

1995

Annual Epidemiologic Surveillance Report for **Idaho National Engineering and Environmental Laboratory**



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Introduction

The U.S. Department of Energy's (DOE) conduct of epidemiologic surveillance provides an early warning system for health problems among workers. This program monitors illnesses and health conditions that result in an absence of five or more consecutive workdays, occupational injuries and illnesses, and disabilities and deaths among current workers.

This report summarizes epidemiologic surveillance data collected from the Idaho National Engineering and Environmental Laboratory (INEEL) from January 1, 1995 through December 31, 1995. The data were collected by a coordinator at INEEL and submitted to the Epidemiologic Surveillance Data Center, located at Oak Ridge Institute for Science and Education, where quality control procedures and data analyses were carried out.

The annual report for 1995 has been redesigned from reports for previous years. Most of the information in the previous reports is also in this report, but some material now appears in the appendices instead of the main body of the report. The information presented in the main body of the report provides a descriptive analysis of the data collected from the site and the appendices provide more detail. A new section of the report presents trends in health over time. The Glossary and an Explanation of Diagnostic Categories have been expanded with more examples of health conditions to illustrate the content of each category.

The data presented here apply only to INEEL. The DOE sites are varied, so comparisons of INEEL with other DOE sites should be made with caution. It is important to keep in mind that many factors can affect the completeness and accuracy of health information collected at the sites as well as affect patterns of illness and injury observed.

Idaho National Engineering and Environmental Laboratory (INEEL) AT A GLANCE, 1995

- ◆ A change in personal leave policy in 1994 reduced dramatically the number of health events captured through return-to-work medical clearances. The change affected virtually all types of health events, and makes comparisons of illness and injury rates for 1993 with those of 1994 and 1995 difficult to interpret. Most reductions in illness and nonoccupational injury observed over the three-year period are probably attributable to this change in leave policy.
- ◆ Overall, we noted few changes in illness and injury patterns from those observed in 1994. About 3.2% of INEEL workers reported at least one illness absence in 1995 compared with 4.4% in 1994.
- ◆ While the overall size of the work force changed less than 3% between 1994 and 1995, the number of workers categorized as having an “unknown” occupation increased from 1,679 to 4,114. Epidemiologic surveillance uses occupational information in broadly defined categories to assess worker health and safety. The lack of job title or other occupational information on these workers limits our ability to make health assessments in a meaningful way. The category of occupational “unknown” is of particular concern because these workers were at 2.7 times the risk of other workers for an OSHA-recordable injury in 1995.
- ◆ Service workers, crafts and manual laborers, and the unknown occupational groups were at highest risk for occupational injuries involving sprains and strains.

Site Overview

INEEL is located in two primary areas in Southeastern Idaho: A remote 570,000 acres, or 890 square mile desert site on the Snake River Plain and multiple locations in the city of Idaho Falls. 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.

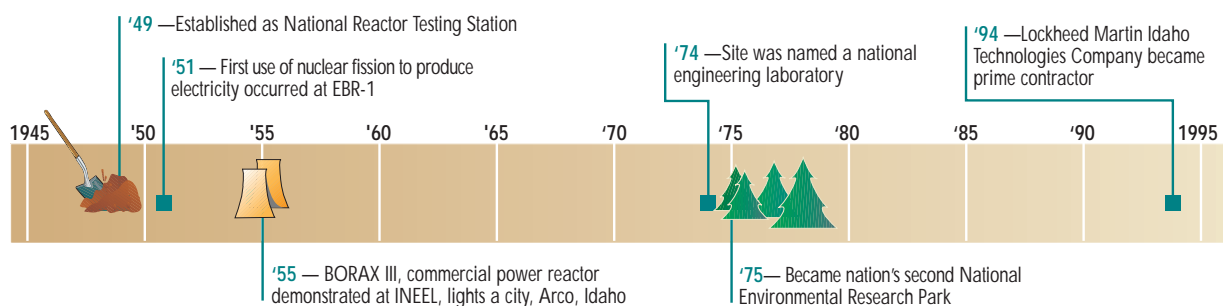
On December 20, 1951, INEEL was the site of a very significant scientific accomplishment: the first use of nuclear fission to produce electricity. This took place at Experimental Breeder Reactor I (EBR-I), now a National Historic Landmark. EBR-I was the first reactor in the world to generate usable amounts of electricity. Three of the nation's commercial power reactor designs—the pressurized water reactor, the boiling water reactor, and the liquid metal-cooled breeder reactor (BORAX III was the first in the world to light a city, Arco, Idaho, in 1955)—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. 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 nonnuclear research.

In 1975, INEEL became the nation's second National Environmental Research Park, one of only five in the nation where scientists conduct ecological studies. All lands within INEEL boundaries comprise a protected outdoor laboratory where scientists from the DOE, other federal and state agencies, universities, and private research foundations conduct ecological studies.

Today, the multipurpose laboratory is solving critical problems related to the environment, energy production and use, U.S. economic competitiveness, and national security. The present mission of INEEL is to develop, demonstrate, deploy, and transfer advanced engineering technology and systems to private industry to improve U.S. competitiveness and security, the efficient production and use of energy, and the quality of life and the environment. It leads national efforts in environmental management, spent fuel management, low-level waste management, mixed waste technologies, the plutonium focus area, and systems engineering.

Management and operation of INEEL is the responsibility of private contractors working under the direction of the DOE Idaho Operations Office. INEEL had been managed by various contractors until 1994 when Lockheed Martin Idaho Technologies Company became the prime contractor. Two other contractors, Argonne National Laboratory-West and Westinghouse Electric Corporation, are also under contract to perform research, waste processing, and support functions for DOE at INEEL.



Timeline of Major Activities at INEEL

The INEEL Work Force

A total of 11,815 INEEL employees were included in epidemiologic surveillance in 1995, an increase of 288 from 1994. There were almost three times as many men (8,796) as women (3,019). The INEEL work force was relatively young compared to the general population. The average age of INEEL workers was 44 for men and 39 for women (figure 1).

Not all occupations pose equal risks for illness or injury, so we compared rates among broad occupational categories to determine whether some occupational groups are at a greater risk than others for these health events. The number of illnesses or injuries reported in any specific occupation may be very small in a given year or the number of workers in a given occupation may be small. These small numbers limit the certainty with which illness and injury rates can be calculated and compared. The analyses in this report use broad occupational categories (figure 2) because there were not enough health events in many specific occupations to permit more detailed analyses. You can find which occupational category you are in by referring to figure 4, which lists many of the job titles that are grouped into each of the categories used for the analyses. Unfortunately, no occupational information was available for many of the workers, limiting the analyses that could be done. Appendix A contains a more detailed distribution of the work force by gender, age, and occupational group.

Figure 1. The Work Force by Gender and Age

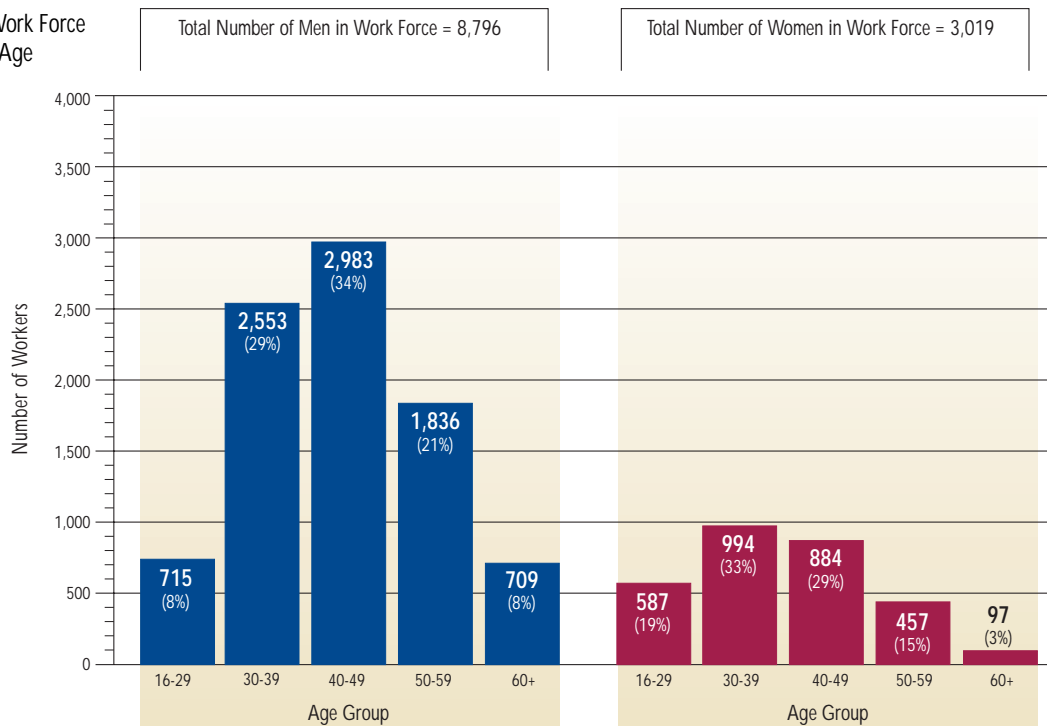
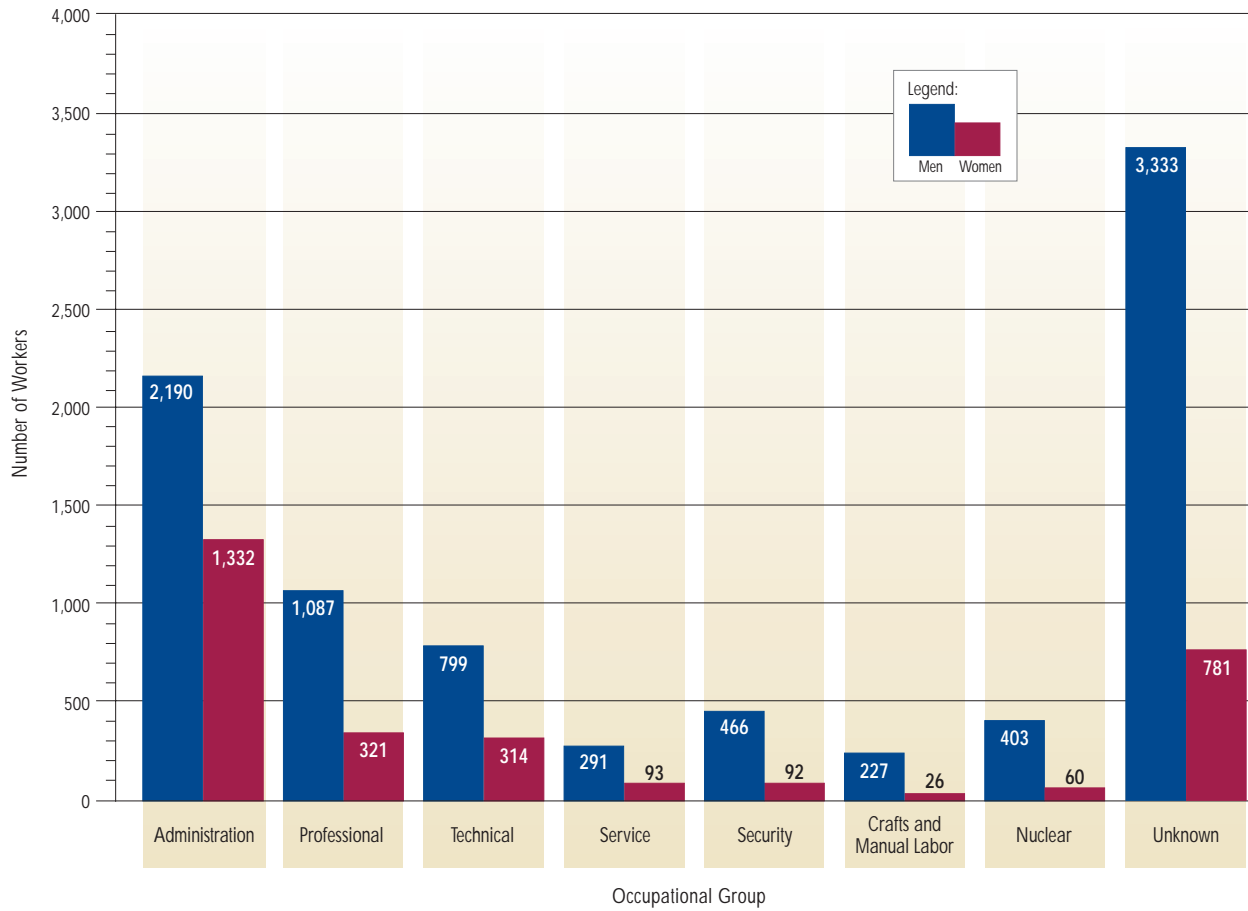


