2002

Pantex Plant
Annual Illness and Injury Surveillance Report

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Additional information about the Department of Energy's Office of Epidemiology and Health Surveillance, the Illness and Injury Surveillance Program, and annual reports for DOE sites participating in this program can be found at:

www.eh.doe.gov/health/epi/surv

ACKNOWLEDGEMENT

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At A Glance

There were 1,434 absences among 815 women, resulting in an absence rate of 176 per 100 workers (1,434/815). There were 2,248 absences among 2,496 men, resulting in an absence rate of 90 per 100 workers (2,248/2,496). This represents over a 200 percent increase in the number of absences in 2002 compared with 2001 for both men and women. This increase is in addition to a greater than 350 percent increase in reported absences from 2000 to 2001. That increase resulted from the inclusion of absences lasting less than 5 days for the first time in 2001.

The risk of reporting an illness or injury diagnosis was at least 30 percent greater among workers in the Technical Support, Nuclear Specialties, and Production Technicians groups.

There were 2,106 diagnoses reported by female workers and 3,154 diagnoses reported by male Pantex workers in 2002. This represents a 285 percent increase among women and a 216 percent increase among men in the number of diagnoses reported in 2002 compared with 2001. The total number of calendar days lost due to illness and injury also showed an increase in 2002 compared with 2001: 24 percent for women and 89 percent for men. These increases are a continuation of a trend that began in 2001 with the reporting of all absences regardless of the number of days lost. Since 2000, the number of calendar days lost has increased 391 percent for women and 494 percent for men.

Among female and male workers, muscles and skeleton conditions, respiratory diseases, and unspecified symptoms accounted for half or over half of all reported diagnoses. In 2001, injuries were a top diagnosis for both males and females; however, this diagnosis was replaced by unspecified symptoms in 2002.

Eighteen definite sentinel health diagnoses were identified among Pantex workers in 2002. Three workers reported 5 diagnoses of chronic beryllium disease. The 13 other diagnoses, reported by 9 workers, were identified as 2 back disorders and 11 injuries.

There were 12 OSHA-recordable events among women and 35 OSHA-recordable events among men. Due to a greater emphasis on safety, the OSHA-recordable events decreased 61 percent for women and 52 percent for men from 2001.

A total of 47 OSHA events were recorded on the OSHA 200 Logs with 12 diagnoses among women and 37 diagnoses among men. Most of the diagnoses were a result of injuries.

Introduction

The U.S. Department of Energy's (DOE) commitment to assuring the health and safety of its workers includes the conduct of illness and injury surveillance activities that provide an early warning system for health problems among workers. The Illness and Injury Surveillance Program monitors illnesses and health conditions that result in an absence, occupational injuries and illnesses, and disabilities and deaths among current workers.

Illness and injury surveillance has been ongoing at Pantex since 1994. This report provides a summary of illness and injury surveillance data collected from the Pantex Plant from January 1, 2002 through December 31, 2002. The data were collected by a coordinator at Pantex and submitted to DOE's Illness and Injury Surveillance Data Center at Oak Ridge Institute for Science and Education, where quality control procedures and preliminary data analyses were performed. The analyses were interpreted and the final report prepared by the DOE Office of Epidemiology and Health Surveillance.

The information presented in this report provides highlights of the data analyses conducted on the 2002 data collected from Pantex. Earlier surveillance reports and additional supporting tables are posted on the Office of Epidemiology and Health Surveillance Web site (**www.eh.doe.gov/health/epi/surv**) or are available by request. The main sections of the report include: work force characteristics; absences due to illness or injury; workplace injuries, illnesses, and deaths that were reportable to the Occupational Safety and Health Administration ("OSHA-recordable" events); and disabilities and deaths among current workers. The 2002 report includes sections on time trends that provide comparative information on the health of the work force from 1994 to 2002.

Note: Starting in 2001, there was a change in how absences were counted that was different from past practices. Beginning that year, *all* reported absences due to illness or injury regardless of the length of absence were counted. Reports prior to 2001 only included absences of 5 or more consecutive workdays.

DOE sites vary by mission, function, job classification, and worker exposures. Therefore, comparisons of Pantex with other DOE sites should be made with caution. In addition, many factors can affect the completeness and accuracy of health information reported at the sites, thereby affecting the observed patterns of illness and injury.

Site Overview

The Pantex Plant, located on the Texas Panhandle 17 miles northeast of Amarillo, was constructed in 1942 to serve as a conventional bomb plant for the U.S. Army. The plant was deactivated when World War II ended and remained vacant until 1949 when Texas Technological University purchased the site for $1 for experimental cattle-feeding operations. The land was sold subject to recall under the National Security Clause, and the Atomic Energy Commission requested the Army to reclaim and reopen the site in 1951 in order to expand nuclear weapons assembly facilities. By 1975, the Pantex Plant became the only nuclear weapons assembly and disassembly plant in the U.S. With the downsizing of the DOE complex, the site assumed new responsibilities. Interim storage of plutonium pits was transferred to the plant in 1989 when a plutonium processing center was deactivated. With the easing of political tensions between the United States and the former Soviet Union in the 1990s, efforts began to reduce nuclear stockpiles. The disassembly of nuclear weapons at the Pantex Plant became a vital part of this operation.

Currently, the Pantex Plant has five primary operational missions: weapons assembly, weapons disassembly, evaluation of weapons, high explosive research and development, and interim plutonium pit storage. The *Final Environmental Impact Statement for the Continued Operations of the Pantex Plant and Associated Storage of Nuclear Weapons Components* was approved in January 1997 by then Secretary of Energy Hazel O'Leary. The Environmental Impact Statement authorized the Pantex Plant to maintain the plant's current dismantlement mission and increase onsite interim storage of plutonium components. It is anticipated that the plant will downsize as weapons dismantlement work decreases over the next 10 years.

In 2002, the Department of Energy honored the Pantex Plant with 17 Defense Programs Awards of Excellence. The awards honored teams across the Plant for their work on projects that increased efficiency, quality, and worker safety and that developed cutting-edge designs and plans for the future needs of the Plant.

The Pantex Plant industrial operations are conducted for the DOE by the management and operating contractor, BWXT Pantex. BWXT brings together the strengths of three premier companies: BWX Technologies, Honeywell, and Bechtel.

The Pantex Work Force - 2002

A total of 3,311 Pantex employees were included in illness and injury surveillance in 2002, 192 more workers than were present in 2001. The age and gender distribution of the 2002 work force is shown in Figure 1. There were 815 (25 percent) women and 2,496 (75 percent) men in the work force. The average age of male and female Pantex workers was 44 years of age. The majority of the workers were White (80 percent). Hispanics comprised 12 percent and African Americans 6 percent of the work force; Asians and Native Americans made up the remaining 2 percent.

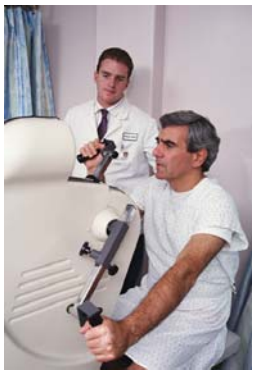
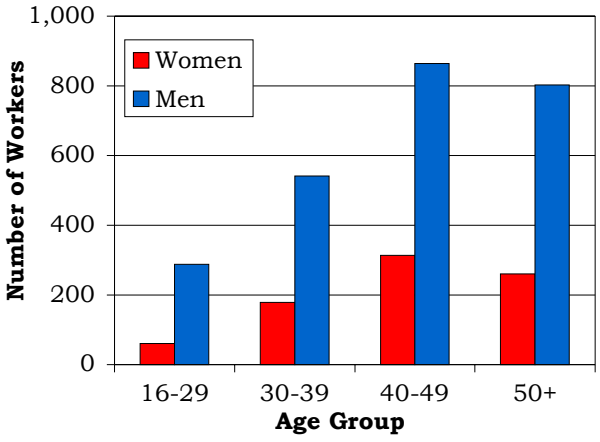


Figure 1. The Work Force by Gender and Age



The distribution of workers by job category and gender is shown in Figure 2. Individual job titles, as reported by Pantex, were grouped into 11 job categories because there were either too few workers or health events within a particular job title, limiting the analyses that could be conducted. Men and women were not distributed equally among the various job categories. Over half of the women (56 percent) were in the Office Management and Administration group, while slightly more than one-fourth of the men (26 percent) were part of this job category. The next largest group of male workers (22 percent) was the Security group.

Figure 2. The Work Force by Job Category and Gender

Job Category	Women	Men
Office Management & Administration	460 56%	661 26%
Engineering, Scientific, & Health Care	52 6%	312 13%
Technical Support	71 9%	213 9%
Heavy Computer Users	40 5%	58 2%
Service	29 4%	20 1%
Security	64 8%	544 22%
Craft & Repair	8 1%	241 10%
Fire Department	5 1%	33 1%
Nuclear Specialties	17 2%	34 1%
Production Technicians	49 6%	294 12%
Material Handlers	20 2%	86 3%

Number and Length of Absences

Illness and injury surveillance examines absences from work. It is based on DOE Order 440.1 that requires contractor management to notify Occupational Medicine when a worker has been absent for 5 or more consecutive workdays. If an absence on a Friday continues through Tuesday, the length of that absence includes the weekend. Starting with the 2001 data, *all* reported absences are now included in the data collection and analyses, regardless of the length of absence. All injuries and illnesses due to a work-related incident must also be reported.

Certain types of health events were excluded from the analyses. These include 7 absences due to maternity leave and 147 absences, reported by 57 men and 47 women, due to elective surgical procedures not related to the treatment of an illness or medical procedures to rule out a particular medical condition.

Throughout this report, analyses take gender, age, and occupation into account because the risk of illness and injury varies by these factors. All numbers in figures and calculations have been rounded to the nearest whole number.

As shown in Figure 3, the rate of absences due to injury or illness varied by gender and age. There were 1,434 absences among 815 women, resulting in an absence rate of 176 per 100 workers (1,434/815). There were 2,248 absences among 2,496 men resulting in an absence rate of 90 per 100 workers (2,248/2,496). This represents over a 200 percent increase in the number of absences in 2002 compared with 2001 for both men and women. This increase is in addition to a greater than 350 percent increase in reported absences from 2000 to 2001. That increase resulted from the inclusion of absences lasting less than 5 days for the first time in 2001. Because of the policy at Pantex that an absence of any length must be reported, the number of absences of short duration continued to increase in 2002. Over 18 percent of men and 34 percent of women reported at least 2 absences in 2002. In 2001, 6 percent of men and 10 percent of women reported more than 1 absence, while in 2000, less than 1 percent of men or women reported more than 1 absence. As a result of these reporting changes, 247 absences were reported in 2000 compared with 1,129 absences reported in 2001 and 3,682 in 2002. In 2002, the rate of absence increased with age among men and women.

