

# 2000

## Y-12 National Security Complex Annual Epidemiologic Surveillance Report



## **Y-12 National Security Complex 2000 Epidemiologic Surveillance Report**

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

**<http://tis.eh.doe.gov/health/epi/surv/index.html>**

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## **Y-12 National Security Complex 2000**

### **At A Glance**

Among both men and women, the most common diagnoses were respiratory conditions and disorders of the muscles and skeleton.

Nine of the 11 possible sentinel health events were identified as carpal tunnel syndrome, reported by nine workers (six women and three men). Three workers in the Professional group, two in the Technical group, and one each in the Management, Administrative, Crafts, and Laborers and General Workers groups reported carpal tunnel diagnoses.

The overall rate of OSHA-recordable events was the same for men and women (3 per 100 workers).

The Crafts and Laborers and General Workers groups had the highest rate of OSHA events (14 per 100 workers) among women.

Operators had the highest average number of lost or restricted workdays (8 days) among men.

Sprains and strains were the most common type of OSHA-recordable injury.

The OSHA-recordable rates among men and women were highest among Nuclear Workers. Nuclear Workers comprised 5 percent of the work force and reported 17 percent of the OSHA events.

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## Introduction

The U.S. Department of Energy's (DOE) commitment to assuring the health and safety of its workers includes the conduct of epidemiologic surveillance activities that provide an early warning system for health problems among workers. The Epidemiologic Surveillance Program monitors illnesses and health conditions that result in an absence of 5 or more consecutive workdays, occupational injuries and illnesses, and disabilities and deaths among current workers.



This report summarizes epidemiologic surveillance data collected from the Y-12 National Security Complex from January 1, 2000 through December 31, 2000. The data were collected by a coordinator at Y-12 and submitted to DOE's Epidemiologic Surveillance Data Center, located at Oak Ridge Institute for Science and Education, where quality control procedures and data analyses were carried out.

Epidemiologic surveillance began at Y-12 in 1998. The information presented in this report provides highlights of the data analyses conducted. Additional supporting tables

are posted on the Office of Health Studies' Web site (<http://tis.eh.doe.gov/health/epi/surv/index.html>) or are available by request. The report includes the following main sections: work force characteristics; absences due to injury or illness of 5 or more consecutive workdays; 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 report also includes a section on time trends that provides comparative information on the health of the work force from 1998 to 2000.

**Note: In the figures and calculations that follow, percentages have been rounded to the nearest whole number.**



DOE sites vary by mission, function, job classification, and worker exposures. Therefore, comparisons of Y-12 with other DOE sites should be made with caution. In addition, many factors can affect the completeness and accuracy of health information reported by the sites, thereby affecting the observed patterns of illness and injury.

## Site Overview

The Y-12 National Security Complex, previously known as the Y-12 Plant, is a DOE facility located in Oak Ridge, Tennessee on 811 acres within the Oak Ridge Reservation. Its 250 buildings contain about 7 million square feet of floor space of laboratory, research and development, machining, dismantlement, and storage areas. The site was established in 1943 to produce highly enriched uranium as part of the Manhattan Project. After World War II, the plant's focus changed to manufacturing components for nuclear weapons. Construction of the plant started in February 1943; enriched uranium production started in November of the same year. Plant construction, however, was not entirely finished until 1945. At its peak during World War II, the plant employed approximately 22,000 workers.

For more than 50 years, the complex has been one of the DOE weapons complex's manufacturing facilities. Every weapon in the stockpile has some components manufactured at the Y-12 National Security Complex.

Today, the mission of the complex is to meet the needs of DOE, other agencies, and private industry through:

- Production of complex components and assemblies;
- Safe and secure storage of nuclear materials;
- Dismantlement, disposition, evaluation, and assessment of weapon components;
- Transitioning the plant size to meet DOE needs;
- Transfer of technology to private industry;
- Maintenance of DOE capabilities; and
- Support of other national priorities.

The nation's first DOE Defense Programs deployment/user facility was located at the Y-12 National Security Complex, and the complex continues to be the home of eight user centers. Such designation allows easier access to the centers, where manufacturers can conduct their own research using unique machinery available at Y-12.

Y-12 was placed on the National Priorities List under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) in 1989. The CERCLA activities are covered under a 1992 tri-party agreement among the Environmental Protection Agency, DOE, and the Tennessee Department of Environment and Conservation. This tri-party, umbrella agreement established a procedural framework and schedule to investigate and remediate contaminant releases and potential releases at the Oak Ridge Reservation in accordance with CERCLA requirements.

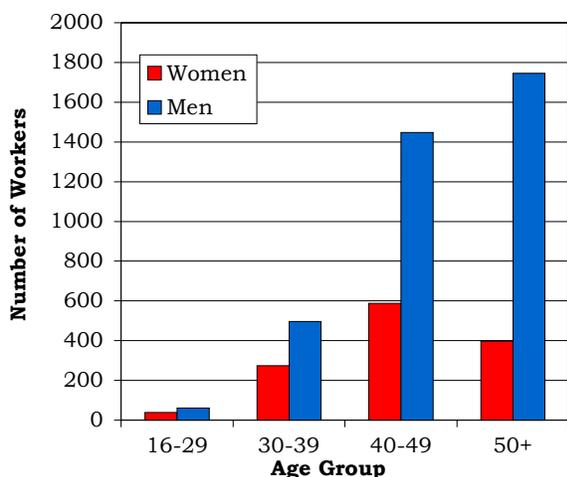


In November 2000, the Y-12 Plant name was changed to the Y-12 National Security Complex, and BWXT Y-12, a team of BWX Technologies Inc. and Bechtel National Inc., took over management and operations of the complex from Lockheed Martin Energy Systems, Inc.

### The Y-12 Work Force - 2000

A total of 5,049 Y-12 employees were included in epidemiologic surveillance in 2000, a decrease of 753 workers from 1999. There were 1,297 (26 percent) women and 3,752 (74 percent) men in the work force. The average age of Y-12 workers was 48 years for men and 45 years for women (Figure 1).

**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 reported by Y-12 were grouped together into 10 job categories because there were either too few workers or too few health events within a particular job title, thereby limiting the type of analyses that could be conducted. Men and women were not distributed equally among the various job categories. Almost thirty percent of female employees were Administrative workers, while only 1 percent of men were in this category. The largest percentage of men (23 percent) were in the Engineering, Scientific, and Health Care job category.

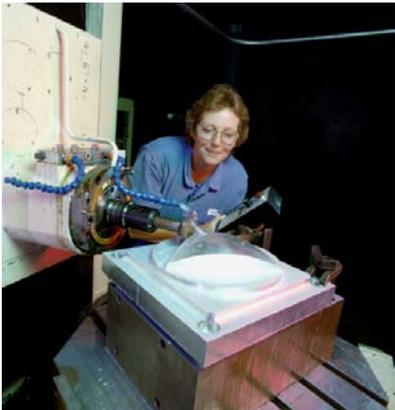
**Figure 2. The Work Force by Job Category and Gender**

Job Category	Women	Men
Management	120 9%	603 16%
Engineering, Scientific, & Health Care	199 15%	873 23%
Professional	240 18%	387 10%
Administrative	362 28%	28 1%
Technical	155 12%	252 7%
Crafts	22 2%	737 20%
Security	34 3%	318 9%
Operators	9 1%	117 3%
Nuclear Workers	63 5%	198 5%
Laborers & General Workers	93 7%	239 6%



## Number and Length of Absences

Epidemiologic surveillance examines absences of 5 or more consecutive workdays (also referred to as “5-day absences”). This absence threshold is based on DOE Order 440.1, which 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. All injuries and illnesses due to a work-related incident also must be reported. Non-occupational illnesses and injuries that involve absences of fewer than 5 days do not routinely require a medical clearance for return to work and therefore are excluded from these analyses.

