

# 2002

## Kansas City Plant Annual Illness and Injury Surveillance Report



## **Kansas City Plant 2002 Illness and Injury Surveillance Report**

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**[www.eh.doe.gov/health/epi/surv](http://www.eh.doe.gov/health/epi/surv)**

ACKNOWLEDGEMENT

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# **Kansas City Plant 2002 Illness and Injury Surveillance Report**

## **At A Glance**

The year 2002 marks the first year of participation in the Illness and Injury Surveillance Program for KCP.

A total of 3,170 KCP employees were included in illness and injury surveillance in 2002. There were 821 (26 percent) women and 2,349 (74 percent) men in the work force.

Laborers (Unskilled) had the highest absence rate among both male and female workers. Men and women in the Officials and Managers category and men in the Professionals category had the lowest absence rates.

Among both women and men, the most common diagnoses included conditions affecting the muscles and skeleton and the digestive system.

Women lost 2,629 calendar days due to illness and injury. Muscles and skeleton conditions (23 percent), digestive illnesses (17 percent), and respiratory conditions (14 percent) accounted for 54 percent of all reported diagnoses among women.

Men lost 5,020 calendar days due to illness and injury. Forty-eight percent of all reported diagnoses among men were due to muscles and skeleton conditions (22 percent), injuries (14 percent), and digestive conditions (12 percent).

Among women, there was no relationship between age and rate of illness and injury. Women classified as Laborers (Unskilled) had the highest illness and injury rates, followed by Service Workers.

Age was related to the illness and injury rates among men. The illness and injury rates were the highest among men aged 50 and older in all job categories except Office and Clerical workers, who did not report any health events. Male Service Workers and Laborers (Unskilled) had the highest rates of illness and injury.

There were 7 OSHA-recordable events among women and 12 OSHA-recordable events among men. The rate of OSHA-recordable events was the same for men and women (1 per 100 workers).

The Laborers (Unskilled) group had the highest rate of OSHA events among both women (6 per 100 workers) and men (4 per 100 workers).

Among women, disorders of the muscles and skeleton were responsible for the largest percentage of the OSHA diagnoses (45 percent). Among men, injuries accounted for 44 percent of the diagnoses reported.

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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 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 absences, occupational illnesses and injuries, and disabilities and deaths among current workers.

This report provides a summary of illness and injury surveillance data collected from the Kansas City Plant (KCP) from January 1, 2002 through December 31, 2002. The data were collected by a coordinator at KCP and submitted to DOE's Illness and Injury Surveillance Data Center at Oak Ridge Institute for Science and Education where quality control procedures and data analyses were performed. Illness and injury surveillance at KCP begins with this report.

The information presented in this report provides highlights of the data analyses conducted. Additional supporting tables are posted on the Office of Epidemiology and Health Surveillance Web site ([www.eh.doe.gov/health/epi/surv](http://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.

**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 KCP 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 Kansas City Plant (KCP) is situated on approximately 141 acres of the 300-acre Bannister Federal complex located within the city limits of Kansas City, Missouri. The facility, built by the Navy during World War II to assemble engines for U.S. Navy fighter planes, was operated by Pratt-Whitney from early 1943 until September 2, 1945, and produced the famous "Double Wasp" engines for the U.S. Navy. In February of 1949, the Atomic Energy Commission asked the Bendix Corporation to manage the facility and build non-nuclear components for nuclear weapons.

Over the past 50 years, the products manufactured at the KCP have become smaller and much more complex. The facility has evolved into a high-tech research production facility that specializes in science-based manufacturing. On March 1, 2000, Congress asked the U.S. Department of Energy to create a National Nuclear Security Administration (NNSA) to strengthen national security and reduce the global threat from weapons of mass destruction through applications of science and technology. As the most comprehensive manufacturing facility within the nuclear weapons complex, the KCP plays an important role by taking designs from the national labs and turning science into reality.

The KCP operates three major complete factories involved in development and production of non-nuclear weapons components and produces more than 40 product lines, using 120 technical capabilities, for the nation's defense system. In addition to production capabilities, the KCP also provides technical support services for national laboratories and government

agencies, including electronic products, mechanical products, engineered materials/product testing, technical service laboratories, and learning technologies and services.



In March 2002, the KCP received the "2002 Federal Laboratory Consortium Award for Excellence in Technology Transfer" for its Feature-Based Machining Advisor, an end-user tool that uses Feature-Based Machining (FBMach) to create process plans and in-process models. FBMach was developed at the KCP through the Advanced Design and Production Technologies campaign. Development of the tool involved the STEP-NC Super Model project, which focused on creating a super model database consisting of integrated product and process information. Building STEP-NC export capability into the FBMach Advisor was part of the technology transfer work performed by the KCP. The project included demonstrations taking a solid model into the FBMach Advisor, creating a process plan for machining, exporting an integrated product/process super model database to an intelligent machine tool controller, and then machining a part.