Figure 3. Absence Rate by Gender and Age

Figure 4. Number of Days Absent by Gender and Age

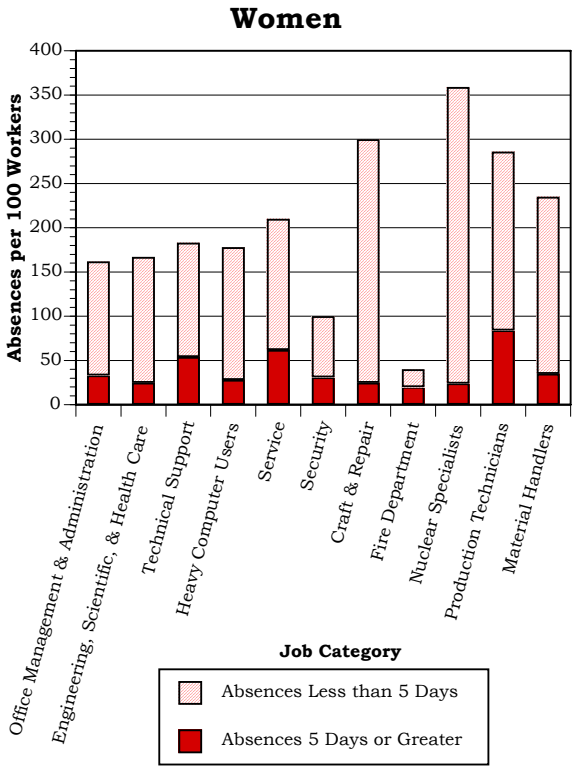
Gender	Age	Number of Absences		Number of Days Absent	
		< 5 Days	≥ 5 Days	Total	Average
Women	16-29	71	15	382	4
	30-39	203	71	1,459	5
	40-49	430	101	2,403	5
	50+	425	118	3,217	6
	Total	1,129	305	7,461	5
Men	16-29	151	39	850	4
	30-39	301	105	2,127	5
	40-49	547	225	4,972	6
	50+	632	248	8,872	10
	Total	1,631	617	16,821	7

The average length of absence by gender and age is shown in Figure 4. The average length of absence was 7 days for men and 5 days for women. The average duration of absence decreased 11 days for women and 5 days for men compared with 2001. Average length of absence increased with age among men and women.

As shown in Figure 5, the rate of absences due to illness or injury varied by job category for men and women. The absence rate was higher among women than men within the same job category except for workers in the Fire Department. Among men and women, Nuclear Specialties workers had the highest absence rate, 262 and 359 per 100 workers, respectively. The lowest rates were for Heavy Computer Users among men (45 per 100 workers) and Fire Department workers among women (40 per 100 workers).

The average duration of absence by job category and gender is shown in Figure 6. Women had the same length or shorter absences than men in each job category except the Service and Fire Department groups. For both men and women, the job categories that had the lowest absence rates had the longest absences and the job categories with the highest absence rates had the shortest absences. Men in the Heavy Computer Users group had an average length of absence of 13 days, while women in the Fire Department had absences averaging 14 days in length. Men and women in the Nuclear Specialties group had the shortest length of absences in 2002: 3 days and 2 days, respectively. Women in the Crafts and Repair group also had absences that averaged only 2 days in length.

Figure 5. Absence Rate by Job Category and Gender



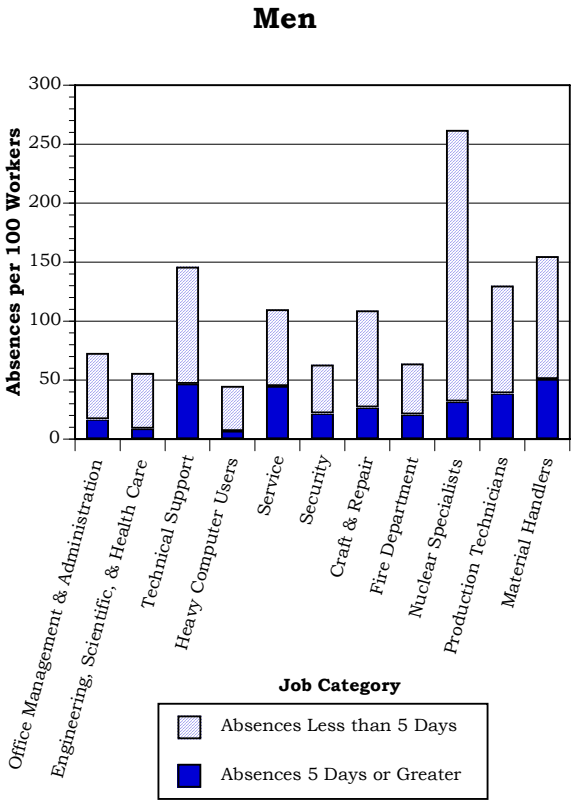
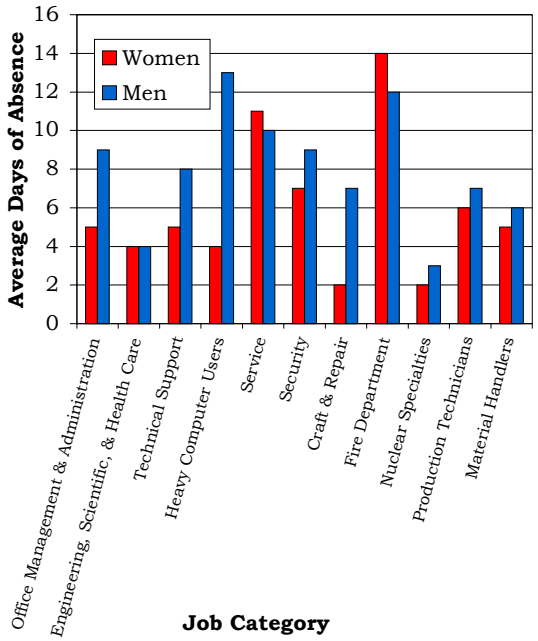


Figure 6. Average Duration of Absence by Job Category and Gender



Diagnostic Categories

Illness and Injury surveillance monitors *all* illnesses and injuries among active workers because it is not always possible to determine which health effects are due to occupational exposures and which are due to other causes. Most illness and injury diagnoses were reported to the occupational medicine clinic by workers who required return-to-work clearances. An absence due to illness or injury may involve more than 1 diagnosis, and illness and injury surveillance includes all reported diagnoses. In addition, the OSHA 200 Log provides information on recorded occupational injuries and illnesses whether or not they involve absences.

This report organizes illness and injury categories based on a standard reference, the *International Classification of Disease, 9th Revision, Clinical Modification* (ICD-9-CM). This reference is used to classify health events for statistical purposes. You can find specific health conditions in the Explanation of Diagnostic Categories at the back of this report.

The number of reported diagnoses categorized according to the ICD-9-CM and number of lost calendar days are presented in Figures 7a and 7b. Please note that the number of lost calendar days for each absence is counted more than once when multiple diagnoses occur in different diagnostic categories for the same absence. There were 2,106 diagnoses reported by female workers and 3,154 diagnoses reported by male Pantex workers in 2002. This represents a 285 percent increase among women and a 216 percent increase among men in the number of diagnoses reported in

2002 compared with 2001. The total number of calendar days lost due to illness and injury also showed an increase in 2002 compared with 2001: 24 percent for women and 89 percent for men. These increases are a continuation of a trend that began in 2001 with the reporting of all absences regardless of the number of days lost. Since 2000, the number of calendar days lost has increased 391 percent for women and 494 percent for men.

The most frequently reported diagnoses were the same for men and women. Among women, muscles and skeleton conditions (23 percent), respiratory diseases (17 percent), and unspecified symptoms (13 percent) accounted for over half of all reported diagnoses. Among male workers, about half of all reported diagnoses were due to muscles and skeleton conditions (18 percent), respiratory conditions (17 percent), and unspecified symptoms (12 percent). Major contributors to these diagnostic categories are shown in Figures 7c and 7d.

Figure 7a. Number of Diagnoses and Lost Calendar Days by Diagnostic Category (Categorized by ICD-9-CM) Among Women

Diagnostic Category	Women		
	Number of Diagnoses		Number of Lost Calendar Days
	<5 Days	≥ 5 Days	
Benign Growths	12	8	254
Blood	7	1	75
Cancer	37	8	224
Digestive	137	39	497
Endocrine/ Metabolic	49	15	338
Existing Birth Condition	0	0	0
Genitourinary	57	35	747
Heart/ Circulatory	61	21	383
Infections/ Parasites	53	11	230
Injury	110	57	1,182
Miscarriage	1	1	12
Muscles & Skeleton	383	97	2,681
Nervous System	173	33	1,052
Psychological	10	14	149
Respiratory	250	118	917
Skin	29	13	245
Unspecified Symptoms	235	31	867

Note: Lost calendar days for each absence are counted more than once when multiple diagnoses occur in different diagnostic categories for the same absence.

Figure 7b. Number of Diagnoses and Lost Calendar Days by Diagnostic Category (Categorized by ICD-9-CM) Among Men

Diagnostic Category	Men		
	Number of Diagnoses		Number of Lost Calendar Days
	<5 Days	≥ 5 Days	
Benign Growths	29	6	112
Blood	25	7	299
Cancer	36	8	365
Digestive	203	92	1,830
Endocrine/ Metabolic	94	17	501
Existing Birth Condition	6	8	259
Genitourinary	56	25	401
Heart/ Circulatory	169	83	3,399
Infections/ Parasites	59	20	280
Injury	224	129	3,043
Miscarriage	NA	NA	NA
Muscles & Skeleton	389	170	4,926
Nervous System	207	66	2,048
Psychological	35	23	366
Respiratory	333	191	1,703
Skin	51	17	350
Unspecified Symptoms	297	79	2,577

Note: Lost calendar days for each absence are counted more than once when multiple diagnoses occur in different diagnostic categories for the same absence.