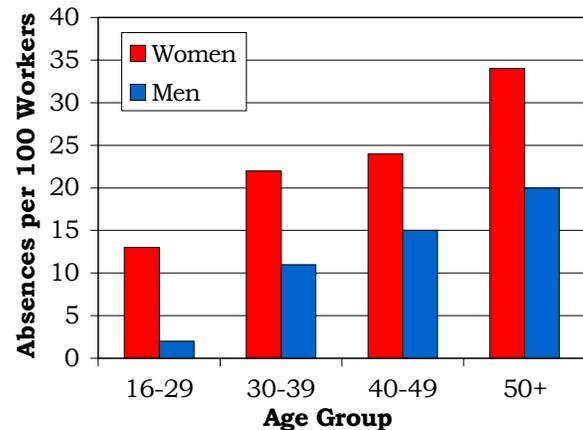


Specific absences of 5 or more consecutive workdays that were not the result of an injury or illness were excluded. These include nine women with nine reported absences due to maternity leave and three female and two male workers with reported absences due to elective surgical procedures not related to the treatment of an illness or injury.

Throughout this report, analyses take gender, age, and occupation into account because the risk of illness and injury varies by these factors.

The substantial increase in the number of reported absences that occurred between 1998 and 1999 did not continue into 2000. In 2000, women reported 343 absences, and men reported 628 absences. This represents a 7 percent decrease for women and an 11 percent decrease for men compared with the number of absences reported in 1999. These decreases reflect the decrease in the Y-12 work force between 1999 and 2000, when the number of both women (17 percent) and men (12 percent) in the work force declined.

**Figure 3. Absence Rate by Gender and Age**



The 5-day absence rate among women was 26 per 100 workers and among men was 17 per 100 workers. These rates are very similar to the rates in 1999 (24 per 100 women and 17 per 100 men). The rate of 5-day absences due to injury or illness also varied by age (Figure 3). The rate of 5-day absences among both men and women increased with age. The average length of absence was 45 days for men and 42 days for women (Figure 4). The youngest workers had the highest average duration of absence for both men and women. Among male workers 30 years of age or older, the average length of absence increased slightly with age.

**Figure 4. Number of Days Absent by Gender and Age**

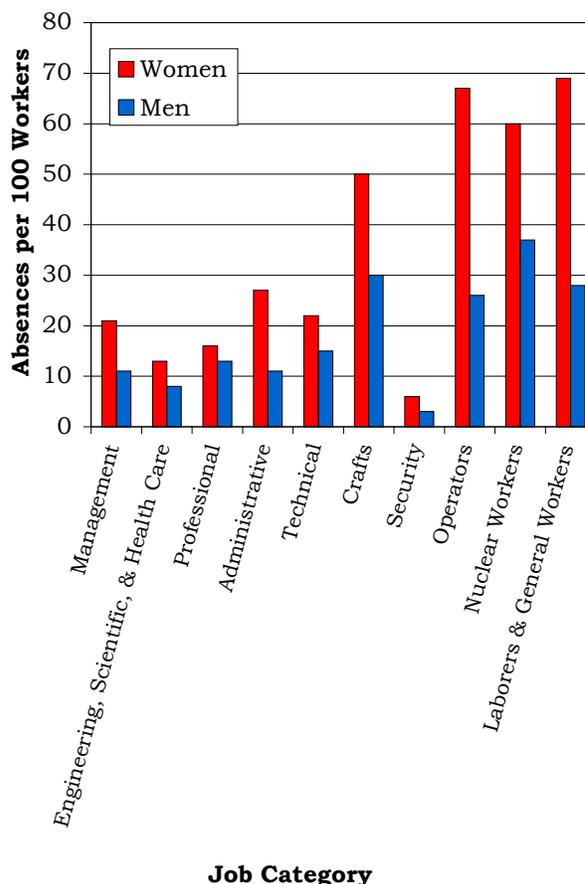
Gender	Age	Number of Absences	Number of Days Absent	Average Number of Days Absent
Women	16-29	5	298	60
	30-39	60	2,292	38
	40-49	144	6,388	44
	50+	134	5,477	41
	Total	343	14,455	42
Men	16-29	1	105	105
	30-39	53	2,122	40
	40-49	222	9,988	45
	50+	352	16,228	46
	Total	628	28,443	45

The rate of 5-day absences due to illness or injury varied by job category for both men and women (Figure 5). Women had a higher rate of absence than did men within the same job category. Nuclear Workers had the highest absence rate among male workers; those in the Security group had the lowest absence rate. Among women, Laborers and General Workers had the highest absence rate; workers in the Security group had the lowest rate.

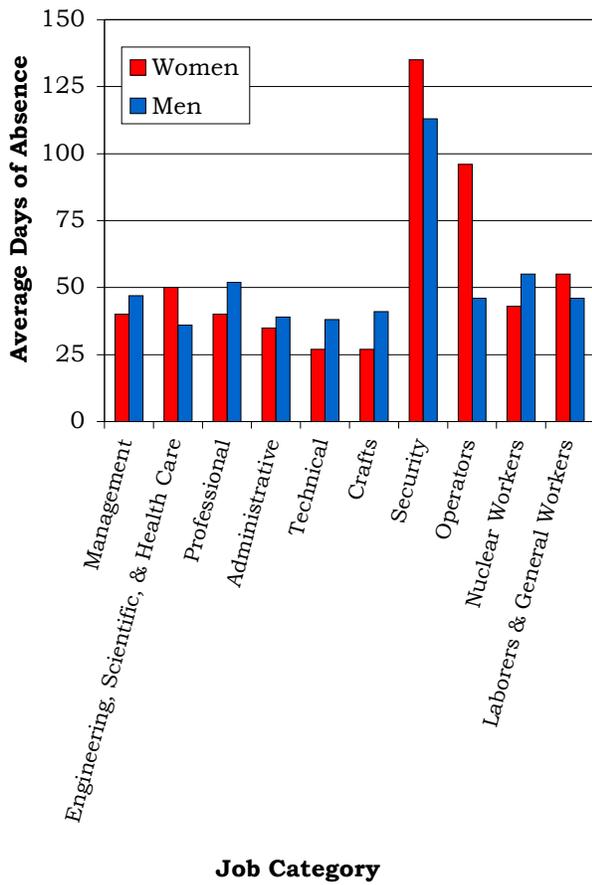


Within a job category, there was no relationship between length of absence and gender (Figure 6). The Security group, which had the lowest absence rate among men, had the longest average duration of absence, 113 days. Engineering, Scientific, and Health Care workers had the shortest average absence duration, 36 days. Security workers, who had the lowest absence rate among women, had the longest average duration of absence, 135 days. Female Technical and Crafts workers both averaged the shortest absences, 27 days.

**Figure 5. Absence Rate by Job Category and Gender**



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



**Diagnostic Categories**

Epidemiologic 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 ones 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 one diagnosis, and epidemiologic 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 Diseases, 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 section of this report.

The number of reported diagnoses categorized according to the ICD-9-CM and the number of lost calendar days are presented in Figure 7. Women reported 351 diagnoses, and men reported 650 diagnoses in 2000. The most frequently reported diagnoses varied little by gender. Among both men and women, the most common diagnoses were respiratory conditions and disorders of the muscles and skeleton.



