2002

Idaho National Engineering and Environmental Laboratory Annual Illness and Injury Surveillance Report

Idaho National Engineering and Environmental Laboratory
2002 Illness and Injury Surveillance Report

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

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

ACKNOWLEDGEMENT

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At A Glance

Beginning with the 2002 Illness and Injury Surveillance Report, INEEL chose to include absences with durations shorter than 5 days. Including absences of less than 5 days added only 17 absences to the 584 reported by the INEEL work force during 2002.

Despite the inclusion of absences less than 5 days, the number of lost workdays due to illness and injury of female employees decreased 36 percent from 2001 to 2002, from 8,540 to 5,433. Among women, conditions of the muscles and skeleton (22 percent), genitourinary conditions (17 percent), and injuries (16 percent) accounted for 55 percent of all reported diagnoses.

Male employees had a 15 percent decrease in lost workdays from 15,355 to 13,035 due to illness and injury. Among men, 63 percent of all reported diagnoses were due to muscles and skeleton conditions (29 percent), respiratory diseases (17 percent), and injuries (17 percent).

Crafts and Manual Labor workers accounted for 11 percent of all male workers at INEEL, but accounted for 56 percent of the men who reported cancer in 2002.

Crafts and Manual Labor workers were over 2 times as likely to report respiratory conditions compared with other workers. A similar level of increased risk has been observed among Crafts and Manual Labor workers since 1998.

Overall, the average number of workdays lost or with restricted activity due to an OSHA event was 9 workdays for women compared with 14 workdays for men.

Since 2000, the number of INEEL workers reporting OSHA-recordable events has been decreasing. The number of workers reporting an OSHA-recordable event decreased 25 percent for men and 41 percent for women from 2001 to 2002. In 2002, 20 women and 64 men reported at least 1 OSHA-recordable event compared with 34 women and 85 men in 2001.

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.

Illness and injury surveillance has been ongoing at Idaho National Engineering and Environmental Laboratory (INEEL) since 1993. This report provides a summary of epidemiologic surveillance data collected from INEEL from January 1, 2002 through December 31, 2002.

The data were collected by a coordinator at INEEL and submitted to the Illness and Injury Surveillance Data Center at Oak Ridge Institute for Science and Education where quality control procedures and preliminary data analyses were performed. The analyses were interpreted and the final report prepared by DOE's Office of Epidemiology and Health Surveillance.

The information presented in this report provides highlights of the data analyses conducted. Surveillance reports and additional supporting tables are posted on the Office of Epidemiology and Health Surveillance Web site (**www.eh.doe.gov/health/epi/surv**) or are available by request. The main sections of the report include: work force characteristics; absences due to illness or injury; workplace injuries, illnesses, and deaths that were reportable to the Occupational Safety and Health Administration ("OSHA-recordable" events); and disabilities and deaths among current workers. The report also includes a section on time trends that provides comparative information on the health of the work force from 1993 to 2002.

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 INEEL 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

INEEL, located in Eastern Idaho, consists of an 890-square mile reservation on the Snake River Plain. Additional research facilities and office buildings are located 32 miles east in Idaho Falls, Idaho. INEEL was established in 1949 as the National Reactor Testing Station to provide an isolated location where various kinds of nuclear reactors and support facilities could be built and tested.

On December 20, 1951, INEEL was the site of a very significant scientific accomplishment: the first use of nuclear fission to generate usable amounts of electricity. This took place at Experimental Breeder Reactor I (EBR-I), now a National Historic Landmark. Three of the nation's commercial power reactor designs – the pressurized water reactor, the boiling water reactor, and the liquid metal-cooled breeder reactor – were first demonstrated at INEEL. Fifty-two test reactors, the largest concentration of nuclear reactors in the world, were constructed at INEEL over the years. In 1955, BORAX III, a commercial power reactor, was the first in the world to light a city: Arco, Idaho. Most reactors were phased out when their missions were completed. In 1974, the site was named a national engineering laboratory to reflect its expanding application of applied science and engineering capabilities to non-nuclear research.

In 1995 INEEL became the nation's second National Environmental Research Park, one of only 5 in the nation. Today, INEEL is a multi-program laboratory that supports DOE's missions and business lines of environmental quality, energy resources, science and technology, and national security. INEEL's mission is to deliver science-based, engineered solutions to the challenges of DOE's mission areas, other federal agencies, and industrial clients; to complete environmental cleanup responsibly while using innovative science and engineering capabilities cost-effectively; to provide leadership and support to optimize the value of environmental management investments and strategic partnerships throughout the DOE complex; and to enhance scientific and technical talent, facilities, and equipment to best serve national and regional interests.

In 2002, scientists at INEEL began researching the possibilities of today's light water nuclear reactors—the source for 20 percent of all electricity in the U.S. The next generation of reactors—called supercritical water reactors—promise to increase reactor energy efficiency by as much as 13 percent while simplifying plant design.

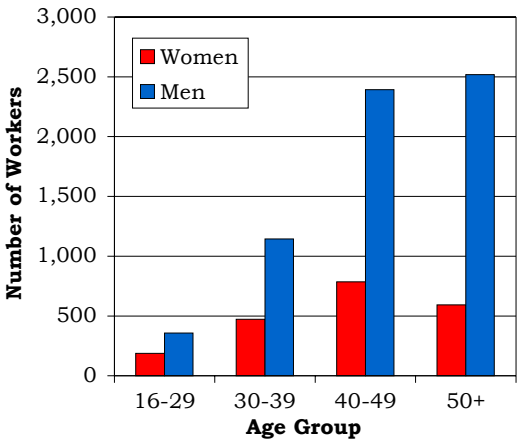
INEEL researchers are now working toward critical advancements in the fields of agriculture-based bioenergy and bioproducts. The team will focus on research and development of techniques to more fully use the renewable materials from wheat and other crops. Using the biorefining concept, researchers will study how crop residues provide basic chemical building blocks to produce fuels and a range of consumer goods normally produced from petrochemicals.

The INEEL is operated for the DOE by Bechtel BWXT Idaho, LLC. Members of the LLC are Bechtel National, Inc., BWX Technologies Company, and Island Northwest Research Alliance (INRA). INRA is a consortium of 8 regional universities, each of which brings unique educational, management, research, and scientific assets into collaboration and partnership with the INEEL.

The INEEL Work Force - 2002

A total of 8,453 INEEL employees were included in illness and injury surveillance in 2002, 6 percent fewer workers than in 2001. The distribution of the 2002 work force by gender and age is shown in Figure 1. There were 2,038 (24 percent) women and 6,415 (76 percent) men in the work force. The average age of women in the work force was 44 years; the average age for men 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, as reported by INEEL, were grouped together into 8 occupational categories, including 1 for "Unknown." This was done because there were either too few workers or 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 Administration group was the most common job category among women (43 percent), followed by the Professional (19 percent) and Unknown (15 percent) groups. Over two-thirds of the men were either in the Professional (27 percent), Unknown (22 percent), or Administration (18 percent) job categories.

Figure 2. The Work Force by Job Category and Gender

Job Category	Women	Men
Administration	882 43%	1,145 18%
Professional	387 19%	1,744 27%
Technical	194 9%	539 8%
Service	117 6%	283 5%
Security	40 2%	258 4%
Crafts & Manual Labor	60 3%	726 11%
Nuclear	52 3%	292 5%
Unknown	306 15%	1,428 22%

Number and Length of Absences

A Note to the Reader:

Prior to the 2002 report, illness and injury surveillance at INEEL examined absences of 5 or more consecutive workdays (also referred to as "5-day absences"). This approach 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.