Figure 7c. Common Diagnoses Among Female Workers in 2002

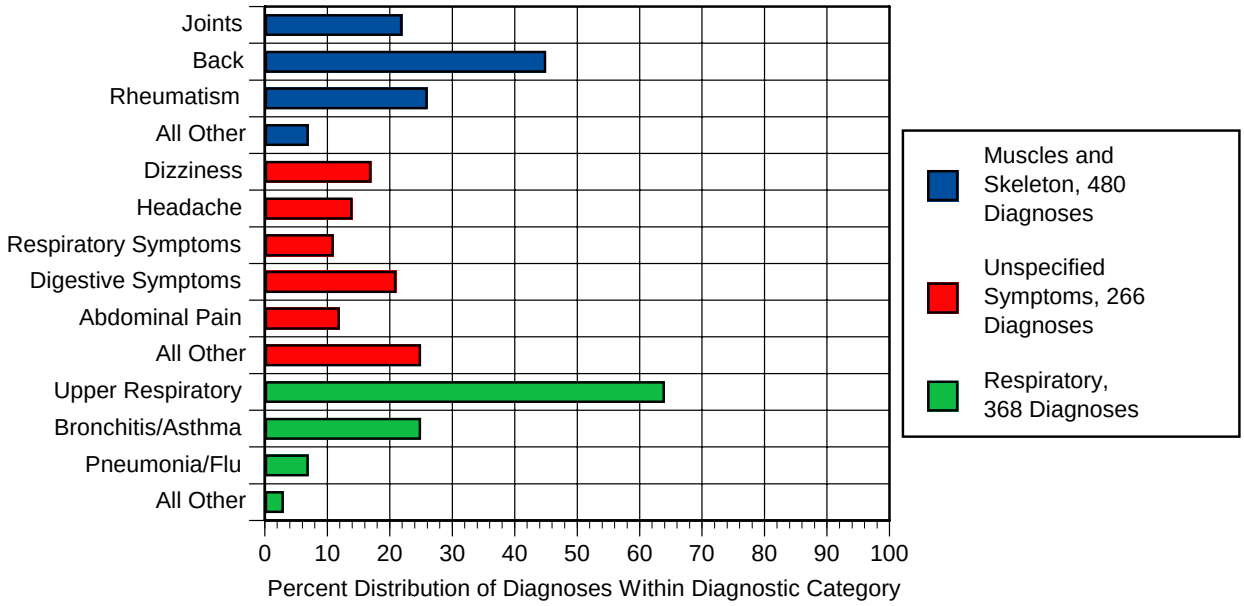
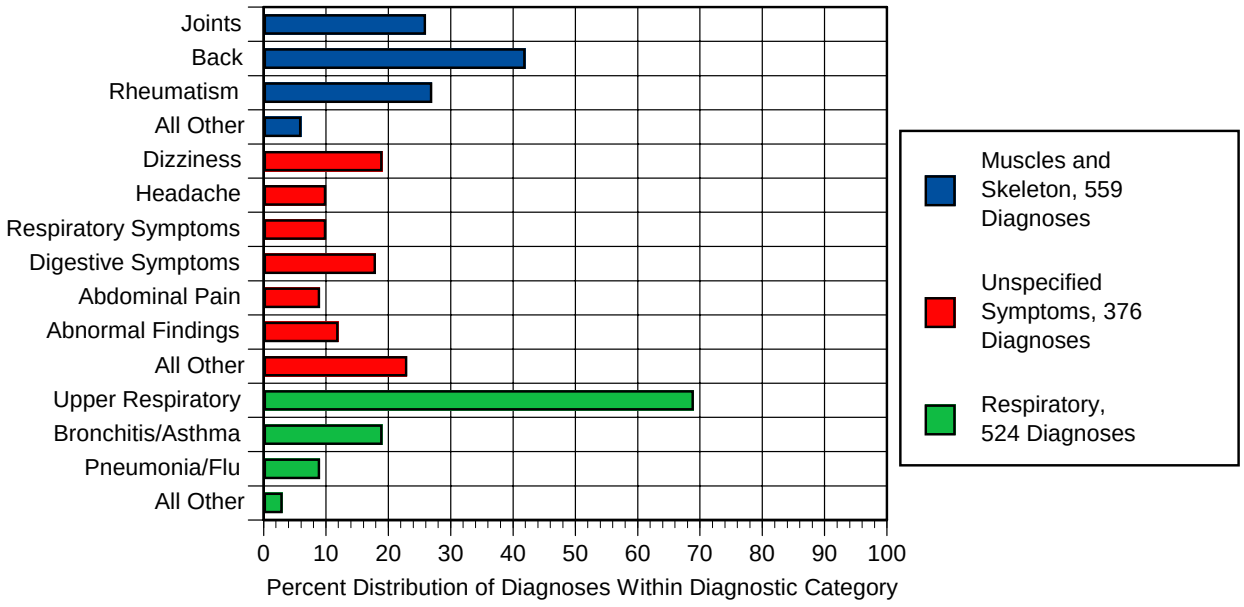


Figure 7d. Common Diagnoses Among Male Workers in 2002



The above diagnoses varied some by age for men and women. Respiratory diseases were among the most commonly reported diagnoses for both men and women in all age groups. Disorders of the muscles and skeleton were frequently reported among women and men 30 years of age and older. Among men under 30 years old and 40 to 49 years old, injuries were frequent diagnoses. Unspecified symptoms were commonly reported by men 30 to 39 and 50 or more years old. Among men under 30 years old, digestive disorders were common; 24 men reported 34 diagnoses. Diagnoses related to the teeth and to enteritis and colitis each accounted for 24 percent of the diagnoses, while stomach disorders accounted for 29 percent.

Figure 8 shows the frequency of reported diagnoses by job category for men and women. The 11 job categories defined for Pantex resulted in a small number of diagnoses reported in some categories. Among women and men, muscles and skeleton conditions, respiratory diagnoses, and unspecified symptoms were common among many job categories. Among female Material Handlers, the 17 cancer diagnoses were reported by 2 women and the 6 diagnoses for endocrine/metabolic disorders were reported by 1 woman.

Among the Pantex work force, 1 woman and 2 men reported 5 diagnoses for chronic beryllium disease (CBD) in 2002. They ranged in age from 38 to 42 years old. Each worker was in a different occupational group: Security, Nuclear Specialties, and Material Handlers.

Figure 8. Most Frequently Reported Diagnoses by Job Category and Gender

Job Category	Men	Women
Office Management & Administration	Unspecified Symptoms (107) Muscles & Skeleton (104) Respiratory (88)	Muscles & Skeleton (226) Respiratory (213) Unspecified Symptoms (133)
Engineering, Scientific, & Health Care	Unspecified Symptoms (49) Respiratory (41) Muscles & Skeleton (29) Nervous System (29)	Muscles & Skeleton (29) Unspecified Symptoms (23) Respiratory (14)
Technical Support	Muscles & Skeleton (94) Respiratory (70) Unspecified Symptoms (48)	Muscles & Skeleton (58) Respiratory (35) Nervous System (20)
Heavy Computer Users	Respiratory (12) Unspecified Symptoms (7) Nervous System (5)	Muscles & Skeleton (23) Unspecified Symptoms (21) Respiratory (13)
Service	Injury (7) Unspecified Symptoms (6) Muscles & Skeleton (5)	Muscles & Skeleton (41) Injury (9) Nervous System (9) Respiratory (9)
Security	Injury (86) Muscles & Skeleton (84) Respiratory (66)	Injury (28) Respiratory (15) Muscles & Skeleton (12)
Craft & Repair	Muscles & Skeleton (76) Respiratory (46) Injury (38)	Digestive (5) Genitourinary (5) Unspecified Symptoms (5) Muscles & Skeleton (4)
Fire Department	Muscles & Skeleton (15) Injury (6) Respiratory (4)	Genitourinary (1) Injury (1) Respiratory (1) Unspecified Symptoms (1)
Nuclear Specialties	Respiratory (28) Unspecified Symptoms (21) Digestive (18)	Unspecified Symptoms (27) Respiratory (23) Digestive (12)
Production Technicians	Respiratory (131) Muscles & Skeleton (106) Nervous Symptom (63)	Muscles & Skeleton (62) Respiratory (38) Unspecified Symptoms (22)
Material Handlers	Muscles & Skeleton (39) Respiratory (37) Injury (27)	Cancer (17) Muscles & Skeleton (14) Digestive (6) Endocrine/Metabolic (6) Respiratory (6)

Note: Numbers in parentheses represent the number of reported diagnoses.

Rates of Disease Occurrence

A Word about Rates: The previous section considered the number of absences and health conditions among various worker groups. For example, Figures 7a and 7b show that men reported 353 diagnoses and women reported 167 diagnoses involving injuries. Men, therefore, reported over 2 times more injuries than women. Does this mean that men were at greater risk of injuries compared with women in 2002? To correctly answer that question, the total number of men and women in the work force must be considered. To compare risk among men and women, it is necessary to calculate the rate of injuries for each gender. Rates are calculated by dividing the number of injury diagnoses in a given gender by the total number of employees of that gender. Multiply this number by 1,000 to get the diagnosis rate per 1,000 workers. For example:

353 injury diagnoses ÷ 2,496 men =
.141 x 1,000 = 141 injury diagnoses per 1,000 men

167 injury diagnoses ÷ 815 women =
.204 x 1,000 = 204 injury diagnoses per 1,000 women

Comparing these rates now correctly suggests that the rate of reported injuries among women is over 40 percent greater than the rate among men. They are called **crude rates** because they do not account for possible differences between men and women such as age and other factors that might affect the individual's risk of having an injury. Because age is so strongly related to the risk of disease and injury, epidemiologists almost always take age into account when comparing groups. This is done by using age-specific categories or by statistical methods of adjustment.

The diagnosis rate, also called the illness and injury rate, is the number of occurrences of a given disease or health condition observed over the course of a year per 1,000 workers at risk of getting that condition (see shaded box). One health condition, arthritis for example, may result in several absences over a year. Conversely, 1 absence may be associated with multiple diagnoses (e.g., the flu and a sprained wrist) recorded for illness and injury surveillance.

In the following analyses, the 4 age groups previously used were collapsed into 2 groups: workers younger than 50 years of age and those 50 and older. In addition, the 11 job categories were combined into 4 larger groups. The rates of all illnesses and injuries combined are presented in Figure 9. Four groups of diagnoses of particular interest to workers are presented in Figure 10: cancer, heart/circulatory system, respiratory system, and injury.

Figure 9. Rates for All Illnesses and Injuries Combined by Job Category, Gender, and Age

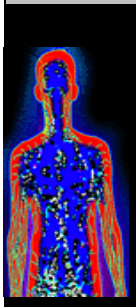
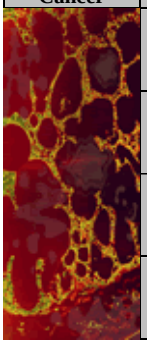
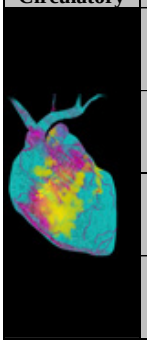
Diagnostic Category	Rate per 1,000			
All Illnesses & Injuries Combined	Job Category	Age	Men	Women
	Office Management & Administration /Heavy Computer Users	<50	906	2,114
		50+	1,122	2,932
	Engineering, Scientific, & Health Care/ Technical Support	<50	1.177	1,949
		50+	1,611	5,292
	Service/Security/Craft & Repair/Fire Department	<50	916	1,765
		50+	1,461	2,619
	Nuclear Specialties/ Production Technicians /Material Handlers	<50	1,822	4,452
		50+	2,744	3,792

Figure 10. Rates for Selected Diagnostic Categories by Job Category, Gender, and Age

Diagnostic Category	Rate per 1,000			
Cancer	Job Category	Age	Men	Women
	Office Management & Administration/Heavy Computer Users	<50	12	36
		50+	64	83
	Engineering, Scientific, & Health Care/ Technical Support	<50	6	0
		50+	0	42
	Service/Security/Craft & Repair/Fire Department	<50	8	0
		50+	5	0
	Nuclear Specialties/ Production Technicians /Material Handlers	<50	13	145
		50+	68	333

Diagnostic Category	Rate per 1,000			
Injury	Job Category	Age	Men	Women
	Office Management & Administration/Heavy Computer Users	<50	120	172
		50+	75	156
	Engineering, Scientific, & Health Care/ Technical Support	<50	147	152
		50+	96	458
	Service/Security/Craft & Repair/Fire Department	<50	164	353
		50+	161	429
	Nuclear Specialties/ Production Technicians /Material Handlers	<50	162	226
		50+	239	208

Diagnostic Category	Rate per 1,000			
Heart / Circulatory	Job Category	Age	Men	Women
	Office Management & Administration/Heavy Computer Users	<50	42	23
		50+	142	208
	Engineering, Scientific, & Health Care/ Technical Support	<50	15	30
		50+	237	417
	Service/ Security/Craft & Repair/Fire Department	<50	71	12
		50+	187	95
	Nuclear Specialties / Production Technicians /Material Handlers	<50	71	161
		50+	316	375

Diagnostic Category	Rate per 1,000			
Respiratory	Job Category	Age	Men	Women
	Office Management & Administration/Heavy Computer Users	<50	127	461
		50+	156	438
	Engineering, Scientific, & Health Care/ Technical Support	<50	226	394
		50+	187	417
	Service/Security/Craft & Repair/Fire Department	<50	129	259
		50+	176	190
	Nuclear Specialties/ Production Technicians /Material Handlers	<50	492	903
		50+	427	458

The rates for all illnesses and injuries combined were higher for male Pantex workers aged 50 and older compared with males younger than 50. Among females, rates were also higher among older workers, with the exception of the Nuclear Specialties/ Production Technicians/Material Handlers group. Women had higher rates than men in all job categories regardless of age. The highest rates for men and women were workers classified as Nuclear Specialties/ Production Technicians/Material Handlers. Among men, the lowest rates were for workers in the Office Management and Administration/ Heavy Computer Users group and among women for workers in the Service/Security/Craft and Repair/Fire Department.