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

Diagnostic Category	Women		Men	
	Number of Diagnoses	Number of Lost Calendar Days	Number of Diagnoses	Number of Lost Calendar Days
Benign Growths	5	201	2	15
Blood	1	96	3	292
Cancer	4	392	18	1,609
Digestive	32	1,193	62	2,089
Endocrine/ Metabolic	4	217	11	448
Existing Birth Condition	0	0	2	116
Genitourinary	36	1,269	29	824
Heart/ Circulatory	11	432	74	4,320
Infections/ Parasites	10	120	9	108
Injury	30	1,373	72	3,800
Miscarriage	1	14	NA	NA
Muscles & Skeleton	76	5,713	151	9,439
Nervous System	17	808	32	1,645
Psychological	17	1,005	19	1,390
Respiratory	90	1,216	114	2,291
Skin	4	356	10	237
Unspecified Symptoms	13	472	42	1,356

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

Women lost 14,455 calendar days due to injury and illness. Respiratory diseases (26 percent), muscles and skeleton conditions (22 percent), and genitourinary disorders (10 percent) accounted for 58 percent of all reported diagnoses among women. The majority of the respiratory conditions were upper respiratory-type infections (78 percent), followed by flu and pneumonia (14 percent). Seventy-five percent of the genitourinary conditions were related to female reproductive disorders. Joint disorders and rheumatism each made up 34 percent of the muscles and skeleton conditions, followed by disk and back problems (24 percent).

Men lost 28,443 calendar days due to injury and illness. Sixty-three percent of all reported diagnoses among men were due to muscles and skeleton conditions (23 percent), respiratory diseases (18 percent), heart/circulatory disorders (11 percent), and injuries (11 percent). Upper respiratory infections accounted for 74 percent of the respiratory conditions, followed by pneumonia and flu (14 percent). Thirty-six percent of muscles and skeleton conditions affected the joints (primarily knee derangement and other joint disorders), 33 percent were back problems and disk disorders, and 28 percent were rheumatism. Ischemic heart disease (42 percent) and hypertension (27 percent) were the most frequent heart/circulatory diagnoses. Frequently reported injuries included sprains and strains (49 percent) and fractures (19 percent).

The previously mentioned diagnoses did not vary by age. Conditions affecting the respiratory system and diagnoses of the muscles and skeleton were the most frequently reported categories for men aged 30 or older. Only one diagnosis was reported among men under 30 years old.

Among women, the most frequently reported diagnoses were also consistent among the various age groups. Respiratory diseases and muscles and skeleton disorders were the most frequently reported diagnoses by women 30 years of age or older. As did men, women younger than 30 years old reported few diagnoses.

Figure 8 shows the frequency of reported diagnoses by job category for men and women. The types of diagnoses did not vary significantly by job category. Among men, muscles and skeleton conditions, injuries, and respiratory conditions appeared in most of the job categories. Among women, muscles and skeleton conditions and respiratory diagnoses were common across almost all job categories. We saw no indication that any particular diagnosis occurred disproportionately in a specific job category.

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

Job Category	Men	Women
Management	Muscles & Skeleton (23) Respiratory (12) Injury (10)	Respiratory (8) Muscles & Skeleton (7) Genitourinary (2) Injury (2) Nervous System (2)
Engineering, Scientific, & Health Care	Digestive (12) Muscles & Skeleton (12) Heart/Circulatory (11)	Genitourinary (9) Digestive (6) Nervous System (3) Psychological (3)
Professional	Heart/Circulatory (10) Muscles & Skeleton (7) Respiratory (7) Unspecified Symptoms (7)	Respiratory (12) Muscles & Skeleton (8) Digestive (6)
Administrative	Heart/Circulatory (2) Injury (1)	Respiratory (26) Muscles & Skeleton (21) Digestive (12) Genitourinary (12)
Technical	Muscles & Skeleton (15) Respiratory (10) Injury (5)	Respiratory (8) Muscles & Skeleton (4) Endocrine/Metabolic (3) Genitourinary (3) Injury (3) Nervous System (3)
Crafts	Muscles & Skeleton (46) Respiratory (39) Injury (25)	Injury (3) Muscles & Skeleton (3) Respiratory (3)
Security	Muscles & Skeleton (5) Heart/Circulatory (1) Injury (1) Psychological (1) Respiratory (1) Unspecified Symptoms (1)	Muscles & Skeleton (2)
Operators	Respiratory (7) Digestive (4) Heart/Circulatory (4) Unspecified Symptoms (4)	Muscles & Skeleton (4) Respiratory (2)
Nuclear Workers	Muscles & Skeleton (25) Heart/Circulatory (10) Respiratory (8)	Respiratory (13) Muscles & Skeleton (6) Heart/Circulatory (5)
Laborers & General Workers	Respiratory (20) Muscles & Skeleton (16) Injury (7)	Muscles & Skeleton (19) Respiratory (16) Injury (7)

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, Figure 7 shows that men reported 151 and women reported 76 diagnoses involving the muscles and skeleton during 2000. Men, therefore, reported about twice as many conditions of the muscles and skeleton as did women. As there were almost 3 times as many men than women at Y-12, it seems reasonable to expect more muscles and skeleton conditions among men than women. Does this mean that men were at greater risk of muscles and skeleton conditions than were women in 2000? 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 muscles and skeleton condition rate for each gender. Rates are calculated by dividing the number of 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:

$$151 \text{ muscles and skeleton diagnoses} \div 3,752 \text{ men} \\ = .040 \times 1,000 = 40 \text{ muscles and skeleton} \\ \text{diagnoses per 1,000 men}$$

$$76 \text{ muscles and skeleton diagnoses} \div 1,297 \text{ women} \\ = .059 \times 1,000 = 59 \text{ muscles and skeleton} \\ \text{diagnoses per 1,000 women}$$

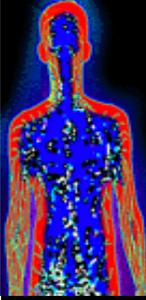
Comparing these rates now correctly suggests that the rate of reported muscles and skeleton conditions among women is almost 50 percent higher than the rate among men. They are called **crude rates** because they do not account for possible differences between men and women such as age and other factors that might affect the individual's risk of having a muscles and skeleton condition. 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 5-day absences over a year. Conversely, one 5-day absence may be associated with multiple diagnoses (e.g., the flu and a sprained wrist) recorded for epidemiologic surveillance.

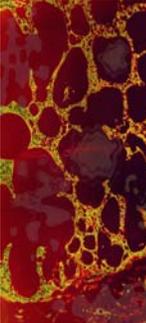


In the following set of analyses, the four age groups previously used were collapsed into two groups: workers younger than 50 years of age and those 50 or older. In addition, the 10 job categories were combined into four larger groups. Five groups of diagnoses of particular interest to workers are presented in Figure 9: all illnesses and injuries combined, cancer, heart/circulatory system, respiratory system, and injury. Additional information about 13 other disease groups is also analyzed and can be found in the Supplemental Tables.