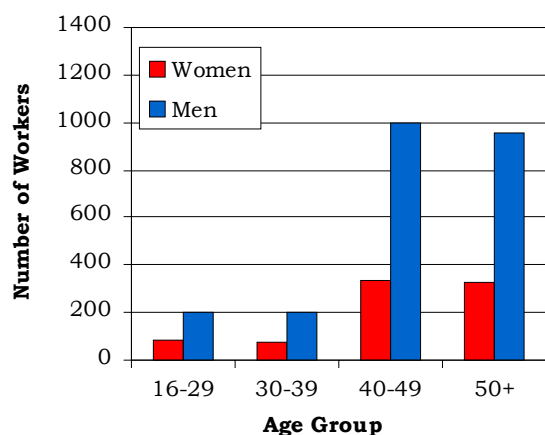
NNSA has contracted with Honeywell Federal Manufacturing & Technologies (FM&T) to manage and operate the KCP. Honeywell FM&T is a division of Honeywell International, a diversified technology and manufacturing leader, headquartered in Morristown, New Jersey.



## The Kansas City Plant Work Force - 2002

A total of 3,170 KCP employees were included in illness and injury surveillance in 2002. The gender and age distribution of the 2002 work force is shown in Figure 1. There were 821 (26 percent) women and 2,349 (74 percent) men in the work force. The average age of male KCP workers was 47 years; the average age of female KCP workers was 46 years.

**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 KCP were grouped into 8 job categories. This is 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. The largest percentage of both men (43 percent) and women (40 percent) were in the Professionals job category. One quarter of the women were Operatives (Semi-Skilled) workers. The Craft Workers (Skilled) category contained the second largest group of male workers (16 percent).

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

Job Category	Women	Men
Officials & Managers	56 7%	279 12%
Professionals	331 40%	1,018 43%
Technicians	32 4%	218 9%
Office & Clerical	110 13%	4 <1%
Service Workers	35 4%	111 5%
Craft Workers (Skilled)	28 3%	380 16%
Laborers (Unskilled)	18 2%	26 1%
Operatives (Semi-Skilled)	211 26%	313 13%



## Number and Length of Absences

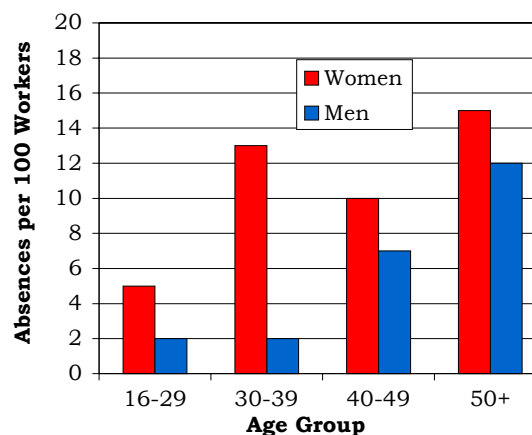
Illness and injury surveillance examines all absences due to illness and injury. Under DOE Order 440.1, contractor management is required to notify Occupational Medicine when a worker has been absent for 5 or more consecutive workdays. If an absence on a Friday continues through Tuesday, the length of that absence includes the weekend. All illnesses and injuries due to a work-related incident 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. KCP, however, has chosen to report all absences, regardless of length.

Specific absences that were not the result of an injury or illness were excluded. These include 4 women with reported absences due to maternity leave and 1 female worker and 1 male worker 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.

As shown in Figure 3, the rates of absence due to illness or injury varied by gender and age. The 96 absences among 79 women resulted in an absence rate of 12 per 100 workers (96/821). Among the 2,349 men, 191 absences reported resulted in an absence rate of 8 per 100 workers (191/2,349). The rate of absences among men increased with age. Among women, the rate increased with age up to age 40 with a slight decrease in the absence rate among those aged 40 to 49 before increasing again for workers

aged 50 and older. The absence rate among women was higher than the absence rate among men regardless of age.

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



The average length of absence was similar for men (26 days) and women (27 days) (Figure 4). The average duration of absence was not related to age for men. Among women, the duration decreased with age for workers less than 50 years of age. Women aged 50 and over had the longest average absences (32 days).

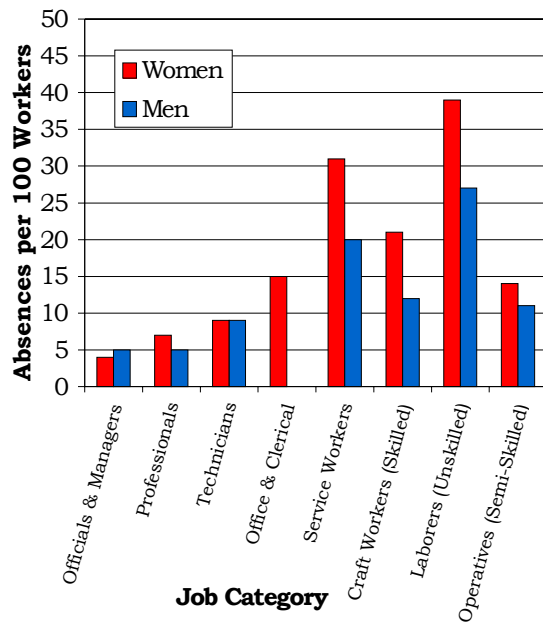
**Figure 4. Number of Days Absent by Gender and Age**