Cancer rates presented in this report are based on reported absences during the year. A worker may experience several periods of absence from 1 cancer diagnosis due to medical

complications or treatment regimens. Each absence results in a separate report of a cancer diagnosis; however, it does not imply that this is a new cancer. The cancer rates in this report are not comparable to the *incidence rates* frequently published in many articles on cancer with which you may be familiar. *Cancer incidence rates* are based on the number of new cancer cases diagnosed within a given time, usually a year.

The likelihood that an individual in the U.S. will develop cancer increases with age. Our data tend to reflect this observation among women. Twenty men reported 42 absences due to cancer. Nine men reported skin cancer, 3 reported prostate cancer, 2 reported colon cancer, and 1 man each reported cancer of the mouth, thymus, and thyroid. Three men reported multiple cancers: prostate cancer that spread to the bone, prostate and skin cancer, and bladder and skin cancer. Four men had previously reported cancer at the same site: prostate, skin, thyroid, and thymus. Three men reported the cancer in 2001 and one in 1999.

Among the 20 men who reported cancer in 2002, 11 men reported 19 absences involving skin cancer. Only 2 absences lasted more than 5 days: 6 days and 29 days. The worker absent for 29 days also reported prostate cancer in the same absence. No association was seen for age or occupational group and the reporting of skin cancer.

Among the 9 women reporting cancer, 45 absences for cancer were reported. Four women had only 1 absence, and 5 women accounted for 41 absences. Five women had breast cancer. The following cancers were each reported by 1 woman: larynx, malignant melanoma, skin, and thyroid. Four women reported cancer at the same site in 2001.

Not unexpectedly, workers aged 50 and older had the highest rates of heart/circulatory problems. Men and women categorized as Nuclear Specialties/Production Technicians/ Material Handlers workers had the

highest rates of heart/circulatory disorders. Ninety-seven of the 159 men reporting heart/circulatory disorders were aged 50 and older; 62 percent of the 162 diagnoses among these older workers involved hypertension or ischemic heart disease (restricted blood flow through an artery). Eighty-two diagnoses for heart/circulatory problems were reported among women; over half were for hypertension or ischemic heart disease. Production Technicians were at 60 percent greater risk of reporting a heart/circulatory condition compared with workers in other occupational categories.

Younger women tended to have higher rates of respiratory disease. Among men, there was no relationship with age and the reporting of a diagnosis for respiratory disease. Workers in the Nuclear Specialties/ Production Technicians/ Material Handlers group had the highest rates among both men and women; this was also true in 2001. Compared with other Pantex workers, Production Technicians were twice as likely and Nuclear Specialties workers 3 times as likely to report a respiratory diagnosis.

Younger men tended to have a higher rate of injury diagnoses compared with men aged 50 and older in the same job category. No association with age was shown among women. The highest rates of injury were in the Service/Security/Craft and Repair/Fire Department category for women and the Nuclear Specialties/ Production Technicians/Material Handlers category for men. Workers in the Technical Support group were almost twice as likely as other groups to report an injury diagnosis. Sprains and strains other than to the back were over twice as likely among Technical Support workers. Service workers were at almost 6 times the risk of other workers for reporting complications from medical care. Security workers were at least 4 times as likely to report a bruise or complications and unspecified injuries. Craft and Repair workers were at almost 7 times greater risk of an open wound to the head, neck, or trunk. Nuclear Specialties workers reported unspecified effects from external causes over 7 times more often than workers in other occupational categories.

In a different set of analyses, the risk of illness and injury among workers classified in 1 job category was compared with the risk to workers in the other 10 job categories. The risk of reporting an illness or injury diagnosis was at least 30 percent greater among workers in the Technical Support, Nuclear Specialties, and Production Technicians groups. Technical Support workers had almost twice the risk of reporting an endrocrine/metabolic/ immunity or a nervous system diagnosis and over 3 times the risk of reporting a psychological disorder compared with workers in other job categories. Muscles and skeleton disorders were reported over twice as often among Service workers. Craft and Repair workers reported conditions of the muscles and skeleton almost twice as often and psychological disorders over twice as often as other workers. Nuclear Specialties workers had at least 3 times the risk of an infectious disease, skin condition, endocrine/metabolic/

immunity or digestive system disorder, or unspecified condition and twice the risk of a muscles and skeleton disorder. Psychological disorders and skin conditions were reported 2 to 3 times more often and nervous system disorders, muscles and skeleton disorders, and unspecified symptoms were reported over 50 percent more often by Production Technicians. Material Handlers were over 4 times more likely to report a blood disorder and about twice as likely to report disorders of the digestive and muscles and skeleton systems compared with workers in other job categories.

Time Trends

Why Are Rates Age-Adjusted?

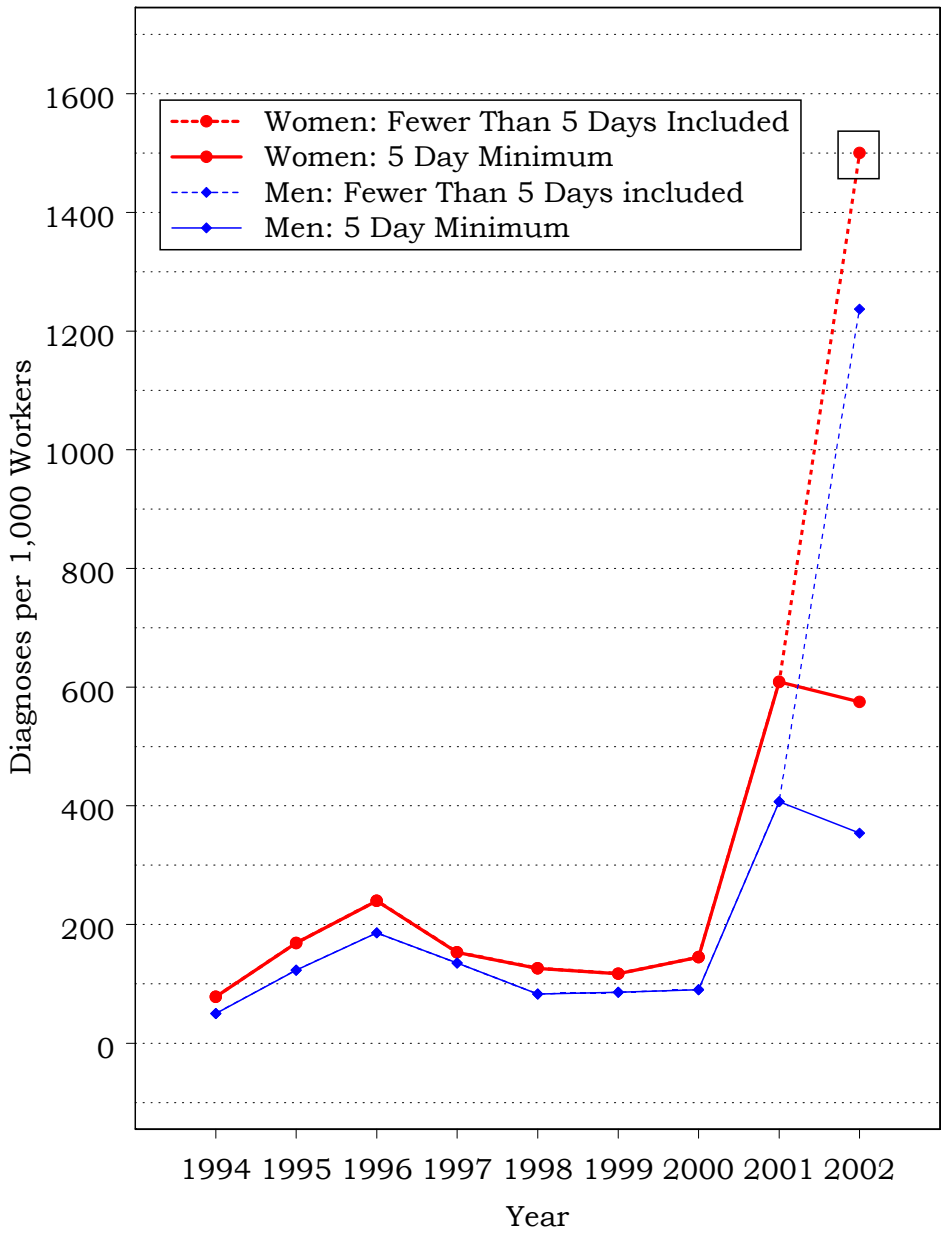
The illness and injury rates in this section of the report are **age-adjusted**. Differences in the age composition among groups of workers are taken into consideration in the analyses and 1 rate is calculated for an entire group. This allows us to make comparisons between different groups of different ages. Age-adjusted rates are calculated using the age distribution of the 1970 U.S. population as a reference.

Age-adjusted rates for all diagnoses combined and selected diagnostic categories from 1994 to 2002 are presented in Figures 11 and 12, respectively. It is important to note that the age-adjusted rates for the year 1994 presented in this report differ from the rates presented in the *1994 Annual Epidemiologic Surveillance Report* due to the elimination of health conditions resulting from maternity leave.

The rate of diagnoses for 2002 increased significantly for both men and women. The large increase in the 2001 rates resulted from changes in how absences were counted (Figures 11 and 12). The increases in the rates from 2001 to 2002 were even larger than the increases from 2000 to 2001. Other than an increased ability to capture all absences, the reason for this continued increase is unclear.