**Figure 9. Illness and Injury Rates by Job Category, Gender, and Age**

Diagnostic Category	Rate per 1,000			
	Job Category	Age	Men	Women
	Management/ Professional/ Administrative	<50	121	203
		50+	135	298
	Engineering, Scientific, & Health Care/ Technical	<50	92	181
		50+	104	152
	Crafts/Security/ Operators/ Laborers & General Workers	<50	177	500
		50+	299	554
Nuclear Workers	<50	321	645	
	50+	467	563	

Diagnostic Category	Rate per 1,000			
	Job Category	Age	Men	Women
	Management/ Professional/ Administrative	<50	28	52
		50+	10	89
	Engineering, Scientific, & Health Care/ Technical	<50	19	24
		50+	15	45
	Crafts/Security/ Operators/ Laborers & General Workers	<50	33	131
		50+	62	135
Nuclear Workers	<50	9	258	
	50+	76	156	

Diagnostic Category	Rate per 1,000			
	Job Category	Age	Men	Women
	Management/ Professional/ Administrative	<50	0	2
		50+	4	9
	Engineering, Scientific, & Health Care/ Technical	<50	6	0
		50+	4	0
	Crafts/Security/ Operators/ Laborers & General Workers	<50	0	0
		50+	10	0
Nuclear Workers	<50	0	32	
	50+	33	0	

Diagnostic Category	Rate per 1,000			
	Job Category	Age	Men	Women
	Management/ Professional/ Administrative	<50	12	12
		50+	20	31
	Engineering, Scientific, & Health Care/ Technical	<50	12	10
		50+	13	15
	Crafts/Security/ Operators/ Laborers & General Workers	<50	24	71
		50+	28	54
Nuclear Workers	<50	38	65	
	50+	22	31	

Diagnostic Category	Rate per 1,000			
	Job Category	Age	Men	Women
	Management/ Professional/ Administrative	<50	10	6
		50+	23	4
	Engineering, Scientific, & Health Care/ Technical	<50	6	0
		50+	18	0
	Crafts/Security/ Operators/ Laborers & General Workers	<50	15	0
		50+	35	27
Nuclear Workers	<50	66	0	
	50+	33	156	

Age was related to the rates for all illnesses and injuries combined across the various job categories for men. This was not true for women. Both men and women classified as Nuclear Workers had the highest rates, followed by workers in the Crafts/Security/ Operators/Laborers and General Workers categories. By contrast, workers in Management/Professional/ Administrative and Engineering, Scientific, and Health Care/Technical occupations tended to have

substantially lower rates. These variations in rates are consistent with those observed in 1999. This difference in rates may in part reflect more complete reporting of absences by workers in bargaining unit occupations than is typical among white collar occupations. The same contrast has been noted at other sites participating in epidemiologic surveillance.

Cancer rates presented in this report are based on reported 5-day absences during the year. A worker may experience several periods of absence from one cancer diagnosis due to medical complications or treatment regimens. Each absence results in the 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 *incident rates* frequently published in many articles on cancer with which you may be familiar. Incident cancer 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. develops cancer increases with age. Our data reflect this observation for men. In all but one job category in which cancer was reported, cancer rates were higher among older workers. Eighteen men reported 18 5-day absences due to cancer. The diagnoses were six prostate cancers, five colon cancers, two malignant melanomas, and one cancer each of the oropharynx (back of the mouth), tongue, thyroid, skin, and an unspecified site. Only 4 women reported cancer in 2000: two breast cancers, one lung cancer, and one cancer that metastasized to the brain. None of these men or women had reported cancer previously. Of the 22 workers who reported cancer, 16 were 50 years of age or older. Nuclear workers were at almost 4 times the risk of reporting a cancer diagnosis

compared to workers in other occupational categories. Three men and 1 woman in the Nuclear Workers group reported a cancer diagnosis. The woman had lung cancer, and the men each had cancer at a different site: thyroid, colon, and prostate.

Older workers tended to have the highest rates due to heart/circulatory problems among men and women. The highest rate was seen among older women in the Nuclear Workers category, but the rate was based on only 5 reported diagnoses; 4 of which were for hypertension (high blood pressure) or ischemic heart disease (restricted blood flow through an artery). Eight of 11 diagnoses for heart/circulatory problems reported among women were for hypertension or ischemic heart disease. Forty-seven of the 74 heart/circulatory diagnoses among men were reported by workers aged 50 or older. Fifty-one of the 74 diagnoses involved hypertension (high blood pressure) or ischemic heart disease (restricted blood flow through an artery). Compared with other workers, Nuclear Workers had over 3 times the risk of reporting heart/circulatory conditions.

Women had higher rates of respiratory disease than did men in all job categories. Older women generally had higher rates than did women younger than 50 years old. Among men, age was not related to the rate of respiratory disease. Crafts/Security/Operators/Laborers and General Workers had the highest rate of respiratory disease for male workers. Among women, the Nuclear Workers group had the highest rate of respiratory disease. Workers in the Crafts, Operators, Nuclear Workers, and Laborers and General Workers categories were almost 2 to over 3 times as likely to report these conditions as were other workers.

Except for the Nuclear Workers, older men had higher rates of injury than did younger men. Among women, the injury rate was not related to age. Women tended to have higher rates than did men in any given job category. The highest rates of injury were among women in the Crafts/Security/Operators/Laborers and General Workers group. Workers in both the Crafts and Laborers and General Workers job categories were at least twice as likely to report an injury as were other workers. Compared with other workers, the Crafts group was at 7 times higher risk of reporting a fractured lower limb and at 3 times higher risk of reporting a back sprain or strain. Laborers and General Workers also were at almost 4 times higher risk of reporting a back sprain or strain. Nuclear Workers were over 4 times as likely to report a sprain or strain to areas other than the back and were at 3 times the risk of muscles and skeleton disorders. Operators were at 8 times the risk of reporting a dislocation.

## Time Trends

### Why Are Rates Age-Adjusted?

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

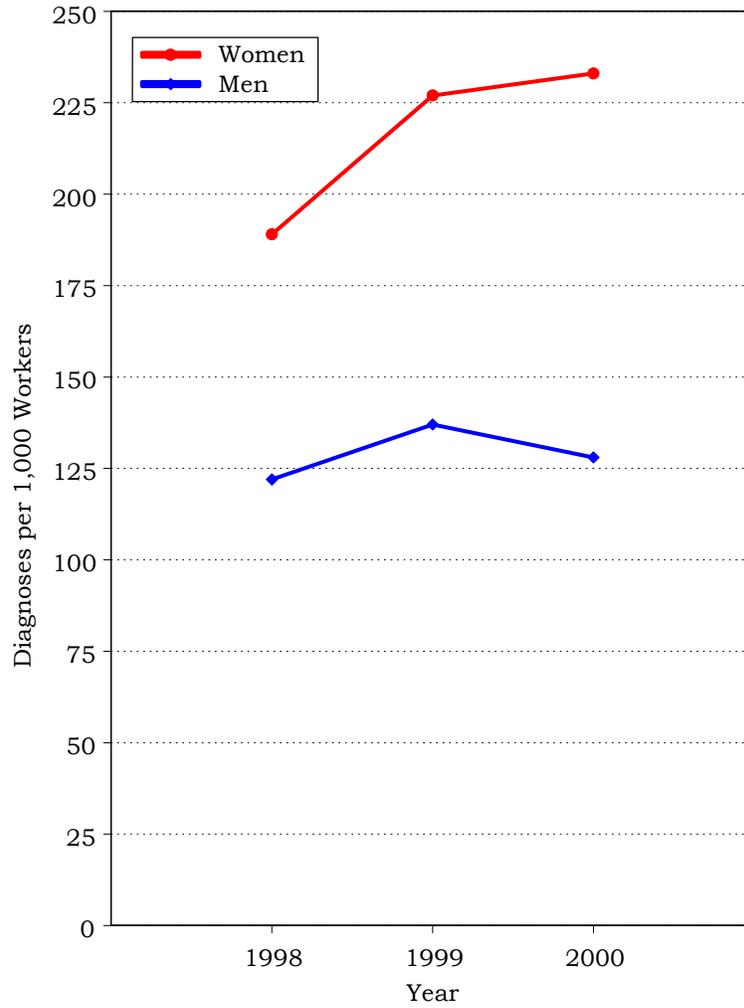
The availability of 3 years of epidemiologic surveillance data for Y-12 workers permitted us for the first time to analyze illness and injury trends over time in the work force. Age-adjusted rates for all illness and injury diagnoses combined are presented in Figure 10. The rate of all illnesses and injuries combined changed little over the 3-year period among men. Among women, the rate increased steadily.