Figure 2. The Work Force by Gender and Occupation



Figures 3a and 3b. Percentage of Workers in Different Occupations by Gender

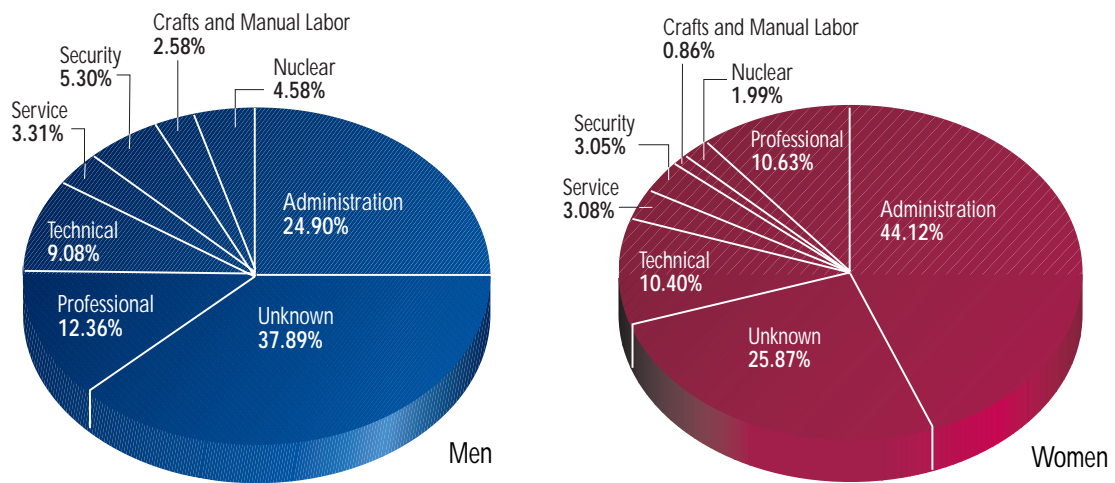


Figure 4. Most Common Job Titles in Each Occupational Group

| | | | |
|--------------------------------|--------------------------------|--------------------------------|--------------------------------|
| ADMINISTRATION | TELECOMMUNICATIONS | TECHNICAL | CRAFTS AND MANUAL LABOR |
| ACCOUNTING | TELEPHONE OPERATOR | COMPLIANCE INSPECTOR | CARPENTER |
| AUDITING | TRAINING | COMPUTER OPERATIONS | COMPUTER OPERATIONS TECHNICIAN |
| BENEFITS | TRAVEL RESERVATIONS | WASTE MANAGEMENT | CONSTRUCTION INSPECTION TECHNI |
| BUDGET & CONTROL | | WORK ORDER TRACKING/SCHEDULING | CONSTRUCTION SERVICES |
| BUILDING/FACILITY MANAGEMENT | PROFESSIONAL | | DESIGN |
| COMPENSATION/EMPLOYMENT RECRUI | AERONAUTICAL/AEROSPACE | SERVICE | DRAFTER |
| DATA ENTRY | APPLICATIONS PROGRAMMING | BAKER | ELECTRO/MECHANICAL TECHNICIAN |
| DEPARTMENT/OPERATIONS ADM | APPLICATIONS SYSTEM ANALYSIS | BUS DISPATCHER | ELECTRONIC PUBLICATIONS |
| DOCUMENT CONTROL | ARCHITECTURAL | BUS DRIVER | ENVIRONMENTAL/FIELD TECHN |
| EEO/AAP | AVIATION | COOK | FIELD SERVICE TECHNICIAN |
| EMERGENCY PREPAREDNESS/FACILIT | BIOLOGY | CUSTODIAN | HP TECH, RAD CON |
| EMPLOYEE AND PUBLIC COMMUNICAT | BIOPROCESS ENGINEERING | FACILITY OPERATIONS, NON-NUCLE | ILLUSTRATOR ARTIST |
| FINANCIAL ANALYSIS | CHEMISTRY | FIREFIGHTER | INSTRUMENTATION TECHNICIAN |
| HUMAN FACTORS | COMMUNICATIONS ENGINEERIN | FOOD SERVICES | LABORATORY TECHNICIAN |
| HUMAN RESOURCES | COMPUTER ENGINEERING, GEN | FOREMAN, OPERATIONS | MANUFACTURING TECHNICIAN |
| HUMAN RESOURCES ADVISOR | COMPUTER HARDWARE ANALYSIS | HIGH SPEED COPIER OPERATOR | OTHER TECHNICAL |
| INVENTORY CONTROL | COMPUTER SOFTWARE ANALYSIS | IMAGE PROCESSOR | OTHER TECHNICAL/OPERATORS |
| LABOR RELATIONS | COMPUTER SYSTEMS-RAPID PR | OPERATOR | P.C. OPERATIONS TECHNICIAN |
| LEGAL | CONFIGURATION MANAGEMENT | OTHER FACILITY SERVICES | QUALITY INSPECTION TECHNICIAN |
| LIBRARY SERVICES | DATA BASE ANALYSIS/PROGRAMMING | PRINTING AND REPRODUCTION | R & D TECHNICIAN |
| MAIL CLERK | DISTRIBUTED SYSTEMS ENGIN | PRODUCTION CONTROL | RADIOLOGICAL CONTROL TECHNICIA |
| MANAGER, ADMINISTRATIVE S | EARTH & LIFE SCIENCES | SALAD MAKER | WASTE OPERATIONS TECHNICI |
| MANAGER, FACILITY/OPERATI | ENVIRONMENTAL SCIENCES | SERVICEMAN | X-RAY TECHNICIAN |
| MANAGER, OPERATIONS | GEOLOGY | SHIPPING OR TRAFFICKING | |
| MANAGER, SCIENTIFIC OR EN | HEALTH PHYSICS | SHIPPING/RECEIVING | NUCLEAR |
| MANUF OPS MGMT/SUPPORT | HYDROLOGY | TIRE REPAIRMAN | DECONTAMINATION FACILITY OPERA |
| MATERIAL SPECIALIST | INDUSTRIAL HYGIENE | TOOL CRIB ATTENDANT | FACILITY OPERATIONS OR HAZARDO |
| MISCELLANEOUS CLERICAL | INDUSTRIAL SAFETY AND HEA | TRANSPORTATION SERVICES | FACILITY OPERATIONS, NUCLEAR |
| OTHER ADMINISTRATIVE SERV | LOGISTICS ENGINEERING | WAREHOUSING AND DISTRIBUTION | NUCLEAR WASTE PROCESS OPE |
| OTHER ADMINISTRATIVE SUPP | MANUFACTURING ENGINEERING | | NUCLEAR/REACTOR |
| PLANNING & BUDGETING | MATHEMATICS | SECURITY | |
| PLANNING AND/OR SCHEDULING | MEDICAL | SECURITY | UNKNOWN |
| PROCUREMENT | METALLURGICAL | SECURITY GUARD | CERAMIC |
| PROJECT MANAGEMENT | MICRO SYSTEMS ANALYSIS | CRAFT FOREMAN | CHEMICAL |
| PROJECT MANAGEMENT SUPPORT | OCCUPATIONAL HEALTH NURSE | ELECTRICIAN | CIVIL |
| PROJECT MANAGEMENT, (NON S&E) | OPERATING SYSTEMS PROGRAMMING | EQUIPMENT OPERATOR | ELECTRICAL |
| PROPERTY MANAGEMENT | OTHER COMPUTER SYSTEMS | EQUIPMENT OPERATOR, HEAVY | ELECTRONIC |
| PURCHASING AND/OR BUYING | OTHER ENGINEERING | FACILITY/PLANT MAINTENANCE | ENVIRON REMED/RESTOR |
| RECEPTIONIST | OTHER SCIENTIFIC | FOREMAN, CRAFTS | ENVIRONMENTAL |
| RECORDS MANAGEMENT | PHYSICS | INSTRUMENT MECHANIC | EPRO |
| REGULATORY COMPLIANCE | PLANT ENGINEERING | LABORER | FITTER |
| SECRETARIAL | RADIOLOGICAL | LINEMAN | INDUSTRIAL |
| STRATEGIC PLANNING | SAFETY | MATERIAL MOVING EQUIP. OP | MATERIALS |
| SUBCONTRACT ADMINISTRATION | SOFTWARE ENGINEERING | MECHANIC | MECHANICAL |
| SUPERVISOR, ADMIN SERVICE | SOFTWARE SYSTEMS ANALYSIS/PROG | MINING | PETROLEUM |
| SUPERVISOR, FAC/OSS | STATISTICS | OTHER CRAFTS | QUALITY |
| SUPERVISOR, OPERATIONS | STRUCTURAL ENGINEERING | PAINTER | TEMPORARY OCCUPATION CODE |
| SUPERVISOR, SCI/ENG FUNC | SYSTEMS ANALYSIS | SHEET METAL MECHANIC | |
| TECHNICAL LEADER | SYSTEMS ENGINEERING | UTILITY OPERATOR | |
| TECHNICAL WRITING AND/OR EDITI | VALUE ENGINEERING | UTILITY SERVICES | |
| TECHNOLOGY TRANSFER/BUSINESS D | WELDING ENGINEERING | WELDER | |

Work Force Demographics

INEEL reported service and security as separate occupational categories for the first time in 1995. To look at time trends for 1993 to 1995, the two categories were combined for the 1995 data (figures 7 and 8).

From 1993 to 1995, the INEEL work force included in epidemiologic surveillance increased from 7,586 employees in 1993 to 11,815 workers in 1995, an increase of 56% overall for the three-year period. Most of these workers were included in epidemiologic surveillance in 1994 as a result of a contractor consolidation under Lockheed Martin Idaho Technologies Company. The percentage of men and women remained constant over the three-year period, with women making up almost one-third of the work force each year. The age distribution of the workers remained relatively unchanged (figures 5 and 6).

Figure 5. Percentage of Men in Different Age Groups, 1993 to 1995

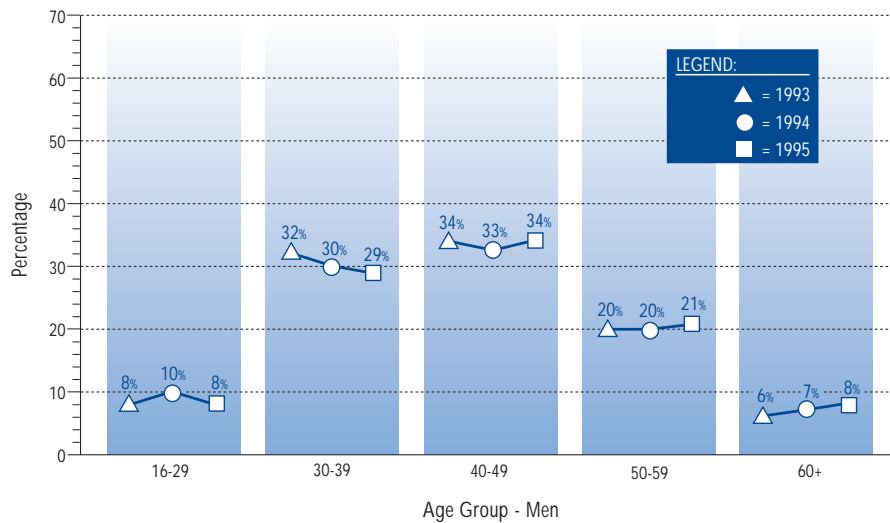
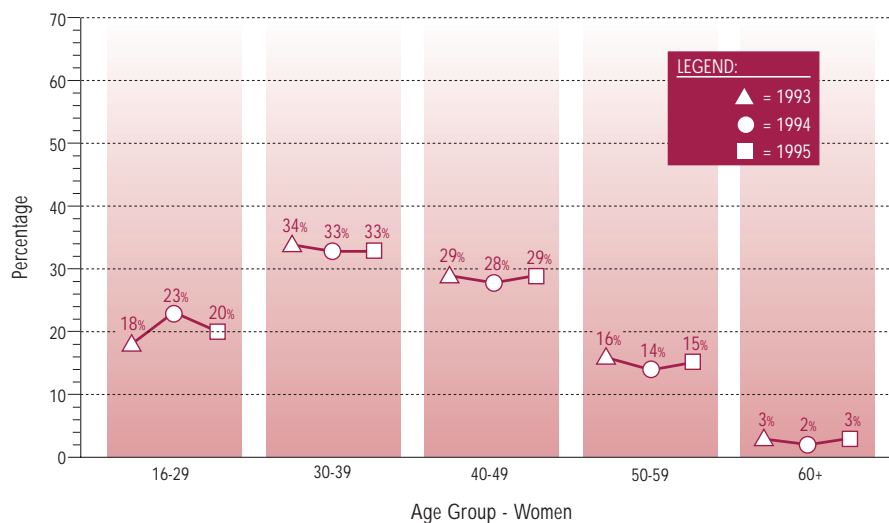


Figure 6. Percentage of Women in Different Age Groups, 1993 to 1995



The type of jobs also shifted from 1993 to 1995. Men showed an increase in the administration and unknown occupational groups and a decrease in professional, technical, and crafts and manual labor groups (figure 7). Women showed a decrease in the administration, professional, and technical occupational groups and an increase in the in the unknown group (figure 8). There was a sharp increase for both men and women in the unknown occupational group from 1994 to 1995.

Figure 7. Percentage of Men in Different Occupational Groups, 1993 to 1995

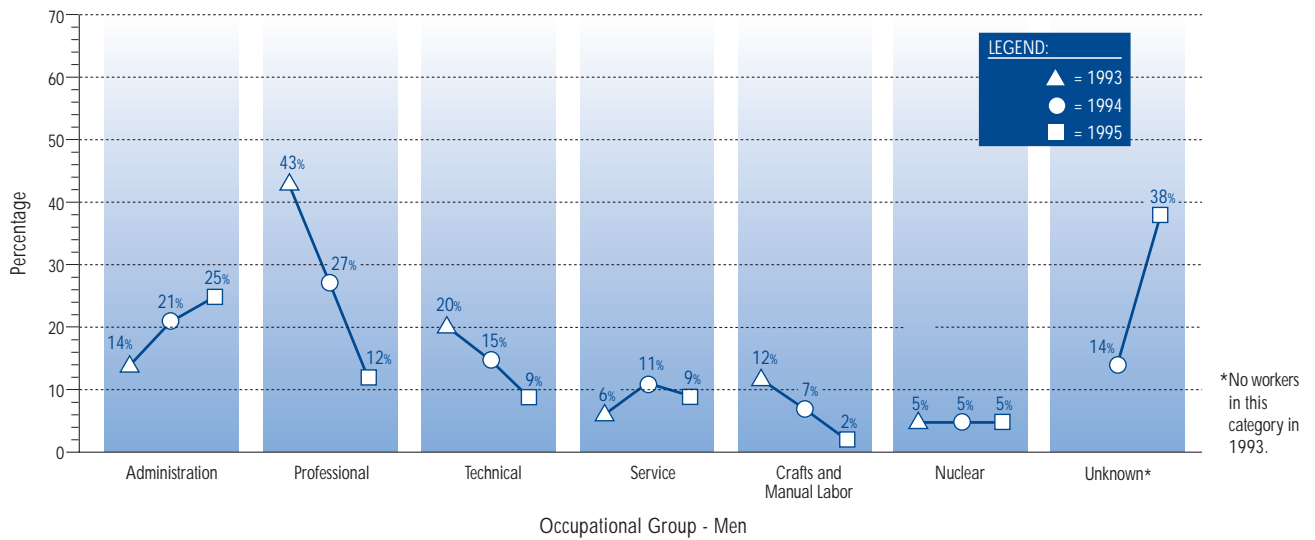


Figure 8. Percentage of Women in Different Occupational Groups, 1993 to 1995



Number and Length of Absences

This section of the report focuses on all illnesses and injuries not considered occupational in nature for which the worker was absent five or more consecutive workdays and cleared back-to-work as required by DOE Order 440.1. Throughout this report, the analyses take gender, age, and occupation into account because the risk of illness and injury varies by these factors. For analyses that examine duration of absence, the reported number of days absent includes weekends unless otherwise stated.