As indicated in Order 440.1, 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 and, as noted above, have been excluded from these analyses until report year 2002. Beginning with the 2002 Epidemiologic Surveillance Report, INEEL chose to include absences of shorter duration. This decision may impact many of the rates, proportions, and trends presented in this and subsequent Epidemiologic Surveillance reports beginning with 2002. The reader may notice an increase in certain rates and is cautioned to take into account the change in absence reporting when interpreting the data that follows. Rates of OSHA-recordable events, reportable regardless of whether or not an absence is involved, will in general not be affected by the change in reporting.

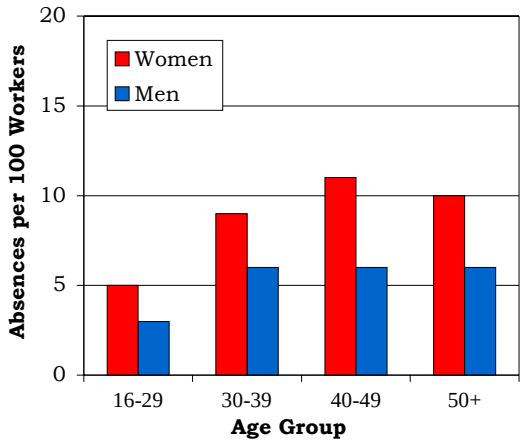
Specific health events resulting in an absence were excluded. These include 19 women with 19 reported absences due to maternity leave and 1 man with a reported absence due to an elective procedure not related to the treatment of an illness or injury.

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

As shown in Figure 3, the rate of absences due to illness or injury varied by gender and age. Including absences of less than 5 days added only 17 absences to the 584 reported by the INEEL work force during 2002. There were 149 female employees with 1 absence and 21 women with multiple absences at INEEL in 2002. Among women, a total of 195 absences were reported. There were 328 male employees who reported 1 absence and 27 men who reported multiple absences, resulting in 389 absences among men. The absence rates in 2002 were 6 per 100 among men (389/6,415) and 10 per 100 among women (195/2,038). There was a 24 percent decrease among women and a 3 percent increase among men in the number of absences from 2001 to 2002. The work force at INEEL decreased over the same period: 8 percent for women and 5 percent for men. The large decrease in the absences reported by women compared with the decrease in the female work force is noteworthy, especially since the pattern was opposite in men. The rate of absences among men 30 years of age and older was constant. Among women, the rate

increased with age until age 50 when the rate decreased.

Figure 3. Absence Rate by Gender and Age



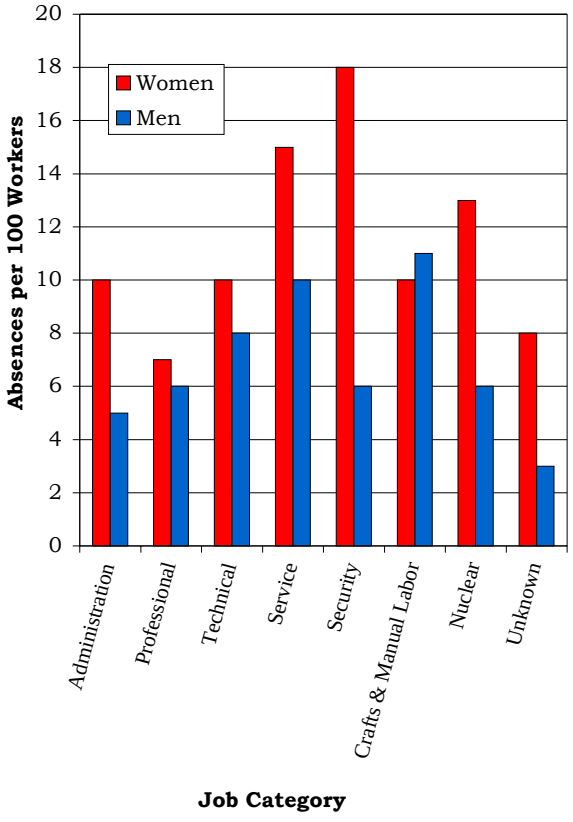
The average length of absence by gender and age is shown in Figure 4. The average length of absence was 34 days for men and 28 days for women. Among women, the length of absence was not related to age. For men, the length of absence varied little with age except for the youngest age group, which had absences half as long as the other age groups.

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	9	206	23
	30-39	41	883	22
	40-49	85	2,687	32
	50+	60	1,657	28
	Total	195	5,433	28
Men	16-29	10	162	16
	30-39	63	2,084	33
	40-49	155	4,986	32
	50+	161	5,803	36
	Total	389	13,035	34

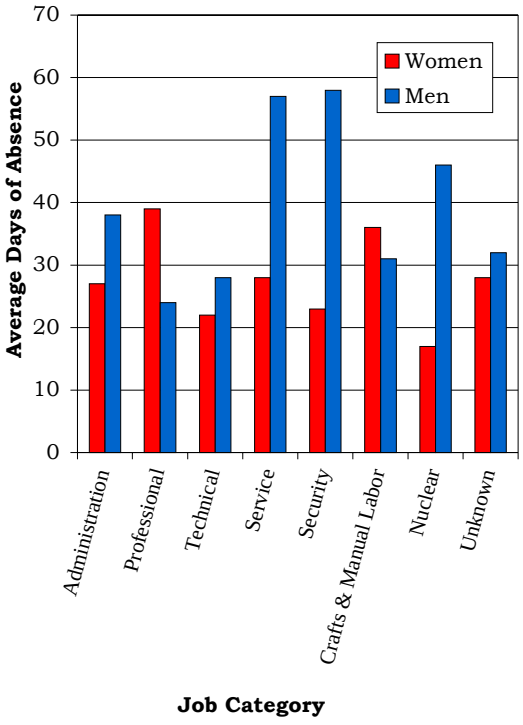
As shown in Figure 5, the rate of absences due to illness or injury varied by job category for men and women. Women had higher rates of absence across similar job categories compared with men, with the exception of the Crafts and Manual Labor group. Among men, Crafts and Manual Labor workers had the highest rate of absences, 11 per 100 workers (81/726), while those in the Unknown category had the lowest rate of absence, 3 per 100 workers (39/1,428). Security workers had the highest rate of absence among female workers, 18 per 100 workers (7/40), while those in the Professional category had the lowest rate of absences, 7 per 100 workers (26/387).

Figure 5. Absence Rate by Job Category and Gender



As shown in Figure 6, the average duration of absence varied by job category and gender. Men had longer absence durations than did women in every job category except the Professional and Crafts and Manual Labor. Among women, the Professional group, which had the lowest absence rate, had the longest average absence, 39 days. Security and Service workers had the longest absences among men, 58 days and 57 days, respectively.

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



Diagnostic Categories

Illness and injury surveillance monitors *all* illnesses and injuries among active workers because it is not always possible to determine what health effects are due to occupational exposures and what 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 section at the back of this report.

The number of reported diagnoses categorized according to the ICD-9-CM and number of lost calendar days are presented in Figure 7a. At INEEL, there were 245 diagnoses reported by women and 449 diagnoses reported by men in 2002. Fifteen diagnoses (3 percent) among men and 7 diagnoses (3 percent) among women were associated with absences less than 5 days.

Female employees lost 5,433 workdays due to illness and injury. Among women, conditions of the muscles and skeleton (22 percent), genitourinary conditions (17 percent), and injuries (16 percent) accounted for 55 percent of all reported diagnoses.

Major contributors to these diagnostic categories are shown in Figure 7b. Among absences lasting less than 5 days, 3 of the 7 diagnoses were for unspecified symptoms, 2 for injuries, and 1 each for a psychological disorder and a digestive disorder.