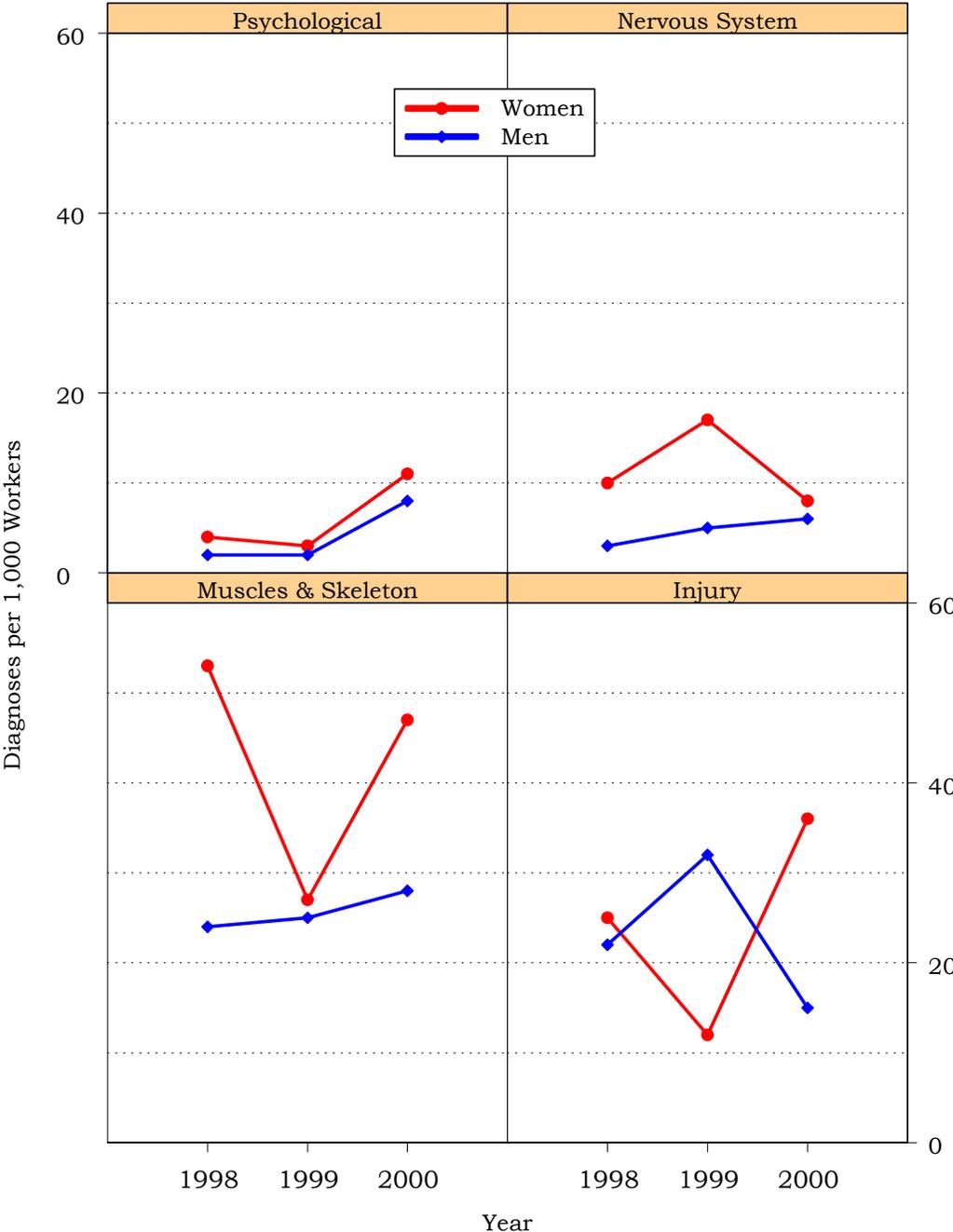
Age-adjusted rates for selected illness and injury categories are presented in Figure 11. Among men and women, the rate of psychological conditions increased between 1999 and 2000. These changes in rates, as well as the dramatic changes in rates over the 3-year period for muscles and skeleton conditions among women and injuries among men and women, cannot be attributed to any particular type of disorder.

The age-adjusted rates for all illness and injury categories combined increased from 1998 to 1999 and then decreased from 1999 to 2000 among men and women in most occupational groups (Figure 12). The only exception was an increase in the overall diagnosis rate from 1999 to 2000 among women in the Operators job category. The rates for women fluctuated more than the rates for men over the 3-year period. These large changes in the female rates from one year to the next are partially due to the small number of women in many of the job categories.

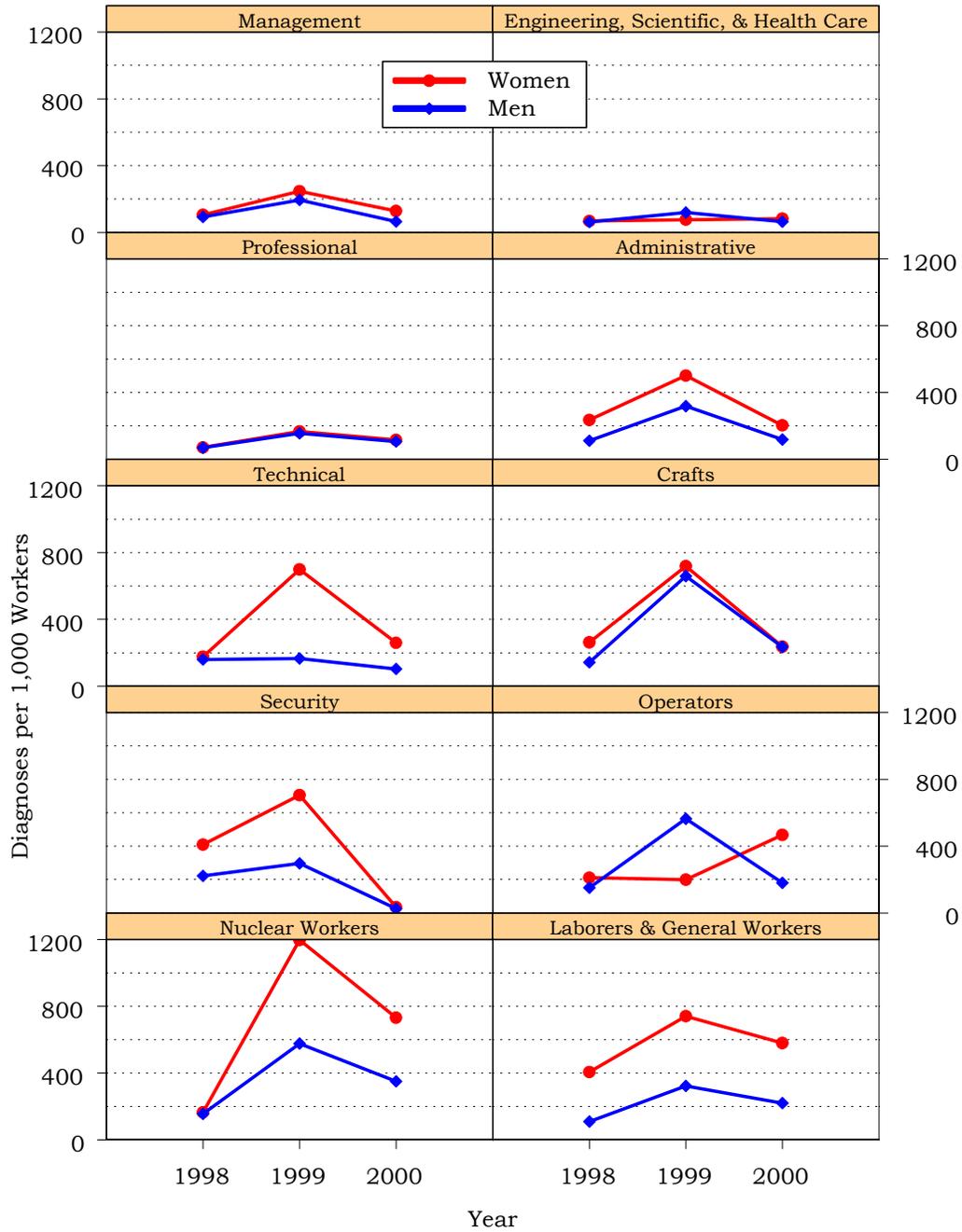
**Figure 10. Age-Adjusted Rates for All Diagnoses Combined Among Women and Men from 1998 to 2000**