Men had about 66% more health events than women during 1995, but the percentage of women (5%) with at least one health event was greater than men (3%) (figure 9) because the work force contained many more men than women. Overall, the average length of absence for a health event was approximately four days longer for women (33.5 days) than for men (29.1 days) (see figure 12). The average number of days absent showed no consistent relationship with age of the worker. An explanation of how these percentages were calculated is in the shaded box.

The longer average duration of absences among women than men aged 16 to 29 may reflect maternity leave; pregnancy/childbirth was the diagnostic category most frequently reported for these women (figure 16).

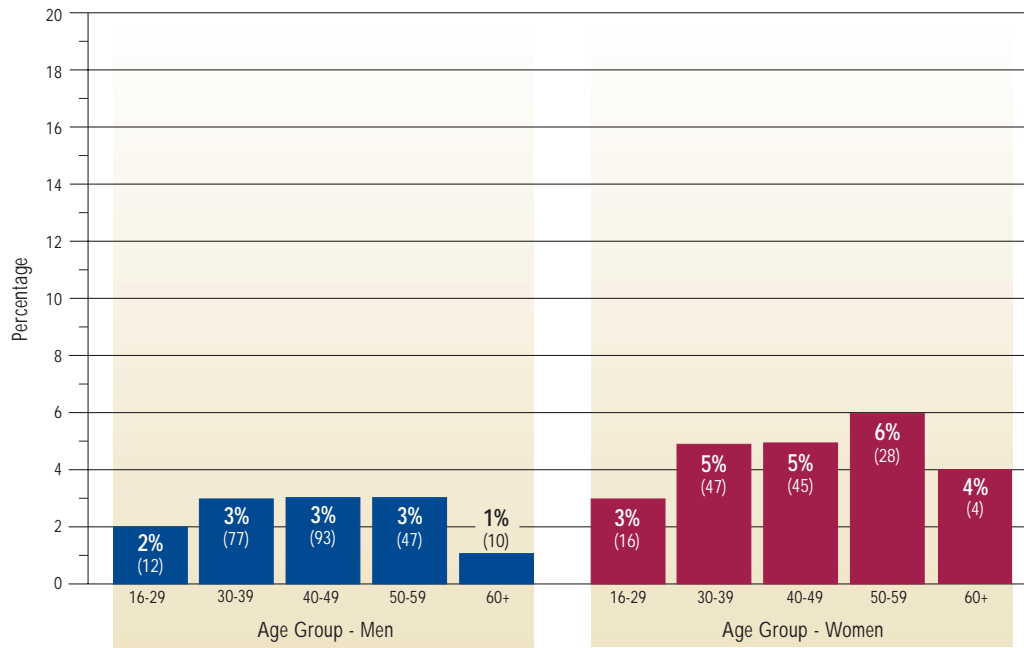
The service occupational category had the highest percentage (8.1%) of workers with at least one health event (appendices A and B). Over 6% of the workers in security and crafts and manual labor had at least one health event. Only 1.3% of the nuclear workers reported a health event. In all occupational groups except the nuclear workers, the percentage of women with at least one event was somewhat higher than among men (figures 10 and 11). Workers in the technical (39.2 days), professional (36.7 days), and crafts and manual labor (35.5 days) groups had the highest average number of days absent for each health event. Workers in the unknown occupational category had the shortest average duration of absence (23.3 days, figure 13). Additional information about the number and length of absences for men and women in different age and occupational groups is in appendices B-E. The Rates of Disease Occurrence section of this report examines the diagnoses underlying these absences.

How Are Percentages Calculated?

The percentages are calculated by dividing the number of workers with at least one health event in a given age and gender group by the number of employees in the same group. This number is multiplied by 100 to give a percent. The number of employees in each group is shown in figure 1. An example is given below:

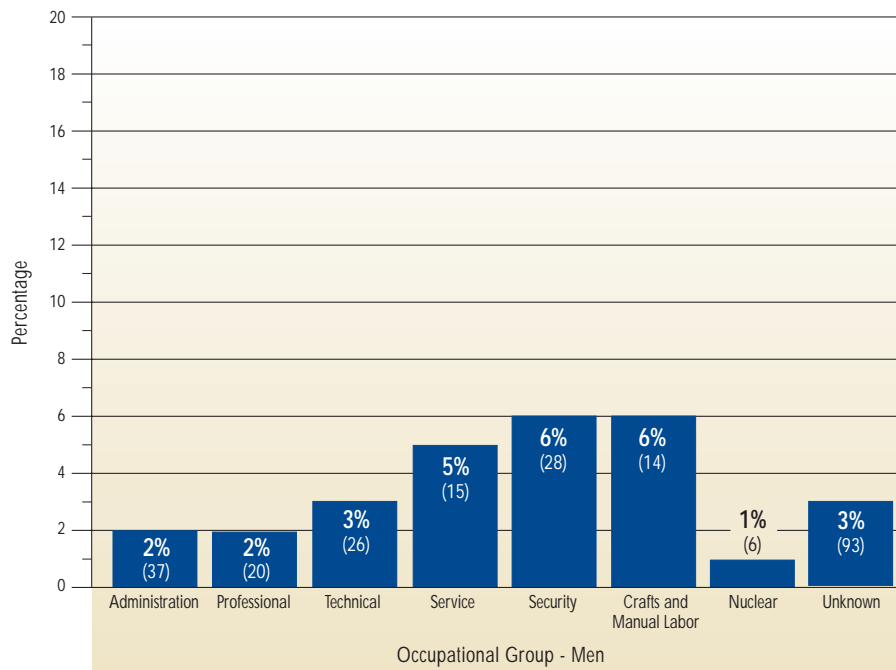
$$\begin{array}{r} 12 \text{ (number of men aged 16-29 with at} \\ \text{least one health event from figure 9)} \\ \div 715 \text{ (number of men in the work force} \\ \text{aged 16-29 from figure 1)} \\ \hline = .017 \times 100 = 1.7\% \end{array}$$

Figure 9. Percentage of Workers with at Least One Health Event by Gender and Age*



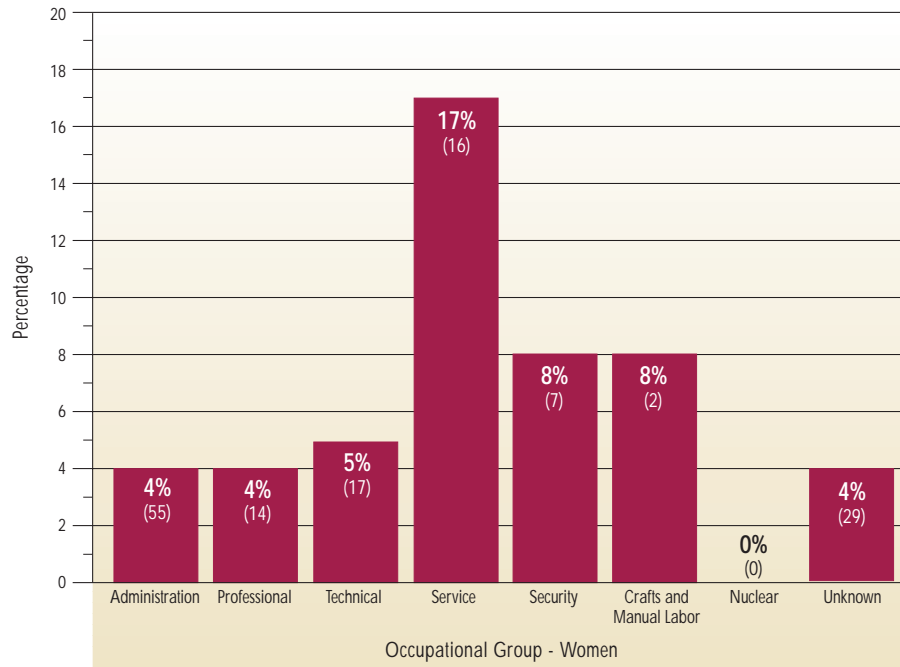
*Numbers in parentheses represent the number of workers with at least one event.

Figure 10. Percentage of Men with at Least One Health Event by Occupation*



*Numbers in parentheses represent the number of men with at least one event.

Figure 11. Percentage of Women with at Least One Health Event by Occupation*



*Numbers in parentheses represent the number of women with at least one event.

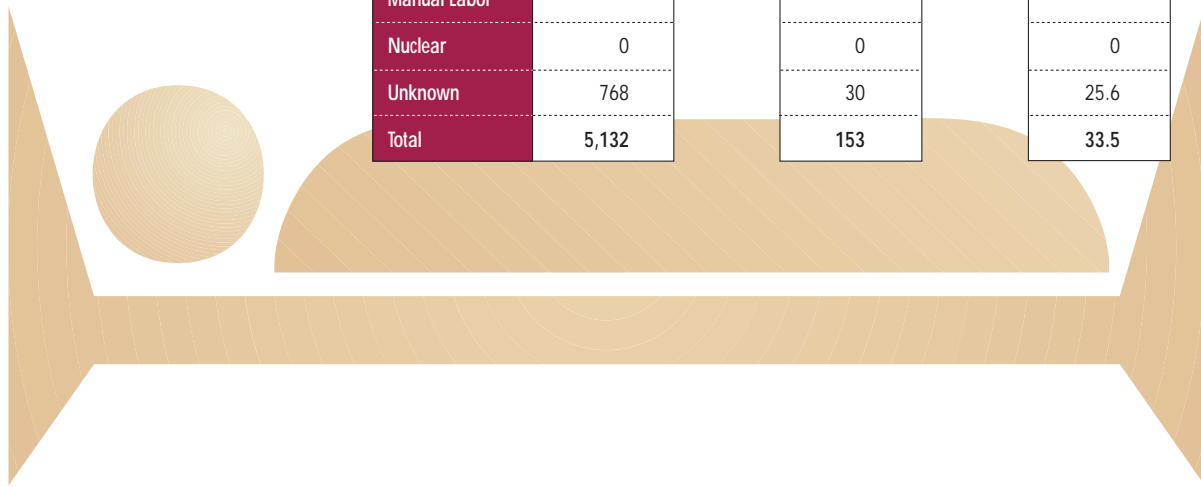
Figure 12. Number of Days Absent by Gender and Age

| | Age Group | Total Number of Days Absent | Total Number of Health Events | Average Number of Days Absent |
|-------|--------------|-----------------------------|-------------------------------|-------------------------------|
| Men | 16-29 | 304 | 13 | 23.4 |
| | 30-39 | 2,637 | 80 | 33.0 |
| | 40-49 | 2,487 | 100 | 24.9 |
| | 50-59 | 1,477 | 49 | 30.1 |
| | 60+ | 477 | 12 | 39.8 |
| | Total | 7,382 | 254 | 29.1 |
| Women | 16-29 | 598 | 17 | 35.2 |
| | 30-39 | 1,641 | 51 | 32.2 |
| | 40-49 | 1,574 | 47 | 33.5 |
| | 50-59 | 1,227 | 34 | 36.1 |
| | 60+ | 92 | 4 | 23.0 |
| | Total | 5,132 | 153 | 33.5 |

Figure 13. Number of Days Absent by Gender and Occupation

| | Occupation | Total Number of Days Absent | Total Number of Health Events | Average Number of Days Absent |
|-----|-------------------------|-----------------------------|-------------------------------|-------------------------------|
| Men | Administration | 1,102 | 39 | 28.3 |
| | Professional | 931 | 22 | 42.3 |
| | Technical | 1,066 | 28 | 38.1 |
| | Service | 423 | 16 | 26.4 |
| | Security | 879 | 28 | 31.4 |
| | Crafts and Manual Labor | 488 | 14 | 34.9 |
| | Nuclear | 256 | 8 | 32.0 |
| | Unknown | 2,237 | 99 | 22.6 |
| | Total | 7,382 | 254 | 29.1 |

| | Occupation | Total Number of Days Absent | Total Number of Health Events | Average Number of Days Absent |
|-------|-------------------------|-----------------------------|-------------------------------|-------------------------------|
| Women | Administration | 2,038 | 59 | 34.5 |
| | Professional | 426 | 15 | 28.4 |
| | Technical | 776 | 19 | 40.8 |
| | Service | 664 | 19 | 34.9 |
| | Security | 380 | 9 | 42.2 |
| | Crafts and Manual Labor | 80 | 2 | 40.0 |
| | Nuclear | 0 | 0 | 0 |
| | Unknown | 768 | 30 | 25.6 |
| | Total | 5,132 | 153 | 33.5 |



Diagnostic Categories

Epidemiologic surveillance monitors both occupational and nonoccupational illnesses and injuries among active workers. For many health conditions it is not possible to say with certainty what caused the health problem, so epidemiologic surveillance assesses the health of the work force by including both occupational injuries and illnesses and health problems that are not necessarily attributed to workplace exposures. Most of the diagnoses are reported by the workers when they visit their site's occupational medicine clinic for a return-to-work clearance following an absence. In contrast, health events are recorded on the OSHA 200 Log because they are occupationally related. We conduct separate analyses of the occupational injuries and illnesses recorded in the OSHA 200 Log because they have been designated as occupational, whether or not they involve an absence (see page 26).