Gender	Age	Number of Absences	Number of Days Absent	Average Number of Days Absent
Women	16-29	4	112	28
	30-39	10	243	24
	40-49	32	681	21
	50+	50	1,593	32
	Total	96	2,629	27
Men	16-29	3	63	21
	30-39	5	145	29
	40-49	72	1,581	22
	50+	111	3,231	29
	Total	191	5,020	26



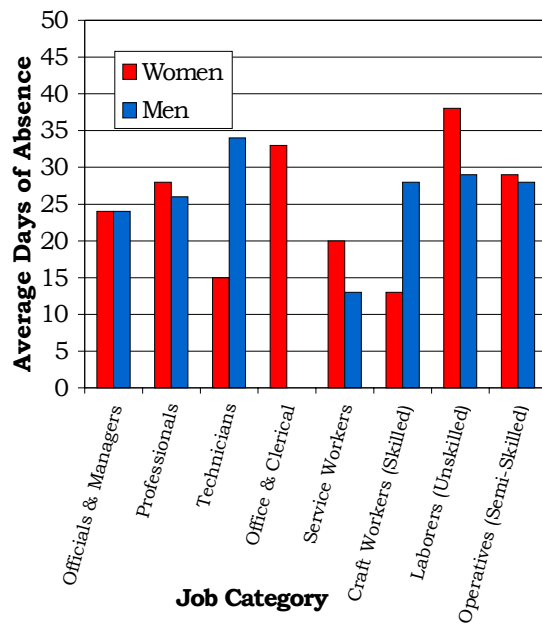
As shown in Figure 5, the rates of absence due to illness or injury varied by job category for both men and women. Women had a higher absence rate than men within the same job category except for those in the Officials and Managers and Technicians categories. Laborers (Unskilled) had the highest absence rate among both male and female workers. Men and women in the Officials and Managers category and men in the Professionals category had the lowest absence rates. No absences were reported among men in the Office and Clerical group.

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



There was no consistent pattern for average absence duration among men and women within a job category (Figure 6). Laborers (Unskilled), who had the highest absence rate among women, also had the longest average number of days absent (38 days), based on 7 absences. One of the 7 absences lasted more than 90 days. Among men, Technicians had the longest average number of days absent, 34 days. Five of the 20 absences reported by male Technicians workers lasted more than 50 days each. Female Craft Workers (Skilled) and male Service Workers averaged the shortest absences, 13 days.

**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 1 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.



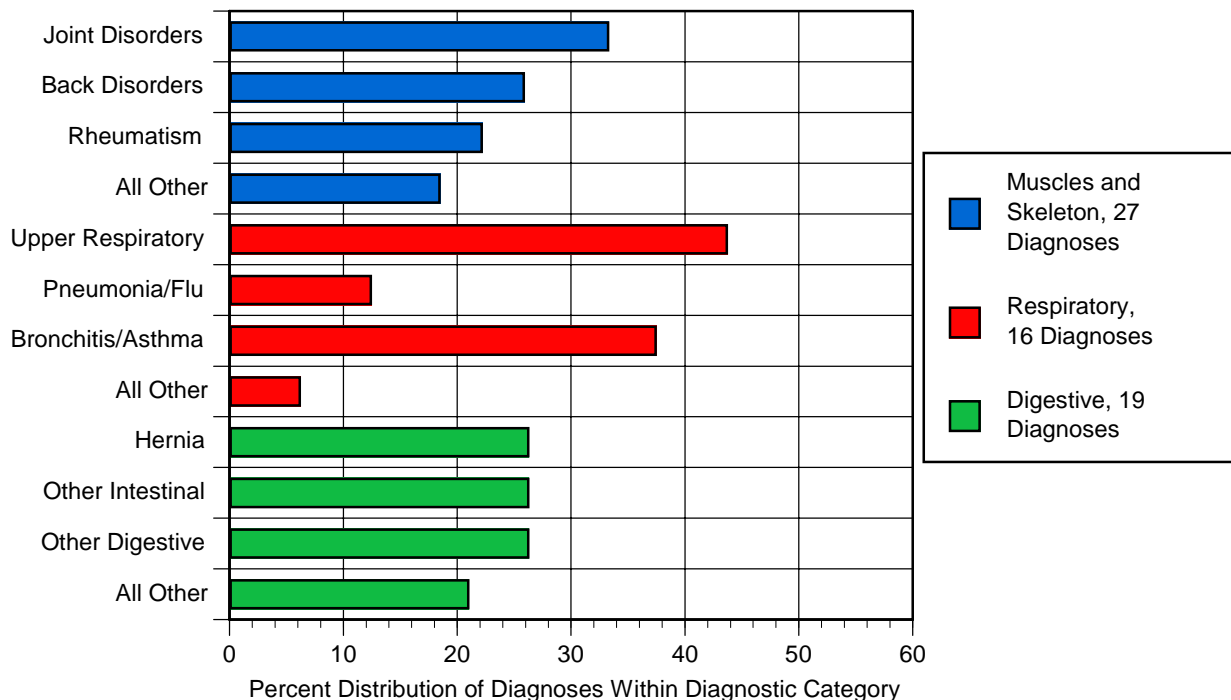
The number of reported diagnoses categorized according to the ICD-9-CM and the number of lost calendar days are presented in Figure 7a. Women reported 115 diagnoses, and men reported 256 diagnoses in 2002. The most frequently reported diagnoses varied little by gender. Among both women and men, the most common diagnoses included conditions affecting the muscles and skeleton and the digestive system.