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	2	80	3	33
Blood	0	0	0	0
Cancer	3	54	12	555
Digestive	17	305	59	1,086
Endocrine/ Metabolic	5	230	4	123
Existing Birth Condition	0	0	0	0
Genitourinary	42	1,087	11	265
Heart/ Circulatory	9	171	23	1,183
Infections/ Parasites	1	8	7	164
Injury	40	1,127	77	2,394
Miscarriage	0	0	NA	NA
Muscles & Skeleton	54	1,165	128	5,919
Nervous System	14	435	12	163
Psychological	9	387	7	109
Respiratory	37	564	77	967
Skin	4	103	6	122
Unspecified Symptoms	8	110	23	490

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

Men lost 13,035 workdays due to illness and injury. Among men, 63 percent of all reported diagnoses were due to muscles and skeleton conditions (29 percent), respiratory diseases (17 percent), and injuries (17 percent). Major contributors to these diagnostic categories are shown in Figure 7c. Fifteen diagnoses reported by men resulted from absences lasting less than 5 days: 3 injuries, 3 unspecified symptoms, 2 muscles and skeleton disorders, 2 digestive conditions, 2 respiratory diseases, and 3 diagnoses each in a different diagnostic category.

The above diagnoses among men and women did not vary much by age. Conditions of the muscles and skeleton, injuries, and respiratory diseases were among the most frequent diagnoses in a majority of the age groups for both men and women of all ages.

Figure 8 shows the frequency of reported diagnoses by occupation for men and women. The types of diagnoses did not vary significantly by occupational category among men or women. Among men, at least 3 of the following diagnostic categories were reported in each job category: digestive disorders, respiratory conditions, muscles and skeleton conditions, and injuries. This consistency in the frequently reported conditions was also seen in 2001 for men. Among women, at least 2 of the following diagnostic categories were reported in each job category: genitourinary diseases, respiratory conditions, muscles and skeleton disorders, and injuries.

Figure 7b. Common Diagnoses Among Female Workers in 2002

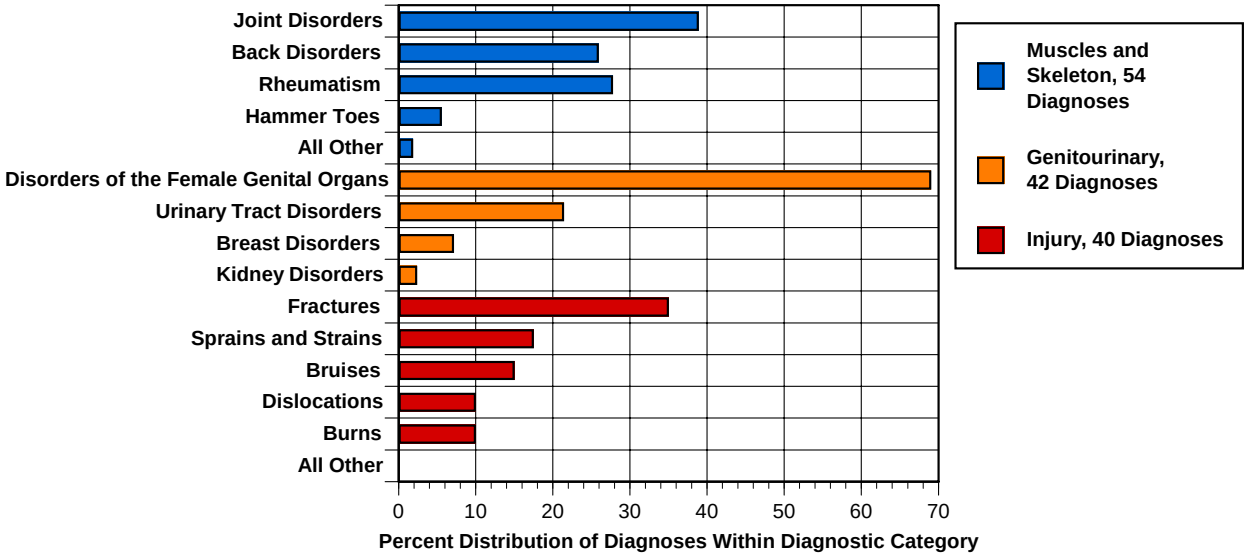


Figure 7c. Common Diagnoses Among Male Workers in 2002

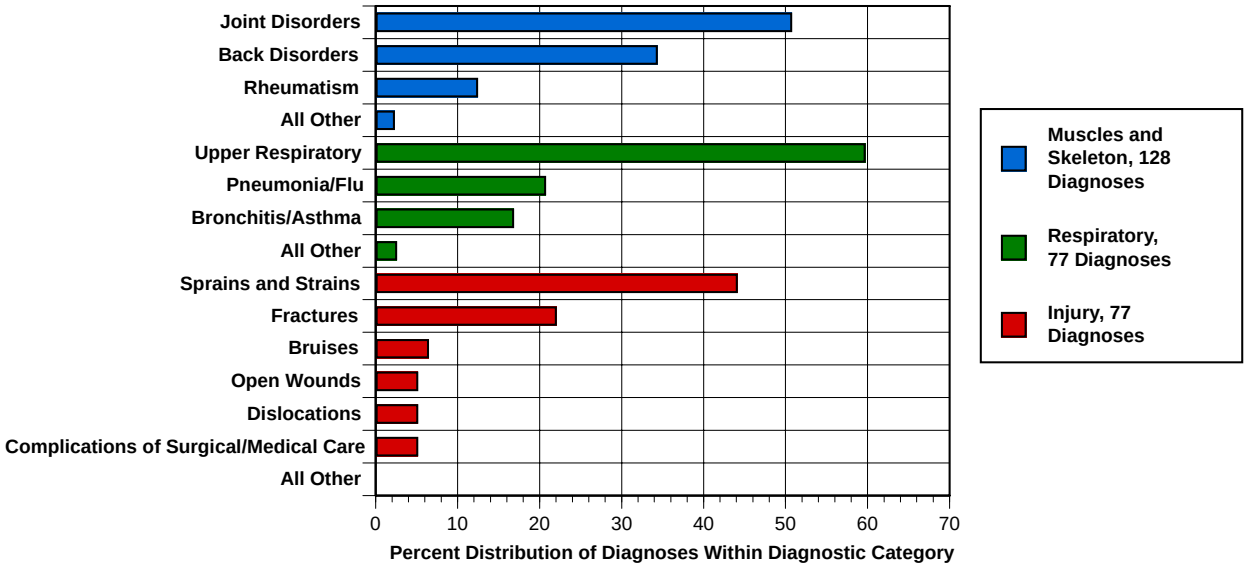
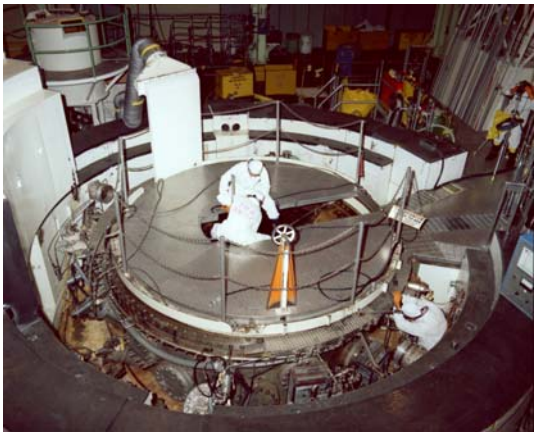