This report organizes diagnostic categories based on the type of disease or condition (e.g., cancer) or body system (e.g., lung/respiratory) affected. Categories can be broken down into specific health conditions. For example, rheumatism is one health condition under the diagnostic category of muscles and skeleton. Bronchitis is a condition in the lung/respiratory category. You can find specific health conditions in the Explanation of Diagnostic Categories on pages 35-39 of this report. A health event can involve more than one diagnosis, and epidemiologic surveillance includes all diagnoses reported. If a worker reported more than one health condition for a single absence and all of these health conditions fell into the same diagnostic category, all of them were counted.

In 1995, injury and poisoning was the most often reported health condition for men and women. Among men, the number of diagnoses reported in the muscles and skeleton category tied for first place with injury and poisoning, followed by conditions affecting the lung/respiratory system and the digestive system. For women, the muscles and skeleton category ranked second, followed by pregnancy/childbirth and lung/respiratory. These diagnostic groups tended to have the most calendar days of absence (figure 14). Some of the more common diagnoses within these diagnostic categories for 1995 are shown in figure 15.

The most frequently reported health conditions varied with age and gender (figure 16 and appendix F). Injury and poisoning ranked among the top three for men in all age groups. Almost half of the injuries (43.9%) were sprains and strains, with burns, bruises, dislocations, fractures, and open wounds accounting for most of the remainder. Conditions affecting the muscles and skeleton were the second most commonly reported reasons for absence for men aged 29 to 49, and among older men they were the most common reason given for absence. Arthritis accounted for one-third (32.9%) of these conditions. Back problems, disc disorders, and rheumatism made up most of the remainder. Other sections of this report focus specifically on job-related health events that are reported under Occupational Safety and Health Administration (OSHA) guidelines (see page 26).

Diagnoses associated with pregnancy/childbirth were the most common reasons for absence for 16 to 39 year old women (figure 16). Injury and poisoning was one of the three most commonly reported categories for women aged 30 to 59 and mainly included diagnoses for burns, fractures, and sprains and strains.

Lung/respiratory diagnoses are among the more common diagnoses reported by workers at all of the epidemiologic surveillance sites. At INEEL, they were among the top three conditions reported for women aged 30 or older and men aged 16 to 39 and 50 to 59. The types of conditions reported by women and men were similar and included diagnoses for bronchitis, flu, pneumonia, sinusitis, and upper respiratory infections. Diagnoses involving the digestive system were prominent among both men and women but occurred in different age groups. Men aged 16 to 29 and 40 to 59 years old and women 50 and older reported these health

conditions. The types of diagnoses observed among men and women were similar except for hernias and associated disorders, which were reported mainly among men.

Diagnoses for injury and poisoning occurred relatively frequently in this work force. While poisoning is included in this diagnostic category, only 4 of the 115 diagnoses were related to poisoning. Three diagnoses were allergic reactions and one was carbon monoxide poisoning. Complications of medical care and medical devices are also included in the injury and poisoning category. The workers reported six such diagnoses. Injuries, including both occupational and nonoccupational injuries, affect many occupational groups and are not confined to a narrow age range (figures 16 and 17). Injury and poisoning was among the three most common diagnostic categories for men in all occupational groups except nuclear and for women in all occupational categories except administrative and nuclear (figure 17). Sprains and strains were the predominant type of injury reported, but fractures, burns, and bruises were also reported often.

Figure 14. Total Number of Health Conditions Reported and Total Number of Days Absent from Work by Gender and Diagnostic Category

| Diagnostic Category | Men | | Women | |
|--------------------------|--|-----------------------------|--|-----------------------------|
| | Total Number of Health Conditions Reported | Total Number of Days Absent | Total Number of Health Conditions Reported | Total Number of Days Absent |
| Benign Growths | 7 | 264 | 9 | 361 |
| Blood | 0 | 0 | 0 | 0 |
| Cancer | 10 | 279 | 4 | 254 |
| Digestive | 3 50 | 3 858 | 16 | 341 |
| Endocrine/Metabolic | 7 | 85 | 4 | 143 |
| Existing Birth Condition | 6 | 281 | 0 | 0 |
| Genitourinary | 8 | 108 | 24 | 623 |
| Heart/Circulatory | 19 | 407 | 2 | 104 |
| Infections/Parasites | 23 | 765 | 9 | 175 |
| Injury and Poisoning | 1 82 | 2 1,965 | 1 33 | 3 729 |
| Lung/Respiratory | 2 52 | 580 | 3 25 | 271 |
| Mental | 9 | 452 | 1 | 22 |
| Muscles and Skeleton | 1 82 | 1 2,906 | 2 27 | 2 831 |
| Nervous System | 34 | 736 | 14 | 581 |
| Pregnancy/Childbirth | NA | NA | 3 25 | 1 1,278 |
| Skin | 7 | 96 | 2 | 59 |
| Unspecified Symptoms | 12 | 157 | 9 | 228 |

Figure 15. Health Conditions Reported Under Selected Diagnostic Categories by Gender

| Men | | Women |
|---|---|--|
| Cancer <ul style="list-style-type: none"> • Bladder • Colon • Esophagus • Liver • Prostate • Skin • Stomach | Lung/Respiratory <ul style="list-style-type: none"> • Bronchitis • Flu • Pneumonia • Sinusitis • Tonsillitis • Upper Respiratory Infection | Cancer <ul style="list-style-type: none"> • Brain • Breast • Skin |
| Digestive <ul style="list-style-type: none"> • Appendicitis • Gallbladder Disorders • Hernias • Ulcers | Muscles and Skeleton <ul style="list-style-type: none"> • Arthritis • Back Problems • Disc Disorders • Rheumatism | Injury and Poisoning <ul style="list-style-type: none"> • Burns • Fractures • Sprains and Strains |
| Injury and Poisoning <ul style="list-style-type: none"> • Bruises • Burns • Dislocations • Fractures • Open Wounds • Sprains and Strains | | Lung/Respiratory <ul style="list-style-type: none"> • Bronchitis • Flu • Pneumonia • Sinusitis • Upper Respiratory Infection |
| | | Muscles and Skeleton <ul style="list-style-type: none"> • Arthritis • Rheumatism |

Figure 16. Three Diagnostic Categories Reported Most Often by Gender and Age

| | | 16-29 | 30-39 | 40-49 | 50-59 | 60+ |
|-------|--|--------------------------|----------------------|-------------------------------------|--|--------------------------|
| Men | Most Common Diagnostic Category | Digestive | Injury and Poisoning | Injury and Poisoning | Muscles and Skeleton | Muscles and Skeleton |
| | Second Most Common Diagnostic Category | Injury and Poisoning (1) | Muscles and Skeleton | Muscles and Skeleton | Digestive | Benign Growth; Cancer |
| | Third Most Common Diagnostic Category | Lung/Respiratory | Lung/Respiratory | Digestive | Injury and Poisoning; Lung/Respiratory | Injury and Poisoning (1) |
| Women | Most Common Diagnostic Category | Pregnancy/Childbirth | Pregnancy/Childbirth | Injury and Poisoning | Muscles and Skeleton | Digestive |
| | Second Most Common Diagnostic Category | Genitourinary | Lung/Respiratory | Genitourinary; Muscles and Skeleton | Injury and Poisoning | Lung/Respiratory |
| | Third Most Common Diagnostic Category | (2) | Injury and Poisoning | Lung/Respiratory | Lung/Respiratory | Nervous System (1) |

(1) This diagnostic category was reported the same number of times as the one above it.
 (2) More than two diagnostic categories tied.

Figure 17. Three Diagnostic Categories Reported Most Often by Gender and Occupation

| | | Administration | Professional | Technical | Service |
|-------|--|--|-------------------------|----------------------|--|
| Men | Most Common Diagnostic Category | Muscles and Skeleton | Digestive | Muscles and Skeleton | Injury and Poisoning |
| | Second Most Common Diagnostic Category | Digestive | Injury and Poisoning | Injury and Poisoning | Heart/Circulatory |
| | Third Most Common Diagnostic Category | Injury and Poisoning | Muscles and Skeleton | Digestive | Lung/Respiratory; Muscles and Skeleton |
| Women | Most Common Diagnostic Category | Pregnancy/Childbirth | Genitourinary | Genitourinary | Injury and Poisoning; Muscles and Skeleton |
| | Second Most Common Diagnostic Category | Lung/Respiratory; Muscles and Skeleton | Injury and Poisoning | Injury and Poisoning | Benign Growth; Unspecified Symptoms |
| | Third Most Common Diagnostic Category | Genitourinary | Lung/Respiratory | (2) | Nervous System |
| | | Security | Crafts and Manual Labor | Nuclear | Unknown |
| Men | Most Common Diagnostic Category | Muscles and Skeleton | Injury and Poisoning | Digestive | Injury and Poisoning |
| | Second Most Common Diagnostic Category | Injury and Poisoning; Nervous System | Muscles and Skeleton | Lung/Respiratory (1) | Lung/Respiratory |
| | Third Most Common Diagnostic Category | Digestive | Lung/Respiratory | Nervous System (1) | Muscles and Skeleton |
| Women | Most Common Diagnostic Category | Injury and Poisoning | Injury and Poisoning | None | Lung/Respiratory; Muscles and Skeleton |
| | Second Most Common Diagnostic Category | Digestive; Heart/Circulatory | Nervous System (1) | None | Injury and Poisoning |
| | Third Most Common Diagnostic Category | Lung/Respiratory (1) | None | None | Digestive; Nervous System |

(1) This diagnostic category was reported the same number of times as the one above it.

(2) More than two diagnostic categories tied.

Rates of Disease Occurrence

Some occupational groups had only a small number of workers who reported very few health events in 1995 (see appendix H). Because rates based on health events among a small number of workers can vary widely just by chance, the eight occupational groups were combined into five larger groups. The five age groups were also combined into two age groups for the same reasons (figure 18). The age groups, less than 40 years and 40 years and older, were chosen because the rates of many illnesses begin to change more rapidly among persons over 40 years of age.

The likelihood of getting cancer increases with age, and cancer rates in most occupational categories were higher among older workers (figure 19). Although this report discusses rates of cancer diagnoses, in fact, one cancer diagnosis can be associated with several absences over a year. The rates are not comparable to incidence rates, which reflect the number of new cancer diagnoses in a population over a specified period of time (usually one year). Incidence rates count a cancer diagnosis only once, but a worker who is absent for a week on four different occasions during the same year could have four diagnoses recorded for epidemiologic surveillance. Cancer rates presented in this report are really absence rates related to cancer, and because a worker may experience many absences related to the same cancer diagnosis, the cancer rates in this report can appear substantially higher than the actual incident of cancer.

Of the 14 cancer diagnoses reported during 1995, 4 were among women and 10 among men. Twelve workers reported the 14 diagnoses. We found no evidence of an excess of any one type of cancer or any occupational group at significantly increased risk for this disease (see appendix H).

A good example of why rates based on small numbers of health events must be interpreted cautiously is seen among women over 40 years old in the combined service/security/crafts and manual labor category. This group showed the highest rate of diseases affecting the circulatory system, but the rate is based on only two diagnoses for aneurysms reported by one woman among the 211 women in this combined occupational category (appendices A and H). A high rate does not always indicate a large number of diagnoses.

A Word about Rates...

The previous section considered the **number** of health events among various groups, but comparing these numbers may be misleading. For example, figure 14 shows that during 1995 men reported 82 diagnoses involving injuries; women reported 33. You can honestly say that men reported almost two and a half times as many injuries as women. Does this mean that men were at greater risk of injury in 1995? Comparing the number of injuries among men versus women will not answer this question. To answer the question, the number of men and women in the work force must be considered (figure 1). Since there are almost three times as many men as women at INEEL, it is reasonable to expect more injuries among men than women. A more accurate way to compare men and women is to calculate the injury rate for each group. The rates are calculated by dividing the number of injuries in a given group by the number of employees in the same group. This number is multiplied by 1,000 to give a rate per 1,000 workers. For example:

Among men,
 $(82 \text{ injuries} \div 8,796 \text{ men}) = .009 \times 1,000 = 9 \text{ injuries per } 1,000 \text{ men}$

Among women,
 $(33 \text{ injuries} \div 3,019 \text{ women}) = .011 \times 1,000 = 11 \text{ injuries per } 1,000 \text{ women}$

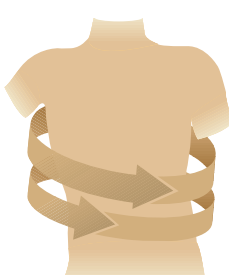
These rates account for differences in the number of men and women in the work force, and comparing them suggests that the rate of reported injuries among women is slightly higher than among men. They are called **crude rates** because they do not account for possible differences between men and women with regard to age, occupation, and other factors that might affect the individual's risk of getting an injury. Not all age groups are equally susceptible to various diseases and injuries, so epidemiologists often take age into account when calculating rates. **Age-specific rates** are presented in this section of the report. These rates are specific to given age groups (e.g., <40, 40+). Definitions of diagnostic rates and age-specific rates appear in the Glossary of this report.

Service workers were 10.8 times more likely to report a heart/circulatory condition than other workers, but this comparison of service workers' circulatory disease rate with the rates in other groups is based on only four diagnoses. Of these, two were for irregular heart beat and one each for a heart attack and high blood pressure (appendix J).

The lung/respiratory category contains very different kinds of diseases: acute infectious diseases such as colds, influenza, and pneumonia; allergies, sinusitis, and bronchitis; and chronic diseases like asthma and emphysema. Overall, over half of the diagnoses in this category involved acute infections, pneumonia, or flu. Rates of lung/respiratory disease were higher among women than men. The rates were higher among the service/security/crafts and manual labor workers for both men and women. Their diagnoses included three acute infections, five pneumonia/influenza, one bronchitis, one asthma, and two other diseases of the lung (appendix H).

