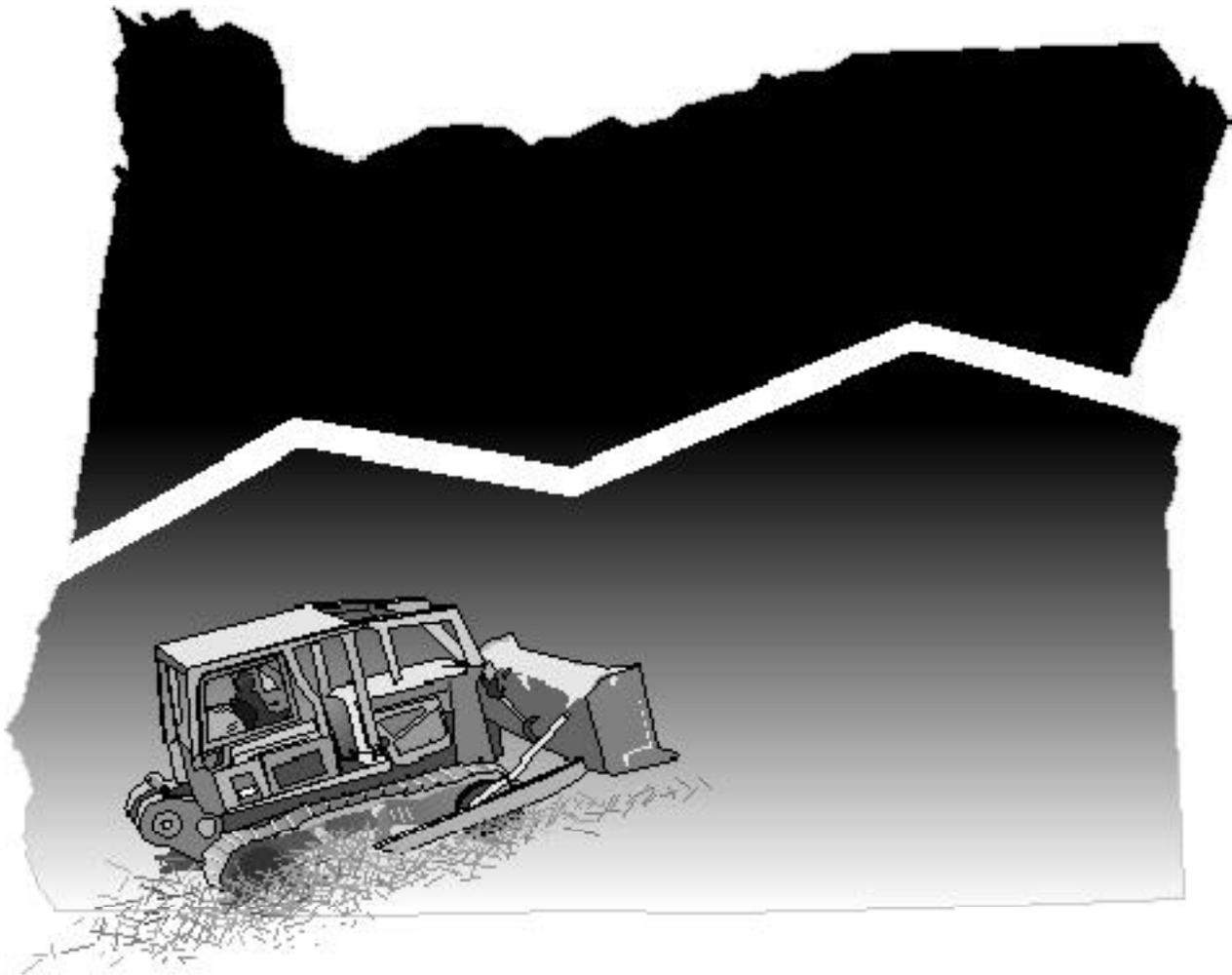


Oregon Occupational Injury and Illness Survey Calendar Year 1999



**Research & Analysis Section
Oregon Department of Consumer
& Business Services**



December 2001

Oregon Occupational Injury and Illness Survey 1999

Department of Consumer & Business Services

Director, Mary Neidig

Information Management Division

Administrator, Dan Adelman

Research & Analysis Section

Manager, Ed Bissell

Assistant Manager, Ronni Rachele

Research Analyst, Stacey Barnhart

Research Assistants

Sarah Loudon

Tina Parr

December 2001

In compliance with the Americans with Disabilities Act (ADA), this publication is available in alternative formats by calling (503) 378-4100 (V/TTY).

The information in this report is in the public domain and may be reprinted without permission.

Visit the DCBS Web site at: <http://www.cbs.state.or.us>



Information Management Division
350 Winter St. NE, Room 300
Salem, OR 97301-3880
(503) 378-8254

Table of contents

Introduction	1
Highlights	2
Private sector survey results	3
Total cases	3
Industry total cases rates	4
Injuries and illnesses	4
Lost workday cases and lost workdays	6
Industry lost workday cases rates	6
Hazardous industry groups	8
Rates by employment size	8
Public sector survey results	10
National survey results	11

Figures

1. Lost workday cases incidence rates by public and private sectors, Oregon, 1975-1999	2
2. Incidence rates of lost workday cases, nonfatal without lost workdays cases, and total cases, private sector, Oregon, 1972-1999	3
3. Incidence rates of occupational injuries and illnesses by industry division, Oregon, 1998-1999	4
4. Percentage distribution of occupational illnesses by category, Oregon, 1999	5
5. Incidence rates of occupational illnesses, Oregon, 1974-1999	6
6. Lost workday cases incidence rates by industry, Oregon, 1995-1999	7
7. Lost workday cases incidence rates by major manufacturing group, Oregon, 1999	8
8. Incidence rates of lost workday cases, nonfatal without lost workdays cases, and total cases, public sector, Oregon, 1975-1999	10
9. Total cases incidence rates by industry division, Oregon, standard industry mix, and national, 1999	11

Text Tables

1. Ranking of the 10 highest lost workday cases incidence rate industry groups, Oregon, 1995-1999	9
2. Lost workday cases incidence rates by size class, Oregon, 1995-1999	9
3. Incidence rates of total cases, lost workday cases, and cases without lost workdays, Oregon and national, 1995-1999	11

Tables

1. Incidence rates of recordable occupational injuries and illnesses by industry, Oregon, 1999	14
2. Number of recordable occupational injuries and illnesses by industry, Oregon, 1999	19
3. Incidence rates and number of occupational injuries by industry division, Oregon, 1999	24
4. Incidence rates and number of occupational illnesses by industry division, Oregon, 1999	24
5. Lost workday cases incidence rates of occupational injuries and illnesses by two-digit SIC industries, private sector, Oregon, 1995-1999	25
6. Nonfatal occupational injury and illness incidence rates per 100 full-time workers by state, private industry, 1999	26
B1. Relative standard errors, private sector, Oregon, 1999	32

Appendices

A. Glossary	28
B. Scope of survey	29
Survey questionnaire	29
Sample design	30
Estimation procedures	30
Industrial classification	31
Publication guidelines	31
Reliability of the estimates	31
C. Instructions for computing incidence rates for an individual firm	32
D. Recordkeeping summary	33
E. Sample of survey questionnaire package	35

Introduction

The Federal Occupational Safety and Health Act of 1970 (OSHA) became an official part of national labor law effective April 28, 1971. The purpose of the Act is “...to assure so far as possible every working man and woman in the Nation safe and healthful working conditions and to preserve our human resources...”

Oregon passed its own occupational safety and health legislation in 1973, the Oregon Safe Employment Act. This act gave full responsibility to the Workers’ Compensation Board for the administration and enforcement of the Federal Occupational Safety and Health Act. Due to legislative changes, enforcement of the Act and the annual survey are now conducted by the Oregon Department of Consumer & Business Services. To help achieve the objective of the Act and to accurately describe the nature of Oregon’s occupational safety and health problems, the department, with the cooperation of the U.S. Bureau of Labor Statistics (BLS), has conducted annual surveys of occupational injuries and illnesses.

The 1999 survey utilizes data drawn from the 28th full year of recordkeeping by private sector employers in the state and the 25th full year of recordkeeping by public sector employers. All employers who had more than 10 employees at any time during 1998 were required to maintain a log and a supplementary record of occupational injuries and illnesses for 1999.

Employers with 10 or fewer employees were exempted from the OSHA recordkeeping provisions unless prenotified by the department of their participation in the 1999 survey.

In 1999, establishments in specified low hazard Standard Industrial Classification (SIC) categories were also exempted from the OSHA recordkeeping provisions unless they were prenotified of their participation in the 1999 survey.

The recordkeeping system is designed to guide the Occupational Safety and Health Administration in establishing standards and identifying hazardous industries, to provide BLS and cooperating state agencies with a statistical base, and to assist the National Institute of Occupational Safety and Health in its research.

The survey collects data from the OSHA records of a scientifically selected sample of establishments across the state and yields estimates for industry groups according to nature of business and employment size. The estimates generated by the survey are useful in occupational safety and health education, and they enable employers to measure their own performance against the experience of other firms in their industry.

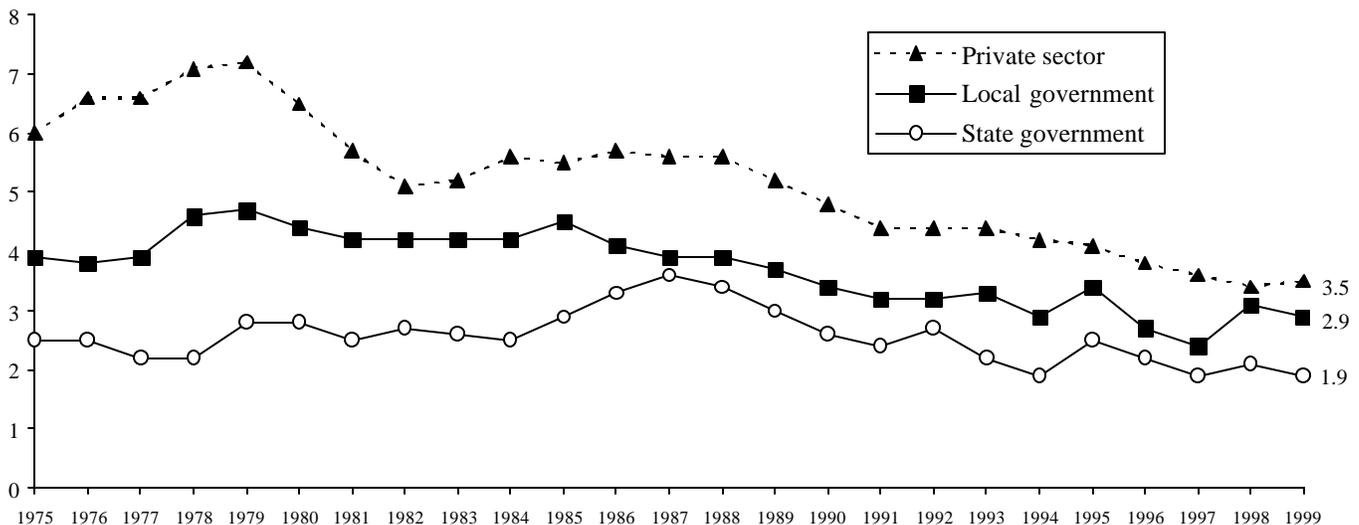
Beginning with the 1992 survey, the OSHA 200-S survey form was replaced with a new collection booklet. The booklet allowed for collection of summary data—employment, hours, and column totals from employer logs—as well as case characteristics and injured worker demographics for cases which resulted in days away from work. This publication presents information on the summary data only. Information on case characteristics and injured worker demographics can be obtained by calling the Research & Analysis Section at (503) 378-8254.

To be consistent with other years, data from 1992 and 1993 were re-estimated using the Oregon Estimation System. Some industry rates may vary from those published earlier. The following narrative, including tables and charts, refers to private sector survey results unless noted otherwise. Statistical measures and unfamiliar textual terms unique to the survey are defined in the glossary.