Figure 8. Most Frequently Reported Diagnoses by Job Category and Gender

Job Category	Men	Women
Administration	Muscles & Skeleton (17) Injury (13) Respiratory (13)	Muscles & Skeleton (22) Injury (19) Respiratory (15)
Professional	Muscles & Skeleton (39) Respiratory (23) Digestive (19)	Muscles & Skeleton (12) Genitourinary (7) Respiratory (6)
Technical	Muscles & Skeleton (17) Injury (9) Respiratory (9)	Muscles & Skeleton (9) Genitourinary (8) Respiratory (4)
Service	Muscles & Skeleton (7) Digestive (5) Respiratory (5)	Muscles & Skeleton (6) Heart/Circulatory (3) Respiratory (3)
Security	Injury (9) Respiratory (4) Muscles & Skeleton (3)	Injury (5) Respiratory (3) Nervous System (1) Skin (1)
Crafts & Manual Labor	Muscles & Skeleton (23) Respiratory (17) Injury (13)	Endocrine/Metabolic (2) Respiratory (2) Genitourinary (1) Injury (1) Nervous System (1)
Nuclear	Injury (6) Respiratory (4) Muscles & Skeleton (3)	Respiratory (3) Genitourinary (2) Injury (2)
Unknown	Muscles & Skeleton (19) Injury (10) Digestive (9)	Genitourinary (10) Injury (7) Muscles & Skeleton (5)

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



Rates of Disease Occurrence

A Word about Rates: The previous section considered the number of absences and health conditions among various worker groups. For example, Figures 7a shows that men reported 77 diagnoses and women reported 40 diagnoses involving injuries during 2002. Men, therefore, reported almost twice as many injuries as women. As there were more than 3 times as many men than women at INEEL, it seems reasonable to expect more injuries among men than women. Does this mean that men were at greater risk of injuries compared with women in 2002? To correctly answer that question, the total number of men and women in the work force must be considered. To compare risk among men and women, it is necessary to calculate the injury rate for each gender. Rates are calculated by dividing the number of injury diagnoses in a given gender by the total number of employees of that gender. Multiply this number by 1,000 to get the diagnosis rate per 1,000 workers. For example:

77 injury diagnoses ÷ 6,415 men = .012 x 1,000 = 12 injury diagnoses per 1,000 men

40 injury diagnoses ÷ 2,038 women = .020 x 1,000 = 20 injury diagnoses per 1,000 women

Comparing these rates now correctly suggests that reported diagnoses due to injuries among women were 67 percent higher than among men. They are called crude rates because they do not account for possible differences between men and women, such as age and other factors that might affect the individual's risk of having an injury. Because age is so strongly related to the risk of disease and injury, epidemiologists almost always take age into account when comparing groups. This is done by using age-specific categories or by statistical methods of adjustment.

The diagnosis rate, also called the illness and injury rate, is the number of occurrences of a given disease or health condition observed over the course of a year per 1,000 workers at risk of getting that condition (see shaded box). One health condition, arthritis for example, may result in several absences over a year. Conversely, 1 absence may be associated with multiple diagnoses (e.g., the flu and a sprained wrist) recorded for 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. In addition, the 8 job categories were combined into 5 larger groups. These groups were collapsed to ensure that the number of diagnoses in each group was large enough to analyze. 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 injuries.

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

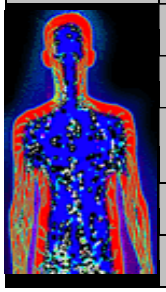
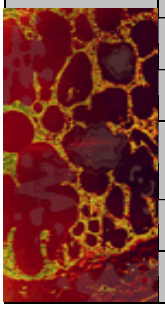
Diagnostic Category	Rate per 1,000			
All Illnesses & Injuries Combined	Job Category	Age	Men	Women
	Administration	<50	66	128
		50+	67	118
	Professional/ Technical	<50	75	102
		50+	71	93
	Service/Security/ Crafts & Manual Labor	<50	100	164
		50+	128	185
	Nuclear	<50	68	190
		50+	61	0
	Unknown	<50	28	91
		50+	40	138

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

Diagnostic Category	Rate per 1,000			
Cancer	Job Category	Age	Men	Women
	Administration	<50	0	4
		50+	8	0
	Professional/ Technical	<50	1	0
		50+	0	8
	Service/Security/ Crafts & Manual Labor	<50	1	0
		50+	11	0
	Nuclear	<50	0	0
		50+	0	0
	Unknown	<50	0	0
		50+	2	0

Diagnostic Category	Rate per 1,000			
Heart/ Circulatory	Job Category	Age	Men	Women
	Administration	<50	0	4
		50+	6	3
	Professional/ Technical	<50	2	4
		50+	7	0
	Service/Security/ Crafts & Manual Labor	<50	1	20
		50+	9	0
	Nuclear	<50	6	0
		50+	9	0
	Unknown	<50	1	0
		50+	5	11

Diagnostic Category	Rate per 1,000			
Respiratory	Job Category	Age	Men	Women
	Administration	<50	16	18
		50+	6	16
	Professional/ Technical	<50	15	19
		50+	13	8
	Service/Security/ Crafts & Manual Labor	<50	22	39
		50+	18	31
	Nuclear	<50	17	71
		50+	9	0
	Unknown	<50	0	5
		50+	3	0

Diagnostic Category	Rate per 1,000			
Injury	Job Category	Age	Men	Women
	Administration	<50	8	28
		50+	15	10
	Professional/ Technical	<50	11	9
		50+	7	0
	Service/Security/ Crafts & Manual Labor	<50	26	39
		50+	11	31
	Nuclear	<50	34	48
		50+	0	0
	Unknown	<50	6	9
		50+	9	57

Age was not strongly related to rates for all illnesses and injuries combined for male or female workers at INEEL. The highest illness and injury rates were those individuals classified as Service/Security/Crafts and Manual Labor workers among men and women. Rates for women were higher than for men in the same job category, regardless of age, with the exception of Nuclear workers aged 50 years and older.

Cancer rates presented in this report are based on reported absences during the year. A worker may

experience several periods of absence from 1 cancer diagnosis due to medical complications or treatment regimens. Each absence results in the report of a cancer diagnosis; however, it does not imply that this is a new *(incident)* cancer. *Incidence cancer rates* are based on the number of new cancer cases diagnosed within a given time, usually a year. 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.

The likelihood that an individual in the U.S. will develop cancer increases with age. Our data reflect this observation for men. Two of the 9 men who reported a cancer diagnosis in 2002 were under age 50. Among the 7 men aged 50 and older reporting cancer, 3 were diagnosed with colon cancer, and 1 each was diagnosed with cancer of the lung, prostate, bladder, and kidney. The man who reported lung cancer reported prostate cancer in 2001. Among the younger men, 2 workers reported cancer: malignant melanoma and skin cancer. Among women, 3 workers reported cancer diagnoses, 2 breast and 1 cervix. Crafts and Manual Labor workers were over 8 times more likely to report an absence for cancer compared with workers in other job categories in 2002. The 5 Crafts and Manual Labor workers reporting cancer in 2002 were all men. Crafts and Manual Labor workers accounted for 11 percent of all male workers at INEEL but for 56 percent of the men who reported cancer in 2002.

Among older workers, men had higher rates of heart/circulatory problems than did women, with the exception of the Other/Unknown category. Fifteen of the 21 absences among men occurred in workers aged 50 and older. Among the 23 diagnoses reported for the 21 absences, 18 diagnoses (78 percent) involved ischemic heart disease (restricted blood flow through an artery). Among men, the Nuclear group had the highest rate of heart/circulatory disorders. Nine women reported 9 diagnoses for

heart/circulatory disorders in 2002. None were for ischemic heart disease. Service workers were 4 times more likely than other workers to report an absence for a heart/circulatory problem.

Women generally had higher rates of respiratory disease than men. Younger workers tended to have higher rates than older workers. Men in the Service/ Security/Crafts and Manual Labor group and women in the Nuclear group had the highest rates of respiratory diagnoses compared with other occupational categories. Crafts and Manual Labor workers were over 2 times as likely to report respiratory conditions compared with other workers. A similar level of increased risk has been observed among Crafts and Manual Labor workers since 1998.