**Figure 11. Age-Adjusted Rates for Selected Diagnostic Categories Among Women and Men from 1998 to 2000**



**Figure 12. Age-Adjusted Rates for All Diagnoses Combined Among Women and Men by Job Category from 1998 to 2000**



Note: The Unknown job category does not appear in this figure; there were no Unknown workers in 2000, and no events were reported by Unknown workers in 1998 and 1999.

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

*Definite Sentinel Health Events:* Conditions 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.

One definite sentinel health event was identified in 2000. One man in the Operators job category, aged 50 or older, was diagnosed with chronic beryllium disease. This event resulted in 8 lost calendar days. Eleven of 1,001 diagnoses (1 percent) were identified as possible sentinel health events (Figure 13). Nine of the 11 possible sentinel health events were identified as carpal tunnel syndrome, reported by nine workers (six women and three men), and resulted in 415 lost calendar days. Two female workers reported over half of the days lost (234 days) from carpal tunnel syndrome and were from the Administrative and Laborers and General Workers groups. Three workers in the Professional group, two in the Technical group, and one each in the Management, Administrative, Crafts, and Laborers and General Workers groups reported carpal tunnel diagnoses. Eight carpal tunnel diagnoses occurred among workers aged 40 or older; one worker was in the 30-39 age group.



**Figure 13. Characteristics of SHEOs by Gender**

	Total Number of SHEO Diagnoses		Total Number of Days Absent	
	Men	Women	Men	Women
<b>Definite</b>	1	0	8	0
<b>Possible</b>	5	6	147	345
<b>Total</b>	6	6	155	345

## Disabilities Among Active Workers

Disability data for the 2000 Y-12 work force were not available.

## Deaths Among Active Workers

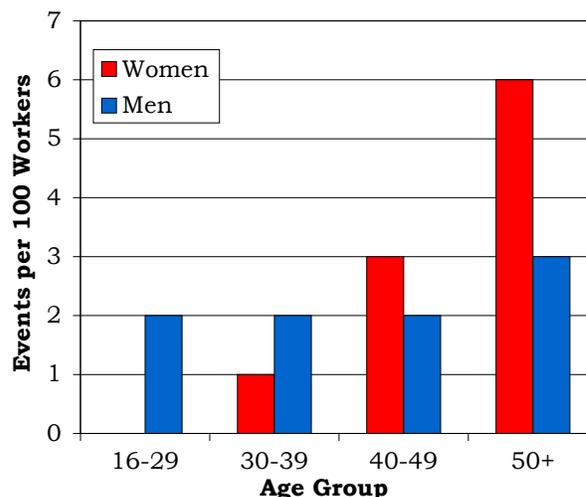
Seven deaths occurred among Y-12 workers (all men) during 2000. Six of the seven deaths occurred in workers aged 50 or older. The causes of death were three motor vehicle accidents, one gunshot wound, one heart condition, one cancer, and one unknown.

## 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 two important respects: 1) they do not necessarily result in days lost from work, and 2) they usually are accompanied by a specific determination that they are work-related.

Figure 14 shows the distribution of OSHA events by gender and age. There were 41 OSHA-recordable events among women and 100 OSHA-recordable events among men. The overall rate of OSHA-recordable events was the same for men and women (3 per 100 workers). The average number of lost or restricted workdays increased with age for men.

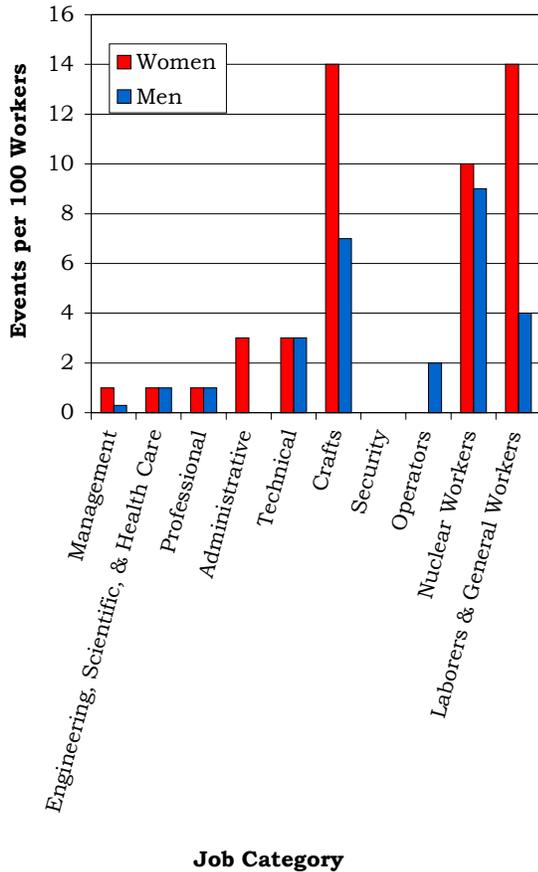
**Figure 14. OSHA-Recordable Events by Gender and Age**



The distribution of OSHA-recordable events by job category and gender is shown in Figure 15. The Crafts and Laborers and General Workers groups had the highest rate of OSHA events (14 per 100 workers) among women. Nuclear Workers had the highest rate of OSHA events among men (9 per 100 workers). Women had higher rates of OSHA-recordable events than did men in five job categories: Management, Administrative, Crafts, Nuclear Workers, and Laborers and General Workers. Men and women in the Security job category, women in the Operators job category, and men in the Administrative job category did not report any OSHA events.