The age-adjusted rates of illness and injury by job category for the past 9 years are shown in Figure 13. The 2002 rates for men in all job categories increased to the highest rates over the 9-year period. With the exception of the Fire Department group, the same increase in the rates was shown for women. The reason for the rate increases is the same as noted above. Among women, there were only 5 workers in the Fire Department group. Such a small number of workers in a job category can result in large changes in a rate from one year to the next.

Figure 11. Age-Adjusted Rates for All Diagnoses Combined Among Women and Men from 1994 to 2002



Note: The 2002 rate for women was truncated to 1,500 (☐) for graphical presentation. The actual rate was 2,544.

Figure 12. Age-Adjusted Rates for Selected Diagnostic Categories Among Women and Men from 1994 to 2002

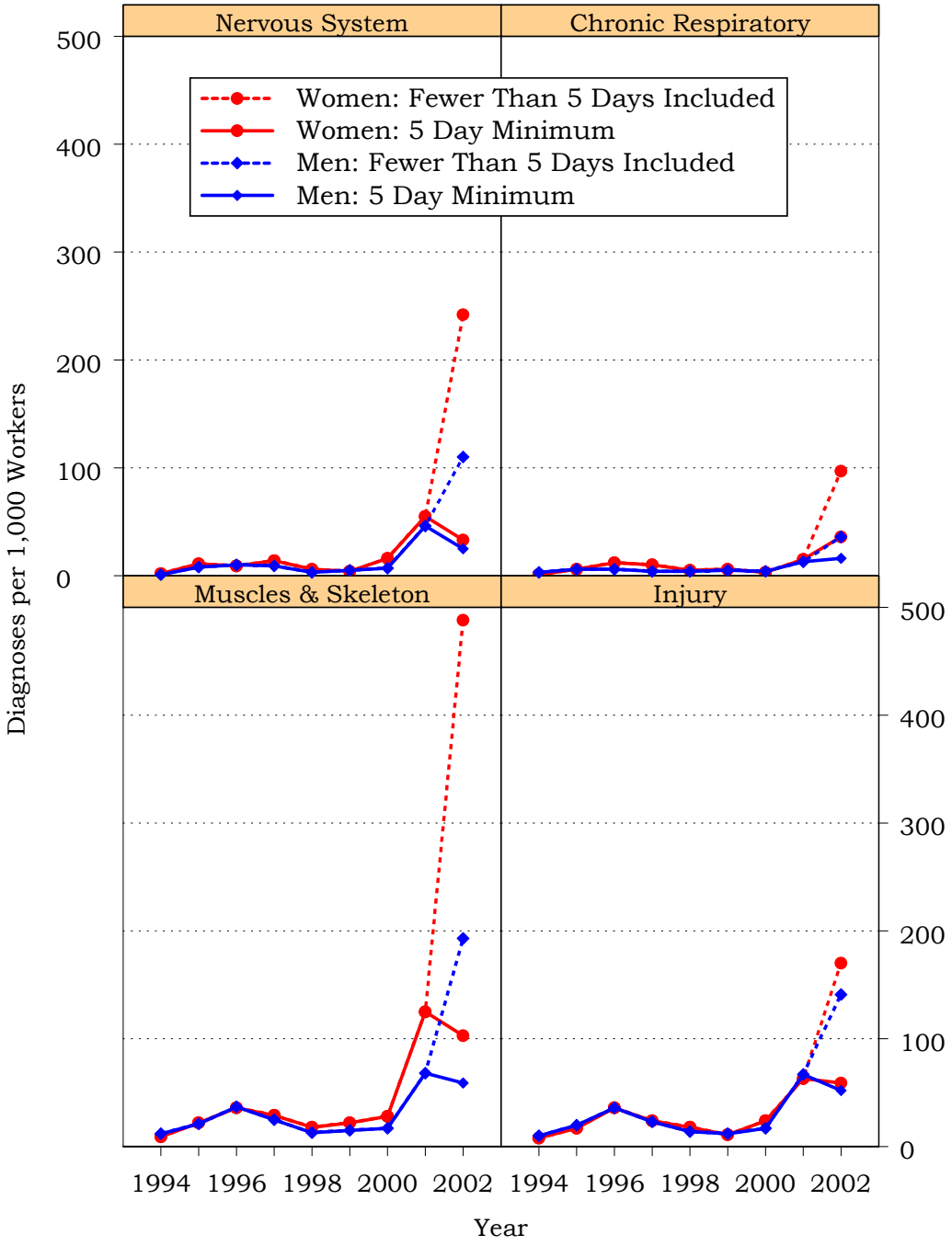
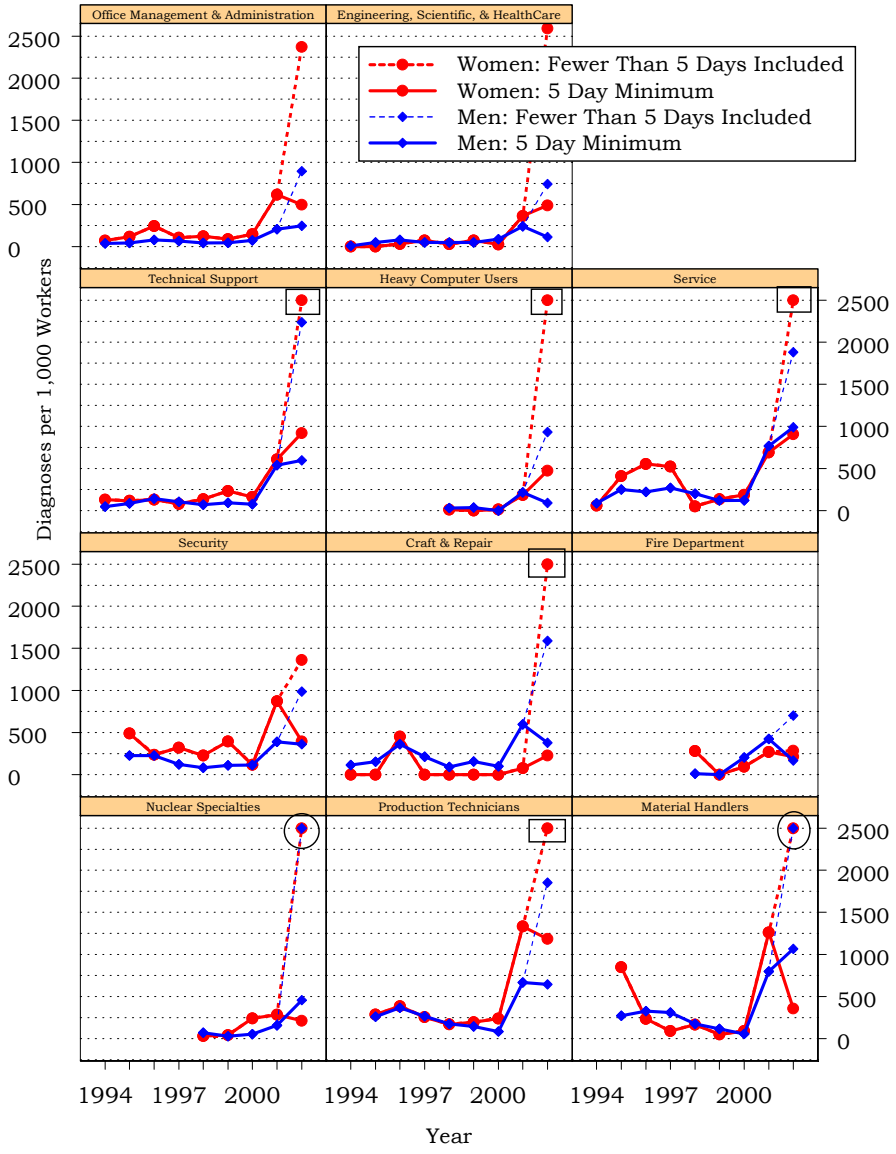


Figure 13. Age-Adjusted Rates for All Diagnoses Combined Among Women and Men by Job Category from 1994 to 2002



Note: Security, Nuclear Specialties, Production Technicians, and Material Handlers job category employees were included in various job categories in 1994. Heavy Computer Users job category employees were included in the Office Management & Administration job category 1994 through 1997. Fire Department job category employees were included in the Service job category 1994 through 1997. Nuclear Specialties job category employees were included in the Production Technicians job category 1995 through 1997. The 2002 Technical Support, Heavy Computer Users, Service, Craft & Repair, and Production Technicians rates for women were truncated to 2,500 (□) for graphical presentation. The actual rates were as follows: Technical Support, 3,253; Heavy Computer Users, 3,641; Service, 3,123; Craft & Repair, 3,145; and Production Technicians, 3,894. The 2002 Nuclear Specialties and Material Handlers rates for women and men were truncated to 2,500 (O) for graphical presentation. The actual rate for Nuclear Specialties was 3,738 and, 3,456 for women and men, respectively; the actual rate for Material Handlers was 3,125 and 2,823 for women and men, respectively.

Sentinel Health Events for Occupations

A sentinel health event for occupation (SHEO) is a disease, disability, or death that is likely to be occupationally related. Its occurrence may serve as a warning signal that materials substitution, engineering control, personal protection, or medical care may be required to reduce the risk of injury or illness among the work force. Sixty-four medical conditions associated with workplace exposures from studies of many different industries have been identified as sentinel health events (refer to the Supporting Tables).

Although sentinel health events may indicate an occupational exposure, many may result from non-occupational exposures. Due to this uncertainty, sentinel health events are assessed in two categories:

Definite Sentinel Health Events: Diseases that are unlikely to occur in the absence of an occupational exposure. Asbestosis, a lung disease resulting from exposure to asbestos, is an example.

Possible Sentinel Health Events: Conditions such as lung cancer or carpal tunnel syndrome may or may not be related to occupation. Detailed occupational and non-occupational information is required to determine the work-relatedness of the illness. For example, lung cancer may result from asbestos exposure or smoking. Carpal tunnel syndrome may result from a job requiring typing or from a hobby such as playing the piano.

Eighteen definite sentinel health diagnoses were identified among Pantex workers in 2002. Three workers reported 5 diagnoses of chronic beryllium disease. The 13 other diagnoses, reported by 9 workers, were identified as 2 back disorders and 11 injuries. Four workers reported 6 absences resulting from sprains and strains of the lower leg and 1 worker reported an absence for a sprain and strain of the back. Additional events included 1 worker reporting a torn rotator cuff of the right shoulder; 1 worker with 1 absence for a fractured ankle; 1 worker reporting 2 absences for a back disorder; and 1 worker with 2 events involving an open wound of the leg. The 18 definite SHEO events accounted for 195 calendar days absent from work.

Thirty-two of 5,260 diagnoses (1 percent) were identified as possible sentinel health events (Figure 14). Eleven of the possible sentinel health diagnoses were identified as carpal tunnel syndrome, reported by 8 workers (4 women and 4 men), and resulted in 107 lost calendar days. Six of these employees were aged 50 years or older. Three of the workers were in the Technical Support job category and 1 each was in Office Management and Administration, Service, Craft and Repair, Nuclear Specialties, and Material Handlers job categories. Eight skin conditions were reported by 7 workers (4 men and 3 women) for a total of 40 lost calendar days. Four of the workers were in the Office Management and Administration job category, and 1 each was in the Craft and Repair, Production Technicians, and Technical Support job categories.