Rates of injury diagnoses were generally higher among younger workers compared with older workers. For the third straight year, men and women aged 50 and older in the Nuclear group have not reported any injuries. Security workers were 3 to 4 times more likely to report any type of injury, 5 times more likely to report a sprain or strain other than to the back, and 7 times more likely to report a contusion. Crafts and Manual Labor workers were almost 10 times more likely to report a sprain or strain of the back, and workers in the Nuclear group were over 5 times more likely than other workers to report a fractured leg and 6 times more likely to report a contusion.

In other analyses, the risk of illness and injury among workers classified in 1 job category was compared with workers in the remaining 7 job categories. As in the period from 1998 through 2001, Service and Crafts and Manual Labor workers were twice as likely as other groups to report an illness or injury. Service workers were 6 times as likely to report a psychological condition and over 3 times as likely to report a nervous system disorder. Crafts and Manual Labor workers were at almost twice the risk of a muscles and skeleton disorder compared with workers in other job categories.

Time Trends

Why Are Rates Age-Adjusted?

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

Age-adjusted rates for all illness and injury categories combined are presented in Figure 11. The age-adjusted rates for the time period 1993-1995 presented in this report differ from rates presented in the 1993, 1994, and 1995 *Annual Epidemiologic Surveillance Report*s due to the exclusion of diagnoses resulting from pregnancy and childbirth. Rates from these earlier 3 years were recalculated so that comparisons with data after 1995 could be made. In addition, a change in the medical leave policy in 1994 resulted in a dramatic decline in the age-adjusted rates for illness and injury from 1993 to 1994. Because of this policy change, comparisons between 1993 and the 1994-2002 rates may not be valid.

The increase seen in the 2001 age-adjusted rates for all illness and injury categories combined among women reversed itself in 2002, as the rates fell below the 2000 rate. Rates of respiratory, digestive, and muscles and skeleton diagnoses decreased among women from 2001 to 2002, while the 2002 rate for injuries remained constant (Figure 12). Among men, the rates for all illness and injury categories combined continued to decrease in 2002, while the rates for the specific diagnostic categories saw little change from 2001 to 2002.

The age-adjusted rates of illness and injury by job category are shown in Figure 13. Among men, there was little change in rates for all illnesses and injuries combined in any job category. Among women, the rates tended to decrease in all job categories except the Security and Unknown groups. The substantial changes in the rates among women in the Security, Crafts and Manual Labor, and Nuclear groups were the result of the small number of workers in these groups. Rates calculated for small groups tend to fluctuate more than those based on larger numbers of workers.

Figure 11. Age-Adjusted Rates for All Diagnoses Combined Among Women and Men from 1993 to 2002