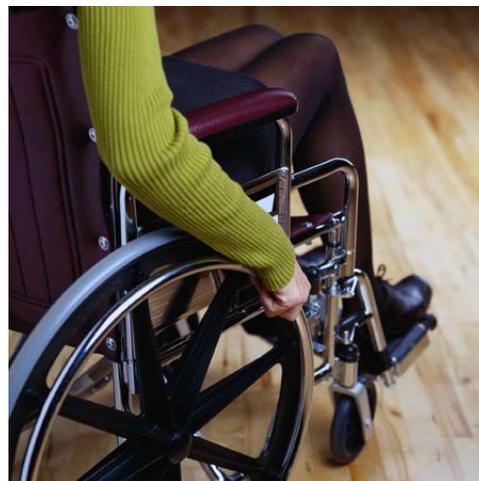
**Figure 15. OSHA-Recordable Events by Job Category and Gender**



The average number of workdays lost or with restricted activity due to an OSHA event was almost 3 times greater for women (14 days) than for men (5 days). Women in the Technical group averaged the highest number of lost or restricted workdays (27 days), although only one of the four events included a report of lost/restricted workdays (106 days). The event resulted in shoulder pain and a sprain/strain of the neck from overexertion and strenuous movement. Operators had the highest average number of lost or restricted workdays (8 days) among men.

**Diagnostic and Accident Categories for OSHA-Recordable Events**

The 141 OSHA events recorded on the OSHA 200 Logs contained 67 diagnoses among women and 132 diagnoses among men (Figure 16). Among women, injuries accounted for 70 percent of the diagnoses reported. The most common (45 percent) type of OSHA-recordable injury was sprains and strains. Nineteen percent of the reported injuries among women were due to bruises, and 9 percent were fractures. Among men, injuries accounted for 70 percent of the diagnoses reported, again primarily due to sprains and strains (46 percent). Bruises (16 percent) and open wounds (15 percent) also were frequently reported among men. After injuries, the most common OSHA-recordable diagnoses among both men and women were conditions involving the muscles and skeleton. Ten of the OSHA diagnoses involved the nervous system; 9 (90 percent) of these were carpal tunnel syndrome.



**Figure 16. OSHA-Recordable Diagnoses by Diagnostic Category and Gender**

Diagnostic Category	Gender	
	Women	Men
Muscles & Skeleton	11	17
Nervous System	2	8
Respiratory	3	2
Skin	1	4
Unspecified Symptoms	3	8
Injury	47	93
Fractures – Upper Limb	1	1
Fractures – Lower Limb	3	0
Back Sprains & Strains	12	16
Other Sprains & Strains	9	27
Open Wounds – Head, Neck, Trunk	1	5
Open Wounds – Upper Limb	2	8
Open Wounds – Lower Limb	0	1
Superficial Injuries	3	3
Bruises	9	15
Foreign Bodies Entering Orifice	0	3
Burns	0	3
Unspecified Injuries	3	1
Adverse Reactions to Non-Medical Substances	3	3
Adverse Reactions to External Causes	1	7

**Figure 17. OSHA-Recordable Accidents by Type and Gender**

Accident Category	Gender	
	Women Number of Accidents	Men Number of Accidents
Motor Vehicle Traffic	0	1
Motor Vehicle Non-Traffic	0	1
Poisoning – Non-Medicinal	2	3
Falls	13	15
Natural/Environmental Factors	2	1
Submersion/Suffocation/ Foreign Bodies	0	3
Other Accidents	23	66
Struck by an Object	1	11
Caught Between Objects	2	4
Cutting/Piercing Instrument/Object	1	4
Hot, Corrosive, or Caustic Material/Steam	0	3
Visible /UV Light	0	2
Overexertion/Strenuous Movements	14	33
Repetitive Trauma	5	9
Total	40	90

A majority (130) of the 141 OSHA events were described as an “accident” in the OSHA logs (Figure 17). Fifty-eight percent (23/40) among women and 73 percent (66/90) among men were described as “other accidents” and resulted in restricted/lost workdays for women (340 days) and for men (288 days). Accidents from overexertion and strenuous movements made up at least 50 percent of the “other accidents” for both men and women. Among men, 45 percent of those accidents occurred among Crafts workers; among women, 52 percent occurred among the Administrative and Laborers and General Workers groups combined.



### Rates of OSHA-Recordable Events

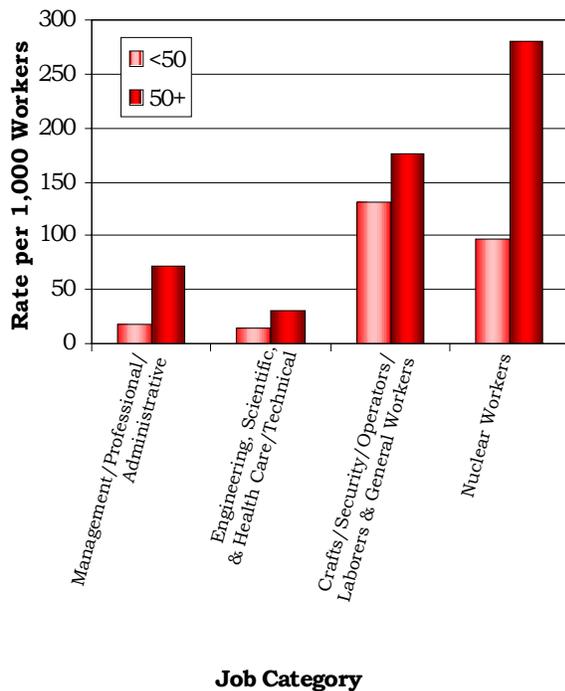
The rates of all OSHA-recordable events by age and job categories and gender are shown in Figures 18 and 19. Women tended to have higher rates than did men for most job categories. The OSHA-recordable rates among men



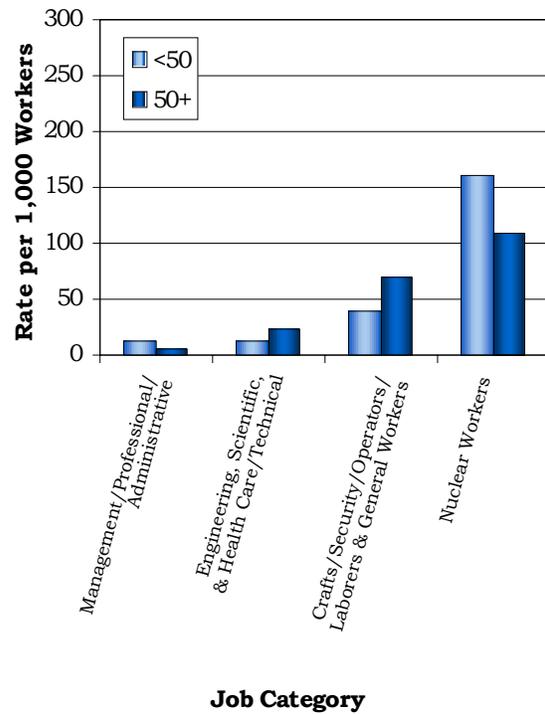
and women were highest among Nuclear Workers. Most of the OSHA health conditions involved injuries. When the rate for OSHA-recordable

injuries was considered separately from other OSHA-recordable health conditions, Nuclear Workers had the highest rates for both men and women. Nuclear Workers comprised 5 percent of the work force and reported 17 percent of the OSHA events.