Figure 14. Characteristics of SHEOs by Gender

	Total Number of SHEO Diagnoses		Total Number of Days Absent	
	Men	Women	Men	Women
Definite	15	3	190	5
Possible	21	11	103	77
Total	36	14	293	82

Disabilities Among Active Workers

No disabilities were reported in 2002.

Deaths Among Active Workers

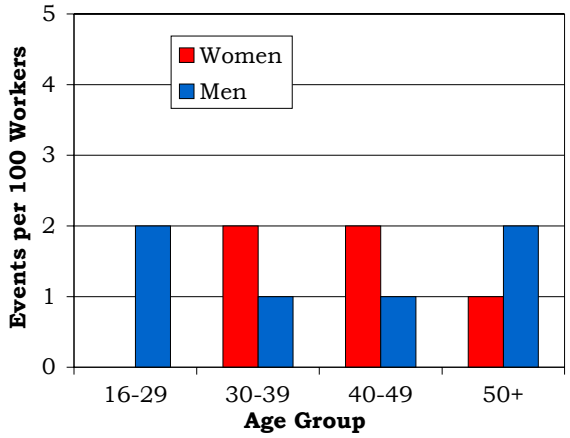
During 2002, 2 deaths occurred among Pantex workers. The deaths occurred among a man and a woman, both over 50 years old. The male was classified as a Production Technician and the female was an Office Management and Administration worker. The deaths were due to a heart/circulatory condition and injuries from a motor vehicle accident.

OSHA-Recordable Events

The Occupational Safety and Health Administration (OSHA) requires employers to maintain a record of occupational injuries and illnesses that have occurred among employees and to make that information available to OSHA on request. Employers maintain the information from these OSHA-recordable events in the OSHA 200 Log. OSHA-recordable events differ from health events captured through return-to-work clearances in at least 2 important respects: 1) they do not necessarily result in days lost from work, and 2) they are usually accompanied by a specific determination that they are work-related.

The distribution of OSHA events by gender and age is shown in Figure 15. There were 12 OSHA-recordable events among women and 35 OSHA-recordable events among men. Due to a greater emphasis on safety, the OSHA-recordable events decreased 61 percent for women and 52 percent for men from 2001. The rate of OSHA-recordable events was the same for men and women (1 per 100 workers). The average number of lost or restricted workdays among women was not related to age. Women aged 16-29 did not report any OSHA events. Among men, lost and restricted workdays increased with age among workers up to age 50.

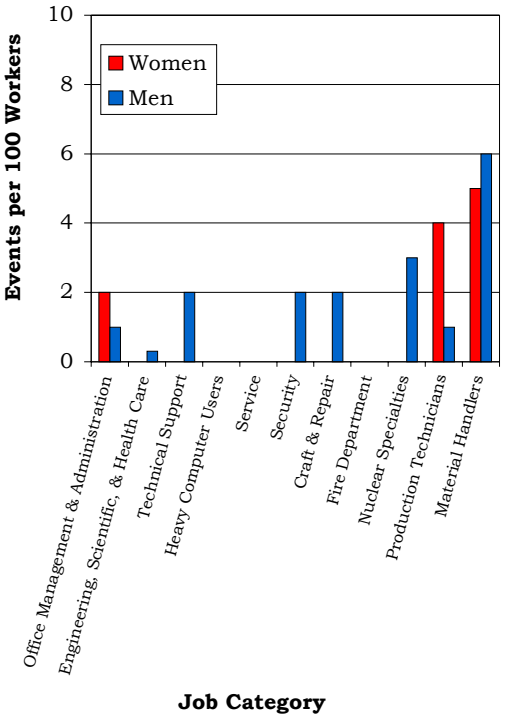
Figure 15. OSHA-Recordable Events by Gender and Age



The rate of OSHA-recordable events by job category and gender is shown in Figure 16. The highest rates of OSHA-recordable events were reported among Material Handlers for both men (6 per 100 workers) and women (5 per 100 workers). OSHA events were reported for women in only 3 job categories (Office Management and Administration, Production

Technicians, and Material Handlers). Men in the Heavy Computer Users, Service, and Fire Department occupational groups did not report any OSHA events.

Figure 16. OSHA-Recordable Events by Job Category and Gender



The average number of workdays lost or with restricted activity due to an OSHA event was 29 days for men and 23 days for women. Among men, Technical Support workers had the highest average number of lost and restricted workdays (57 days). The Office Management and Administration job category had the highest average number of lost or restricted workdays among women (28 days).

Diagnostic and Accident Categories for OSHA-Recordable Events

A total of 47 OSHA events were recorded on the OSHA 200 Logs with 12 diagnoses among women and 37 diagnoses among men as shown in Figure 17. Injuries accounted for 67 percent of the diagnoses reported by women; the most common injuries involved sprains and strains (50 percent), followed by bruises (25 percent). Among men, injuries accounted for 89 percent of the diagnoses reported, the most common being sprains and strains (45 percent), followed by open wounds (21 percent) and bruises (21 percent).

Figure 17. OSHA-Recordable Diagnoses by Diagnostic Category and Gender

Diagnostic Category	Gender	
	Women	Men
Muscles & Skeleton	1	3
Nervous System	3	1
Injury	8	33
Fractures – Lower Limb	0	1
Back Sprains & Strains	0	5
Other Sprains & Strains	4	10
Open Wounds – Head, Neck, Trunk	1	0
Open Wounds – Upper Limb	0	5
Open Wounds – Lower Limb	0	2
Superficial Injuries	0	1
Bruises	2	7
Foreign Bodies Entering Orifice	0	2
Unspecified Injuries	1	0

Forty-five of the 47 OSHA events were described as "an accident" in the OSHA logs (Figure 18). Over two-thirds (69 percent) of the reported accidents were among workers 40 years and older who made up about the same percentage (68 percent) of the work force. Fifty-five percent of the accidents occurred among workers in the Office Management and Administration (31 percent) and Security (24 percent) job categories, who made up about the same percentage of the work force.

Figure 18. OSHA-Recordable Accidents by Type and Gender

Accident Category	Gender	
	Women	Men
	Number of Accidents	Number of Accidents
Non-Motor Vehicle	0	1
Falls	3	7
Submersion/Suffocation/ Foreign Bodies	0	2
Other Accidents	9	23
Struck by an Object	1	5
Caught Between Objects	0	1
Cutting/Piercing Instrument/Object	0	4
Overexertion/Strenuous Movements	4	11
Repetitive Trauma	4	2
Total	12	33

Rates of OSHA-Recordable Events

The rates of all OSHA-recordable events for all diagnoses by age and job categories and gender are shown in Figures 19 and 20. The OSHA-recordable rates for both women and men were highest among Nuclear Specialties/Production Technicians/ Material Handlers. Most of the OSHA health conditions involved injuries. When the rate for OSHA-recordable injuries was considered separately, the same groups had the highest rates for men.

Figure 19. OSHA-Recordable Rates by Age and Job Categories Among Women, All Diagnoses Combined

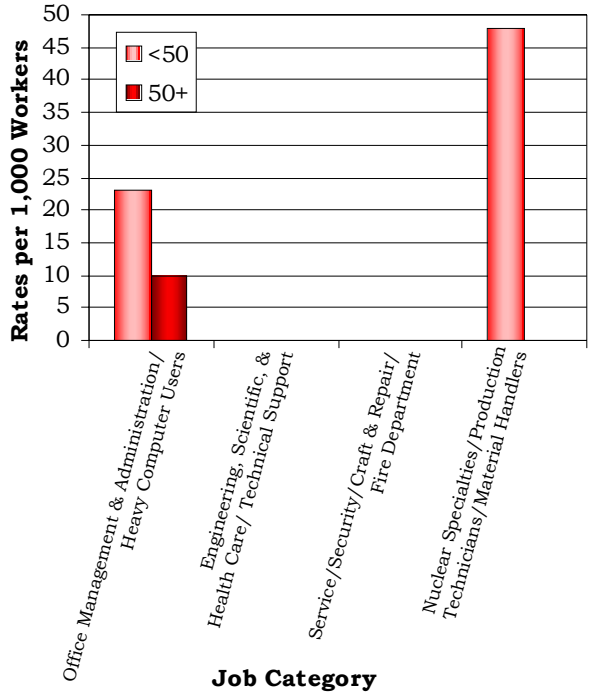
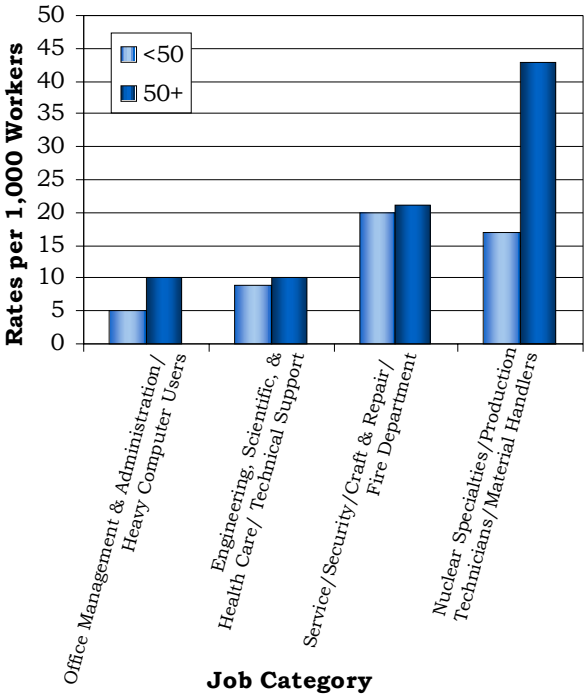


Figure 20. OSHA-Recordable Rates by Age and Job Categories Among Men, All Diagnoses Combined