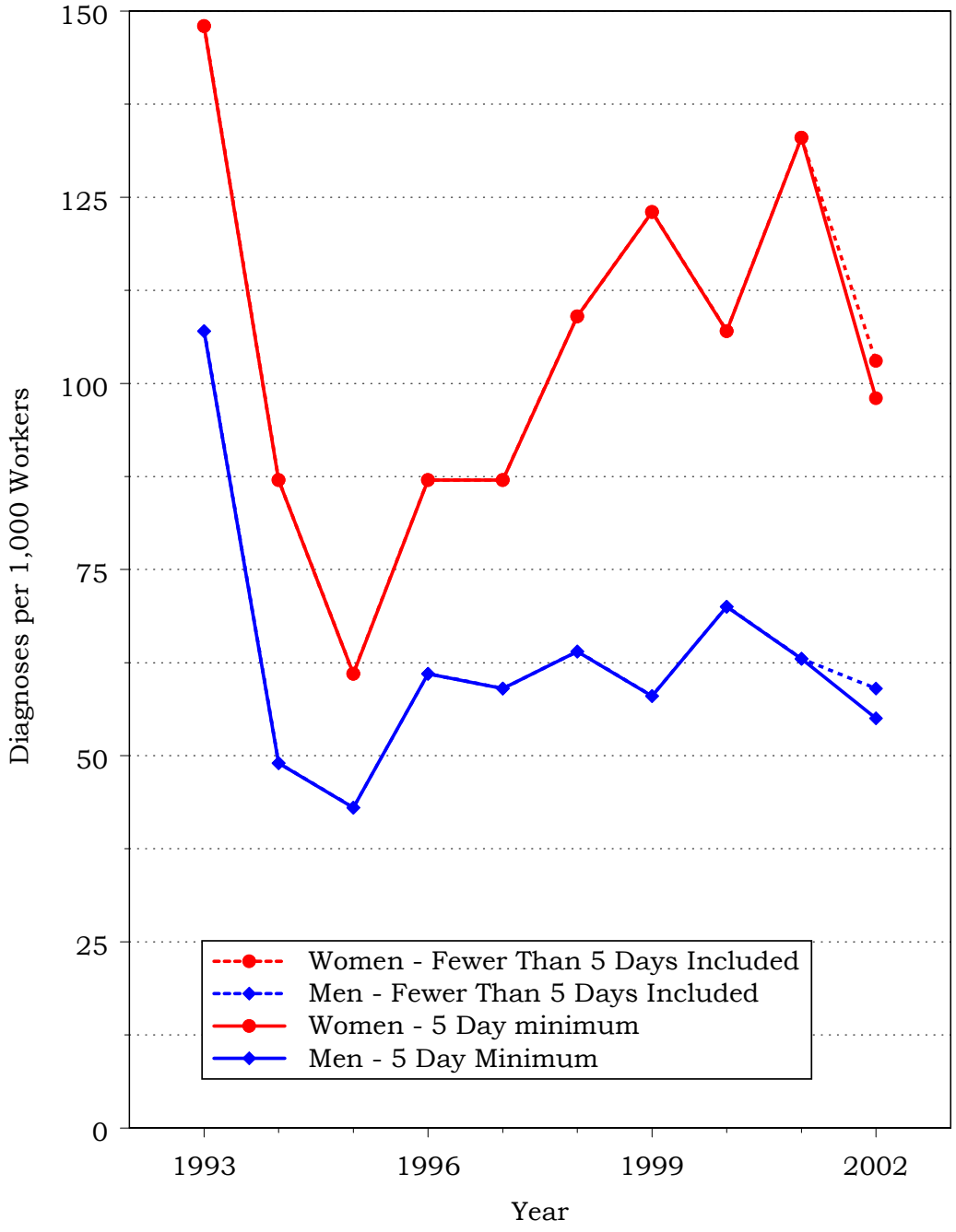
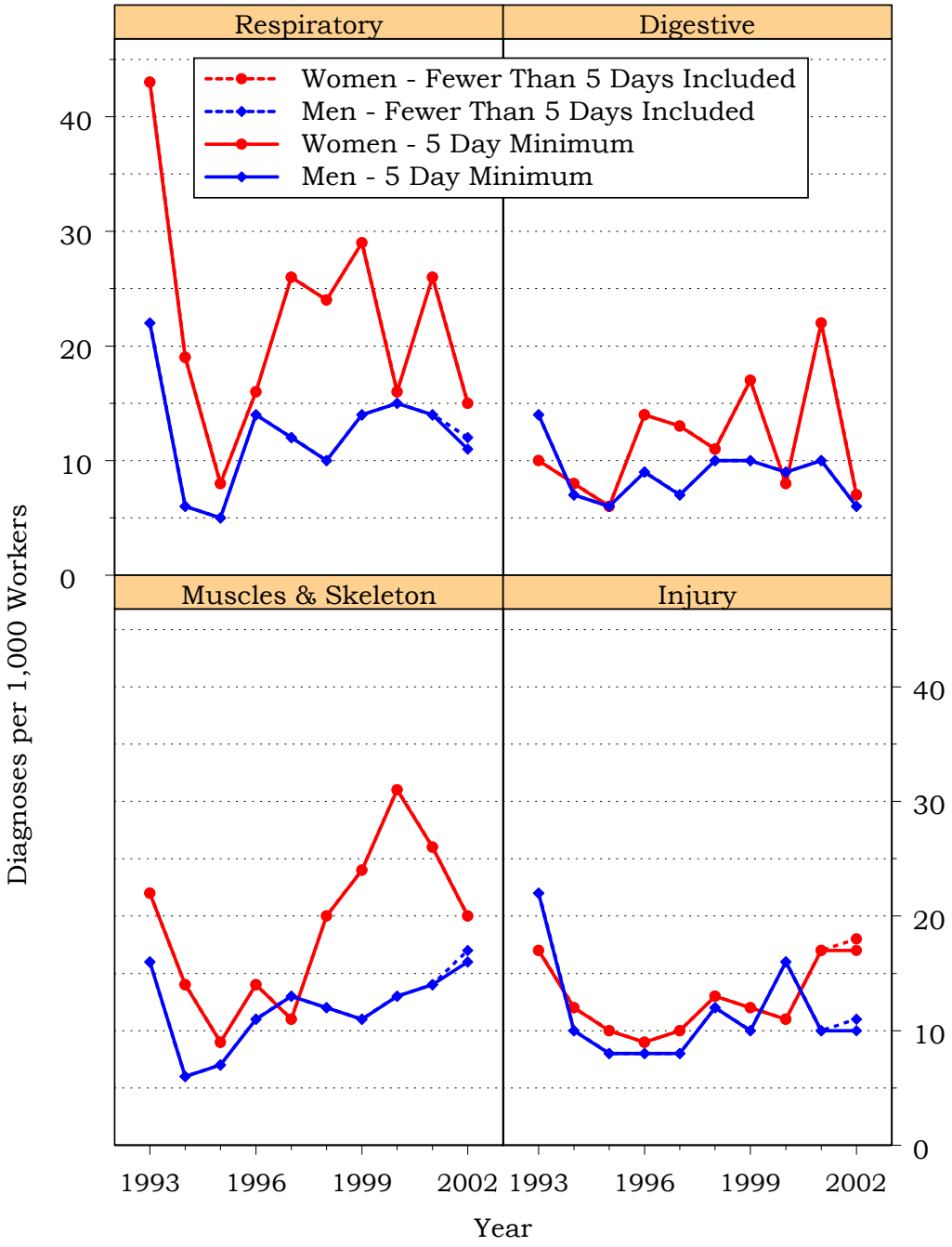
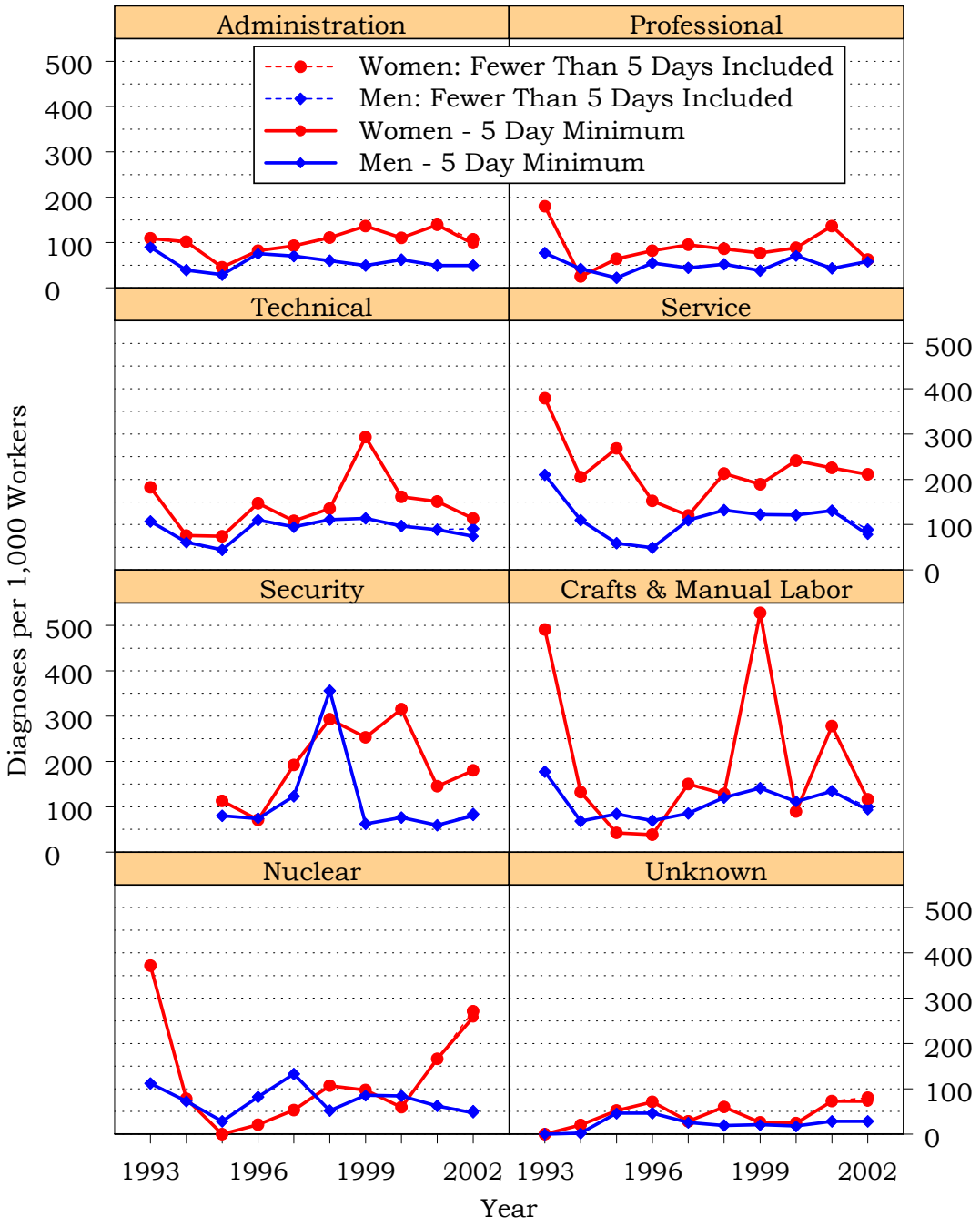


Figure 12. Age-Adjusted Rates for Selected Diagnostic Categories Among Women and Men from 1993 to 2002



Note: For 1993, the injury rates are based on external causes of injury data; for 1994 through 2002, the injury rates are based on injury and poisoning data.

Figure 13. Age-Adjusted Rates for All Diagnoses Combined Among Women and Men by Job Category from 1993 to 2002



Note: Security workers were included in the Service job category in 1993 and 1994.

Sentinel Health Events for Occupations

A sentinel health event for occupations (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 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 result from non-occupational exposures. Due to this uncertainty, sentinel health events are assessed in two categories:

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

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

Thirteen definite sentinel health events, involving a total of 18 diagnoses, were identified in 2002. Eight of 694 (1 percent) diagnoses were identified as possible sentinel health events (Figure 14). Half of these were identified as carpal tunnel syndrome, reported by 4 workers (4 women), and resulted in 198 days absent. The 4 women reporting carpal tunnel syndrome were all aged 40 and older.