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

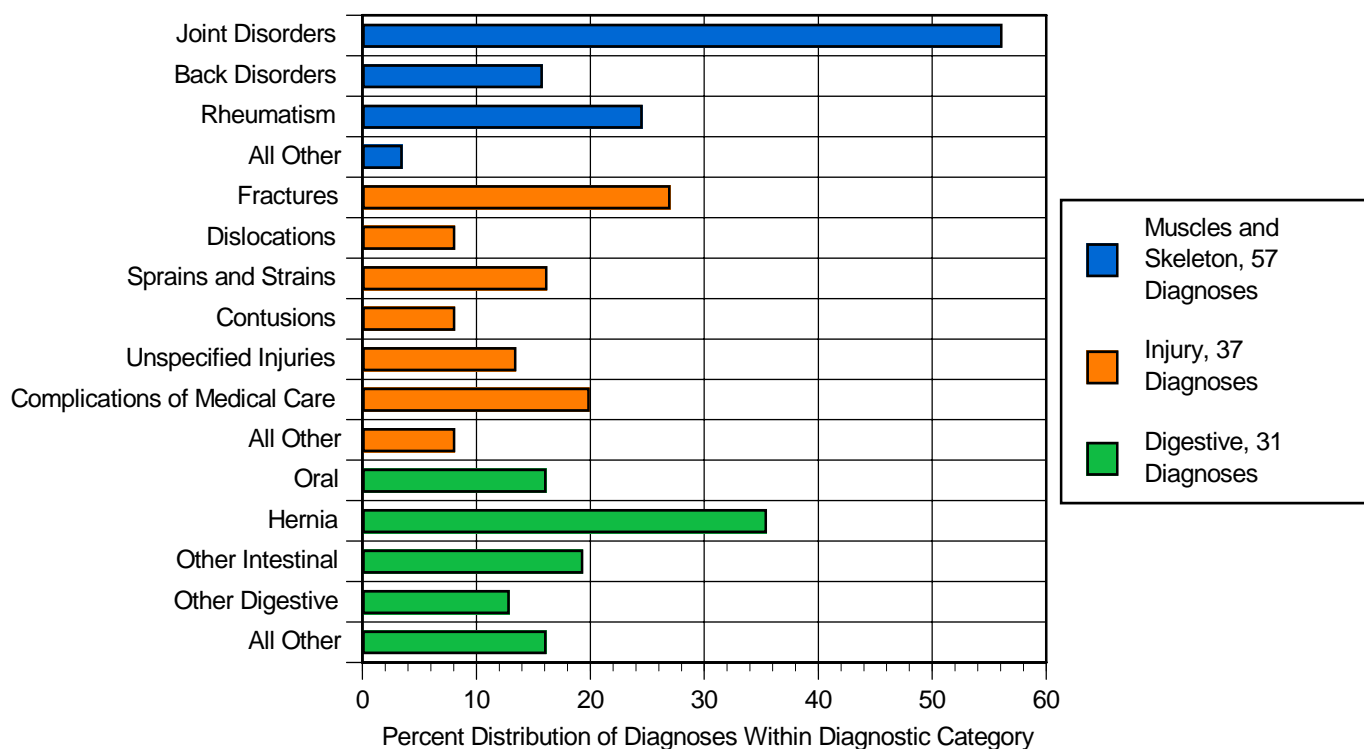
Diagnostic Category	Women		Men	
	Number of Diagnoses	Number of Lost Calendar Days	Number of Diagnoses	Number of Lost Calendar Days
Benign Growths	0	0	4	150
Blood	0	0	1	2
Cancer	7	403	9	474
Digestive	19	455	31	657
Endocrine/ Metabolic	1	2	3	73
Existing Birth Condition	0	0	2	57
Genitourinary	12	273	9	126
Heart/ Circulatory	4	178	25	1,072
Infections/ Parasites	2	17	8	492
Injury	14	251	37	853
Miscarriage	0	0	NA	NA
Muscles & Skeleton	27	847	57	1,661
Nervous System	5	57	15	239
Psychological	3	28	2	51
Respiratory	16	185	23	203
Skin	1	38	4	64
Unspecified Symptoms	4	25	26	169

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. Common Diagnoses Among Female Workers in 2002**



**Figure 7c. Common Diagnoses Among Male Workers in 2002**



Women lost 2,629 calendar days due to illness and injury. Muscles and skeleton conditions (23 percent), digestive illnesses (17 percent), and respiratory conditions (14 percent) accounted for 54 percent of all reported diagnoses among women. Major contributors to these diagnostic categories are shown in Figure 7b.

Men lost 5,020 calendar days due to illness and injury. Forty-eight percent of all reported diagnoses among men were due to muscles and skeleton conditions (22 percent), injuries (14 percent), and digestive conditions (12 percent). Figure 7c shows major contributors to these diagnostic categories among men.

The previously mentioned diagnoses varied some by age. Except for the youngest age group, diagnoses of the muscles and skeleton were among the more frequently reported categories for men of all age groups. Injuries were



common in men aged 30 to 49 years old. Digestive diseases were commonly reported in male workers aged 40 to 49. Among males 50 and older, heart/circulatory conditions and unspecified symptoms were common. Among this age group, 15 men reported 17 heart/circulatory diagnoses, 53 percent of which involved ischemic heart disease (restricted blood flow to an artery).