Highlights

- Employees in private sector industries in Oregon suffered occupational injuries and illnesses at a rate of 7.0 cases for every 100 full-time employees. The 1999 rate of 7.0 increased slightly compared to the record low rate of 6.9 in 1998.
- The 1999 lost workday cases incidence rate rose slightly to 3.5, the second lowest rate since the start of the survey in 1972. The lowest rate, 3.4, was reported in 1998 (see Figure 1 below).
- An estimated 39,090 lost workday cases occurred in 1999. Nonfatal cases without lost workdays numbered 38,881.
- Oregon workers lost 91.9 workdays per 100 full-time employees due to occupational injuries and illnesses during 1999. The 1999 lost workdays rate of 91.9 equates to 1,032,098 lost workdays. Of these, 481,731 were days away from work and 550,367 were days of restricted work activity.
- Manufacturing reported the highest 1999 total cases incidence rate of the major industry divisions, 10.5.
- Divisions posting record low total cases incidence rates in 1999 were agriculture, forestry, and fishing at 7.2; retail trade at 6.1; and finance, insurance, and real estate at 1.0.
- The highest 1999 lost workday cases incidence rate of the major industry divisions was 6.2 in transportation and public utilities. The lowest rate was 0.4 in finance, insurance, and real estate.
- The private sector total cases incidence rate for occupational illnesses reported a rate of 0.4 cases per 100 full-time employees, matching the 0.4 cases in 1998.
- The 1999 total cases incidence rate for state and local governments matched the 1996 record low rate of 5.9. This rate represents a 1.7 percent decrease from the 1998 rate of 6.0.
- The 1999 public sector lost workday cases incidence rate of 2.6 is 7.1 percent below the 1998 rate of 2.8. State government experienced a rate of 1.9 in 1999, while local government recorded a rate of 2.9. Figure 1 compares public and private sector rates.

Figure 1. Lost workday cases incidence rates by public and private sectors, Oregon, 1975-1999



Private Sector Survey Results

Total cases

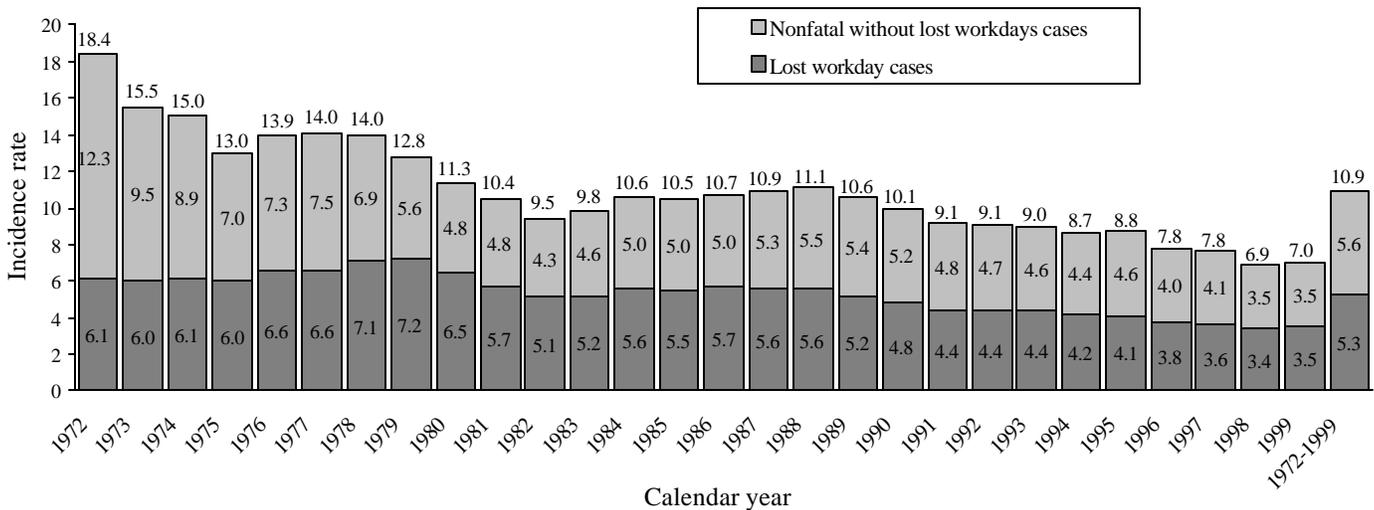
During calendar year 1999, Oregon workers employed in the private sector suffered occupational injuries and illnesses at a rate of 7.0 cases per 100 full-time employees (see Table 1, page 14). This incidence rate indicates that, on the average, one out of every 14 Oregon workers experienced a job-related injury or illness sometime during the year. The **total cases incidence rate** of 6.9 in 1998 is the lowest rate ever recorded in Oregon (see Figure 2 below).

While the 1999 total cases incidence rate of 7.0 represents a slight increase (1.4 percent) from the 1998 rate of 6.9, the number of total cases decreased, dropping from 78,062 in 1998 to 70,868 in 1999 (see Table 2, page 19).

Total cases are composed of fatalities, lost workday cases, and nonfatal cases without lost workdays. For the purpose of analyzing the total cases incidence rate, fatalities, which constitute a negligible fraction of the total case rate, will not be considered. In 1999, as in the 28-year average, lost workday cases comprise half of the total recordable cases.

All three 1999 rates are well below the 28-year average. The total cases incidence rate is 35.8 percent below the average rate of 10.9. The lost workday cases incidence rate is 34.0 percent below the average, 5.3 and is the lowest ever recorded. At 3.5, the incidence rate of nonfatal cases without lost workdays is 37.5 percent below the 28-year average rate of 5.6.

Figure 2. Incidence rates of lost workday cases, nonfatal without lost workdays cases, and total cases, private sector, Oregon, 1972-1999



Note: Data excludes agricultural production employers for 1972; mining employers, except oil and gas extraction for 1972-73; railroad employers for 1972-74; and agricultural production employers with 10 or fewer employees since 1975.

Note: Due to rounding, lost workday cases rates and nonfatal without lost workdays cases rates may not sum to total cases rates.

Industry total cases rates

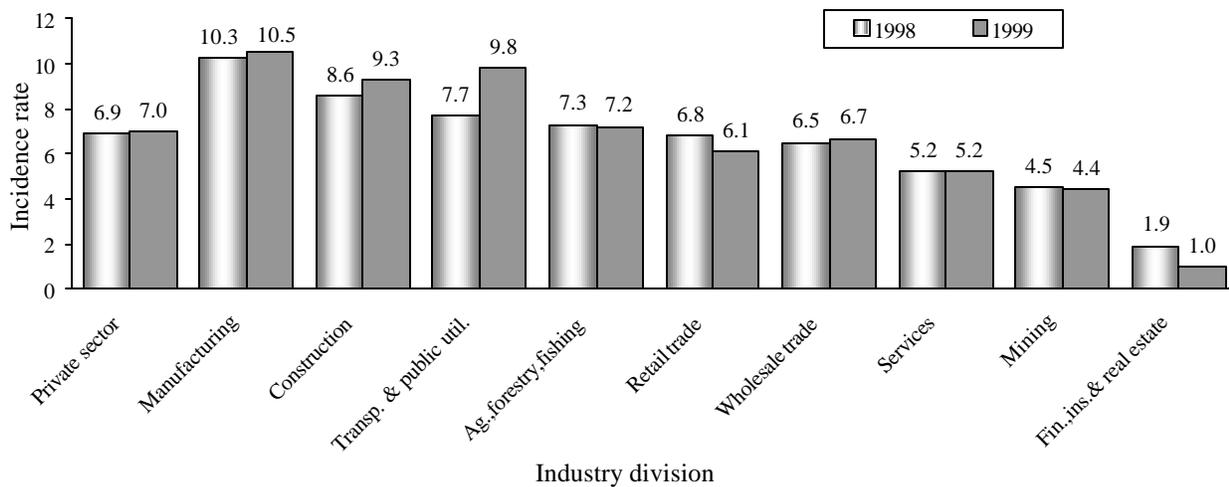
Four industry divisions – agriculture, forestry, and fishing; retail trade; mining; and finance, insurance, and real estate - experienced a decrease in total cases incidence rate from 1998 to 1999. The largest drop was 47.4 percent in finance, insurance, and real estate.

Manufacturing reported the highest total cases incidence rate of any division, with a rate of 10.5, an increase of 1.9 percent from the 1998 rate of 10.3.

Transportation and public utilities ranked second with a rate of 9.8, a 27.3 percent increase from the 1998 rate of 7.7. Construction was third highest in 1999 at 9.3.

Of the four industry divisions that experienced a decrease in total cases incidence rates in 1999, all but mining also posted record low total cases incidence rates since the inception of the survey in 1972. See page 11 for a comparison of Oregon rates to the national averages.

Figure 3. Total cases incidence rates of occupational injuries and illnesses by industry division, Oregon, 1998-1999



Note: Incidence rates indicate the number of total cases per 100 full-time equivalent workers per year.

Injuries and illnesses

The private sector rate of 7.0 cases per 100 full-time workers includes a rate of 6.6 for **injuries** and an **illness** rate of 0.4. An occupational **injury** is any injury such as a cut, fracture, sprain, amputation, etc., that results from a work accident or from an exposure involving a single incident in the work environment. An estimated 73,991 injury cases occurred in 1999, up from 73,413 in 1998. The incidence rate for total injuries increased from 6.5 in 1998 to 6.6 in 1999. Manufacturing accounted for 22,693 injury cases or 30.7 percent of the private sector total (see Table 3, page 24). Services was second to manufacturing, contributing 15,601 injury cases or 21.1 percent of all injuries. In addition to registering the largest number of injury cases,

manufacturing also posted the highest total injury cases incidence rate of 9.6. The lowest total injury incidence rate, 0.9, was reported by the finance, insurance, and real estate division.

Occupational **illnesses** include any abnormal condition or disorder, other than an injury, caused by exposure to environmental factors associated with employment. The incidence of occupational illnesses measured by the survey refers to the number of new illness cases occurring during a survey year, and does not measure continuing conditions of illness reported in previous surveys. Cases are recorded only in the year in which they are diagnosed and recognized as work-related.

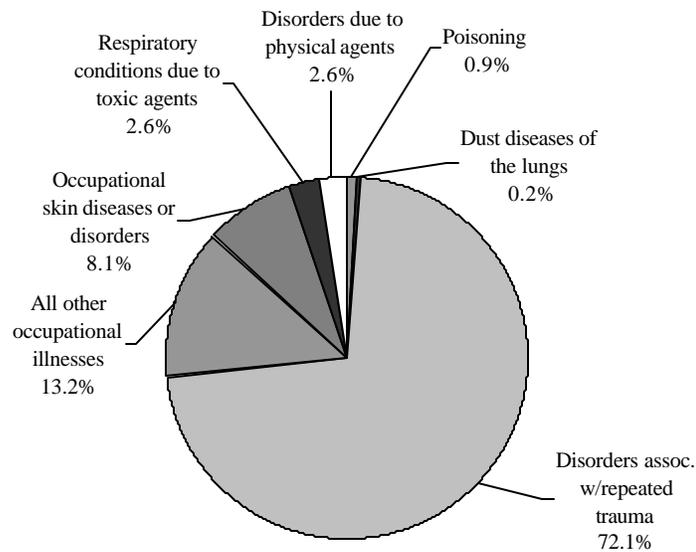
*Because of rounding, the sum of the rates may not equal the total rate.

During 1999, there were an estimated 4,077 occupational illnesses recorded in Oregon's private sector. This translates into an incidence rate of 0.4 cases per 100 full-time employees, or four cases per 1,000 full-time workers.

Of the seven categories of occupational illnesses, disorders due to repeated trauma was the most frequently recorded (see Figure 4). Disorders due to

repeated trauma are conditions caused by repeated motion, vibration, pressure, noise, etc. As shown in Figure 5, the 1999 incidence rate for repeated trauma remained the same as in 1998 at 2.6. The 1999 rate of 2.6 represents an increase of over 300 percent from the repeated trauma rate of 0.6 in 1974. The incidence rate for the other six illness categories decreased 73.0 percent during the same period.