Figure 14. Characteristics of SHEOs by Gender

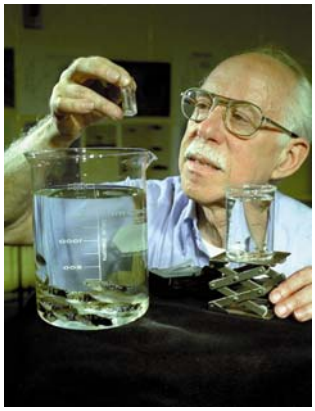
	Total Number of SHEO Diagnoses		Total Number of Days Absent	
	Men	Women	Men	Women
Definite	15	3	376	58
Possible	3	5	139	230
Total	18	8	515	288

Disabilities Among Active Workers

No disabilities were reported among the INEEL work force in 2002.

Deaths Among Active Workers

No deaths were reported among the INEEL work force in 2002.



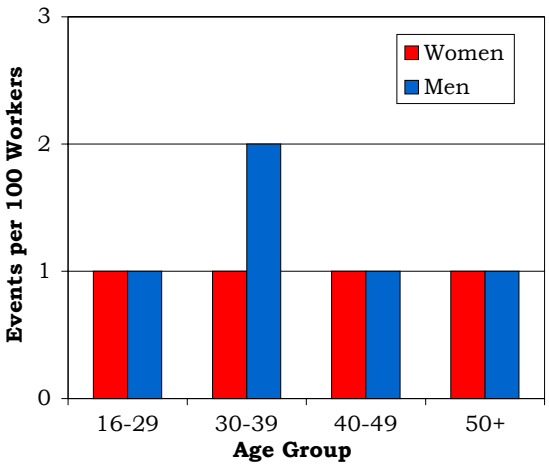
OSHA-Recordable Events

The Occupational Safety and Health Administration (OSHA) requires employers to maintain a record of occupational injuries and illnesses occurring among employees and to make that information available to OSHA on request. Employers maintain the information from these OSHA-recordable events in the OSHA 200 Log.

OSHA-recordable events differ from health events captured through return-to-work clearances in at least 2 important respects: 1) they do not necessarily result in days lost from work, and 2) they are usually accompanied by a specific determination that they are work-related.

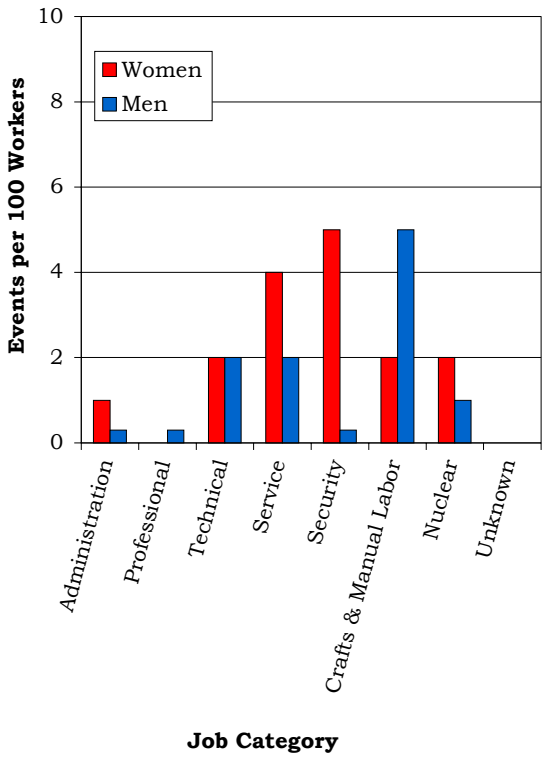
The rate of OSHA events by age and gender is shown in Figure 15. The number of workers reporting an OSHA-recordable event decreased 25 percent for men and 41 percent for women from 2001 to 2002. In 2002, 20 women and 64 men reported at least 1 OSHA-recordable event compared with 34 women and 85 men in 2001. A similar decrease in the number of workers reporting an OSHA-recordable event occurred from 2000 to 2001 (25 percent decrease for men and 36 percent decrease for women). The percentage of the work force with an OSHA event was the same for men and women in 2002 (1 per 100 workers).

Figure 15. OSHA-Recordable Events by Gender and Age



The rate of OSHA-recordable events by job category and gender is shown in Figure 16. For men and women combined, the Crafts and Manual Labor group had the highest rate of OSHA-recordable events (4 per 100 workers), followed by Service workers (3 per 100 workers). No OSHA events were recorded for female workers in the Professional and Unknown groups. For the remaining 6 occupational groups, the rates for women were higher than for men in 4 groups. Among female INEEL workers, the Security group had the highest percentage of OSHA events (5 per 100 workers); in 2001, female Security workers reported no OSHA events.

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



Overall, the average number of workdays lost or with restricted activity due to an OSHA event was 9 workdays for women compared with 14 workdays for men. Women aged 16 to 29 and men aged 50 and older had the highest average number of lost or restricted workdays (28 days and 19 days, respectively). Women in the Crafts and Manual Labor group had the highest average number of lost or restricted workdays, 43 days. This was based on 1 event involving a worker reporting a broken ankle. Among men, Nuclear workers had the highest average, 27 days, followed by Service workers, 26 days. Three men in the Nuclear group reported 3 events in 2002. One event involved a back sprain that resulted in 11 days lost and 62 days restricted. Six male Service workers reported 6 OSHA events. Three events involved sprains and strains (knee and leg, shoulder, and lower back). Two events were responsible for the largest number of days lost and restricted: a sprain and strain to the knee and lower leg resulted in 75 lost workdays, and a fractured foot was responsible for 27 days lost and 49 days restricted.

Diagnostic and Accident Categories for OSHA-Recordable Events

There were 86 OSHA events recorded on the OSHA 200 Logs. There were 26 diagnoses among women and 73 diagnoses among men, as shown in Figure 17. Among men, injuries accounted for 92 percent of the diagnoses reported, primarily due to sprains and strains (48 percent). Injuries accounted for 88 percent of the diagnoses among women, with 61 percent due to sprains and strains. Open wounds and unspecified injuries also were frequently reported among men. There were no carpal tunnel diagnoses reported.

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

Diagnostic Category	Gender	
	Women	Men
Muscles & Skeleton	0	2
Nervous System	0	2
Respiratory	1	0
Unspecified Symptoms	2	2
Injury	23	67
Fractures – Upper Limb	1	2
Fractures – Lower Limb	1	2
Dislocations	1	0
Back Sprains & Strains	4	16
Other Sprains & Strains	10	16
Open Wounds – Head, Neck, Trunk	0	4
Open Wounds – Upper Limb	1	9
Open Wounds – Lower Limb	0	1
Superficial Injuries	1	3
Bruises	2	5
Unspecified Injuries	2	9

Thirteen percent (11) of the 86 OSHA events were described as "an accident" in the OSHA logs, and this distribution is shown in Figure 18. All of these events were categorized as "other accidents," 2 among women and 9 among men. Ten events were the result of repetitive trauma; 1 event was due to overexertion and strenuous movements. Other accidents were most frequently reported among workers aged 40 or older and among Crafts and Manual Labor and Technical workers.

Figure 18. OSHA-Recordable Accidents by Type and Gender

Accident Category	Gender	
	Women	Men
	Number of Accidents	Number of Accidents
Other Accidents	2	9
Overexertion/Strenuous Movements	0	1
Repetitive Trauma	2	8
Total	2	9

Rates of OSHA-Recordable Events

The rates of all diagnoses combined for OSHA-recordable events by age and job category for women and men are shown in Figures 19 and 20. Women tended to have higher OSHA rates compared with men of the same age group and job categories. Men in the Service/Security/Crafts and Manual Labor group and women in the Nuclear group had the highest OSHA-recordable rate for all diagnoses combined, as well as the highest rate for OSHA-recordable injuries. The Service/Security/Crafts and Manual Labor group accounted for 20 percent of the male work force but for 62 percent of the OSHA-recordable events among men. Among women, Nuclear workers accounted for 3 percent of the work force but for 5 percent of the OSHA-recordable events.