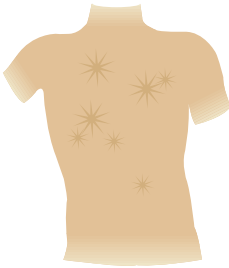
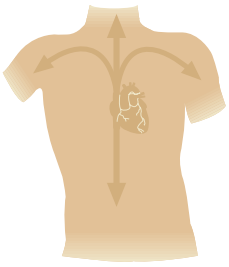
In the injury and poisoning category, only three diagnoses involved poisoning, so this category really focuses on injuries. Injury rates did not change consistently with age. The types of injuries reported by men and women were somewhat different. Sprains and strains made up 44% of the injuries reported by men, and sprains and strains (27%), fractures (21%), and burns (15%) accounted for the majority of diagnoses among women. Two women reported five diagnoses for second-degree burns. Service workers were over 4.4 times as likely to sustain sprains and strains as were workers in other groups, and security workers also were 3.8 times more likely to sustain such injuries. Compared with other workers, both service and crafts and manual labor workers were over 5 times as likely to report sprains and strains of the back. Professional workers had a 4.6 times greater risk of having fractures involving the lower limbs than other occupational groups. Three (38%) of the eight diagnoses for broken legs were reported in this occupational group, which made up 11% of the work force (appendices A, H, and J).

Figure 18. Rates per 1,000 for All Diagnostic Categories Combined by Gender, Age, and Occupation



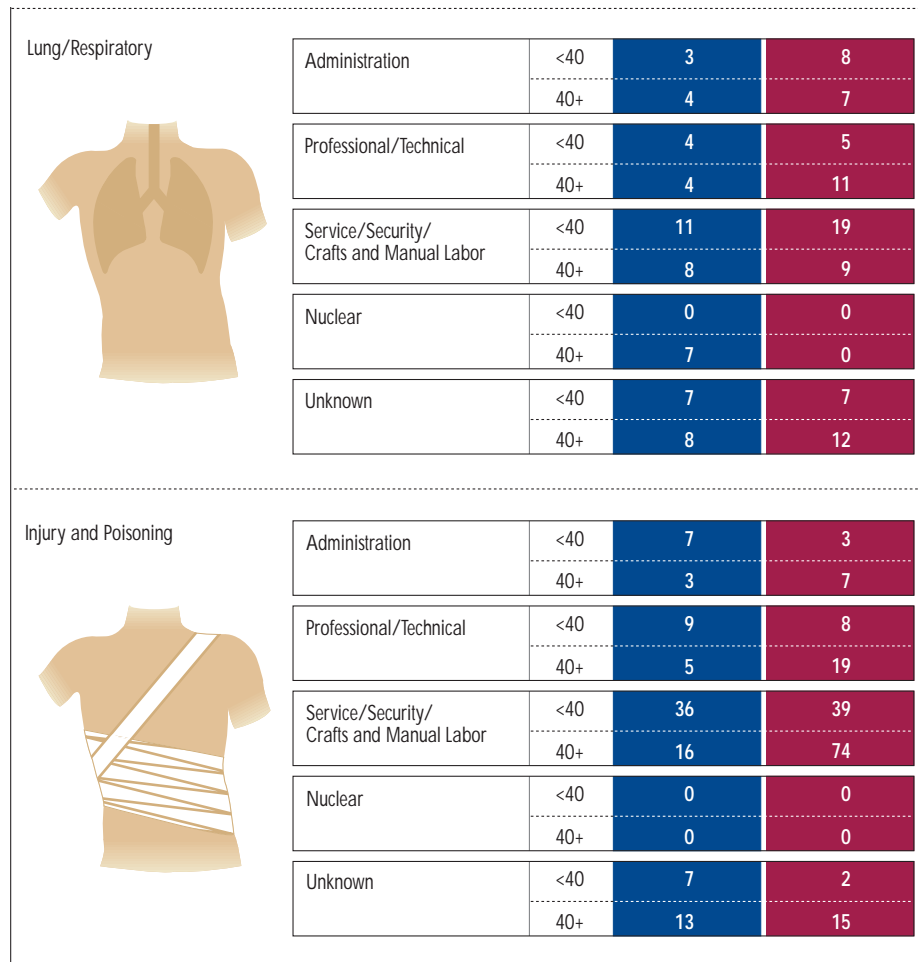
| All Diagnostic Categories | Occupational Group | Age | Rate per 1,000 | |
|--|--------------------|-----|----------------|-------|
| | | | Men | Women |
| Administration | | <40 | 20 | 52 |
| | | 40+ | 38 | 67 |
| Professional/Technical | | <40 | 37 | 86 |
| | | 40+ | 41 | 65 |
| Service/Security/ Crafts and Manual Labor | | <40 | 122 | 97 |
| | | 40+ | 69 | 259 |
| Nuclear | | <40 | 8 | 0 |
| | | 40+ | 36 | 0 |
| Unknown | | <40 | 41 | 31 |
| | | 40+ | 52 | 70 |

Figure 19. Rates per 1,000 for Selected Diagnostic Categories by Gender, Age, and Occupation

| Diagnostic Category | Occupational Group | Age | Rate per 1,000 | | |
|---|---|----------------|----------------|-------|---|
| | | | Men | Women | |
| Cancer  | Administration | <40 | 0 | 0 | |
| | | 40+ | 3 | 3 | |
| | Professional/Technical | <40 | 0 | 3 | |
| | | 40+ | 2 | 0 | |
| | Service/Security/ Crafts and Manual Labor | <40 | 2 | 0 | |
| | | 40+ | 0 | 9 | |
| | Nuclear | <40 | 0 | 0 | |
| | | 40+ | 4 | 0 | |
| | Unknown | <40 | 1 | 0 | |
| | | 40+ | 0 | 0 | |
| | Heart/Circulatory  | Administration | <40 | 0 | 0 |
| | | | 40+ | 0 | 0 |
| Professional/Technical | | <40 | 0 | 0 | |
| | | 40+ | 4 | 0 | |
| Service/Security/ Crafts and Manual Labor | | <40 | 6 | 0 | |
| | | 40+ | 6 | 19 | |
| Nuclear | | <40 | 0 | 0 | |
| | | 40+ | 0 | 0 | |
| Unknown | | <40 | 2 | 0 | |
| | | 40+ | 2 | 0 | |

(continued)

Figure 19. Rates per 1,000 for Selected Diagnostic Categories by Gender, Age, and Occupation (continued)

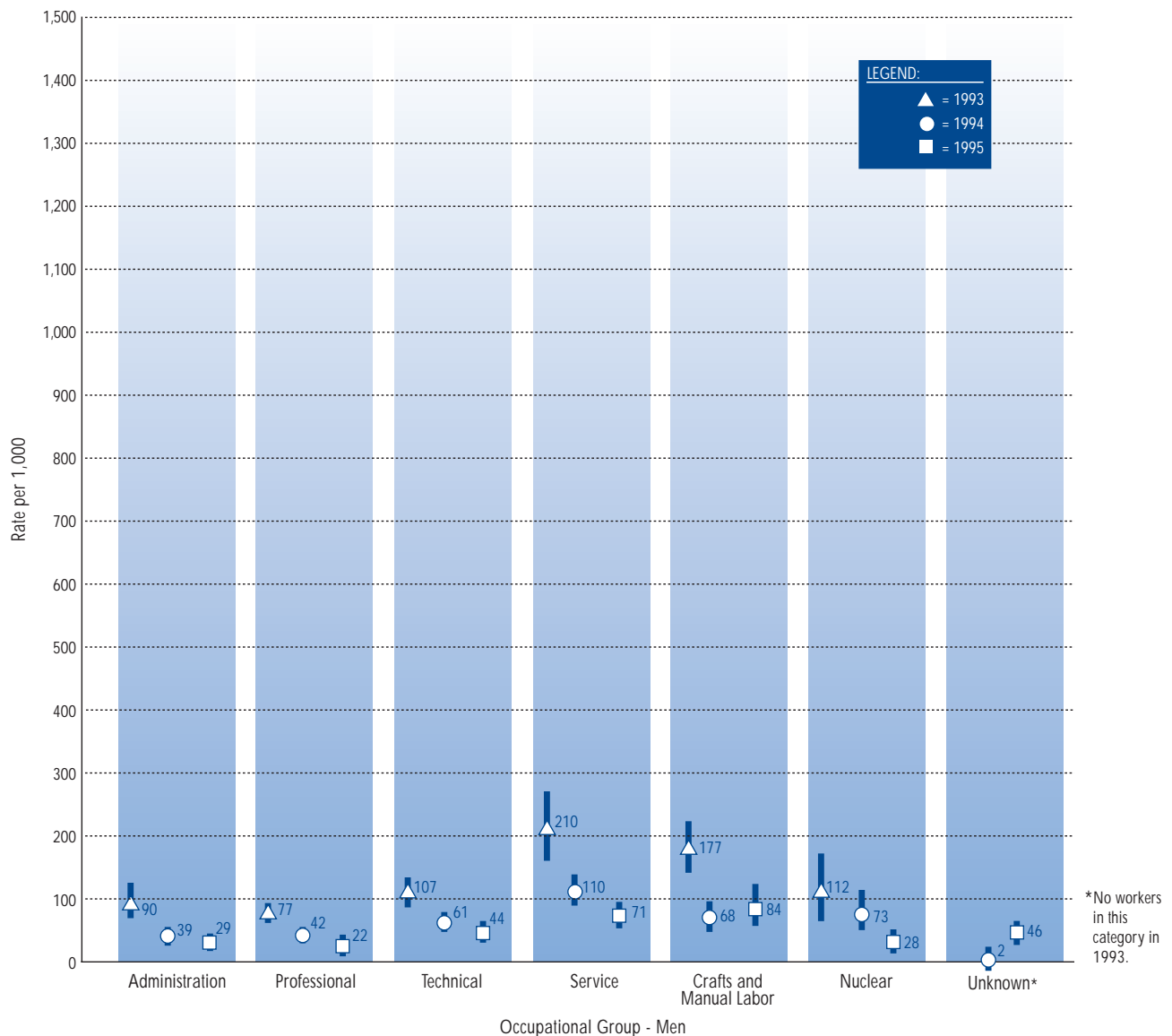


Disease Rates – Time Trends

INEEL reported service and security as separate occupational categories for the first time in 1995. To look at time trends for 1993 to 1995, the two categories were combined for the data (figures 20 and 21).

Over the 1993 to 1995 time period, the rates for all diagnostic categories combined decreased for all occupational categories except the unknown category. There was no unknown occupational category in 1993. The decrease in the diagnosis rates between 1993 and 1994 was most likely due to a 1994 change in the medical leave policy. INEEL adopted a “personal days off” policy that permitted workers to use personal days off as sick leave as well as vacation leave; the more traditional sick leave was categorized as short-term disability. As a result, fewer health events were reported to the medical clinic, and valid comparisons between

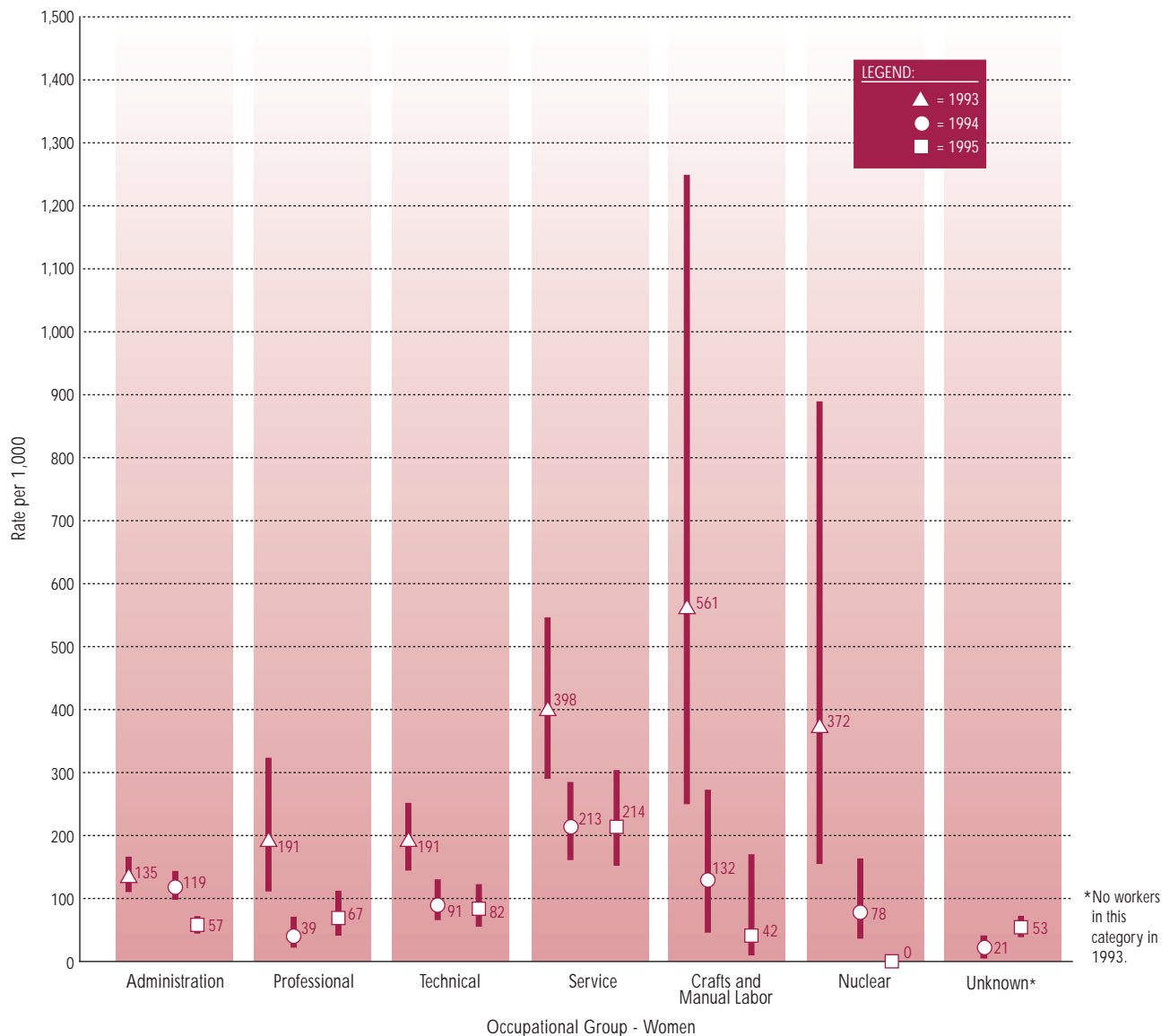
Figure 20. Age-Adjusted Rates for All Diagnostic Categories Combined for Men by Occupation, 1993 to 1995*



1993 and 1994 rates could not be made (figures 20, 21, 22). All of the selected diagnostic categories for both men and women showed a decrease in rates for 1993 through 1995. Although age can affect the occurrence of certain diseases, it does not appear to be the reason for the decreases seen here. The percentage of workers in each age group remained relatively stable for that time period. The greatest rate decreases occurred in the heart/circulatory category for men and the lung/respiratory category for men and women.