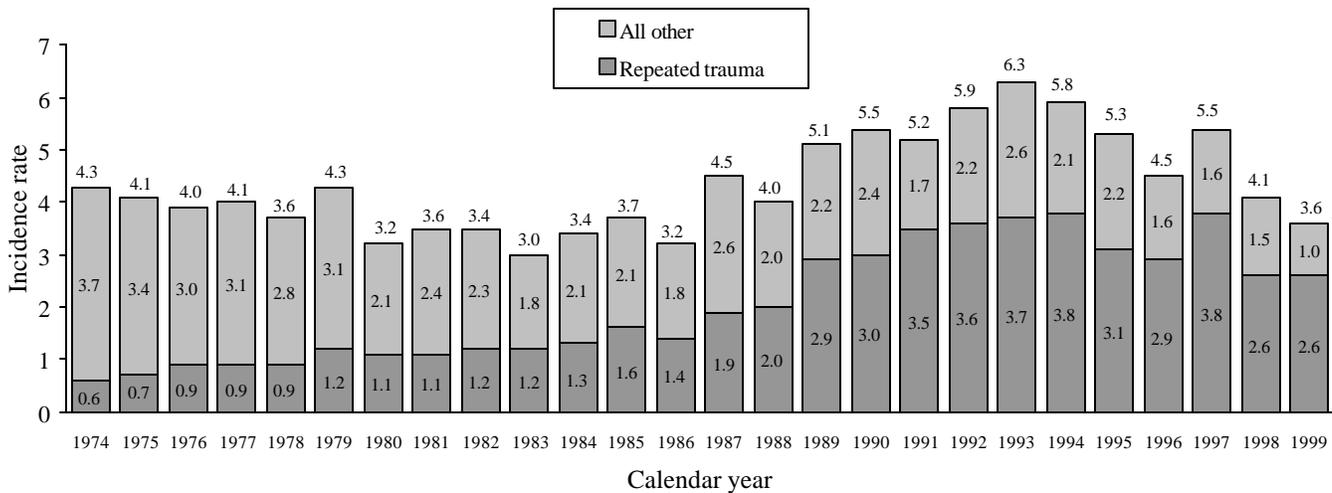
Figure 4. Percentage distribution of occupational illnesses by category, Oregon 1999



Manufacturing registered the greatest number of illness cases, with 2,001 cases comprising 49.1 percent of all recordable illnesses (see Table 4, page 24). In manufacturing, disorders due to repeated trauma constituted the most frequent type of illness, and other illnesses ranked second.

Manufacturing also suffered the highest rate of occupational illnesses with 0.8 cases per 100 full-time workers. Transportation and public utilities have the second highest rate of 0.4 cases per 100 full-time workers. Transportation and public utilities contributed 279 illness cases, or 6.8 percent of all illnesses.

Figure 5. Incidence rates of occupational illnesses, Oregon, 1974-1999



Note: Incidence rates indicate the number of illnesses per 1,000 full-time equivalent workers per year. Due to rounding, repeated trauma cases and all other cases rates may not sum to total cases rates.

Lost workday cases and lost workdays

The **lost workday cases incidence rate** measures the number of occupational injuries and illnesses per 100 full-time workers that resulted in days away from work and/or days of restricted work activity. Days away from work are those days when an employee would normally have worked but could not because of an occupational injury or illness. Days of restricted work activity are recorded when an employee, as a result of an injury or illness, is transferred to a temporary job, is unable to perform some of the regular duties of his or her permanent job, or is unable to work full-time at his or her permanent job. The number of days away from work and days of restricted activity per 100 full-time workers is represented by the **lost workdays incidence rate**.

The 1999 private sector lost workday cases incidence rate increased 2.9 percent from 3.4 in 1998 to 3.5. The rate of 3.5 cases per 100 full-time workers (see Table 1, page 14) corresponds to a total of 39,090 lost workday cases (see Table 2, page 19). Of these 39,090 lost workday cases, only 23,896 cases resulted in actual days away from work. The remainder were cases which only resulted in restricted workdays. The proportion of lost workday cases with days away from work has fallen steadily from 98.5 percent in 1975 to 61.0 percent in 1999.

An estimated 1,032,098 workdays were lost in Oregon's private sector due to occupational injuries and illnesses during 1999. Of these, 481,731 were days away from work and 550,367 were days of restricted work activity. The average number of lost workdays per lost workday case in 1999 was 26 days. The private sector lost workdays incidence rate increased 12.0 percent from 82.1 in 1998 to 91.9 in 1999.

Industry lost workday cases rates

Five-year trends for the major industry divisions are shown in Figure 6. (For trends at the two-digit SIC level, refer to Table 5, page 25.) Two industry divisions—retail trade and finance, insurance, and real estate—set record low rates in 1999: 2.6 and 0.4, respectively. Five industry divisions - agriculture, forestry, and fishing; construction; manufacturing; transportation and public utilities; and wholesale trade - exhibited increases in 1999. Transportation and public utilities exhibited the largest percentage increase rising 34.8 percent from the 1998 rate of 4.6 to a rate of 6.2 in 1999. The lowest rate was recorded by finance, insurance, and real estate with 0.4 in 1999.

Figure 6. Lost workday cases incidence rates by industry, Oregon, 1995-1999

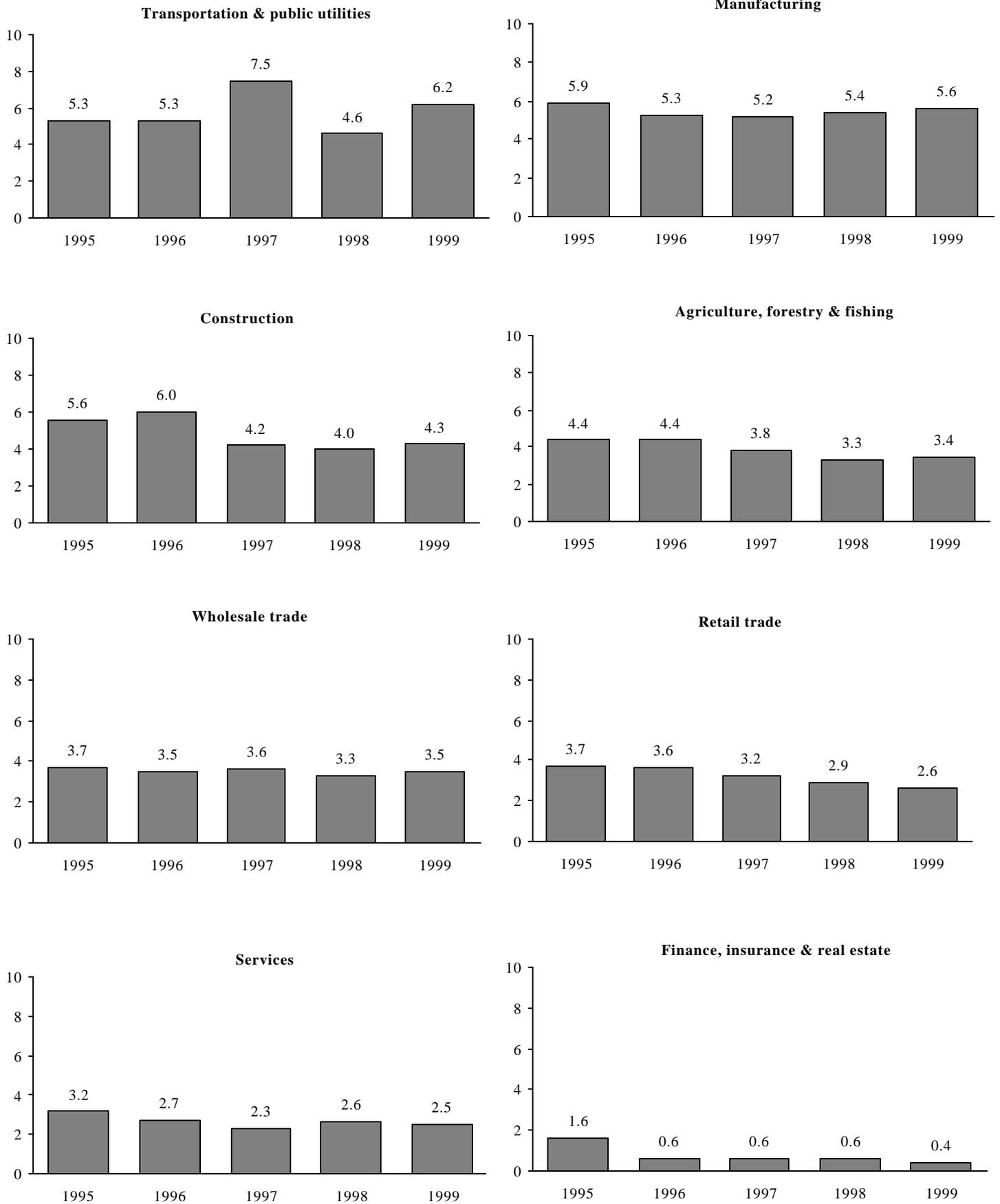
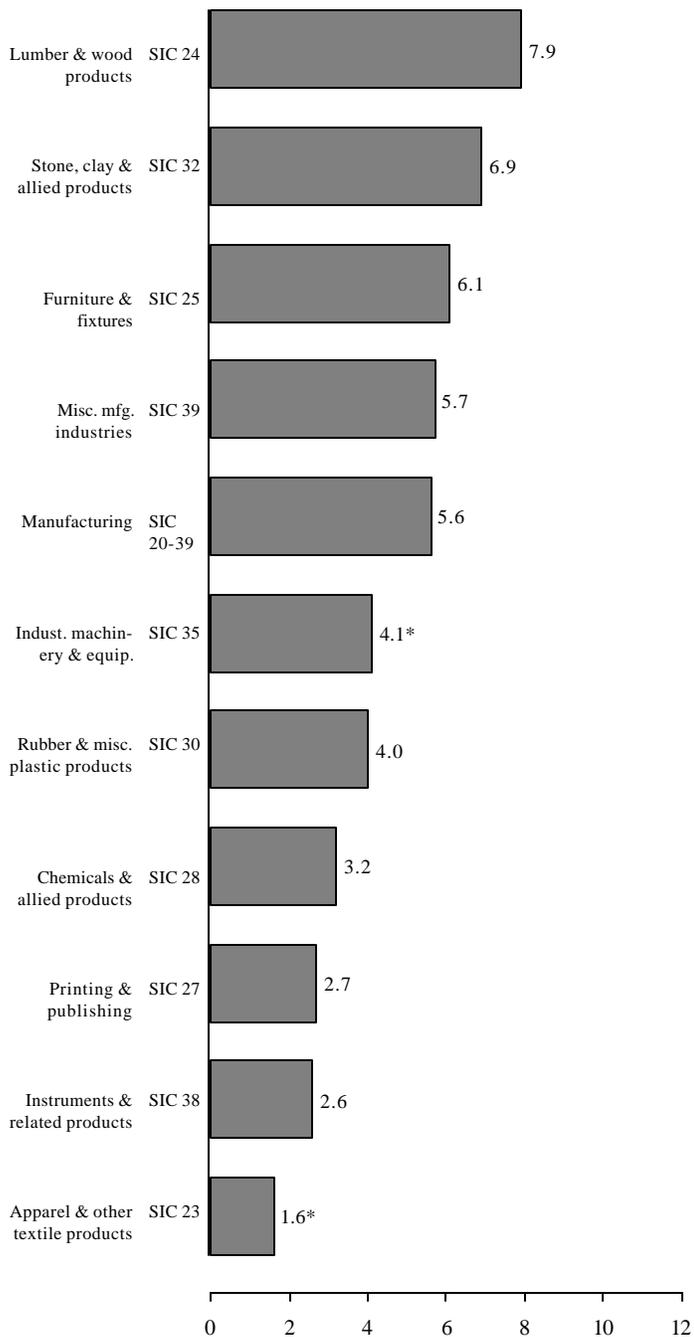


Figure 7. Lost workday cases incidence rates by major manufacturing group, Oregon, 1999



*Lowest rate ever reported for this industry.

The 1999 manufacturing rate of 5.6 represents a 3.7 percent increase from the 1998 rate of 5.4. Lost workday cases rates among the major manufacturing industries ranged from a high of 7.9 to a low of 1.6 in 1999. Five major groups showed decreases, with two reporting their lowest rate ever (see Figure 7). Of the groups exhibiting record lows, apparel and other textile products (SIC 23) reported the largest decrease, dropping 33.3 percent to 1.6. Lumber and wood products (SIC 24) held the highest rank of 7.9, a 9.7 percent increase from the 1998 rate of 7.2. Printing and publishing (SIC 27) experienced a 40.0 percent decrease, dropping from 4.5 in 1998 to 2.7 in 1999.

Hazardous industry groups

In 1999, four of the ten most hazardous industries at the three-digit SIC level were engaged in services, while three were involved in some type of manufacturing activity, two were involved in transportation and public utilities, and one was involved in construction. As shown in Text Table 1, air transportation, scheduled (SIC 451) recorded the highest 1999 lost workday cases incidence rate of the industry groups, 20.6 cases per 100 full-time workers. This rate signifies a 7.2 percent decrease from the 1997 rate of 22.2. Nursing and personal care facilities (SIC 805) ranked second with a rate of 10.8, a 9.1 percent increase from the 1998 rate of 9.9. Sawmills and planing mills (SIC 242) was the most hazardous industry involved in manufacturing with a rate of 10.2.