Among women, the most frequently reported diagnoses also varied among age groups. Conditions of the muscles and skeleton were reported frequently by women in all age groups. Respiratory



conditions were among the most common diagnoses in all age groups but the oldest. No injuries were reported by women under the age of 40. Twelve women 40 years of age and older reported 14 injury diagnoses, 36 percent of which were sprains and strains. Infections/parasites were among the most common diagnoses among workers less than 40 years old; none were reported for workers 40 years and older.

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, injuries, muscles and skeleton conditions, and heart/circulatory illnesses appeared frequently in most job categories. Among women, digestive illnesses, injuries, and muscles and skeleton conditions were common across most job categories. We saw no indication that any particular diagnoses occurred disproportionately in a specific job category.

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

Job Category	Men	Women
Officials & Managers	Muscles & Skeleton (6) Cancer (2) Heart/Circulatory (2) Injury (2)	Digestive (1) Injury (1)
Professionals	Injury (15) Muscles & Skeleton (11) Heart/Circulatory (9)	Muscles & Skeleton (8) Digestive (6) Cancer (4) Respiratory (4)
Technicians	Muscles & Skeleton (9) Injury (4) Heart/Circulatory (3)	Respiratory (3) Heart/Circulatory (1)
Office & Clerical	None	Muscles & Skeleton (4) Genitourinary (3) Cancer (2) Digestive (2) Injury (2) Psychological (2)
Service Workers	Unspecified Symptoms (18) Respiratory (9) Infections/Parasites (3)	Genitourinary (4) Injury (3) Digestive (1) Heart/Circulatory (1) Infections/Parasites (1) Muscles & Skeleton (1) Nervous System (1)
Crafts Workers (Skilled)	Muscles & Skeleton (15) Injury (9) Heart/Circulatory (8) Nervous System (8)	Respiratory (3) Muscles & Skeleton (2) Injury (1) Unspecified Symptoms (1)
Laborers (Unskilled)	Muscles & Skeleton (4) Genitourinary (2) Digestive (1) Injury (1)	Muscles & Skeleton (4) Digestive (2) Genitourinary (1) Injury (1) Respiratory (1)
Operatives (Semi-Skilled)	Digestive (14) Muscles & Skeleton (12) Injury (4)	Muscles & Skeleton (8) Digestive (7) Injury (6)

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



## Rates of Disease Occurrence

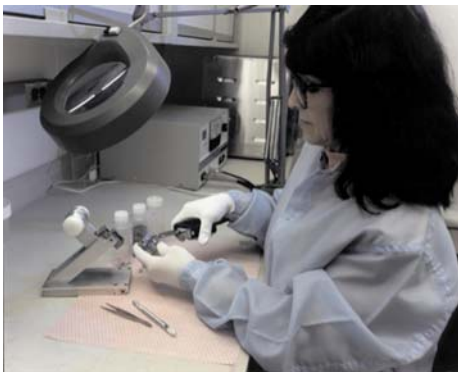
**A Word about Rates:** The previous section considered the number of absences and health conditions among various worker groups. For example, Figure 7a shows that men reported 57 and women reported 27 diagnoses involving muscles and skeleton conditions during 2002. Men, therefore, reported more than twice as many muscles and skeleton conditions as women. As there were almost 3 times as many men than women at the KCP, 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 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 muscles and skeleton rate for each gender. Rates are calculated by dividing the number of muscles and skeleton 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:

57 muscles and skeleton diagnoses ÷ 2,349 men = .024 x 1,000 = 24 muscles and skeleton diagnoses per 1,000 men

27 muscles and skeleton diagnoses ÷ 821 women = .033 x 1,000 = 33 muscles and skeleton diagnoses per 1,000 women

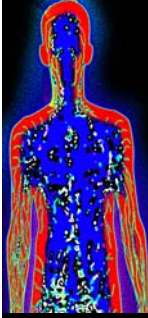
Comparing these rates now correctly suggests that the rate of reported muscles and skeleton conditions among women was 38 percent higher than the rate for men. They are called **crude rates** because they do not account for possible differences between men and women such as age and other factors that 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.

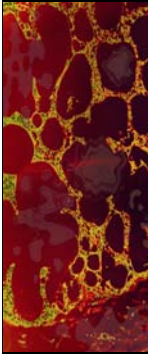


In the following set of analyses, the 4 age groups previously used were collapsed into 2 groups: workers younger than 50 years of age and those 50 and older. The rates of all illnesses and injuries combined are presented in Figure 9. Four groups of diagnoses of particular interest to workers are presented in Figure 10: cancer, heart/circulatory system, respiratory system, and injury. Additional information about 6 other disease groups is also analyzed and can be found in the Supplemental Tables.