From 1993 to 1995, the overall rate of cardiovascular disease reported among men dropped 68%. Most of this decrease occurred between 1994 and 1995. The reduction was most pronounced for heart attacks and other ischemic heart disease (involving restricted blood flow to the heart). The overall decrease in cardiovascular disease was also seen among women, but no specific form of disease appeared instrumental in reducing the rates. For all three years, cardiovascular disease rates among women were

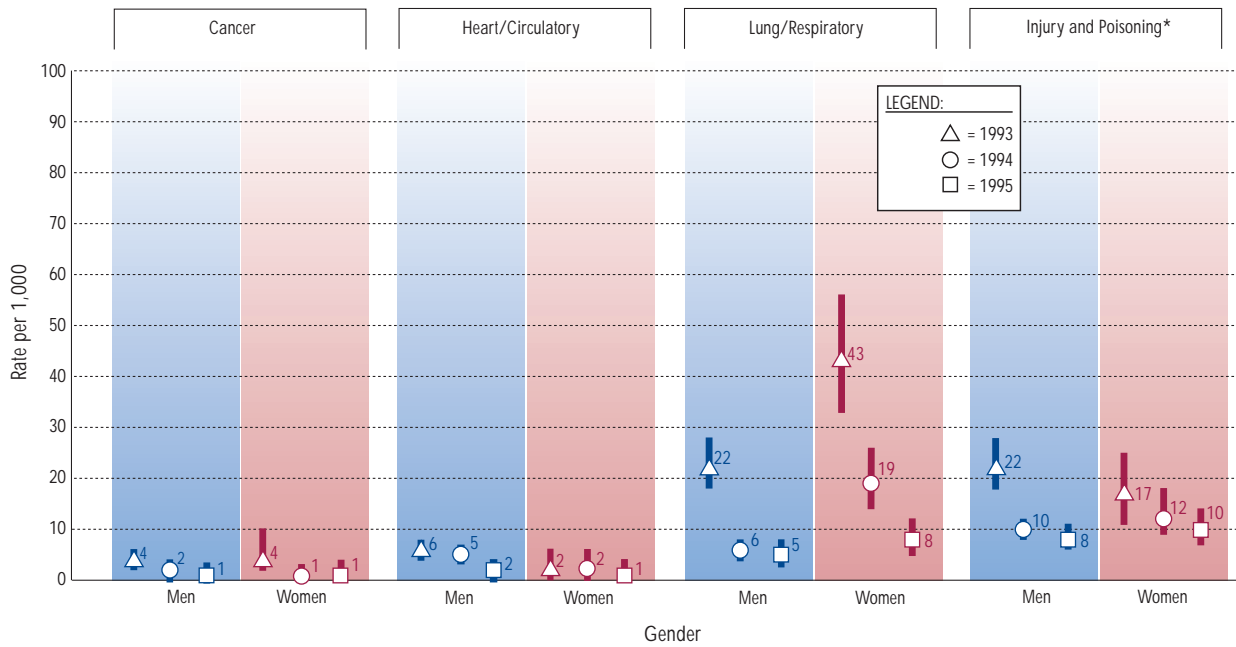
Figure 21. Age-Adjusted Rates for All Diagnostic Categories Combined for Women by Occupation, 1993 to 1995*



about half those of men. A number of factors could account for the reduced rates observed over the three-year period, but the most probable explanation is that changes in sick leave policy reduced cardiovascular disease reporting (figure 22).

Respiratory diagnoses decreased among both men and women from 1993 to 1995, but the decrease was more dramatic among women (figure 22). The most frequently reported lung/respiratory diagnoses were for bronchitis, pneumonia and influenza, and sinusitis. The percentage of diagnoses for bronchitis and pneumonia and influenza were relatively stable for this period and occurrences of sinusitis showed a sharp decrease in women from 1994 to 1995. Respiratory disease rates remained higher among women than among men over the three years, a difference that has also been noted at other epidemiologic surveillance sites.

Figure 22. Age-Adjusted Rates for Selected Diagnostic Categories by Gender, 1993 to 1995



*For 1993, rate based on external causes of injury data; for 1994 and 1995, rate based on injury and poisoning data.

Occupational Sentinel Health Events

An occupational sentinel health event (SHEO) is a disease, disability, or injury whose occurrence may serve as a warning signal that workplace conditions may need to be changed or additional attention may be required to reduce its occurrence. Injuries and poisonings resulting from accidents in the workplace as well as 64 disease conditions have been identified as SHEOs from studies of workplace exposures and disease in many different industries (appendix K). Although SHEOs may indicate an occupational exposure, many SHEOs can also result from nonoccupational exposures or may reflect the combined effects of both occupational and nonoccupational exposures. Because the occupational status of many SHEOs is uncertain, we assess them in the following three categories (appendix K has additional information about what diseases and conditions are included in each SHEO).

Definitely SHEOs: Consists of diseases that are unlikely to occur in the absence of an occupational exposure. Asbestosis, a lung condition resulting from exposure to asbestos, is an example of this group.

Possibly SHEOs: Includes such conditions as lung cancer and carpal tunnel syndrome, which may or may not be related to occupation. Additional information about the person's hobbies, personal habits, and work history are required to establish a link between disease and occupation. For example, lung cancer can result from asbestos exposure as well as smoking. Carpal tunnel syndrome may result from a job requiring typing or from a hobby such as playing piano.

Accidents: Includes all types of on-the-job accidents and resulting health conditions. Accidents specifically identified as occurring in the home, on the farm, or during recreation are excluded.

Forty-three of the 407 health events (11%) reported in 1995 fit our definition of SHEOs, and 32 of the SHEOs involved accidents (figures 23 and 24). Only one of the accidents was specifically indicated as occurring in the workplace. Over one-third (38%) of these accidents occurred in workers in the 40-49 age group. Of the 11 SHEOs that did not result from a specific accident, 8 involved carpal tunnel syndrome. INEEL workers missed a total of 326 days due to this diagnosis. Women reported six of the diagnoses (75%), and half of the workers with carpal tunnel syndrome were aged 40 to 49. There was no relationship with occupational group.

Figure 23. Characteristics of Health Events for SHEOs and Days Absent by Gender

| | | Total Number of Workers | Total Number of Health Events | Total Number of Health Conditions | Total Number of Days Absent |
|-------|--------------|-------------------------|-------------------------------|-----------------------------------|-----------------------------|
| Men | Definite | 1 | 1 | 1 | 9 |
| | Possible | 5 | 5 | 5 | 122 |
| | Accident | 24 | 24 | 32 | 618 |
| | Total | 30 | 30 | 38 | 749 |
| Women | Definite | 0 | 0 | 0 | 0 |
| | Possible | 6 | 6 | 6 | 264 |
| | Accident | 7 | 7 | 15 | 144 |
| | Total | 13 | 13 | 21 | 408 |

Figure 24. Number of Accidents by Gender, Age, and Occupation*

| Occupational Group | Age Group - Men | | | | | Age Group - Women | | | | | Total |
|-------------------------|-----------------|----------|-----------|----------|----------|-------------------|----------|----------|----------|----------|-----------|
| | 16-29 | 30-39 | 40-49 | 50-59 | 60+ | 16-29 | 30-39 | 40-49 | 50-59 | 60+ | |
| Administration | | 1 | 2 | | | | | | 1 | | 4 |
| Professional | | | 2 | | | | | | 1 | | 3 |
| Technical | | 3 | | | | 1 | | | | | 4 |
| Service | | 2 | 1 | | | | | 1 | | | 4 |
| Security | | 1 | 1 | | | | 1 | | | | 3 |
| Crafts and Manual Labor | | | | 1 | | | | | | | 1 |
| Nuclear | | | | | | | | | | | 0 |
| Unknown | 1 | 1 | 4 | 3 | 2 | | | 1 | 1 | | 13 |
| Total | 1 | 8 | 10 | 4 | 2 | 1 | 1 | 2 | 3 | 0 | 32 |

*Blank space is equal to zero.

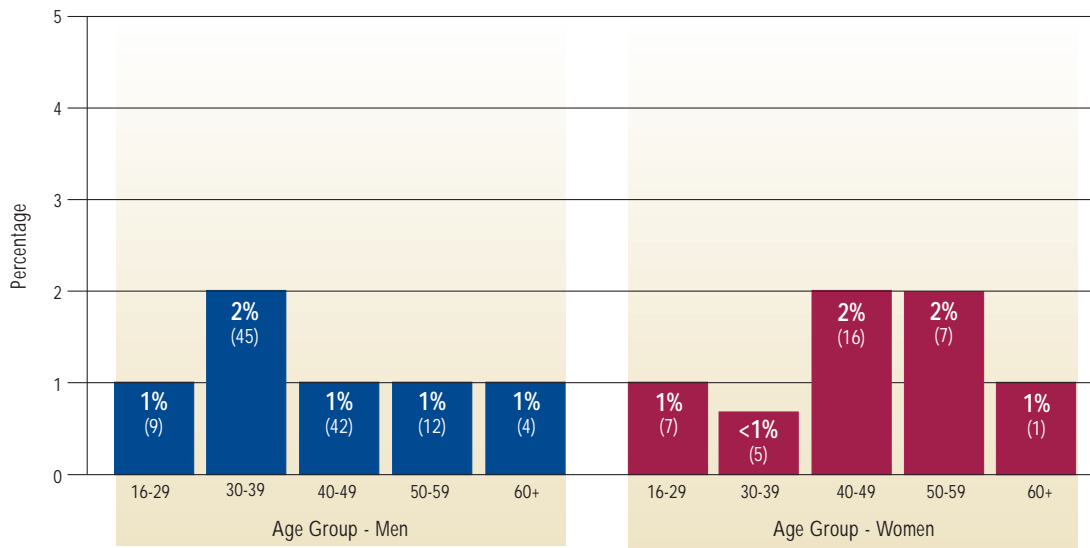
OSHA-Recordable Events

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

The number of workers with at least one OSHA event in 1995 (148) represented an approximate 5% decrease from the number of workers with a recordable event in 1994 (156). There was a 12% decrease in the total number of OSHA events from 1994 (173) to 1995 (152). Men reported over three times as many OSHA events as women in 1995, but the percentage of workers with at least one OSHA event was about the same for both men and women. These events were more likely to occur among men 30-39 years old and women 40-59 years old (figure 25). Men in administrative, professional, or nuclear occupations were somewhat less likely than others to experience an OSHA event (figure 26). Women in the service and technical occupations had a higher percentage of workers with at least one OSHA event than other women (figure 27). The number of workdays lost or with restricted activity averaged at least 28 days longer for men (77.4 days) than for women (49.2 days) (figure 28). Neither women nor men showed a clear relationship between age at injury and average number of days lost or restricted. The large gender difference in the average number of workdays lost or with restricted activity was mostly due to two OSHA events reported by two men in the 60+ age group. The diagnoses for both events were a back sprain and strain that resulted in a combined total of 710 workdays lost or with restricted activity.

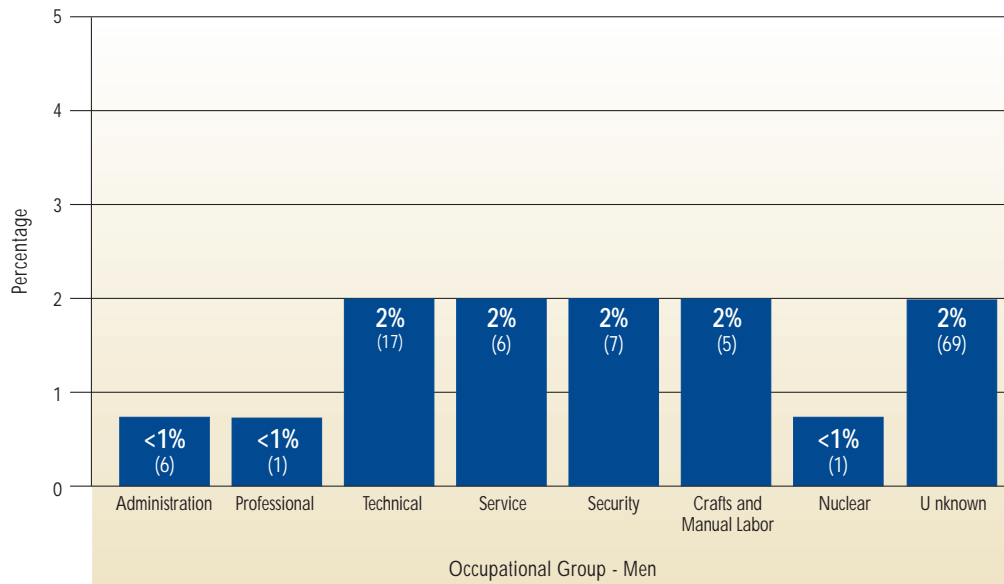
The service group (2.3%) had the highest percentage of workers with at least one OSHA event (figures 26 and 27). The crafts and manual laborers, who made up 2.1% of the total work force, had the highest average number of workdays lost or with restricted activity per OSHA event (146.0 days for men and women combined; figure 29). Two workers reported a back sprain and strain resulting in a total of 40 days lost and 180 days restricted. A third worker suffered a bruise to the chest, which resulted in 510 days of restricted work activity. Appendices L-N contain more detailed data about the number of OSHA events and days of work lost or with restricted activity for men and women in different age and occupational groups.