Rates by employment size

Establishments in the intermediate size ranges continued to post the highest incidence rates. For the private sector as a whole, establishments with 1000-2499 employees reported the highest lost workday cases incidence rate of 5.4 cases per 100 full-time employees. As shown in Text Table 2, the lowest incidence rates for the private sector were reported by establishments with fewer than 50 employees and establishments with 2,500 or more employees. The tendency for intermediate sized establishments to have the highest rates has held in Oregon since the inception of the survey and is characteristic of rates by employment size for the nation as well.

Text Table 1. Ranking of the 10 highest lost workday cases
incidence rate industry groups, Oregon, 1995-1999

Industry	Incidence rates ²					
	SIC ¹	1995	1996	1997	1998	1999
Air Transportation, Scheduled	451	--	--	22.2	--	20.6
Nursing and Personal Care Facilities	805	9.9	12.1	8.0	9.9	10.8
Sawmills and Planing Mills	242	6.9	6.8	7.5	--	10.2
Services to Dwellings & Other Buildings	734	4.2	--	--	--	8.5
Residential Care	836	9.0	--	4.5	6.0	8.4
Roofing, Siding, and Sheet Metal Work	176	10.0	7.6	10.4	7.0	8.2
Logging	241	10.7	10.1	10.9	9.4	7.7
Concrete, Gypsum, & Plaster Products	327	9.3	--	9.5	--	7.5
Public Warehousing and Storage	422	3.8	5.2	--	5.7	7.5
Job Training and Related Services	833	--	--	3.3	7.0	7.5

¹Standard Industrial Classification Manual, 1987 Edition.

²Incidence rates represent the number of injuries and illnesses per 100 full-time equivalent workers per year.

Note: Dashes indicate data do not meet publication criteria.

Text Table 2. Lost workday cases incidence rates
by size class, Oregon, 1995-1999

Number of employees	Incidence rates ¹				
	1995	1996	1997	1998	1999
All sizes	4.1	3.8	3.6	3.4	3.5
1-3	2.5	1.0	1.5	1.1	0.9
4-10	3.0	2.4	1.8	1.8	1.6
11-19	2.6	2.6	2.8	2.5	2.7
20-49	3.8	3.5	2.9	3.0	3.1
50-99	4.7	4.3	4.2	3.8	4.9
100-249	5.0	5.3	4.7	4.7	4.1
250-499	5.8	5.4	4.9	4.5	4.6
500-999	4.2	4.2	5.8	5.2	3.9
1000-2499	5.1	5.1	5.3	5.7	5.4
2500+	2.2	1.7	1.2	1.3	3.4

¹Incidence rates represent the number of injuries and illnesses per 100 full-time equivalent workers per year.

Public Sector Survey Results

The calendar year 1999 survey marked the twenty-fifth year of recordkeeping by the public sector in Oregon. The public sector, which excludes Federal government employees, recorded a total cases incidence rate of 5.9. This rate matches the 1996 record low of 5.9 and represents a 1.7 percent decrease from the 1998 rate of 6.0. It is 24.4 percent lower than the average rate of 7.8 for the period 1975-1999 (see Figure 8).

The 1999 public sector lost workday cases incidence rate decreased to 2.6, while the rate for nonfatal without lost workdays cases increased to 3.3. Compared to the 25-year average, the 1999 public sector lost workday cases incidence rate decreased 21.2 percent and the rate of nonfatal without lost workdays cases was down 25.0 percent.

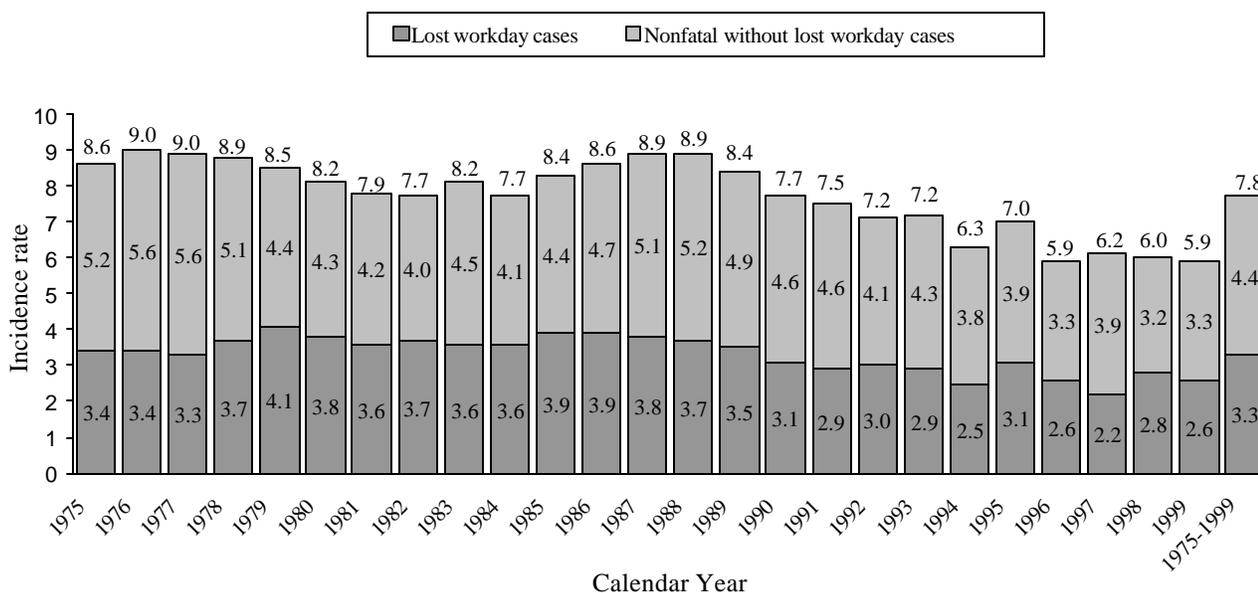
During 1999, the public sector reported a total of 9,425 occupational injury and illness cases. Of these injuries and illnesses, 4,093 or 43.4 percent were lost workday cases. An estimated 103,454 workdays were lost in Oregon's public sector due to occupational injuries and illnesses during 1999, up 11.2 percent from 93,046 days in 1998. Of the 103,454 lost workdays in 1999, 42,664

were days away from work and 60,790 were days of restricted work activity. The average number of lost workdays per lost workday case was 25 days.

State government recorded 2,004 cases or 21.3 percent of the total public sector injuries and illnesses. Of these cases, 851 resulted in lost workdays. The 1999 total cases incidence rate for state government was 4.4, down from the 1998 rate of 4.7. The lost workday cases rate decreased 42.9 percent to 1.2. At the two-digit SIC industry level, health services (SIC 80) reported the highest lost workday cases incidence rate of 7.2. The next highest ranking, 3.3, came from environmental quality and housing (SIC 95).

Local government accounted for 78.7 percent, or 7,421 of the total cases in the public sector. Of these cases, 3,242 resulted in lost workdays. Local government's total cases rate was the same as the 1998 rate of 6.5. The lost workday cases incidence rate decreased 6.5 percent to 2.9. At the two-digit SIC industry level, the lost workday cases rate was highest for local and interurban passenger transit (SIC 41) which had a rate of 7.8. The next highest rate was 4.6 in electric, gas, and sanitary services (SIC 49).

Figure 8. Incidence rates of lost workday cases, nonfatal without lost workday cases, and total cases, public sector, Oregon, 1975-1999



Note: Due to rounding, lost workday cases and nonfatal without lost workday cases rates may not sum to total cases rates.

National Survey Results

The total cases incidence rate for the private sector nationwide decreased to 6.3 in 1999. The lost workday cases incidence rate decreased 3.2 percent to 3.0, while the incidence rate for nonfatal cases without lost workdays fell 5.7 percent to 3.3. The Oregon lost workday cases incidence rate and total cases incidence rate exceed the national rates by 16.7 percent and 11.1 percent respectively. See Table 6 on page 26 for a comparison of Oregon rates to those of other states.

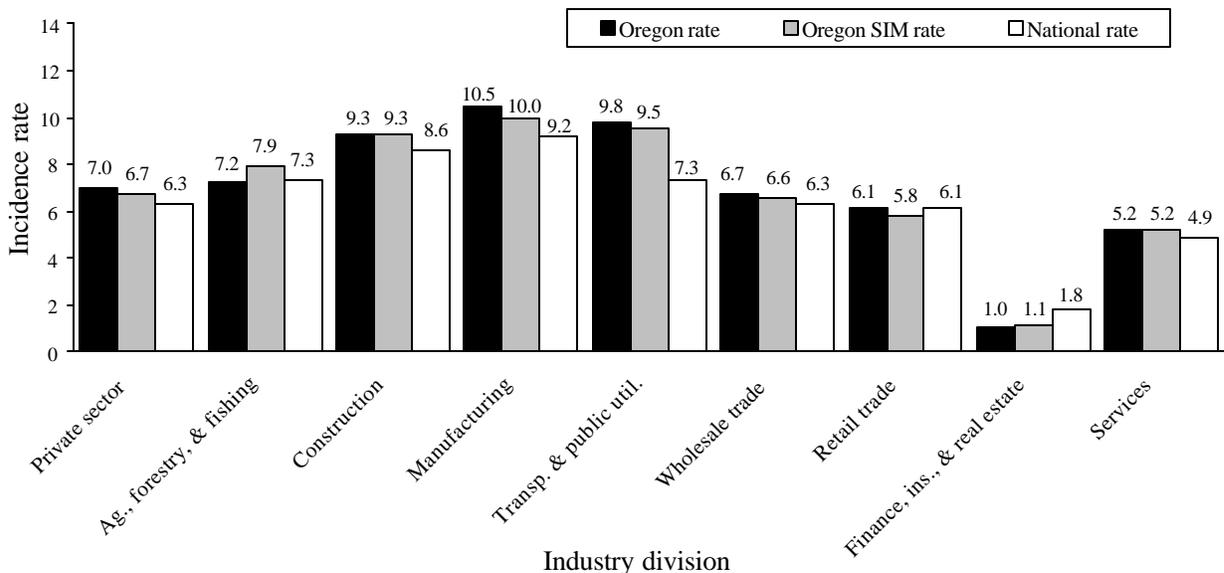
One reason Oregon rates are higher than national rates is the higher proportion of the Oregon workforce in hazardous industries. This disparity can be controlled by using national employment figures to achieve a Standardized Industry Mix (SIM). (See Appendix B.)

Oregon unadjusted incidence rates and SIM incidence rates are compared to national incidence rates at the industry division level in Figure 9. The figure shows that if Oregon would have the same industry mix as the nation, Oregon's private sector would have posted a 1999 total cases incidence rate of 6.7, 6.3 percent above the national rate of 6.3. Despite the SIM adjustment, some Oregon industries continue to post incidence rates above the national averages, notably manufacturing, and transportation and public utilities. The Oregon SIM rates for wholesale trade; retail trade; finance, insurance, and real estate; and services compare favorably with the national rates for these industries.

