accidents resulting in occupational injuries came from "other accidents," such as overexertion or being struck by an object.

- Falls were the second most common type of accident and most commonly resulted in sprains and strains and bruises. Non-OSHA-recordable falls listed on the return-to-work clearance resulted in mainly fractures and sprains and strains.

- Sprains and strains and bruises were the most common injuries as the result of OSHA transportation accidents. Non-OSHA transportation accidents most commonly resulted in sprains and strains, fractures, and bruises.

Distribution of Types of Accidents Resulting in Injuries Among OSHA Events

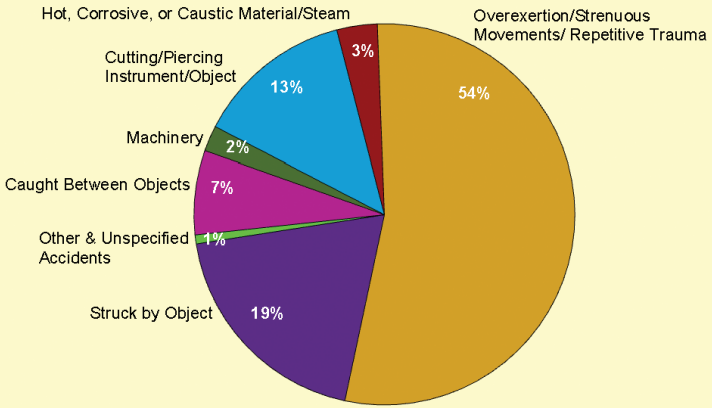
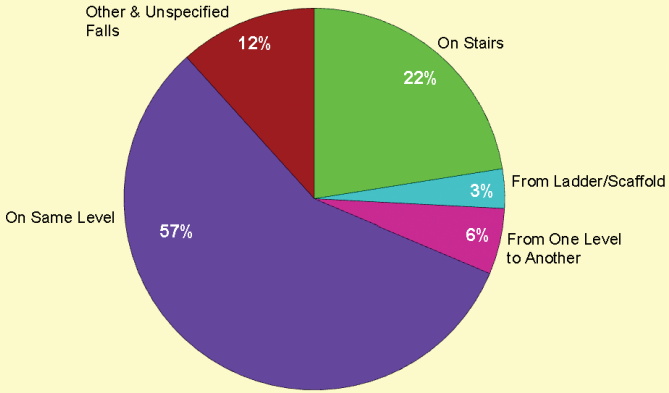


The category "overexertion/strenuous movements/repetitive trauma" was the most common type of occupational accident.

- The rate of accidents resulting from overexertion/ strenuous movements/repetitive trauma was more than twice that of the next most common type of accident, falls.
- Overexertion/strenuous movements/repetitive motion resulted in an average of 23 lost or restricted workdays per event.
- Falls most often resulted in an injury, while overexertion/strenuous movements/repetitive motion most often resulted in a musculoskeletal disorder.

Distribution of Types of Accidents Resulting in Injuries Among OSHA Events

Other Accidents



Falls