**Figure 18. OSHA-Recordable Rates by Age and Job Categories Among Women, All Diagnoses Combined**



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



Injuries were more likely among the Crafts and Nuclear Workers (4 times) and Laborers and General Workers (2 times) groups. The Nuclear Workers, Crafts, and Laborers and General Workers groups were at greater risk (6 times, 5 times, and 3 times, respectively) of a back sprain or strain than were workers in other job categories. Both the Crafts and Nuclear Workers groups were at 3 times greater risk for sprains and strains to areas other than the back. Laborers and General Workers were 3 times more likely to experience disorders of the muscles and skeleton than were workers in other job categories. Workers in the Crafts job category were at increased risk (12 times) for disorders of the nervous system, while Nuclear Workers were almost 8 times more likely to report unspecified injuries.

## Time Trends for OSHA-Recordable Events

The age-adjusted OSHA-recordable rates from 1998 to 2000 are shown in Figure 20. We found no consistent trends in rates for women in most job categories over the 3-year period. The



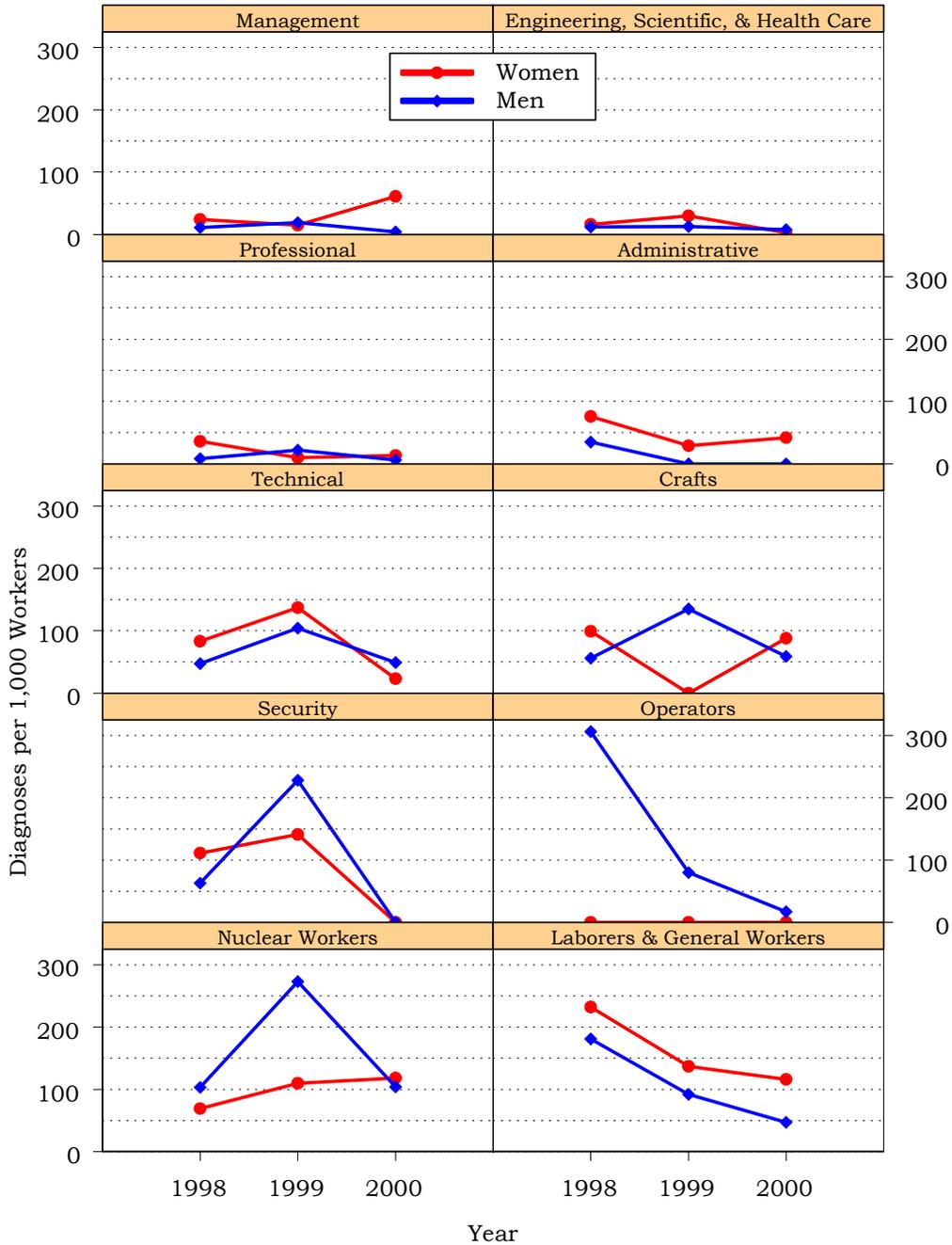
exceptions were in the Nuclear Workers group, which showed an increase in rates for 1999 and 2000, and in the rate for the Laborers and General Workers group, which showed a decrease in 1999 and 2000.

No OSHA-recordable events were reported in 2000 for women in the Security job category or for women in the Operators job category during the 3-year period, 1998-2000.

Among men, the rate of OSHA-recordable events declined among the Operators and Laborers and General Workers groups over the 3-year period. Rates declined from 1999 to 2000 for the following groups: Management; Engineering, Scientific, and Health Care; Professional; Technical; Crafts; Security; and Nuclear Workers. No OSHA-recordable events were reported for men in the Administrative job category in 1999 and 2000 or for Security workers in 2000.



**Figure 20. Age-Adjusted Rates for All OSHA-Recordable Diagnoses Combined Among Women and Men by Job Category from 1998 to 2000**



Note: The Unknown job category does not appear in this figure; there were no Unknown workers in 2000, and no events were reported by Unknown workers in 1998 and 1999.

## 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 five 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.

<b>Abbreviated Categories Used in the Annual Report</b>	<b>ICD-9-CM Codes</b>
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**

<b>All conditions</b>	001-V82	All reported health events
<b>Infectious and parasitic diseases</b>	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
<b>Malignant neoplasms</b>	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)
<b>Benign neoplasms and neoplasms of uncertain behavior and unspecified nature</b>	210-229 235-239	Tumors that are not cancerous or do not exhibit cancerous behavior, regardless of the part of the body affected
<b>Endocrine, nutritional, and metabolic diseases and disorders of the immune system</b>	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

<b>Disorders of the blood and blood forming organs</b>	280-289	Anemia and hemophilia (excludes leukemia)
<b>Mental disorders</b>	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
<b>Diseases of the nervous system and sense organs</b>	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

<b>Diseases of the circulatory system</b>	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

<b>Diseases of the respiratory system</b>	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
<b>Diseases of the digestive system</b>	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
<b>Diseases of the genitourinary system</b>	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

<b>Complications of pregnancy, childbirth, and the puerperium</b>	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
<b>Diseases of the skin and subcutaneous tissue</b>	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

<b>Diseases of the musculoskeletal system and connective tissue</b>	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
<b>Congenital anomalies</b>	740-759	Spina bifida; cleft palate; harelip; and various chromosomal anomalies, such as Klinefelter’s syndrome
<b>Certain conditions originating in the perinatal period</b>	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
<b>Symptoms, signs, and ill-defined conditions</b>	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

<ul style="list-style-type: none"> <li>• Other injuries and late effects of external causes</li> </ul>	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
<b>Supplementary classifications related to personal or family history of disease</b>	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
<b>Supplementary classifications related to health care for reproduction and child development</b>	V20-V28	Problems related to pregnancy, postpartum care, contraception, outcome of delivery, and physical development of child
<b>Contact with health services for reasons other than illness or injury</b>	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**