Text Table 3. Incidence rates of total cases, lost workday cases, and cases without lost workdays, Oregon and national, 1995-1999

	Total cases					Lost workday cases					Cases without lost workdays				
	1995	1996	1997	1998	1999	1995	1996	1997	1998	1999	1995	1996	1997	1998	1999
Oregon rates	8.8	7.8	7.8	6.9	7.0	4.1	3.8	3.6	3.4	3.5	4.6	4.0	4.1	3.5	3.5
National rates	8.1	7.4	7.1	6.7	6.3	3.6	3.4	3.3	3.1	3.0	4.4	4.1	3.8	3.5	3.3

Figure 9. Total cases incidence rates by industry division, Oregon, Oregon with standard industry mix, and national, 1999



Tables

Table 1. Incidence rates of recordable occupational injuries and illnesses by industry, Oregon, 1999

Industry ¹	SIC ²	Employment ³	Cases				Lost workdays		
			Total ⁴	Lost workday		Nonfatal without lost workdays	Total	Days away from work	Days of restricted work activity
				Total	Away from work				
Private Sector⁵		1,327,800	7.0	3.5	2.1	3.5	91.9	42.9	49.0
Agriculture, Forestry, & Fishing ⁵		43,000	7.2	3.4	2.3	3.9	83.9	30.9	53.0
Agricultural Production	01-02	22,700	6.1	2.4	1.5	3.8	69.7	26.9	42.8
Agricultural Production-Crops	01	21,100	5.9	2.4	1.4	3.6	68.8	26.6	42.2
Field Crops, ex. cash grains	013	2,000	3.3	1.8	1.8	1.5	59.5	59.5	0.0
Fruits and Tree Nuts	017	4,200	4.9	2.9	1.7	2.1	56.0	19.7	36.3
Horticultural Specialties	018	9,300	7.0	2.2	1.0	4.9	73.7	16.7	57.0
Agricultural Services	07	14,900	9.2	5.0	3.5	4.1	117.1	28.6	88.5
Forestry	08	4,700	9.2	4.8	3.9	4.4	79.9	67.9	12.0
Forestry Services	085	3,100	10.3	6.0	5.7	4.3	119.4	111.0	8.4
Mining		2,100	4.4	3.1	2.2	1.3	148.6	120.3	28.4
Construction		82,000	9.3	4.3	3.3	5.0	149.6	99.0	50.6
General Building Contractors	15	19,800	9.6	4.0	2.9	5.6	128.4	61.9	66.5
Residential Building Construction	152	11,700	10.9	4.7	3.7	6.3	134.0	69.3	64.7
Nonresidential Building Construction	154	8,100	8.0	3.2	1.9	4.8	121.5	52.9	68.6
Heavy Construction, ex. building	16	9,900	11.4	5.5	4.0	5.9	186.2	109.3	76.9
Heavy Construction, ex. highway	162	6,400	12.7	5.2	4.2	7.6	212.6	146.4	66.1
Special Trade Contractors	17	52,200	8.8	4.1	3.4	4.6	150.4	110.4	40.1
Plumbing, Heating, Air Conditioning	171	11,300	9.1	4.6	3.4	4.5	261.4	232.7	28.7
Electrical Work	173	10,300	6.5	2.6	2.2	3.9	26.0	13.3	12.7
Masonry, Stonework, and Plastering	174	6,100	13.8	6.2	5.3	7.6	134.9	76.7	58.2
Carpentry and Floor Work	175	4,500	9.0	4.2	3.9	4.9	149.5	88.2	61.4
Roofing, Siding, and Sheet Metal Work	176	3,900	15.1	8.2	7.2	6.9	298.6	247.9	50.7
Misc. Special Trade Contractors	179	8,900	8.6	3.9	2.8	4.7	138.4	61.5	76.9
Manufacturing		242,200	10.5	5.6	2.6	4.8	130.6	50.4	80.2
Apparel and Other Textile Products	23	2,500	4.6	1.6	0.9	3.0	32.9	18.3	14.7
Lumber and Wood Products	24	49,800	14.8	7.9	3.3	6.9	187.5	89.5	98.1
Logging	241	7,900	13.6	7.7	7.5	5.8	400.0	370.4	29.6
Sawmills and Planing Mills	242	14,200	18.0	10.2	2.8	7.7	179.2	44.0	135.2
Sawmills and Planing Mills, general	2421	13,500	17.9	9.9	2.8	7.9	178.3	42.2	136.1
Millwork, Plywood & Structural Members	243	20,000	13.3	7.3	2.6	6.1	152.0	44.4	107.5
Softwood Veneer and Plywood	2436	8,200	10.0	5.7	1.6	4.3	127.7	35.2	92.5
Wood Buildings and Mobile Homes	245	3,600	16.6	6.2	2.5	10.3	108.1	32.0	76.1
Mobile Homes	2451	3,300	17.0	6.2	2.8	10.8	115.5	36.0	79.5
Miscellaneous Wood Products	249	3,600	9.4	2.9	1.1	6.4	86.5	51.6	34.9
Reconstituted Wood Products	2493	2,700	7.0	3.6	1.4	3.4	117.8	69.3	48.5

See footnotes at end of table.

Continued

Table 1. Incidence rates of recordable occupational injuries and illnesses by industry, Oregon, 1999 (continued)

Industry ¹	SIC ²	Employment ³	Cases				Lost workdays		
			Total ⁴	Lost workday		Nonfatal without lost workdays	Total	Days away from work	Days of restricted work activity
				Total	Away from work				
Furniture and Fixtures	25	4,100	9.1	6.1	2.9	3.0	107.1	21.7	85.4
Printing and Publishing	27	16,600	5.2	2.7	1.5	2.5	44.7	17.3	27.4
Newspapers Publishing, Printing	271	4,900	6.8	2.4	1.0	4.4	22.8	8.1	14.7
Commercial Printing	275	6,800	4.5	2.8	1.7	1.6	52.5	25.2	27.3
Commercial Printing, Lithographic	2752	5,000	4.6	2.8	2.1	1.8	62.6	32.5	30.2
Chemicals and Allied Products	28	3,500	6.3	3.2	2.0	3.1	30.5	6.6	23.9
Rubber and Misc. Plastics Products	30	7,200	9.0	4.0	2.5	4.9	64.8	35.7	29.1
Miscellaneous Plastics Products, NEC	308	6,300	8.8	4.6	2.8	4.2	73.7	40.6	33.1
Plastics Products, NEC	3089	4,200	6.4	3.3	2.0	3.1	68.2	42.5	25.7
Stone, Clay, and Glass Products	32	5,300	13.4	6.9	2.4	6.5	213.3	87.3	126.0
Concrete, Gypsum, & Plaster Products	327	2,700	14.8	7.5	2.6	7.4	204.6	87.1	117.5
Industrial Machinery and Equipment	35	21,400	9.5	4.1	2.3	5.5	122.8	43.4	79.4
Special Industry Machinery	355	4,000	13.4	4.6	2.3	8.8	148.1	49.1	99.1
Computer and Office Equipment	357	5,900	4.0	2.7	1.3	1.3	93.2	39.8	53.4
Industrial Machinery, NEC	359	3,000	7.9	3.2	1.3	4.6	74.3	30.9	43.5
Industrial Machinery, NEC	3599	2,600	7.9	3.7	1.5	4.2	85.4	35.3	50.0
Instruments and Related Products	38	10,800	5.1	2.6	1.1	2.6	74.6	23.5	51.1
Measuring and Controlling Devices	382	6,500	4.9	3.2	1.4	1.7	108.2	38.2	70.0
Instruments to Measure Electricity	3825	4,100	1.9	0.7	0.4	1.2	28.5	13.5	15.0
Medical Instruments and Supplies	384	2,200	4.0	2.0	1.0	2.1	51.7	10.0	41.7
Miscellaneous Manufacturing Industries	39	4,000	9.8	5.7	1.7	4.1	70.5	9.0	61.5
Transportation and Public Utilities		77,600	9.8	6.2	4.9	3.5	193.2	125.1	68.1
Trucking and Warehousing ⁶	42	26,500	11.6	7.0	5.9	4.6	251.5	180.7	70.8
Trucking & Courier Services, ex. air ⁶	421	24,400	11.7	7.0	6.1	4.7	258.2	188.2	70.3
Public Warehousing and Storage	422	2,000	10.7	7.5	4.0	3.2	168.7	92.0	76.8
Water Transportation	44	2,400	14.4	11.3	10.9	3.1	703.2	700.5	2.7
Transportation by Air ⁶	45	12,100	20.3	16.3	12.5	4.0	358.9	150.2	208.7
Air Transportation, Scheduled ⁶	451	10,100	25.3	20.6	15.7	4.7	460.7	193.1	267.6
Transportation Services ⁶	47	5,100	3.5	1.6	0.8	1.9	59.5	20.8	38.7
Communications	48	13,800	3.2	1.2	0.8	2.0	35.2	10.0	25.2
Electric, Gas, and Sanitary Services	49	10,000	7.9	3.9	2.7	4.0	102.3	69.5	32.8
Electric Services	491	6,200	7.2	3.4	2.1	3.7	82.0	43.4	38.5

See footnotes at end of table.

Continued

Table 1. Incidence rates of recordable occupational injuries and illnesses by industry, Oregon, 1999 (continued)

Industry ¹	SIC ²	Employment ³	Cases				Lost workdays		
			Total ⁴	Lost workday		Nonfatal without lost workdays	Total	Days away from work	Days of restricted work activity
				Total	Away from work				
Wholesale Trade		94,100	6.7	3.5	2.3	3.3	82.9	41.3	41.6
Wholesale Trade-Durable Goods	50	51,700	5.9	2.8	2.1	3.1	63.2	34.3	28.9
Motor Vehicles, Parts, and Supplies	501	7,500	12.3	6.3	4.3	5.9	128.7	63.3	65.4
Professional & Commercial Equipment	504	10,200	1.7	0.5	0.5	1.1	42.9	35.5	7.4
Electrical Goods	506	5,800	2.0	0.9	0.6	1.1	13.6	4.6	9.0
Machinery, Equipment, and Supplies	508	11,800	6.3	3.5	3.0	2.8	74.1	50.3	23.8
Miscellaneous Durable Goods	509	2,700	5.2	1.5	1.2	3.7	51.7	7.5	44.2
Wholesale Trade-Nondurable Goods	51	42,400	7.8	4.3	2.7	3.5	107.7	50.2	57.5
Paper and Paper Products	511	3,500	6.8	3.8	1.6	3.0	55.4	32.9	22.4
Groceries and Related Products	514	14,300	11.4	6.5	4.4	4.9	180.2	85.9	94.4
Misc. Nondurable goods	519	9,000	7.1	3.7	2.2	3.4	111.4	63.9	47.5
Retail Trade		292,200	6.1	2.6	1.6	3.5	69.1	28.3	40.8
Building Materials & Garden Supplies	52	13,100	11.1	5.2	2.5	5.9	81.0	20.2	60.8
Lumber & Other Building Materials	521	7,900	13.8	5.7	1.9	8.1	74.2	10.1	64.1
General Merchandise Stores	53	38,400	7.7	3.8	2.2	4.0	114.3	28.9	85.5
Department Stores	531	25,500	6.5	3.0	1.8	3.5	76.7	24.9	51.8
Food Stores	54	40,800	7.5	2.6	2.2	4.9	57.2	31.7	25.5
Grocery Stores	541	35,600	8.1	2.8	2.4	5.3	60.6	34.5	26.1
Miscellaneous Food Stores	549	3,100	1.4	1.1	0.6	0.3	10.0	1.3	8.6
Automotive Dealers & Service Stations	55	36,000	8.2	2.6	2.1	5.4	59.6	33.2	26.5
New and Used Car Dealers	551	14,700	4.2	1.3	1.1	2.9	27.1	14.8	12.3
Auto and Home Supply Stores	553	6,900	17.0	5.2	4.6	11.7	121.7	46.8	74.8
Gasoline Service Stations	554	10,800	9.4	3.5	2.7	5.2	81.1	53.3	27.8
Apparel and Accessory Stores	56	14,000	3.1	1.6	1.0	1.5	57.5	25.5	32.1
Family Clothing Stores	565	7,500	5.7	3.0	1.8	2.7	107.9	41.9	66.0
Furniture and Homefurnishings Stores	57	13,200	5.1	2.4	1.8	2.7	36.1	18.0	18.0
Furniture and Homefurnishings Stores	571	7,700	7.2	3.6	2.6	3.6	54.3	26.0	28.3
Radio, Television, & Computer Stores	573	4,700	2.0	0.6	0.6	1.4	7.2	5.6	1.6
Eating and Drinking Places	58	104,900	4.5	1.9	0.8	2.7	56.0	10.7	45.3
Miscellaneous Retail	59	31,900	3.2	2.1	1.7	1.1	95.9	80.6	15.3
Miscellaneous Shopping Goods Stores	594	13,900	1.2	0.2	0.1	1.0	0.8	0.1	0.7
Nonstore Retailers	596	5,800	7.7	4.3	2.9	3.3	224.1	171.6	52.5
Retail Stores, NEC	599	6,100	4.0	4.0	4.0	0.0	226.4	213.9	12.5
Finance, Insurance, and Real Estate		83,800	1.0	0.4	0.3	0.7	10.4	6.2	4.3
Depository Institutions	60	22,200	0.6	0.1	0.1	0.5	3.4	2.0	1.4
Commercial Banks	602	14,800	0.7	0.1	0.1	0.6	4.4	2.5	1.9

See footnotes at end of table.