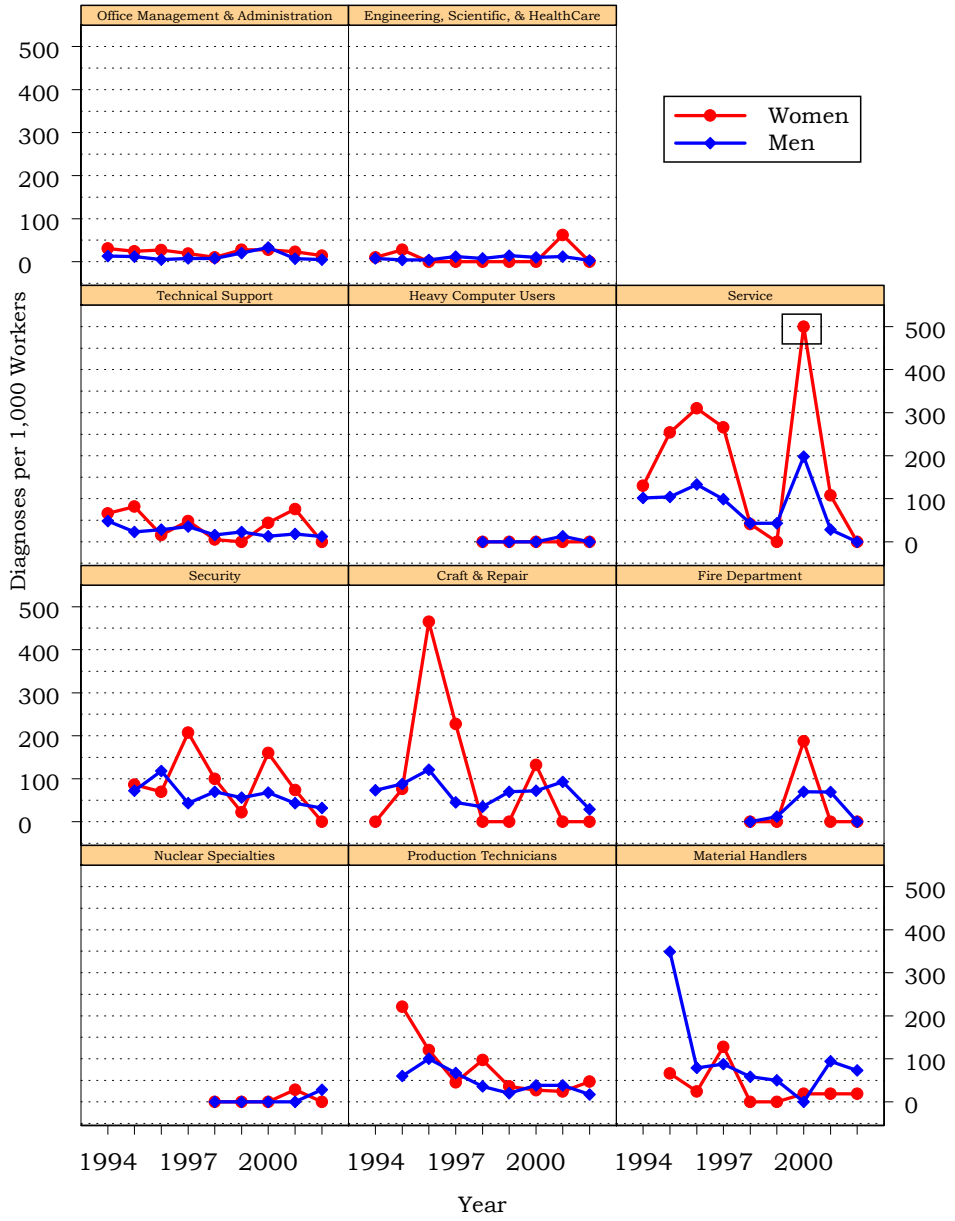


Material Handlers were almost 5 times more likely to have an OSHA-recordable event as other workers and 4 times more likely to report an injury. Security workers were over 5 times more likely to report a sprain or stain other than to the back.

Time Trends for OSHA-Recordable Events

The age-adjusted rates for OSHA-recordable events from 1994 to 2002 by job category among men and women are shown in Figure 21. During the 9-year period, the overall rates for OSHA-recordable events among men and women remained stable for the majority of the occupational groups. From 2001 to 2002, rates decreased among women because no OSHA events were reported in 8 of the 11 job categories. Fewer than 75 women were in each of these 8 job categories not reporting an OSHA event. Small numbers of women in these groups can cause large changes in the rates from one year to the next. We will continue to examine these trends as more years of data are gathered. There were no significant changes in injury rates for men and women during this 9-year period.

Figure 21. Age-Adjusted Rates for All OSHA-Recordable Diagnoses Combined Among Women and Men by Job Category from 1994 to 2002



Note: Security, Nuclear Specialties, Production Technicians, and Material Handlers job category employees were included in various job categories in 1994. Heavy Computer Users job category employees were included in the Office Management & Administration job category 1994 through 1997. Fire Department job category employees were included in the Service job category 1994 through 1997. Nuclear Specialties job category employees were included in the Production Technicians job category 1995 through 1997. The 2000 Service rate for women was truncated to 500 ( ) for graphical presentation. The actual rate was 642.

Glossary

Adjustment: A mathematical procedure for rates in which the effects of differences of a characteristic (such as age or gender) between groups have been removed. The purpose of adjustment is to allow comparisons between two or more groups with the effect of the differences for the characteristic removed.

Age-Adjusted Rate: A rate that has been mathematically adjusted to account for the effects of differences in the age composition between groups.

Age-Specific Rate: A rate that is calculated for a specific age group (e.g., 16 to 29 years old). Only people in the specific age group are included in the calculation of the rate.

Confidence Interval: A range of values determined by the degree of random variability in the data. The width of the confidence interval is affected by the size of the group being studied and how often the event whose true value is sought occurs. Generally, as the size of the group or the frequency of the event increases, the width of the confidence interval decreases. The level of confidence, for example a 95 percent confidence level, indicates the percentage (e.g., 95 percent) of time that the true value is expected to fall within the confidence interval if the mathematical procedure is repeated 100 times.

Demographics: Characteristics of human populations related to their size, density, age distribution, and vital status.

Diagnosis (diagnoses): Identification of a disease or health condition from signs and symptoms.

Diagnosis Rate: The number of occurrences of a given disease or health condition observed during a given time period per the number of workers at risk of getting that disease during that time period. It is usually multiplied by 100 or 1,000 to produce a rate expressed as a convenient number.

Diagnostic Category: A particular type of disease, a group of related health conditions, or diseases that all affect the same organ system.

Epidemiologic Surveillance: The ongoing evaluation of the health of a human population which is based on the collection and interpretation of demographic and health information for that population.

Epidemiology: The study of the distribution and determinants of diseases and health conditions in human populations.

ICD-9-CM Code: An abbreviation for the *International Classification of Diseases, 9th Revision, Clinical Modification*. An internationally accepted standardized system for the classification of disease and health data collected from medical records.

OSHA: An acronym for the Occupational Safety and Health Administration.

OSHA Event: An abbreviation used throughout this report for an OSHA-Recordable Event.

OSHA-Recordable Event: An accident that occurs on the job and involves fatalities (regardless of time between injury and death), time lost from work, transfer of employment, medical treatment other than first aid, loss of consciousness, or restriction of work or motion. Also included is any diagnosed occupational health event reported to the employer that is neither fatal nor results in workdays lost. By law, these events are recordable in the OSHA 200 Log.

Person-Year: A unit of measurement combining the number of people being studied with the time that each was observed equivalent to 1 person followed for 1 year. For example, 5 people followed for 1 year contribute 5 person-years, as do 10 people each followed for half a year.

Relative Risk: The ratio of the occurrence of a disease or health condition in one group compared to the rate of occurrence of that same disease or health condition in another group.

Explanation of Diagnostic Categories

Throughout this report, health conditions have been grouped into a number of diagnostic categories which come from the *International Classification of Diseases, 9th Revision, Clinical Modification* (ICD-9-CM). For the text of this report the categories are abbreviated to make the report easier to read. The following table lists the abbreviated categories used throughout the annual report and the corresponding ICD-9-CM codes found in the supporting tables.

Abbreviated Categories Used in the Annual Report	ICD-9-CM Codes
Benign Growths	210-229 235-239
Blood	280-289
Cancer	140-208 230-234
Digestive	520-579
Endocrine /Metabolic	240-279
Existing Birth Conditions	740-759
Genitourinary	580-629
Heart/Circulatory	390-459
Infections/Parasites	001-139
Injury	800-999
Miscarriage	630-676
Muscles and Skeleton	710-739
Nervous System	320-389
Psychological	290-319
Respiratory	460-519
Skin	680-709
Unspecified Symptoms	780-799

ICD-9-CM Codes

All conditions	001-V82	All reported health events
Infectious and parasitic diseases	001-139	Diseases caused by bacteria, viruses, and parasites
• Intestinal infections	001-009	Infections of the bowel or gut
• Tuberculosis	010-018	TB in the lungs and other organs
• Zoonotic bacterial diseases	020-027	Bacterial diseases that animals transmit to humans
• Other bacterial diseases	030-041	Whooping cough, diphtheria, strep throat, and gangrene
• Human Immunodeficiency Virus (HIV) infection	042	AIDS
• Poliomyelitis and other non-arthropod diseases of the central nervous system	045-049	Viral meningitis (swelling of the layers covering the brain and spinal cord); viral encephalitis (swelling of the brain); and polio
• Viral diseases accompanied by exanthem	050-057	Diseases accompanied by rashes or blisters like chickenpox, measles, shingles, and herpes
• Arthropod-borne viral diseases	060-066	Encephalitis (swelling of the brain) caused by bites from virus-carrying ticks or mosquitoes
• Other diseases caused by viruses and chlamydiae	070-079	Viral hepatitis, mumps, rabies, and mononucleosis
• Rickettsioses and other arthropod-borne diseases	080-088	Rocky Mountain spotted fever, malaria, and lyme disease
• Other spirochetal diseases	100-104	Trench mouth and Weil's disease (jaundice caused by coil-shaped bacteria)
• Mycoses	110-118	Athlete's foot; fungal infections of fingernails and toenails; and thrush
• Helminthiases	120-129	Pinworms, tapeworms, roundworms, and whipworms

• Other infectious and parasitic diseases	130-136	Lice, chiggers, scabies, and mites
• Late effects of infectious or parasitic diseases	137-139	Side effects of TB, chickenpox, or polio even though the disease is no longer active
Malignant neoplasms	140-208, 230-234	All cancers, regardless of the part of the body affected
• Lip, oral cavity, and pharynx	140-149	Lip, mouth, throat, and tongue
• Digestive organs and peritoneum	150-159	Stomach, esophagus (tube that transports food to the stomach), intestines, colon, rectum, anus, liver, pancreas, and gallbladder
• Respiratory system and intrathoracic organs	160-165	Sinuses, throat, voice box, lungs, and heart
• Bone, connective tissue, skin, and breast	170-176	Bone, muscle, ligament, tendon, blood vessels, fat, skin, and breast
• Genitourinary organs	179-189	Kidney, bladder, and cervix, ovary, uterus, and prostate
• Other and unspecified sites	190-199	Eye, brain, and thyroid
• Lymphatic and hematopoietic tissue	200-208	Leukemia, lymphoma, Hodgkin's disease, multiple myeloma, lymphosarcoma, and reticulum cell sarcoma
• Carcinoma in situ	230-234	A cancer that is confined to the site of origin (has not spread to neighboring tissue)
Benign neoplasms and neoplasms of uncertain behavior and unspecified nature	210-229 235-239	Tumors that are not cancerous or do not exhibit cancerous behavior, regardless of the part of the body affected
Endocrine, nutritional, and metabolic diseases and disorders of the immune system	240-279	Diseases affecting the hormone secreting glands and organs. Overactive thyroid; underactive thyroid; vitamin deficiency; diabetes; gout; and problems affecting the antibody producing system