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

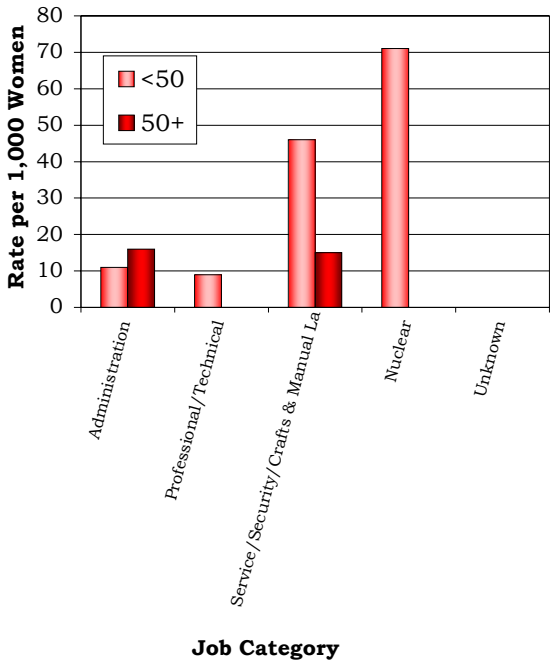
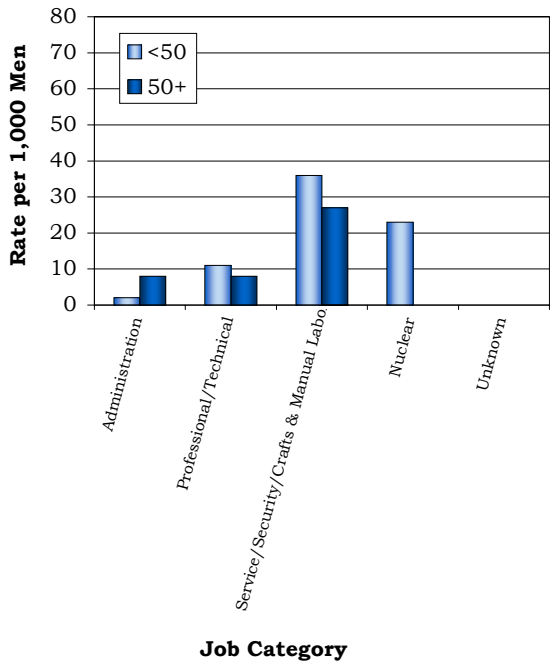


Figure 20. OSHA-Recordable Rates by Age and Job Categories Among Men, All Diagnoses Combined



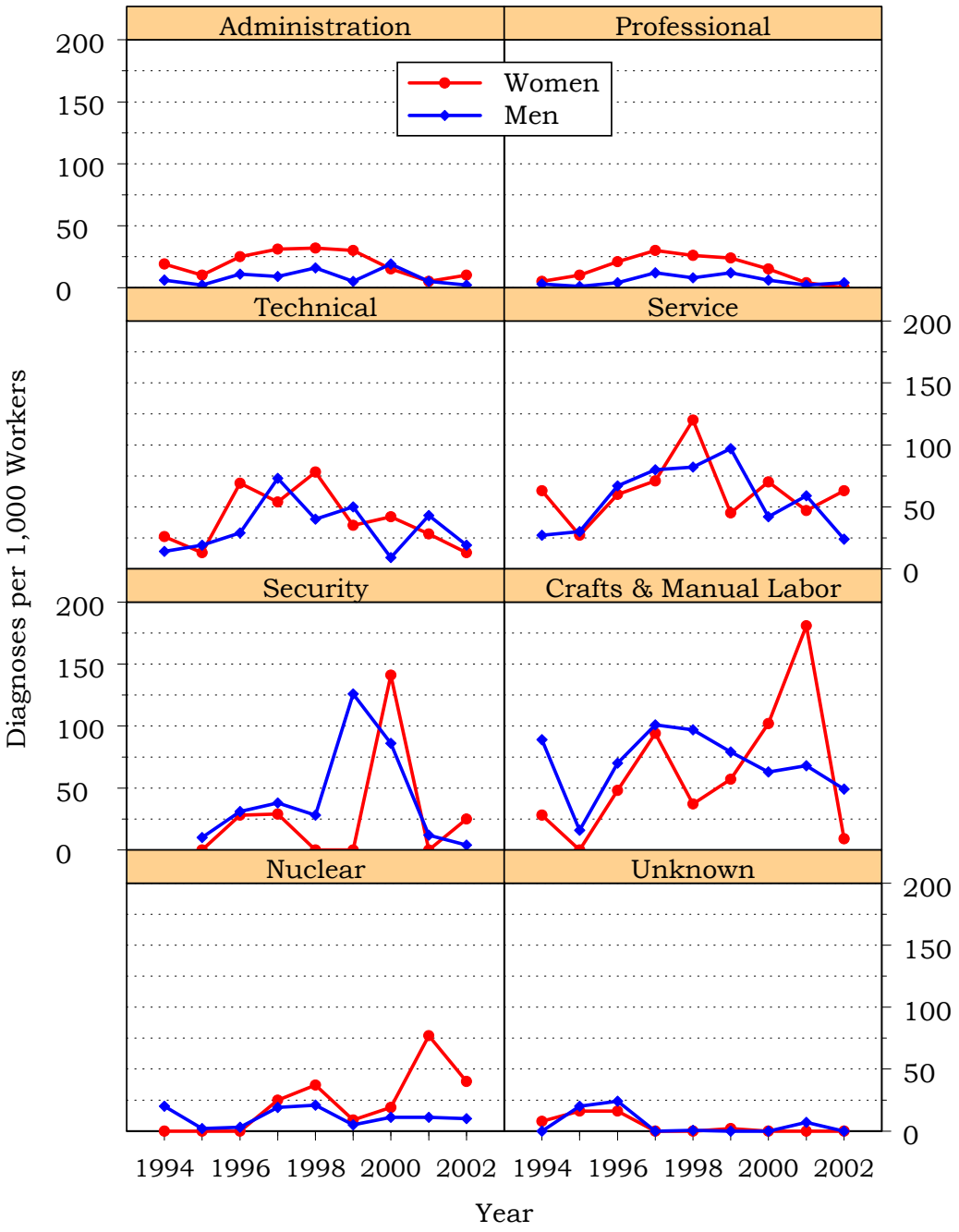
Crafts and Manual Labor workers were at 7 times the risk of an injury, and Technical and Service workers were at least twice as likely as other workers

to report an injury. Crafts and Manual Labor workers were 7 to 12 times as likely as other job categories to suffer sprains and strains. Service workers were at 5 times the risk for sprains and strains other than of the back. Technical workers were 6 times more likely to report complications and unspecified injuries.

Time Trends for OSHA-Recordable Events

The age-adjusted rates for all diagnostic categories combined from 1994 to 2002 by job category for women and men are shown in Figure 21. Among men, the rates of OSHA-recordable events have remained steady or decreased over the 9-year time period. The same is true for women, with the exception of workers in the Nuclear group whose rates tended to increase over the same period. The rates for women in the Crafts and Manual Labor group tended to increase from 1994 to 2001, followed by a significant rate decrease in 2002. No events were reported in 2002 by women in the Professional group and both men and women in the Unknown job category. There were no significant changes in injury rates for men and women for 2002.

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



Note: Security workers were included in the Service job category in 1994.

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.

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

ICD-9-CM Codes

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

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

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

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

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

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

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

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

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

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

NOTES