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

Diagnostic Category	Rate per 1,000			
	Job Category	Age	Men	Women
	Officials & Managers	<50	21	29
		50+	75	48
	Professionals	<50	34	85
		50+	110	84
	Technicians	<50	85	174
		50+	168	0
	Office & Clerical	<50	0	130
		50+	0	172
	Service Workers	<50	347	200
		50+	385	533
	Craft Workers (Skilled)	<50	121	250
		50+	187	250
	Laborers (Unskilled)	<50	0	750
		50+	533	429
Operatives (Semi-Skilled)	<50	139	124	
	50+	176	217	


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

Diagnostic Category	Rate per 1,000				
	Job Category	Age	Men	Women	
	Cancer	Job Category	Age	Men	Women
			50+	15	0
	Professionals	<50	1	8	
		50+	3	24	
	Technicians	<50	0	0	
		50+	20	0	
	Office & Clerical	<50	0	0	
		50+	0	31	
	Service Workers	<50	14	0	
		50+	0	0	
	Craft Workers (Skilled)	<50	0	0	
		50+	0	0	
	Laborers (Unskilled)	<50	0	0	
50+		0	0		
Operatives (Semi-Skilled)	<50	0	0		
	50+	17	9		




Diagnostic Category	Rate per 1,000			
Heart/ Circulatory	Job Category	Age	Men	Women
	Officials & Managers	<50	0	0
		50+	15	0
	Professionals	<50	3	0
		50+	20	0
	Technicians	<50	9	43
		50+	20	0
	Office & Clerical	<50	0	0
		50+	0	16
	Service Workers	<50	14	0
		50+	0	67
	Craft Workers (Skilled)	<50	11	0
		50+	30	0
	Laborers (Unskilled)	<50	0	0
		50+	0	0
Operatives (Semi-Skilled)	<50	10	0	
	50+	0	9	

Among women, there was no relationship between age and rate of illness and injuries. Women classified as Laborers (Unskilled) had the highest illness and injury rates, followed by Service Workers. Age was related to the illness and injury rates among men. The illness and injury rates were the highest among men aged 50 and older in all job categories except Office and Clerical workers, who did not report any health events. Male Service Workers and Laborers (Unskilled) had the highest rates of illnesses and injuries.

Diagnostic Category	Rate per 1,000			
Respiratory	Job Category	Age	Men	Women
	Officials & Managers	<50	0	0
		50+	0	0
	Professionals	<50	1	12
		50+	12	12
	Technicians	<50	17	130
		50+	0	0
	Office & Clerical	<50	0	0
		50+	0	0
	Service Workers	<50	56	0
		50+	128	0
	Craft Workers (Skilled)	<50	11	0
		50+	10	188
	Laborers (Unskilled)	<50	0	250
		50+	0	0
Operatives (Semi-Skilled)	<50	15	19	
	50+	0	28	

A worker may experience several periods of absence from 1 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 *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.

Diagnostic Category	Rate per 1,000			
Injury	Job Category	Age	Men	Women
	Officials & Managers	<50	7	29
		50+	7	0
	Professionals	<50	7	0
		50+	29	0
	Technicians	<50	26	0
		50+	10	0
	Office & Clerical	<50	0	22
		50+	0	16
	Service Workers	<50	28	50
		50+	0	133
	Craft Workers (Skilled)	<50	38	83
		50+	10	0
	Laborers (Unskilled)	<50	0	0
		50+	67	71
Operatives (Semi-Skilled)	<50	21	19	
	50+	0	38	

The likelihood that an individual in the U.S. will develop cancer increases with age. Our data reflect this observation for men and women. Eight men reported 8 absences due to cancer. The diagnoses were 3 prostate cancers, 3 colon cancers, 1 kidney cancer, 1 leukemia, and 1 unspecified. Five women reported 6 absences due to cancer. Diagnoses included 5 breast cancer, 1 cancer of the jaw, and 1 unspecified. One worker reported 2 absences for breast cancer in 2002.

As expected, older workers tended to have the highest rates due to heart/circulatory problems among women and men. The highest rate among men was in the Craft Workers (Skilled) category. Thirteen of the 25 diagnoses reported by male KCP workers involved hypertension or ischemic heart disease (restricted

blood flow through an artery). The highest rate seen among women was in the Technicians job category, but the rate was based on only 1 reported diagnosis. Three of the 4 diagnoses reported among women, regardless of job category, involved hypertension or ischemic heart disease.

Among women, Craft Workers (Skilled) had the highest rate of respiratory conditions, which was based on 3 reported diagnoses. Among males, Service Workers had the highest rate of respiratory conditions. No respiratory conditions were reported by male and female Officials and Managers and Office and Clerical workers, female Service Workers, and male Laborers (Unskilled). Service Workers were at more than 6 times higher risk of a respiratory condition than other workers.

The highest rate of injury among women was in Service Workers, based on 3 diagnoses. Female Laborers (Unskilled) also had a high rate of injury. Among males, Laborers (Unskilled) had the highest rate of injuries. Service Workers were almost 4 times more likely than other workers to report an injury.

In other analyses, we compared the risk of illness and injury among workers classified in one job category with the risk to workers in the remaining 7 job categories. Service Workers were 11 times more likely to report genitourinary conditions and almost 12 times more likely to report unspecified symptoms compared with all other groups. Craft Workers (Skilled) were at 4 times the risk of other workers for nervous system illnesses. Laborers (Unskilled) were at more than 6 times the risk of genitourinary conditions and almost 6 times the risk of muscles and skeleton conditions. Operatives (Semi-Skilled) workers were over 3 times more likely to report a digestive condition than other groups.