Continued

Table 1. Incidence rates of recordable occupational injuries and illnesses by industry, Oregon, 1999 (continued)

Industry ¹	SIC ²	Employment ³	Cases				Lost workdays		
			Total ⁴	Lost workday		Nonfatal without lost workdays	Total	Days away from work	Days of restricted work activity
				Total	Away from work				
Services		410,800	5.2	2.5	1.6	2.7	66.2	26.9	39.4
Hotels and Other Lodging Places	70	21,800	6.0	3.5	2.3	2.5	83.2	25.5	57.7
Hotels and Motels	701	20,400	6.3	3.7	2.4	2.6	88.5	27.1	61.4
Personal Services	72	12,400	6.4	3.5	2.1	2.9	47.0	23.6	23.4
Laundry, Cleaning, & Garment Services	721	4,400	10.2	5.7	3.5	4.5	97.1	47.7	49.4
Beauty Shops	723	4,000	4.0	1.3	1.3	2.7	4.8	3.1	1.7
Business Services	73	96,500	3.0	1.2	1.1	1.8	39.6	22.0	17.5
Services to Dwellings & Other Buildings	734	11,000	11.4	8.5	8.5	2.9	226.3	78.7	147.6
Miscellaneous Business Services	738	33,800	3.7	1.0	0.9	2.7	51.6	44.7	6.9
Auto Repair, Services, and Parking	75	15,400	5.4	3.3	2.1	2.1	80.4	29.4	51.0
Automotive Repair Shops	753	9,500	4.7	2.6	1.5	2.0	78.7	15.5	63.3
Automotive Services, ex. repair	754	3,200	7.7	5.6	5.6	2.1	126.9	101.5	25.4
Miscellaneous Repair Services	76	4,300	5.3	3.1	2.6	2.2	65.2	47.3	17.8
Miscellaneous Repair Shops	769	2,700	7.0	4.3	3.8	2.7	51.7	45.0	6.7
Health Services	80	106,500	7.2	3.5	1.8	3.7	81.0	26.9	54.1
Offices & Clinics of Medical Doctors	801	26,300	4.2	1.4	0.7	2.8	46.2	8.5	37.7
Nursing and Personal Care Facilities	805	15,100	16.5	10.8	4.6	5.7	252.3	91.2	161.1
Hospitals	806	41,000	7.9	3.5	2.2	4.4	63.2	17.8	45.4
Medical and Dental Laboratories	807	2,500	5.1	1.4	1.0	3.6	10.6	5.5	5.1
Home Health Care Services	808	2,300	7.8	3.9	3.9	3.9	327.3	246.5	80.9
Misc. Health & Allied Services	809	2,300	5.1	2.3	2.0	2.8	68.3	54.6	13.7
Educational Services	82	18,900	3.4	1.2	0.8	2.2	18.1	6.8	11.4
Elementary and Secondary Schools	821	6,400	5.1	1.3	1.2	3.8	18.8	2.2	16.6
Social Services	83	40,900	7.8	4.5	2.9	3.2	135.5	51.7	83.8
Job Training and Related Services	833	5,700	12.3	7.5	4.0	4.8	173.9	110.8	63.1
Child Day Care Services	835	7,600	2.3	0.8	0.8	1.5	1.5	1.5	0.0
Residential Care	836	17,600	12.4	8.4	5.5	4.0	282.3	96.9	185.4
Membership Organizations	86	25,700	2.5	0.9	0.7	1.6	23.1	14.8	8.3
Civic and Social Associations	864	6,000	5.2	1.8	1.8	3.4	29.6	28.2	1.5
Religious Organizations	866	15,300	2.3	0.7	0.5	1.6	30.7	15.5	15.2
Engineering & Management Services	87	28,400	1.1	0.5	0.5	0.5	14.7	13.8	0.9
Engineering & Architectural Services	871	10,600	1.4	0.8	0.7	0.6	31.0	30.1	0.8
Research and Testing Services	873	5,000	1.5	0.6	0.3	1.0	12.5	11.7	0.8
Management and Public Relations	874	6,500	1.1	0.5	0.4	0.6	2.5	2.0	0.5

See footnotes at end of table.

Continued

Table 1. Incidence rates of recordable occupational injuries and illnesses by industry, Oregon, 1999 (continued)

Industry ¹	SIC ²	Employment ³	Cases				Lost workdays		
			Total ⁴	Lost workday		Nonfatal without lost workdays	Total	Days away from work	Days of restricted work activity
				Total	Away from work				
Public Sector		215,800	5.9	2.6	1.8	3.3	64.9	26.8	38.2
State Government		57,700	4.4	1.9	1.2	2.5	39.5	12.4	27.1
Heavy Construction, ex. building	16	4,900	6.7	2.7	2.2	4.0	48.8	20.7	28.1
Health Services	80	2,200	10.5	7.2	3.9	3.4	150.2	28.4	121.8
Educational Services	82	22,300	2.7	0.8	0.6	1.8	23.3	10.7	12.6
Colleges and Universities	822	13,500	2.7	0.8	0.6	1.8	23.3	10.7	12.6
Social Services	83	3,500	6.8	2.4	1.8	4.4	50.4	16.7	33.8
Justice, Public Order, and Safety	92	8,500	5.7	2.0	1.4	3.6	41.1	14.6	26.5
Administration of Human Resources	94	6,100	1.9	1.3	1.1	0.6	12.8	5.1	7.6
Environmental Quality and Housing	95	2,800	8.0	3.3	1.0	4.6	75.0	10.9	64.1
Local Government		158,200	6.5	2.9	2.1	3.7	75.2	32.6	42.6
Local and Interurban Passenger Transit	41	2,400	9.1	7.8	7.5	1.3	141.3	50.0	91.4
Electric, Gas, and Sanitary Services	49	2,400	7.0	4.6	2.7	2.4	121.3	28.5	92.9
Educational Services	82	92,600	5.9	2.3	1.7	3.6	68.6	21.3	47.3
Administration of Human Resources	94	4,400	8.0	3.7	2.5	4.3	107.1	74.9	32.2

Footnotes:

- ¹ Industry, division and group totals include data for industries not shown separately.
- ² *Standard Industrial Classification Manual. 1987 edition*
- ³ Annual average employment for nonfarm industries is estimated from the Oregon Employment Security 202 program. Agricultural production employment is generated from weighted data in the annual OSH Survey.
- ⁴ The incidence rates represent the number of injuries and/or illnesses or lost workdays per 100 full time employees and were calculated as:

$$IR = N \times 200,000 / EH$$

Where: IR = incidence rate
N = number of injuries and/or illnesses or lost workdays
EH = total hours worked by all employees during calendar year
200,000 = base for 100 full-time equivalent workers (40 hours per week, 50 weeks per year)
- ⁵ Excludes agricultural production employers with 10 or fewer employees.
- ⁶ In 1996, air courier establishments previously in SICs 421, 423, 452, & 473 were reclassified to SIC 451. Data for these SICs are not comparable to estimates for prior years.

Source: Research and Analysis Section, Oregon Department of Consumer & Business Services.

Table 2. Number of recordable occupational injuries and illnesses by industry, Oregon, 1999

Industry ¹	SIC ²	Employment ³	Cases				Lost Workdays			Ave. lost workdays per lost workday case
			Total ⁴	Lost Workdays		Nonfatal without lost workdays	Total	Days away from work	Days of restricted work activity	
				Total	Away from work					
Private Sector⁵		1,327,800	78,068	39,090	23,896	38,881	1,032,098	481,731	550,367	26
Agriculture, Forestry, & Fishing ⁵		43,000	2,739	1,276	870	1,463	31,753	11,697	20,056	25
Agricultural Production	01-02	22,700	1,344	519	319	825	15,307	5,902	9,405	29
Agricultural Production-Crops	01	21,100	1,201	480	288	721	13,907	5,375	8,532	29
Field Crops, ex. cash grains	013	2,000	58	31	31	27	1,048	1,048	-	34
Fruits and Tree Nuts	017	4,200	170	99	59	71	1,933	681	1,252	20
Horticultural Specialties	018	9,300	802	248	117	554	8,400	1,906	6,494	34
Agricultural Services	07	14,900	1,058	581	407	477	13,513	3,302	10,211	23
Forestry	08	4,700	337	176	144	161	2,933	2,493	440	17
Forestry Services	085	3,100	222	129	123	93	2,576	2,394	182	20
Mining		2,100	75	52	38	22	2,525	2,043	482	49
Construction		82,000	6,844	3,147	2,462	3,697	110,359	73,016	37,343	35
General Building Contractors	15	19,800	1,646	685	494	961	21,974	10,596	11,378	32
Residential Building Construction	152	11,700	1,023	437	350	586	12,548	6,492	6,056	29
Nonresidential Building Construction	154	8,100	623	248	144	375	9,426	4,104	5,322	38
Heavy Construction, ex. building	16	9,900	1,006	486	351	520	16,457	9,660	6,797	34
Heavy Construction, ex. highway	162	6,400	742	301	248	441	12,405	8,546	3,859	41
Special Trade Contractors	17	52,200	4,192	1,976	1,617	2,216	71,928	52,760	19,168	36
Plumbing, Heating, Air Conditioning	171	11,300	1,026	521	381	505	29,426	26,198	3,228	56
Electrical Work	173	10,300	672	270	229	402	2,704	1,382	1,322	10
Masonry, Stonework, and Plastering	174	6,100	665	299	257	366	6,483	3,685	2,798	22
Carpentry and Floor Work	175	4,500	377	173	162	204	6,230	3,673	2,557	36
Roofing, Siding, & Sheet Metal Work	176	3,900	455	247	218	208	8,991	7,465	1,526	36
Misc. Special Trade Contractors	179	8,900	694	313	230	381	11,191	4,974	6,217	36
Manufacturing		242,200	24,694	13,278	6,206	11,388	307,486	118,613	188,873	23
Apparel and Other Textile Products	23	2,500	101	35	19	66	731	405	326	21
Lumber and Wood Products	24	49,800	7,561	4,017	1,664	3,516	95,932	45,763	50,169	24
Logging	241	7,900	973	553	539	419	28,687	26,564	2,123	52
Sawmills and Planing Mills	242	14,200	2,812	1,588	437	1,199	27,967	6,867	21,100	18
Sawmills and Planing Mills, general	2421	13,500	2,683	1,483	412	1,175	26,659	6,310	20,349	18
Millwork, Plywood & Struct. Members	243	20,000	2,763	1,505	548	1,256	31,457	9,199	22,258	21
Softwood Veneer and Plywood	2436	8,200	920	527	147	391	11,712	3,226	8,486	22
Wood Buildings and Mobile Homes	245	3,600	602	227	90	375	3,929	1,163	2,766	17
Mobile Homes	2451	3,300	550	201	90	349	3,733	1,163	2,570	19
Miscellaneous Wood Products	249	3,600	354	111	42	243	3,262	1,946	1,316	29
Reconstituted Wood Products	2493	2,700	169	87	35	82	2,856	1,679	1,177	33
Furniture and Fixtures	25	4,100	364	245	116	119	4,286	867	3,419	17
Printing and Publishing	27	16,600	791	407	227	384	6,774	2,625	4,149	17

See footnotes at end of table

Continued

Table 2. Number of recordable occupational injuries and illnesses by industry, Oregon, 1999 (continued)