Figure 25. Percentage of Workers with at Least One OSHA Event by Gender and Age*



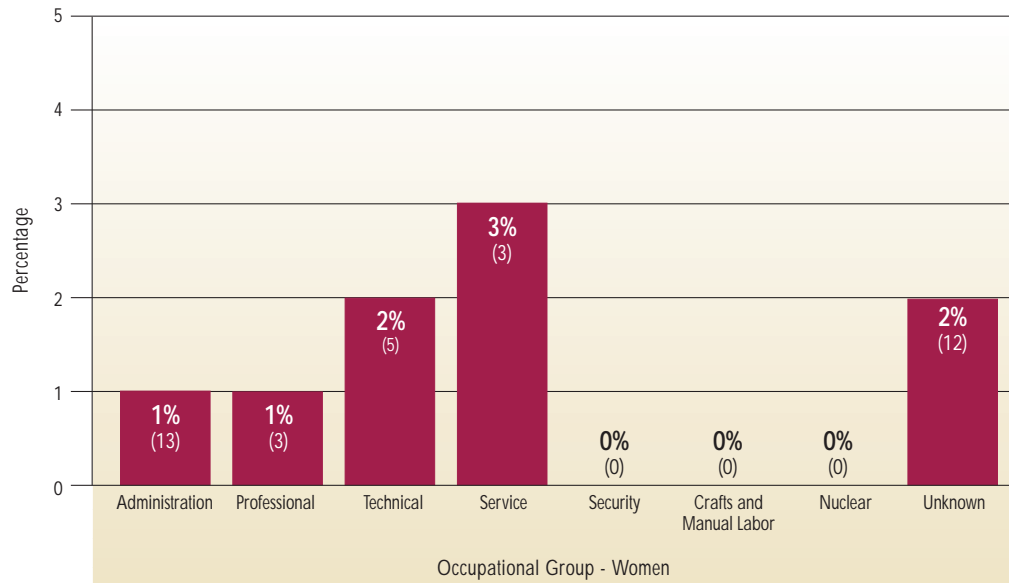
*Numbers in parentheses represent the number of workers with at least one event.

Figure 26. Percentage of Men with at Least One OSHA Event by Occupation*



*Numbers in parentheses represent the number of men with at least one event.

Figure 27. Percentage of Women with at Least One OSHA Event by Occupation*



*Numbers in parentheses represent the number of women with at least one event.

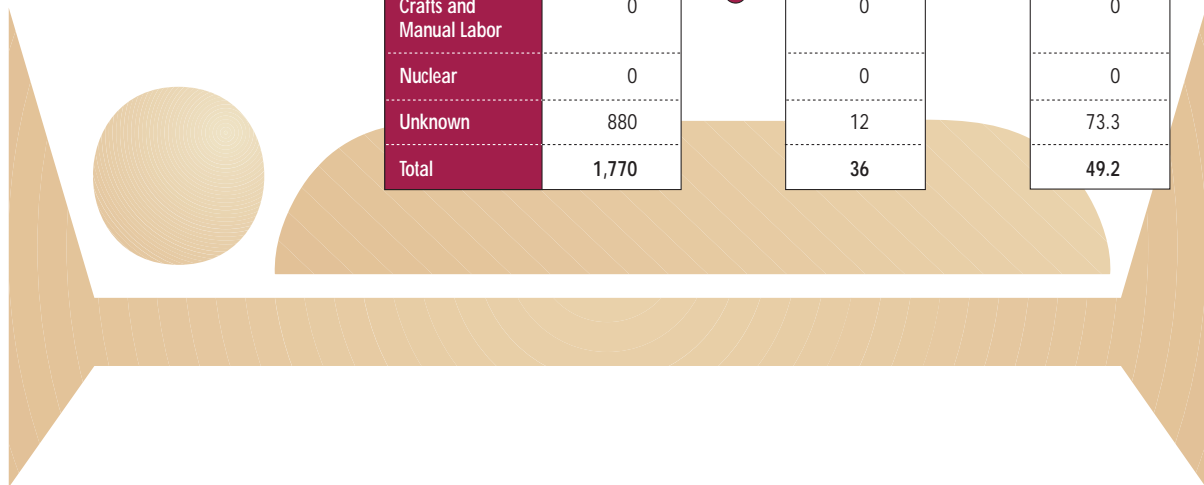
Figure 28. Lost and Restricted Workdays by Gender and Age

| | Age Group | Total Number of Days Lost/Restricted | Total Number of OSHA Events | Average Number of Days Lost/Restricted |
|-------|--------------|--------------------------------------|-----------------------------|--|
| Men | 16-29 | 620 | 9 | 68.9 |
| | 30-39 | 3,750 | 46 | 81.5 |
| | 40-49 | 3,060 | 45 | 68.0 |
| | 50-59 | 820 | 12 | 68.3 |
| | 60+ | 730 | 4 | 182.5 |
| | Total | | 8,980 | 116 |
| Women | 16-29 | 520 | 7 | 74.3 |
| | 30-39 | 20 | 5 | 4.0 |
| | 40-49 | 700 | 16 | 43.8 |
| | 50-59 | 530 | 7 | 75.7 |
| | 60+ | 0 | 1 | 0.0 |
| | Total | | 1,770 | 36 |

Figure 29. Lost and Restricted Workdays by Gender and Occupation

| | Occupation | Total Number of Days Lost/Restricted | Total Number of Health Events | Average Number of Days Lost/Restricted |
|-----|-------------------------|--------------------------------------|-------------------------------|--|
| Men | Administration | 50 | 6 | 8.3 |
| | Professional | 0 | 1 | 0.0 |
| | Technical | 1,420 | 17 | 83.5 |
| | Service | 220 | 7 | 31.4 |
| | Security | 510 | 7 | 72.9 |
| | Crafts and Manual Labor | 730 | 5 | 146.0 |
| | Nuclear | 20 | 1 | 20.0 |
| | Unknown | 6,030 | 72 | 83.8 |
| | Total | 8,980 | 116 | 77.4 |

| | Occupation | Total Number of Days Lost/Restricted | Total Number of Health Events | Average Number of Days Lost/Restricted |
|-------|-------------------------|--------------------------------------|-------------------------------|--|
| Women | Administration | 150 | 13 | 11.5 |
| | Professional | 250 | 3 | 83.3 |
| | Technical | 300 | 5 | 60.0 |
| | Service | 190 | 3 | 63.3 |
| | Security | 0 | 0 | 0 |
| | Crafts and Manual Labor | 0 | 0 | 0 |
| | Nuclear | 0 | 0 | 0 |
| | Unknown | 880 | 12 | 73.3 |
| | Total | 1,770 | 36 | 49.2 |



Diagnostic and Accident Categories for OSHA-Recordable Events

Over 75% of the health conditions reported were for injury and poisoning (figure 30). Sprains and strains were the most common type of OSHA-recordable injury among both men and women, accounting for 57% of such recordable injuries in 1995 and 55% in 1994. Among men, 86% of the sprains and strains occurred in the 30-39 and 40-49 age groups (appendix O). Open wounds and bruises also occurred fairly frequently among men (figure 31). Occupation did not appear strongly related to the type of injury sustained (figure 32, appendix S). The second most frequently reported OSHA-recordable category was disorders of the nervous system. Of the 19 health conditions reported, 18 were carpal tunnel syndrome. Of the 10 men who were diagnosed with carpal tunnel syndrome, 1 was in the professional occupation category, 4 were in the technical, 1 was in the service, and 4 were in the unknown categories. Half of these men were in the 30-39 age group. Of the 8 women, 6 were in administration, 1 was in the professional category, and 1 was in the unknown category (appendix S). The type of accident was reported for only 1 of the 152 OSHA events. This accident, recorded for a man aged 40-49 in the unknown occupational category, involved a foreign body in his eye.

Figure 30. Health Conditions by Gender and Diagnostic Category*

| Diagnostic Category | Total Number of Health Conditions Reported | |
|---------------------------------------|--|-------|
| | Men | Women |
| Digestive | 1 | |
| Lung/Respiratory | 4 | 1 |
| Muscles and Skeleton | 1 | 1 |
| Nervous System | 11 | 8 |
| Skin | 1 | |
| Unspecified Symptoms | 3 | 2 |
| Injury and Poisoning | 99 | 24 |
| • Upper Limb Fractures | | 1 |
| • Back Sprains and Strains | 27 | 10 |
| • Other Sprains and Strains | 29 | 4 |
| • Open Wounds - Head, Neck, Trunk | 10 | 1 |
| • Open Wounds - Upper Limb | 10 | 1 |
| • Superficial Injuries | 3 | 1 |
| • Bruises | 13 | 3 |
| • Foreign Bodies Entering Orifice | 2 | |
| • Burns | 3 | 1 |
| • Unspecified Injuries | | 1 |
| • Adverse Reaction to External Causes | 2 | 1 |

*Blank space is equal to zero.

Figure 31. Three Diagnostic Categories Reported Most Often by Gender and Age

| | | 16-29 | 30-39 | 40-49 | 50-59 | 60+ |
|-------|--|---------------------|-------------------------|---------------------|---------------------|---------------------|
| Men | Most Common Diagnostic Category | Open Wounds | Sprains and Strains | Sprains and Strains | Sprains and Strains | Sprains and Strains |
| | Second Most Common Diagnostic Category | Bruises | Open Wounds | Open Wounds | Nervous System | Open Wounds |
| | Third Most Common Diagnostic Category | (2) | Nervous System; Bruises | (2) | Bruises | Bruises (1) |
| Women | Most Common Diagnostic Category | Sprains and Strains | Nervous System | Sprains and Strains | Sprains and Strains | Sprains and Strains |
| | Second Most Common Diagnostic Category | (2) | Sprains and Strains (1) | Nervous System | Nervous System | None |
| | Third Most Common Diagnostic Category | None | Unspecified Symptoms | (2) | Bruises | None |

(1) This diagnostic category was reported the same number of times as the one above it.
 (2) More than two diagnostic categories tied.

Figure 32. Three Diagnostic Categories Reported Most Often by Gender and Occupation

| | | Administration | Professional | Technical | Service |
|-------|--|----------------------|--------------------------|--|----------------------------------|
| Men | Most Common Diagnostic Category | Sprains and Strains | Nervous System | Sprains and Strains | Sprains and Strains |
| | Second Most Common Diagnostic Category | Open Wounds (1) | None | Nervous System | Open Wounds |
| | Third Most Common Diagnostic Category | Bruises (1) | None | Open Wounds | Lung/Respiratory; Nervous System |
| Women | Most Common Diagnostic Category | Nervous System | Nervous System | Sprains and Strains | Sprains and Strains |
| | Second Most Common Diagnostic Category | Sprains and Strains | Unspecified Symptoms (1) | Lung/Respiratory; Muscles and Skeleton | Burns |
| | Third Most Common Diagnostic Category | Open Wounds; Bruises | Unspecified Injuries (1) | Bruises (1) | None |

| | | Security | Crafts and Manual Labor | Nuclear | Unknown |
|-------|--|----------------------------------|-------------------------|-------------------------------------|---------------------|
| Men | Most Common Diagnostic Category | Sprains and Strains | Sprains and Strains | Adverse Reaction to External Causes | Sprains and Strains |
| | Second Most Common Diagnostic Category | Lung/Respiratory; Nervous System | Superficial Injuries | None | Open Wounds |
| | Third Most Common Diagnostic Category | Open Wounds (1) | Bruises (1) | None | Bruises |
| Women | Most Common Diagnostic Category | None | None | None | Sprains and Strains |
| | Second Most Common Diagnostic Category | None | None | None | (2) |
| | Third Most Common Diagnostic Category | None | None | None | None |

(1) This diagnostic category was reported the same number of times as the one above it.
 (2) More than two diagnostic categories tied.

Rates of OSHA-Recordable Events

The rate of all diagnoses combined for OSHA-recordable events was greater for women over 40 years of age and men under 40 with the exception of nuclear workers (figure 33). Similar trends are seen in the rates of occupational injuries considered separately (figure 34). Workers in the unknown category were more likely to have an OSHA event that resulted in days lost from work or with restricted activity than were other groups of workers. Workers with an unknown occupation made up 35% of the work force but had 43% of the days lost and 71% of the days restricted (appendix N). Their risk of sprains and strains was almost 3 times greater than other occupational groups (appendix W). Of the 3,900 days lost or restricted from back sprains and strains, 71% were in the unknown group (appendix T). Compared with other occupational groups, the crafts and manual labor (over 4 times) and service (over 3 times) groups also had a higher risk of sustaining back sprains and strains (appendix W).