## 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 material substitution, engineering control, personal protection, or medical care may be required to reduce the risk of illness or injury 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 may also result from non-occupational exposures. Due to this uncertainty, sentinel health events are assessed in 2 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 2002. One male in the Service Workers category, aged 50+, was diagnosed with berylliosis. This event resulted in 18 lost calendar days. Eight of 371 diagnoses (2 percent) were identified as possible sentinel health events (Figure 11). Seven of the 8 possible sentinel health events were identified as carpal tunnel syndrome, reported by 6 workers (4 men and 2 women) and resulted in 81 lost calendar days. Three of the carpal tunnel diagnoses were reported by workers in the Professionals job category and 2 diagnoses were reported by Craft Workers (Skilled). Six diagnoses occurred among workers aged 40 and older; 1 diagnosis was reported by a worker aged 30 to 39.

**Figure 11. Characteristics of SHEOs by Gender**

	Total Number of SHEO Diagnoses		Total Number of Days Absent	
	Men	Women	Men	Women
Definite	1	0	18	0
Possible	6	2	226	23
Total	7	2	244	23

**Disabilities Among Active Workers**

No disabilities for the 2002 KCP work force were reported.

**Deaths Among Active Workers**

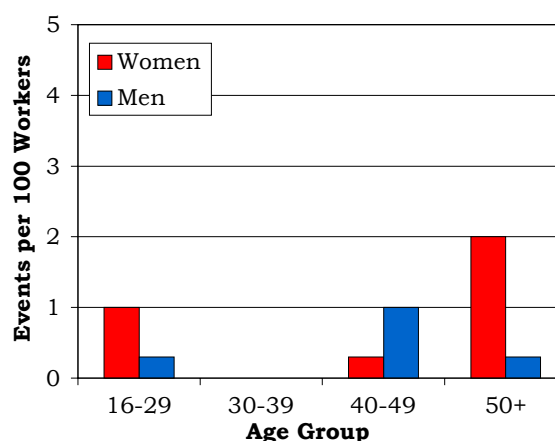
Seven KCP employees (6 men and 1 woman) died in 2002. The cause of death included 4 cancers (1 colon, 2 head and neck area, and 1 leukemia) and 1 each for nervous system disorders, cardiovascular disease, and injuries suffered in a motor vehicle accident. One worker who died was in the 40-49 age group; the remaining 6 workers were aged 50 or above.

**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.

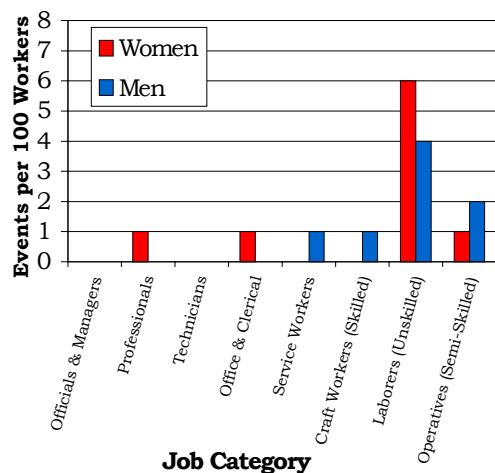
Figure 12 shows the distribution of OSHA events by gender and age. There were 7 OSHA-recordable events among women and 12 OSHA-recordable events among men. The rate of OSHA-recordable events was the same for men and women (1 per 100 workers). The average number of lost or restricted workdays increased with age for both men and women.

**Figure 12. OSHA-Recordable Events by Gender and Age**



The distribution of OSHA-recordable events by job category and gender is shown in Figure 13. Women had higher rates of OSHA-recordable events than did men in 3 job categories: Professionals, Office and Clerical, and Laborers (Unskilled). Men and women in the Officials and Managers and Technicians job categories, men in the Service Workers and Craft Workers (Skilled) job categories did not report any OSHA events. Among both women (6 per 100 workers) and men (4 per 100 workers), the Laborers (Unskilled) group had the highest rate of OSHA events.

**Figure 13. OSHA-Recordable Events by Job Category and Gender**



The average number of workdays lost or with restricted activity due to an OSHA event was similar for women (12 days) and men (13 days). Laborers (Unskilled) workers had the highest average number of lost or restricted workdays among men (70 days) and women (21 days) and both were based on only 1 event. The male Laborers (Unskilled) worker reported an inguinal hernia caused by lifting and moving parts, resulting in 20 lost and 50 restricted workdays. The female worker in this category had 21 restricted workdays due to a broken index finger. This event was caused by her hand getting caught in a door.

## Diagnostic and Accident Categories for OSHA-Recordable Events

There were 19 OSHA events recorded on the OSHA 200 Logs, containing 11 diagnoses among women and 16 diagnoses among men (Figure 14). Among women, disorders of the muscles and skeleton were responsible for the largest percentage of the OSHA diagnoses (45 percent). Injuries accounted for 36 percent of the diagnoses reported, with 3 of the 4 diagnoses being sprains and strains. The remaining diagnosis was a fracture of the upper limb. Among men, injuries accounted for 44 percent of the diagnoses reported; the 7 diagnoses were 3 open wounds, 2 fractures, 1 dislocation, and 1 superficial injury. After injuries, the most common type of OSHA-recordable diagnoses among men was conditions involving the muscles and skeleton.