Industry ¹	SIC ²	Employment ³	Cases				Lost Workdays			Ave. lost workdays per lost worday case
			Total ⁴	Lost Workdays		Nonfatal without lost workdays	Total	Days away from work	Days of restricted work activity	
				Total	Away from work					
Newspapers Publishing, Printing	271	4,900	280	97	42	183	941	335	606	10
Commercial Printing	275	6,800	288	183	107	105	3,396	1,631	1,765	19
Commercial Printing, Lithographic	2752	5,000	209	127	95	82	2,856	1,481	1,375	22
Chemicals and Allied Products	28	3,500	217	111	69	106	1,052	227	825	9
Rubber and Misc. Plastics Products	30	7,200	623	280	171	343	4,497	2,476	2,021	16
Miscellaneous Plastics Products, NEC	308	6,300	537	280	171	257	4,497	2,476	2,021	16
Plastics Products, NEC	3089	4,200	255	132	81	123	2,739	1,706	1,033	21
Stone, Clay, and Glass Products	32	5,300	674	347	122	327	10,716	4,387	6,329	31
Concrete, Gypsum, & Plaster Products	327	2,700	364	183	64	181	5,021	2,137	2,884	27
Industrial Machinery and Equipment	35	21,400	1,989	846	472	1,143	25,642	9,053	16,589	30
Special Industry Machinery	355	4,000	545	187	93	358	6,032	1,998	4,034	32
Computer and Office Equipment	357	5,900	229	153	75	76	5,366	2,291	3,075	35
Industrial Machinery, NEC	359	3,000	223	92	38	131	2,109	876	1,233	23
Industrial Machinery, NEC	3599	2,600	195	91	37	104	2,103	870	1,233	23
Instruments and Related Products	38	10,800	510	254	113	256	7,414	2,338	5,076	29
Measuring and Controlling Devices	382	6,500	266	174	77	92	5,928	2,091	3,837	34
Instruments to Measure Electricity	3825	4,100	58	22	13	36	873	413	460	40
Medical Instruments and Supplies	384	2,200	91	44	23	47	1,163	225	938	26
Miscellaneous Manufacturing Industries	39	4,000	355	207	63	148	2,550	326	2,224	12
Transportation and Public Utilities		77,600	6,779	4,319	3,411	2,453	133,588	86,490	47,098	31
Trucking and Warehousing ⁶	42	26,500	2,965	1,789	1,507	1,169	64,127	46,072	18,055	36
Trucking & Courier Services, ex. air ⁶	421	24,400	2,753	1,641	1,428	1,105	60,777	44,246	16,531	37
Public Warehousing and Storage	422	2,000	212	148	79	64	3,350	1,826	1,524	23
Water Transportation	44	2,400	232	182	175	50	11,327	11,284	43	62
Transportation by Air ⁶	45	12,100	1,882	1,515	1,156	367	33,285	13,930	19,355	22
Air Transportation, Scheduled ⁶	451	10,100	1,818	1,483	1,130	335	33,156	13,898	19,258	22
Transportation Services ⁶	47	5,100	159	73	38	86	2,691	939	1,752	37
Communications	48	13,800	401	147	101	254	4,379	1,239	3,140	30
Electric, Gas, and Sanitary Services	49	10,000	741	366	253	375	9,614	6,531	3,083	26
Electric Services	491	6,200	416	199	123	217	4,765	2,525	2,240	24
Wholesale Trade		94,100	5,951	3,060	2,058	2,891	73,465	36,614	36,851	24
Wholesale Trade-Durable Goods	50	51,700	2,889	1,379	1,012	1,510	31,152	16,895	14,257	23
Motor Vehicles, Parts, and Supplies	501	7,500	853	440	299	413	8,953	4,404	4,549	20
Professional & Commercial Equipment	504	10,200	196	64	59	132	5,053	4,185	868	79
Electrical Goods	506	5,800	112	49	35	63	776	263	513	16
Machinery, Equipment, and Supplies	508	11,800	710	399	333	311	8,356	5,667	2,689	21
Miscellaneous Durable Goods	509	2,700	123	35	28	88	1,224	178	1,046	35

See footnotes at end of table

Continued

Table 2. Number of recordable occupational injuries and illnesses by industry, Oregon, 1999 (continued)

Industry ¹	SIC ²	Employment ³	Cases				Lost Workdays			Ave. lost workdays per lost workday case
			Total ⁴	Lost Workdays		Nonfatal without lost workdays	Total	Days away from work	Days of restricted work activity	
				Total	Away from work					
Wholesale Trade-Nondurable Goods	51	42,400	3,062	1,681	1,046	1,381	42,313	19,719	22,594	25
Paper and Paper Products	511	3,500	206	116	47	90	1,676	997	679	14
Groceries and Related Products	514	14,300	1,536	877	595	659	24,301	11,579	12,722	28
Misc. Nondurable goods	519	9,000	608	316	188	292	9,545	5,473	4,072	30
Retail Trade		292,200	13,594	5,709	3,656	7,824	154,580	63,282	91,298	27
Building Materials & Garden Supplies	52	13,100	1,294	604	286	690	9,444	2,355	7,089	16
Lumber & Other Building Materials	521	7,900	1,022	420	140	602	5,495	748	4,747	13
General Merchandise Stores	53	38,400	2,322	1,130	649	1,192	34,437	8,689	25,748	30
Department Stores	531	25,500	1,409	659	400	750	16,580	5,384	11,196	25
Food Stores	54	40,800	2,246	787	673	1,459	17,113	9,485	7,628	22
Grocery Stores	541	35,600	2,163	746	644	1,417	16,179	9,211	6,968	22
Miscellaneous Food Stores	549	3,100	24	19	10	5	171	23	148	9
Automotive Dealers & Service Stations	55	36,000	2,758	880	710	1,817	20,064	11,159	8,905	23
New and Used Car Dealers	551	14,700	597	179	152	418	3,869	2,116	1,753	22
Auto and Home Supply Stores	553	6,900	958	296	261	662	6,872	2,645	4,227	23
Gasoline Service Stations	554	10,800	893	333	260	499	7,736	5,086	2,650	23
Apparel and Accessory Stores	56	14,000	316	166	107	150	5,863	2,595	3,268	35
Family Clothing Stores	565	7,500	282	147	88	135	5,344	2,076	3,268	36
Furniture and Homefurnishings Stores	57	13,200	615	288	217	327	4,312	2,155	2,157	15
Furniture and Homefurnishings Stores	571	7,700	529	263	192	266	4,009	1,920	2,089	15
Radio, Television, & Computer Stores	573	4,700	83	25	25	58	303	235	68	12
Eating and Drinking Places	58	104,900	3,284	1,349	606	1,935	40,617	7,740	32,877	30
Miscellaneous Retail	59	31,900	759	505	408	254	22,730	19,104	3,626	45
Miscellaneous Shopping Goods Stores	594	13,900	92	15	9	77	60	9	51	4
Nonstore Retailers	596	5,800	387	219	147	168	11,289	8,643	2,646	52
Retail Stores, NEC	599	6,100	196	196	196	0	10,966	10,360	606	56
Finance, Insurance, and Real Estate		83,800	775	265	212	510	7,750	4,567	3,183	29
Depository Institutions	60	22,200	129	27	27	102	675	393	282	25
Commercial Banks	602	14,800	109	17	17	92	644	362	282	38
Services		410,800	16,617	7,984	4,983	8,633	210,592	85,409	125,183	26
Hotels and Other Lodging Places	70	21,800	959	557	361	402	13,334	4,085	9,249	24
Hotels and Motels	701	20,400	943	557	361	386	13,334	4,085	9,249	24
Personal Services	72	12,400	602	330	195	272	4,447	2,233	2,214	13
Laundry, Cleaning, & Garment Services	721	4,400	439	246	151	193	4,197	2,063	2,134	17
Beauty Shops	723	4,000	92	30	30	62	109	71	38	4

See footnotes at end of table

Continued

Table 2. Number of recordable occupational injuries and illnesses by industry, Oregon, 1999 (continued)

Industry ¹	SIC ²	Employment ³	Cases				Lost Workdays			Ave. lost workdays per lost workday case
			Total ⁴	Lost Workdays		Nonfatal without lost workdays	Total	Days away from work	Days of restricted work activity	
				Total	Away from work					
Business Services	73	96,500	2,454	982	895	1,472	32,519	18,109	14,410	33
Services to Dwellings & Other Buildings	734	11,000	765	572	572	193	15,153	5,269	9,884	26
Miscellaneous Business Services	738	33,800	1,037	294	260	743	14,453	12,525	1,928	49
Auto Repair, Services, and Parking	75	15,400	739	449	283	290	11,065	4,048	7,017	25
Automotive Repair Shops	753	9,500	421	238	134	183	7,122	1,400	5,722	30
Automotive Services, ex. repair	754	3,200	185	135	135	50	3,063	2,451	612	23
Miscellaneous Repair Services	76	4,300	201	117	98	84	2,476	1,798	678	21
Miscellaneous Repair Shops	769	2,700	165	101	90	64	1,225	1,067	158	12
Health Services	80	106,500	5,904	2,865	1,505	3,039	65,996	21,947	44,049	23
Offices & Clinics of Medical Doctors	801	26,300	925	310	159	615	10,262	1,884	8,378	33
Nursing and Personal Care Facilities	805	15,100	2,059	1,348	577	711	31,559	11,403	20,156	23
Hospitals	806	41,000	2,417	1,060	656	1,357	19,268	5,414	13,854	18
Medical and Dental Laboratories	807	2,500	118	33	23	85	248	129	119	8
Home Health Care Services	808	2,300	64	32	32	32	2,684	2,021	663	84
Misc. Health & Allied Services	809	2,300	98	44	39	54	1,313	1,049	264	30
Educational Services	82	18,900	378	136	90	242	2,008	750	1,258	15
Elementary and Secondary Schools	821	6,400	178	46	41	132	653	78	575	14
Social Services	83	40,900	2,410	1,407	903	1,003	41,943	16,007	25,936	30
Job Training and Related Services	833	5,700	496	302	163	194	7,040	4,485	2,555	23
Child Day Care Services	835	7,600	111	37	37	74	74	74	0	2
Residential Care	836	17,600	1,402	949	619	453	32,020	10,992	21,028	34
Membership Organizations	86	25,700	402	139	118	263	3,765	2,410	1,355	27
Civic and Social Associations	864	6,000	185	64	64	121	1,064	1,011	53	17
Religious Organizations	866	15,300	177	55	42	122	2,401	1,212	1,189	44
Engineering & Management Services	87	28,400	267	133	117	134	3,659	3,438	221	28
Engineering & Architectural Services	871	10,600	131	73	70	58	2,929	2,851	78	40
Research and Testing Services	873	5,000	53	20	12	33	434	407	27	22
Management and Public Relations	874	6,500	61	28	23	33	139	109	30	5
Public Sector		215,800	9,425	4,093	2,918	5,330	103,454	42,664	60,790	25
State Government		57,700	2,004	851	566	1,151	18,082	5,686	12,396	21
Heavy Construction, ex. building	16	4,900	340	136	110	203	2,489	1,054	1,435	18
Health Services	80	2,200	207	141	77	66	2,956	559	2,397	21
Educational Services	82	22,300	349	109	73	240	3,059	1,406	1,653	28
Colleges and Universities	822	13,500	349	109	73	240	3,059	1,406	1,653	28
Social Services	83	3,500	218	76	57	142	1,627	538	1,089	21
Justice, Public Order, and Safety	92	8,500	436	757	108	279	3,168	1,123	2,045	20
Administration of Human Resources	94	6,100	107	73	64	34	726	292	434	10
Environmental Quality and Housing	95	2,800	202	84	24	117	1,894	276	1,618	23

See footnotes at end of table.

Continued

Table 2. Number of recordable occupational injuries and illnesses by industry, Oregon, 1999 (continued)

Industry ¹	SIC ²	Employment ³	Cases				Lost Workdays			Ave. lost workdays per lost worday case
			Total ⁴	Lost Workdays		Nonfatal without lost workdays	Total	Days away from work	Days of restricted work activity	
				Total	Away from work					
Local Government		158,200	7,421	3,242	2,352	4,179	85,372	36,978	48,394	26
Local and Interurban Passenger Transit	41	2,400	199	170	164	29	3,074	1,087	1,987	18
Electric, Gas, and Sanitary Services	49	2,400	149	98	57	51	2,600	610	1,990	27
Educational Services	82	92,600	3,655	1,444	1,017	2,211	42,168	13,101	29,067	29
Administration of Human Resources	94	4,400	256	117	80	139	3,423	2,395	1,028	29

See footnotes at end of table.

Footnotes:

- ¹ Industry, division and group totals include data for industries not shown separately.
- ² *Standard Industrial Classification Manual. 1987 edition*
- ³ Annual average employment for nonfarm industries is estimated from the Oregon Employment Security 202 Program. Agricultural production employment is generated from weighted data in the annual OSH Survey.
- ⁴ Includes fatalities in addition to lost workday cases and nonfatal cases without lost workdays.
- ⁵ Excludes agricultural production employers with ten or fewer employees.
- ⁶ In 1996, air courier establishments previously in SICs 421, 423, 452, & 473 were reclassified to SIC 451. Data for these SICs are not comparable to estimates for prior years.

Source: Research and Analysis Section, Oregon Department of Consumer & Business Services.