Figure 33. Rates per 1,000 for all Diagnostic Categories Combined by Gender, Age, and Occupation

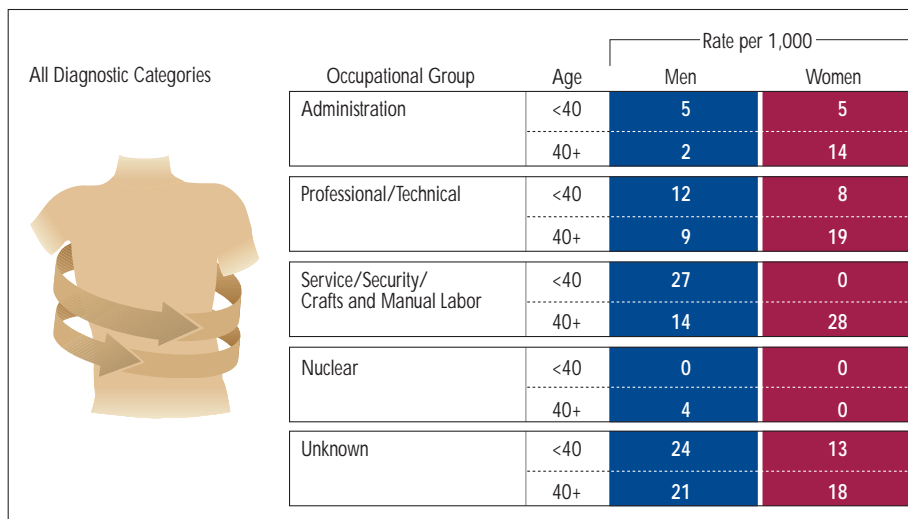
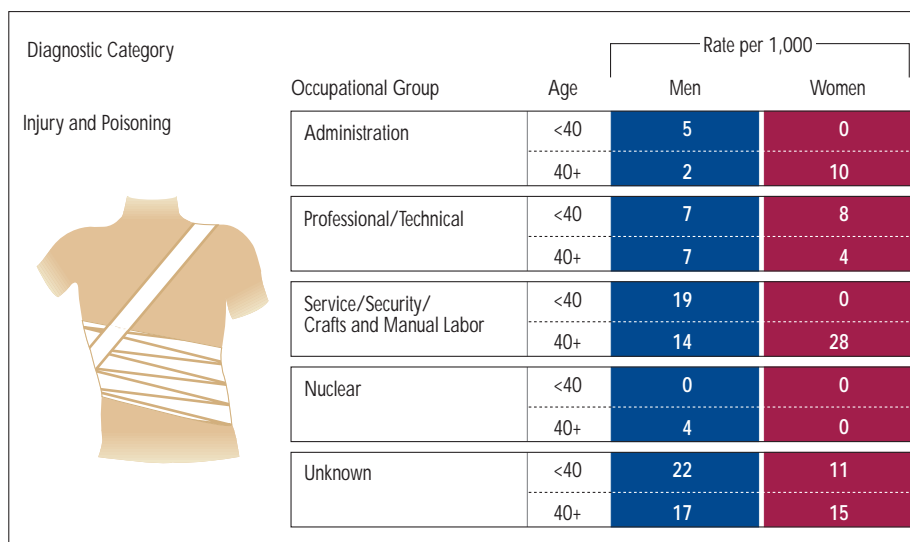


Figure 34. Rates per 1,000 for Injury and Poisoning by Gender, Age, and Occupation



Glossary

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

Age-Adjusted Rate: A rate that has been mathematically adjusted to account for the effects of differences in the age composition between groups. This allows one rate per group to be compared.

Age-Specific Rate: A rate that is calculated for a group that is a specific age (e.g., 16 to 29 years old). Only people in the specific age group are included in the calculation of the rate. The purpose of calculating age-specific rates is to identify differences in the rate that occur as the age changes. Any differences that are related to age can be seen by comparing age-specific rates for the different age groups.

Confidence Interval: A mathematical procedure used to determine in what range the true value of an event is likely to be. The width of the confidence interval (i.e., how wide the range is) 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% confidence level, indicates the percentage (e.g., 95%) 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, distribution, and health.

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

Diagnosis Rate: The number of occurrences of a given disease or health condition observed among DOE workers during a given time period per 1,000 DOE workers at risk of getting that disease during the time period. It is calculated as follows (using 1995 as the time period):

$$\text{Diagnosis rate for a disease during 1995 (per 1,000 DOE workers)} = \frac{\text{Number of occurrences of the disease reported during 1995}}{\text{Number of DOE workers at risk for the disease during 1995}} \times 1,000$$

Diagnostic Category: A particular type of disease, a group of related health conditions, or diseases that all affect the same organ system. Cancer is an example of a diagnostic category that contains a particular type of disease, and pregnancy/childbirth is an example of one that contains a group of related health conditions. Lung/respiratory is an example of a diagnostic category that contains 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 occurrence and distribution of diseases and health conditions in human populations.

Health Condition: A specific disease or medical condition. Health conditions are grouped together to form diagnostic categories. Tuberculosis is a specific disease that is part of the diagnostic category of infections/parasites. A fractured arm is a specific health condition included in the diagnostic category of injury and poisoning.

Health Event: An absence from work that lasted at least five consecutive workdays.

ICD-9-CM Code: An abbreviation for the *International Classification of Diseases, Ninth Revision, Clinical Modification*. It is internationally accepted as a standardized system for the classification of disease and health data collected from medical records and is useful to describe the disease and health characteristics of a population.

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 one person followed for one year. For example, 5 persons followed for one year contribute five person-years, as do 10 people each followed for half a year. In the epidemiologic surveillance reports, rates are often expressed as the number of events per 1,000 person-years.

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

Explanation of Diagnostic Categories

Throughout this report, health conditions have been grouped into a number of diagnostic categories which come from the *International Classification of Diseases* (ICD-9-CM). For the text of this report the categories are abbreviated to make the report easier to read. In the appendixes a different set of abbreviations was used for the categories. These names are the same as the ones used in previous annual reports. The table that begins on the next page lists the categories in numeric order according to ICD-9-CM and gives examples of common diseases included in each category. The last column of the table below links the category names in the reports and the appendixes to the table that begins on the next page.

| Diagnostic Categories Used in This Report | Diagnostic Categories Used in the Appendix and Previous Annual Reports | ICD-9-CM Codes |
|---|--|-----------------|
| Benign Growths | Benign and Other Neoplasms | 210-229,235-239 |
| Blood | Blood and Blood Forming Organs | 280-289 |
| Cancer | Malignant Neoplasms | 140-208,230-234 |
| Digestive | Digestive System | 520-579 |
| Endocrine/Metabolic | Endocrine and Metabolic Diseases | 240-279 |
| Existing Birth Condition | Congenital Anomalies | 740-759 |
| Genitourinary | Genitourinary System | 580-629 |
| Heart/Circulatory | Circulatory System | 390-459 |
| Infections/Parasites | Infectious and Parasitic Diseases | 001-139 |
| Injury and Poisoning | Injury and Poisoning | 800-999 |
| Lung/Respiratory | Respiratory System | 460-519 |
| Mental | Mental Disorders | 290-319 |
| Muscles and Skeleton | Musculoskeletal System | 710-739 |
| Nervous System | Nervous System and Sense Organs | 320-389 |
| Pregnancy/Childbirth | Pregnancy and Childbirth | 630-676 |
| Skin | Skin and Subcutaneous Tissue | 680-709 |
| Unspecified Symptoms | Symptoms, Signs and Ill-Defined Conditions | 780-799 |

| Categories and Subcategories of Diagnoses | ICD-9-CM Codes | Diseases |
|--|------------------|--|
| 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 nonarthropod diseases of 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 |
| • Helminthiasis | 120-129 | Pinworms, tapeworms, roundworms, 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 | Cancers of the 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, and skin | 170-173 | Bone, muscle, ligament, tendon, blood vessels, fat, and skin |
| • Genitourinary organs | 179-189 | Cervix, uterus, prostate, kidney, and bladder |
| • 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 - Nonpsychotic 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 |

(continued)

| Categories and Subcategories of Diagnoses | ICD-9-CM Codes | Diseases |
|---|---|---|
| <ul style="list-style-type: none"> • Hereditary and degenerative diseases of the central nervous system • Other disorders of the central nervous system • Disorders of the peripheral nervous system • Disorders of the eye • Diseases of the ear and mastoid process | <p>330-337</p> <p>340-349</p> <p>350-359</p> <p>360-379</p> <p>380-389</p> | <p>Alzheimer's and Parkinson's disease, tremors, and Huntington's chorea</p> <p>Multiple sclerosis (MS), cerebral palsy, epilepsy, and migraine</p> <p>Nerve disorders of the face, carpal tunnel syndrome, muscular dystrophy</p> <p>Inflammation and ulcers of the eye and eyelid; detached retina; pink eye; problems with tear ducts; glaucoma; and cataracts</p> <p>Infections of the outer, middle, or inner ear; ringing of the ears; hearing loss</p> |
| <p>Diseases of the circulatory system</p> <ul style="list-style-type: none"> • Acute rheumatic fever • Chronic rheumatic heart disease • Hypertensive disease • Ischemic heart disease • Diseases of pulmonary circulation • Other forms of heart disease • Cerebrovascular disease • Diseases of the arteries and capillaries • Diseases of the veins, lymphatics, and other | <p>390-459</p> <p>390-392</p> <p>393-398</p> <p>401-405</p> <p>410-414</p> <p>415-417</p> <p>420-429</p> <p>430-438</p> <p>440-448</p> <p>451-459</p> | <p>Rheumatic fever, heart murmurs, heart attacks, angina, hardening of the arteries, varicose veins, hemorrhoids, and phlebitis</p> <p>High fever and joint pain with possible heart damage</p> <p>Long lasting swelling and damage to the heart which results from rheumatic fever</p> <p>High blood pressure</p> <p>Heart attack and angina</p> <p>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)</p> <p>Swelling of the inner lining, middle lining, or sac enclosing the heart; heart failure; and irregular heartbeat</p> <p>Stroke, bleeding in the brain, and blockage or low blood flow in blood vessels of the brain</p> <p>Hardening of the arteries; aneurysm (bulge that develops in the walls of arteries); and blood clots</p> <p>Phlebitis (swelling of a vein) and thrombophlebitis (swelling of a vein which has a blood clot)</p> |
| <p>Diseases of the respiratory system</p> <ul style="list-style-type: none"> • Acute respiratory infections • Other diseases of the upper respiratory tract • Pneumonia and influenza • Chronic obstructive pulmonary diseases and allied conditions • Pneumoconiosis and other lung diseases caused by external agents • Other diseases of respiratory system | <p>460-519</p> <p>460-466</p> <p>470-478</p> <p>480-487</p> <p>490-496</p> <p>500-508</p> <p>510-519</p> | <p>Colds, sinusitis, laryngitis, pneumonia, influenza, chronic bronchitis, asthma, and emphysema</p> <p>Colds, sore throat, sinus infections, swollen tonsils, and bronchitis</p> <p>Allergies, hay fever, sinus infections, bronchitis, and sore throat that continue for a long time</p> <p>"The flu" and pneumonia caused by a bacteria or virus</p> <p>Emphysema and asthma</p> <p>Black lung; miners' asthma; asbestosis; silicosis; berylliosis; and conditions caused by chemical fumes and vapors</p> <p>Pleurisy (swelling of the lining of the lungs), collapsed lung, and respiratory failure</p> |
| <p>Diseases of the digestive system</p> <ul style="list-style-type: none"> • Diseases of the oral cavity, salivary glands, and jaw • Diseases of the esophagus, stomach, and duodenum • Appendicitis • Hernia of the abdominal cavity • Noninfectious enteritis and colitis • Other diseases of the intestines and peritoneum • Other diseases of digestive system | <p>520-579</p> <p>520-529</p> <p>530-537</p> <p>540-543</p> <p>550-553</p> <p>555-558</p> <p>560-569</p> <p>570-579</p> | <p>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</p> <p>Tooth problems (too many, too few, abnormal shape or size, cavities, bleeding gums, toothaches), and infections and swelling of the mouth, jaw, and tongue</p> <p>Ulcers of the esophagus (tube that transports food to the stomach), stomach, and small intestine; indigestion; and uncontrollable vomiting</p> <p>Swelling of the appendix (rupture, surgery, or both may result)</p> <p>Ruptures of the groin and diaphragm (muscle which separates the chest area from the lower part of the trunk)</p> <p>Crohn's disease and swelling of the intestine and colon</p> <p>Irritable bowel syndrome, blockage of the intestine, constipation, and diarrhea</p> <p>Diseases of the liver, gallbladder, and pancreas; hepatitis; blood in stool; and bleeding in the stomach and intestine</p> |

(continued)

| Categories and Subcategories of Diagnoses | ICD-9-CM Codes | Diseases |
|---|----------------|--|
| 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 disc ("slipped disc"), 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; 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 |
| • Nonspecific abnormal findings | 790-796 | Abnormal x-ray, blood, stool, and urine test results |

(continued)

| Categories and Subcategories of Diagnoses | ICD-9-CM Codes | Diseases |
|--|----------------|---|
| <ul style="list-style-type: none"> • 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 |
| <ul style="list-style-type: none"> • Fractures, all sites | 800-829 | Cracks or breaks of any bone |
| <ul style="list-style-type: none"> • Dislocations | 830-839 | Separation of a bone from its normal socket or joint |
| <ul style="list-style-type: none"> • 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 |
| <ul style="list-style-type: none"> • 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 |
| <ul style="list-style-type: none"> • 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 |
| <ul style="list-style-type: none"> • Open wounds | 870-897 | Animal bites; cuts; lacerations; punctures; and amputations, excluding the arteries and veins |
| <ul style="list-style-type: none"> • 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 |

Reader Response

To help us serve your information needs better, please take a moment to answer the following questions. Then fold this postage paid form into thirds along the dotted lines, **tape** (do not staple) it together, and return to us. Thank you for sharing your thoughts with us!

- 1) Overall, the information in this report was (circle one...)
- Too detailed About right Not detailed enough
- 2) Are there additional topics you would like to see covered in future reports?
- Yes No

If yes, please list additional topics:

- 3) Please list suggestions for improving the Epidemiologic Surveillance reports:

- 4) Which of the following occupational categories best describes the type of work you do? (check one...)

- Management/Administrative
- Technical
- Professional/Scientific
- Crafts/Trades
- Clerical

- 5) I am employed by (check one...)

- U.S. Department of Energy (DOE)
- DOE contractor or subcontractor
- Other Federal agency
- Military
- State or Local government
- Other



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INEEL 1995 Appendices

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