**Figure 14. OSHA-Recordable Diagnoses by Diagnostic Category and Gender**

Diagnostic Category	Gender	
	Women	Men
Digestive	0	1
Muscles & Skeleton	5	5
Nervous System	0	1
Skin	1	1
Unspecified Symptoms	1	1
Injury	4	7
Fractures – Upper Limb	1	1
Fractures – Lower Limb	0	1
Dislocations	0	1
Back Sprains & Strains	1	0
Other Sprains & Strains	2	0
Open Wounds – Head, Neck, Trunk	0	1
Open Wounds – Upper Limb	0	2
Superficial Injuries	0	1

Ninety-five percent (18) of the 19 OSHA events were described as “an accident” in the OSHA logs (Figure 15). The majority of events were described as “other accidents,” 3 (50 percent) of 6

events among women and 9 (75 percent) of 12 events among men. Overexertion and strenuous movements were responsible for half of the “other accidents,” followed by cutting/piercing instrument/object (25 percent). The remaining accidents were caused by falls.

**Figure 15. OSHA-Recordable Accidents by Type and Gender**

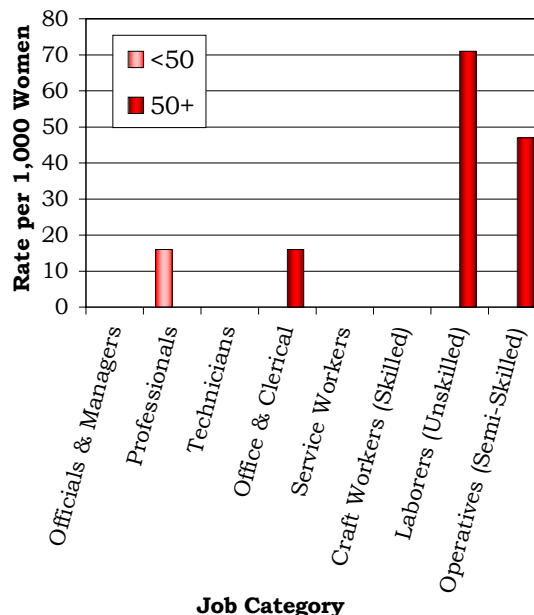
Accident Category	Gender	
	Women	Men
	Number of Accidents	Number of Accidents
Falls	3	3
Other Accidents	3	9
Struck by an Object	0	1
Caught Between Objects	1	0
Cutting/Piercing Instrument/Object	0	3
Overexertion/Strenuous Movements	2	4
Repetitive Trauma	0	1
Total	6	12

**Rates of OSHA-Recordable Events**

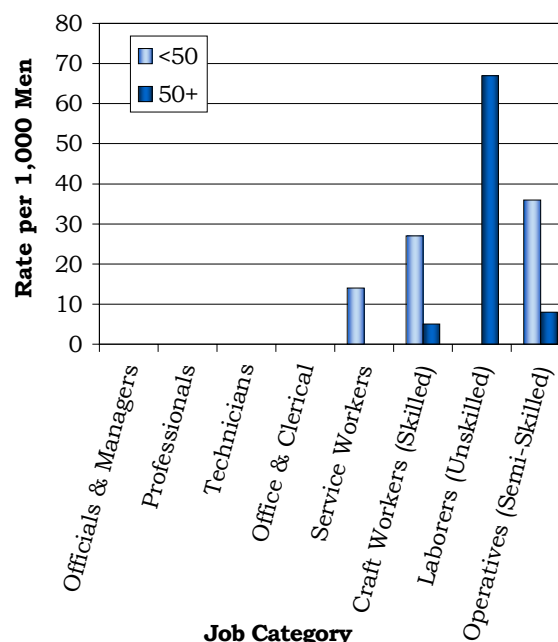
The rates of all OSHA-recordable events by age and job categories and gender are shown in Figures 16 and 17. The OSHA-recordable rates among both men and women were highest among Laborers (Unskilled) workers. OSHA-recordable events were reported by both men and women in 2 of the job categories: Laborers (Unskilled) and Operatives (Semi-Skilled). Women aged 50 and older in these job categories had rates higher than men. Most of the OSHA health conditions involved injuries. When the rate for OSHA-recordable injuries was considered separately from other OSHA-recordable health conditions, the Laborers (Unskilled) job category had the highest rate for women. For men, however, the Operatives (Semi-Skilled) workers had the highest rate. Together, these 2 occupational groups accounted for 18 percent of the work force and 63 percent of the OSHA-recordable events.

Respectively, Laborers (Unskilled) and Operatives (Semi-Skilled) workers were 7 times and 5 times more likely as other workers to report a health condition; in addition, Operatives (Semi-Skilled) were at 5 times greater risk of an injury.

**Figure 16. OSHA-Recordable Rates by Age and Job Categories Among Women, All Diagnoses Combined**



**Figure 17. OSHA-Recordable Rates by Age and Job Categories Among Men, All Diagnoses Combined**



## 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 2 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 1 group compared with 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
<b>Injury and poisoning</b>	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**