Disorders of the blood and blood forming organs	280-289	Anemia and hemophilia (excludes leukemia)
Mental disorders	290-319	Psychiatric diagnoses - Non-psychotic disorders: depression; anxiety, fear, and stress disorders; alcoholism; drug dependence; and eating disorders, such as anorexia; Psychotic disorders: dementia, schizophrenia, and manic depression
Diseases of the nervous system and sense organs	320-389	Huntington's chorea; Alzheimer's and Parkinson's disease; epilepsy; multiple sclerosis; migraine; diseases of the eye, such as cataract and glaucoma
• Inflammatory diseases of the central nervous system	320-326	Bacterial meningitis (swelling of the layers covering the brain and spine); bacterial encephalitis (swelling of the brain); and brain and spinal abscesses
• Hereditary and degenerative diseases of the central nervous system	330-337	Alzheimer's and Parkinson's disease, tremors, and Huntington's chorea
• Other disorders of the central nervous system	340-349	Multiple sclerosis (MS), cerebral palsy, epilepsy, and migraine
• Disorders of the peripheral nervous system	350-359	Nerve disorders of the face, carpal tunnel syndrome, muscular dystrophy
• Disorders of the eye	360-379	Inflammation and ulcers of the eye and eyelid; detached retina; pink eye; problems with tear ducts; glaucoma; and cataracts
• Diseases of the ear and mastoid process	380-389	Infections of the outer, middle, or inner ear; ringing of the ears; hearing loss

Diseases of the circulatory system	390-459	Rheumatic fever, heart murmurs, heart attacks, angina, hardening of the arteries, varicose veins, hemorrhoids, and phlebitis
• Acute rheumatic fever	390-392	High fever and joint pain with possible heart damage
• Chronic rheumatic heart disease	393-398	Long lasting swelling and damage to the heart which results from rheumatic fever
• Hypertensive disease	401-405	High blood pressure
• Ischemic heart disease (Restricted blood flow to the heart)	410-414	Heart attack and angina
• Diseases of pulmonary circulation	415-417	Blood clots in the lung and pulmonary aneurysm (bulge that develops in the wall of the pulmonary artery, which is the artery that carries blood to the lungs)
• Other forms of heart disease	420-429	Swelling of the inner lining, middle lining, or sac enclosing the heart; heart failure; and irregular heartbeat
• Cerebrovascular disease	430-438	Stroke, bleeding in the brain, and blockage or low blood flow in blood vessels of the brain
• Diseases of the arteries and capillaries	440-448	Hardening of the arteries; aneurysm (bulge that develops in the walls of arteries); and blood clots
• Diseases of the veins, lymphatics, and other circulatory system diseases	451-459	Phlebitis (swelling of a vein), thrombophlebitis (swelling of a vein which has a blood clot), varicose veins, and hemorrhoids

Diseases of the respiratory system	460-519	Colds, sinusitis, laryngitis, pneumonia, influenza, chronic bronchitis, asthma, and emphysema
• Acute respiratory infections	460-466	Colds, sore throat, sinus infections, swollen tonsils, and bronchitis
• Other diseases of the upper respiratory tract	470-478	Allergies, hay fever, sinus infections, bronchitis, and sore throat that continue for a long time
• Pneumonia and influenza	480-487	"The flu" and pneumonia caused by a bacteria or virus
• Chronic obstructive pulmonary diseases and allied conditions	490-496	Emphysema and asthma
• Pneumoconiosis and other lung diseases caused by external agents	500-508	Black lung; miners' asthma; asbestosis; silicosis; berylliosis; and conditions caused by chemical fumes and vapors
• Other diseases of the respiratory system	510-519	Pleurisy (swelling of the lining of the lungs), collapsed lung, and respiratory failure
Diseases of the digestive system	520-579	Diseases affecting the teeth and mouth, salivary glands, digestive tract, and the abdominal cavity. Examples include dental abscess, ulcers, appendicitis, hepatitis (excluding viral hepatitis), cirrhosis of the liver, gallstones, pancreatitis, abdominal hernia, and intestinal polyps
• Diseases of the oral cavity, salivary glands, and jaw	520-529	Tooth problems (too many, too few, abnormal shape or size, cavities, bleeding gums, toothaches), and infections and swelling of the mouth, jaw, and tongue
• Diseases of the esophagus, stomach, and duodenum	530-537	Ulcers of the esophagus (tube that transports food to the stomach), stomach, and small intestine; indigestion; and uncontrollable vomiting

• Appendicitis	540-543	Swelling of the appendix (rupture, surgery, or both may result)
• Hernia of the abdominal cavity	550-553	Ruptures of the groin and diaphragm (muscle which separates the chest area from the lower part of the trunk)
• Non-infectious enteritis and colitis	555-558	Crohn's disease and swelling of the intestine and colon
• Other diseases of the intestines and peritoneum	560-569	Irritable bowel syndrome, blockage of the intestine, constipation, and diarrhea
• Other diseases of the digestive system	570-579	Diseases of the liver, gallbladder, and pancreas; hepatitis; blood in stool; and bleeding in the stomach and intestine
Diseases of the genitourinary system	580-629	Diseases affecting the kidneys, the prostate, and testes; benign breast diseases; infertility (male and female); diseases of the ovary; pelvic inflammatory disease; and menstrual disorders
• Nephritis, nephrotic syndrome, and nephrosis	580-589	Swelling of the kidney; swelling of the small blood vessels in the kidney; and kidney failure
• Other diseases of the urinary system	590-599	Swelling and infection of the kidney and bladder; kidney stones; and difficulty urinating
• Diseases of the male genital organs	600-608	Enlarged prostate; swelling of the scrotum and prostate; and abscess of the prostate
• Disorders of the breast	610-611	Benign tumors, cysts, and infections of the breast
• Inflammatory disease of the female pelvic organs	614-616	Swelling of the uterus, ovary, fallopian tubes, or cervix
• Other diseases of the female genital tract	617-629	Conditions associated with menopause and postmenopause; PMS; infertility; and cramps

Complications of pregnancy, childbirth, and the puerperium	630-676	Miscarriage; complications of pregnancy, such as hemorrhage; pregnancy-related high blood pressure; preeclampsia; and premature labor or other complications of labor
• Ectopic and molar pregnancy	630-633	Development of fetus outside the uterus and growth of cysts
• Other pregnancy with abortive outcome	634-639	Miscarriage and complications associated with miscarriage
• Complications mainly related to pregnancy	640-648	Abnormal bleeding and possible miscarriage; infections; high blood pressure caused by pregnancy; and premature labor
• Normal delivery, and other indications for care in pregnancy, labor, and delivery	650-659	Delivery requiring little or no assistance; multiple births; breech birth; and problems of the fetus or placenta which affect care of mother
• Complications occurring mainly in the course of labor and delivery	660-669	Long labor; unusually fast delivery; and abnormal bleeding after delivery
• Complications of the puerperium	670-676	Infections of the breast; blood clot in lung; and varicose veins
Diseases of the skin and subcutaneous tissue	680-709	Acne, cellulitis, sunburn, psoriasis, and seborrhea
• Infections of the skin and subcutaneous tissue	680-686	Abscesses, boils, hair-containing cysts, and pus-filled blisters
• Other inflammatory conditions of skin and subcutaneous tissue	690-698	Skin rashes caused by detergents, oils, greases, solvents, sun, food, drugs, or medicine
• Other diseases of the skin and subcutaneous tissue	700-709	Corns, calluses, heat rash, swollen hair follicles, acne, and ingrown fingernails and toenails

Diseases of the musculoskeletal system and connective tissue	710-739	Arthritis, systemic lupus erythematosus, ankylosing spondylitis, herniated intervertebral disk ("slipped disk"), lumbago, sciatica, rheumatism, tendonitis, and osteoporosis
• Arthropathies and related disorders	710-719	Arthritis; joint pain and stiffness; and other diseases of the connective tissue which supports and connects internal organs, forms bones and blood vessel walls, and attaches to bones
• Dorsopathies	720-724	Swelling of the spine; herniated, slipped, and ruptured disk; rheumatoid arthritis of the spine; lumbago; and sciatica
• Rheumatism, excluding the back	725-729	Swelling and degeneration of joints, muscles, tendons; tennis elbow; and bursitis
• Osteopathies, chondropathies, and acquired musculoskeletal deformities	730-739	Fracture caused by bone disease; osteoporosis; curvature of the spine; flat foot; hammer toe; and development of deformities of the nose, toes, feet, legs, arms, and hands
Congenital anomalies	740-759	Spina bifida; cleft palate; harelip; and various chromosomal anomalies, such as Klinefelter's syndrome
Certain conditions originating in the perinatal period	760-779	Maternal high blood pressure; maternal malnutrition; ectopic pregnancy; breech birth; fetal malnutrition or slow growth; injuries related to birth trauma; and perinatal jaundice
Symptoms, signs, and ill-defined conditions	780-799	Blackout, chills, dizziness, fatigue, pallor, abnormal weight loss, undiagnosed chest pain, and heartburn

• Symptoms	780-789	Hallucinations, fainting, convulsions, dizziness, fatigue, fever, sleep disturbance, rash, headache, sore throat, chest pain, nausea, vomiting, and heartburn
• Non-specific abnormal findings	790-796	Abnormal x-ray, blood, stool, and urine test results
• Ill-defined and unknown causes of morbidity and mortality	797-799	Senility; asphyxia; respiratory arrest; nervousness; and unexplained death within 24 hours of onset of symptoms
Injury and poisoning	800-999	Dislocation of joints; sprains and strains of associated muscles; concussions; bruises; cuts; internal injuries from crushing, puncture, tearing, or blunt impact; burns; blisters; poisoning; frostbite; heatstroke; and complications of medical or surgical care
• Fractures, all sites	800-829	Cracks or breaks of any bone
• Dislocations	830-839	Separation of a bone from its normal socket or joint
• Sprains and strains of joints and adjacent muscles	840-848	Strains are injuries to muscle from overuse or stretching the muscle beyond its normal limit; sprains are injuries involving tearing or overextending the ligaments of a joint
• Intracranial injuries excluding those with skull fractures	850-854	Concussions; internal bruises; and bleeding within the head without a fracture of the bones of the skull
• Internal injuries of the thorax, abdomen, and pelvis	860-869	Bruising, crushing, tearing, or rupturing the chest, abdomen, and pelvis and the organs within these areas of the body
• Open wounds	870-897	Animal bites; cuts; lacerations; punctures; and amputations, excluding the arteries and veins

• Other injuries and late effects of external causes	900-999	Miscellaneous injuries, including injuries to the arteries and veins; problems that occur an extended period of time after the injury has taken place (”late effects”); superficial bruises and abrasions; burns; post-injury shock; poisoning; toxic side effects of chemicals; heatstroke; electrocution; and altitude sickness
Supplementary classifications related to personal or family history of disease	V10-V19	Covers situations in which the person is not ill or injured but has a personal or family history of problems, such as cancer, mental illness, allergies, or arthritis that may affect his or her risk of illness
Supplementary classifications related to health care for reproduction and child development	V20-V28	Problems related to pregnancy, postpartum care, contraception, outcome of delivery, and physical development of child
Contact with health services for reasons other than illness or injury	V50-V59	Care for workers who have been treated previously for an illness or injury that is no longer present but who receive care to complete treatment or prevent recurrence

NOTES