Table 3. Incidence rates and number of occupational injuries by industry division, Oregon, 1999

Industry	Incidence rates ¹				Number of cases or days			
	Total cases ²	Lost workday cases	Nonfatal cases without lost workdays	Lost workdays	Total occupational injuries ³	Lost workday cases	Nonfatal cases without lost workdays	Lost workdays
Private sector	6.6	3.3	3.3	85.3	73,991	37,126	36,768	957,238
Agriculture, forestry, & fishing	7.1	3.3	3.7	83.7	2,677	1,262	1,415	31,675
Mining	4.4	3.0	1.3	148.5	74	51	22	2,523
Construction	9.2	4.2	4.9	148.9	6,768	3,130	3,638	109,845
Manufacturing	9.6	5.1	4.5	113.5	22,693	12,114	10,551	267,338
Transportation & public utilities	9.4	6.1	3.3	189.5	6,500	4,223	2,270	131,032
Wholesale trade	6.6	3.4	3.2	81.4	5,846	3,035	2,811	72,096
Retail Trade	5.9	2.5	3.4	66.0	13,133	5,494	7,578	147,814
Finance, insurance, & real estate	0.9	0.3	0.6	10.0	699	230	469	7,396
Services	4.9	2.4	2.5	59.0	15,601	7,587	8,014	187,519

¹Incidence rates represent the number of injuries per 100 full-time equivalent workers.

²Because of rounding, the total may not equal the sum of lost workday cases and nonfatal cases without lost workdays.

³Includes 97 fatalities.

Table 4. Incidence rates and number of occupational illnesses by industry division, Oregon, 1999

Industry	Incidence rates ¹				Number of cases or days			
	Total cases ²	Lost workday cases	Nonfatal cases without lost workdays	Lost workdays	Total occupational illnesses	Lost workday cases	Nonfatal cases without lost workdays	Lost workdays
Private sector	0.4	0.2	0.2	6.7	4,077	1,964	2,113	74,860
Agriculture, forestry, & fishing	0.2	0.0	0.1	0.2	62	14	48	78
Mining	0.1	0.1	0.0	0.1	1	1	0	2
Construction	0.1	0.0	0.1	0.7	76	17	59	514
Manufacturing	0.8	0.5	0.4	17.0	2,001	1,164	837	40,148
Transportation & public utilities	0.4	0.1	0.3	3.7	279	96	183	2,556
Wholesale trade	0.1	0.0	0.1	1.5	105	25	80	1,369
Retail trade	0.2	0.1	0.1	3.0	461	215	246	6,766
Finance, insurance, & real estate	0.1	0.0	0.1	0.5	76	35	41	354
Services	0.3	0.1	0.2	7.3	1,016	397	619	23,073

¹Incidence rates represent the number of illnesses per 100 full-time equivalent workers.

²Because of rounding, the total may not equal the sum of lost workday cases and nonfatal cases without lost workdays.

Table 5. Lost workday cases incidence rates of occupational injuries and illnesses by two-digit SIC industries, private sector, Oregon, 1995-1999

	SIC ¹	1995	1996	1997	1998	1999
Private sector		4.1	3.8	3.6	3.4	3.5
Agriculture, forestry, & fishing		4.4	4.4	3.8	3.3	3.4
Agricultural production	01-02	3.7	4.9	4.0	2.8	2.4
Agricultural services	07	5.0	3.5	3.5	3.6	5.0
Forestry	08	5.8	5.2	3.8	3.5	4.8
Mining		4.0	3.9	3.8	3.1	3.1
Construction		5.6	6.0	4.2	4.0	4.3
General building contractors	15	4.2	5.7	4.1	4.2	4.0
Heavy construction, except building	16	4.5	9.2	4.7	4.4	5.5
Special trade contractors	17	6.4	5.4	4.1	3.8	4.1
Manufacturing		5.9	5.3	5.2	5.4	5.6
Food & kindred products	20	6.8	6.5	6.3	7.1	--
Apparel & other textile products	23	3.1	5.4	2.3	--	1.6
Lumber & wood products	24	7.0	6.3	7.5	7.2	7.9
Furniture & fixtures	25	9.1	7.0	6.2	--	6.1
Paper & allied products	26	3.4	3.0	2.8	3.2	--
Printing & publishing	27	2.3	2.8	--	4.5	2.7
Chemicals & allied products	28	3.2	3.7	4.3	3.5	3.2
Rubber & misc. plastics products	30	5.8	5.5	6.5	3.5	4.0
Stone, clay, & glass products	32	8.1	8.8	6.9	7.9	6.9
Primary metal industries	33	10.6	8.1	6.9	9.6	--
Fabricated metal products	34	9.0	7.7	5.4	7.5	--
Industrial machinery & equipment	35	4.9	4.7	4.5	5.4	4.1
Electronic & other electric equipment	36	2.3	1.9	2.3	1.4	--
Transportation equipment	37	10.1	8.9	8.1	7.5	--
Instruments & related products	38	1.6	1.4	1.6	1.1	2.6
Miscellaneous manufacturing industries	39	4.4	4.3	6.0	3.7	5.7
Transportation & public utilities		5.3	5.3	7.5	4.6	6.2
Railroad transportation	40	4.0	2.9	--	3.3	--
Local & interurban passenger transit	41	3.2	5.1	--	3.3	--
Trucking & warehousing ²	42	6.5	5.9	9.6	3.4	7.0
Water transportation ²	44	7.1	--	5.6	9.7	11.3
Transportation by air ²	45	10.9	--	18.8	--	16.3
Transportation services ²	47	1.0	1.2	--	2.3	1.6
Communications	48	3.2	2.4	2.1	1.4	1.2
Electric, gas, & sanitary services	49	4.2	3.3	2.9	3.4	3.9
Wholesale trade		3.7	3.5	3.6	3.3	3.5
Wholesale trade-durable goods	50	3.0	3.7	3.2	3.3	2.8
Wholesale trade-nondurable goods	51	4.5	3.1	4.2	3.3	4.3
Retail trade		3.7	3.6	3.2	2.9	2.6
Building materials & garden supplies	52	4.4	--	4.5	3.6	5.2
General merchandise stores	53	5.1	4.8	4.9	4.2	3.8
Food stores	54	5.3	4.0	3.4	3.2	2.6
Automotive dealers & service stations	55	3.1	3.3	2.4	3.0	2.6
Apparel & accessory stores	56	2.3	1.8	2.7	2.0	1.6
Furniture & home furnishings stores	57	4.4	6.3	1.9	2.5	2.4
Eating & drinking places	58	3.0	3.2	2.7	--	1.9
Miscellaneous retail	59	2.1	1.8	3.5	1.9	2.1
Finance, insurance, & real estate		1.6	0.6	0.6	0.6	0.4
Depository institutions	60	0.8	--	0.2	0.1	0.1
Services		3.2	2.7	2.3	2.6	2.5
Hotels & other lodging places	70	3.4	8.4	5.2	4.1	3.5
Personal services	72	4.5	--	2.0	2.4	3.5
Auto repair, services, & parking	75	3.2	3.6	2.7	5.8	3.3
Miscellaneous repair services	76	4.7	2.7	4.6	3.7	3.1
Amusement & recreation services	79	1.8	3.6	2.7	2.0	--
Health services	80	3.8	4.3	3.6	3.6	3.5
Educational services	82	1.6	1.3	1.1	1.3	1.2
Social services	83	6.0	--	4.1	4.6	4.5
Membership organizations	86	1.3	1.1	1.1	1.4	0.9
Engineering & management services	87	0.9	0.7	--	0.9	0.5

¹Standard Industrial Classification Manual, 1987 Edition.

²In 1996, air courier establishments previously classified in SICs 421, 423, 452, and 473 were reclassified to SIC 451. Data for these SICs are not comparable to estimates for prior years.

Note: Dashes indicate data do not meet publication criteria.

Table 6. Nonfatal occupational injury and illness incidence rates per 100 full-time workers¹ by state, private industry, 1999

State	Total cases	Lost workday cases		Cases without lost workdays
		Total ²	With days away from work ³	
Private industry⁴	63	30	19	33
Alabama	7.5	3.4	1.8	4.1
Alaska	8.1	3.8	3.4	4.2
Arizona	6.0	2.7	1.6	3.3
Arkansas	6.8	3.2	1.7	3.5
California	5.9	3.0	1.8	3.0
Connecticut	6.8	3.4	2.2	3.4
Delaware	5.6	2.7	1.8	2.8
Florida	5.4	2.4	1.5	2.9
Georgia	5.4	2.3	1.3	3.1
Guam	4.0	2.3	2.2	1.7
Hawaii	6.0	3.4	3.0	2.7
Illinois	6.0	2.9	1.9	3.1
Indiana	8.3	3.9	2.1	4.4
Iowa	8.7	4.1	2.1	4.6
Kansas	7.6	3.6	1.9	4.0
Kentucky	8.4	4.1	2.5	4.3
Louisiana	4.8	2.1	1.4	2.7
Maine	9.3	4.9	2.1	4.4
Maryland	5.2	2.6	1.9	2.7
Massachusetts	5.8	2.9	2.1	2.9
Michigan	8.1	3.9	1.8	4.2
Minnesota	6.9	3.3	1.9	3.6
Missouri	7.6	3.2	1.8	4.3
Montana	7.2	2.8	2.2	4.4
Nebraska	7.1	3.2	2.0	3.9
Nevada	7.3	3.0	1.7	4.3
New Jersey	4.4	2.3	1.8	2.2
New Mexico	5.1	2.6	1.8	2.5
New York	4.1	2.1	1.9	1.9
North Carolina	5.7	2.6	1.3	3.1
Oklahoma	6.6	3.5	2.2	3.1
Oregon	7.0	3.4	2.1	3.5
Puerto Rico	4.4	3.6	3.5	0.9
Rhode Island	7.0	3.8	2.8	3.2
South Carolina	5.7	2.7	1.6	3.0
Tennessee	6.8	3.4	1.9	3.4
Texas	5.0	2.8	1.7	2.3
Utah	7.4	3.0	1.7	4.4
Vermont	7.6	3.5	2.4	4.1
Virgin Islands	1.9	1.1	1.0	0.8
Virginia	5.1	2.5	1.6	2.6
Washington	9.0	3.8	2.8	5.3
West Virginia	7.2	3.9	3.4	3.3
Wisconsin	8.4	3.9	2.4	4.4

¹ Incidence rates represent the number of injuries and illnesses per 100 full-time workers and were calculated as:

$(N/EH) \times 200,000$, where:

N = number of injuries and illnesses

EH = total hours worked by all employees during the calendar year,

200,000 = base for 100 equivalent full-time workers (working 40 hours per week, 50 weeks per year).

² Total lost workday cases involve days away from work, days of restricted work activity, or both.

³ Days away from work cases include those which result in days away from work with or without restricted work activity.

⁴ Data cover all 50 states.

Note: Because of rounding, components may not add to totals.

Source: U.S. Department of Labor, Bureau of Labor Statistics, December 2000

Appendices

Glossary

Annual average employment: Average number of full and part-time employees who worked during the calendar year. Includes all classes of employees (i.e., administrative, supervisory, clerical, professional, technical, sales, delivery, installation, construction, and service personnel, as well as operating and related workers).

Average lost workdays per lost workday case: The number of workdays lost divided by the number of lost workday cases.

Employment size group: A grouping of establishments with a specified range of employment.

Establishment: A single physical location where business is conducted or where services or industrial operations are performed. (For example: a factory, mill, store, hotel, restaurant, movie theater, farm, ranch, bank, sales office, warehouse, or central administrative office.) Where distinctly separate activities are performed at a single physical location (such as contract construction activities operated from the same physical location as a lumber yard), each activity shall be treated as a separate establishment.

Incidence rate: Number of injuries and/or illnesses, or lost workdays, per 100 full-time workers per year. The rate is calculated as:

$$IR = (N \times 200,000) / EH$$

where: IR = Incidence rate
N = Number of injuries and/or illnesses or lost workdays
EH = Total hours worked by all employees during the calendar year
200,000 = Base for 100 full-time equivalent workers (working 40 hours per week, 50 weeks per year)

First aid treatment: One-time treatment and subsequent observation of minor scratches, cuts, burns, splinters, and so forth, which do not ordinarily require medical care.

Hours worked: Total hours worked by all employees. Includes all time on duty, but excludes vacation, holiday, sick leave, and all other nonwork time even though paid.

Lost workdays: Days which, because of an occupational injury or illness, an employee:

- (1) would have worked but could not (days away from work);
- (2) was assigned to a temporary job (restricted days);
- (3) worked at a permanent job less than full time (restricted days); or
- (4) worked at a permanently assigned job but could not perform all the duties normally assigned to it (restricted days).

Lost workdays does not include the day of injury.

Medical treatment: Treatment administered by a physician or by registered professional personnel under the standing orders of a physician. Medical treatment does not include first aid treatment even though provided by a physician or registered professional personnel.

Occupational illness: Any abnormal condition or disorder, other than one resulting from an occupational injury, caused by exposure to environmental factors associated with the employment. Includes acute and chronic illnesses or diseases which may be caused by inhalation, absorption, ingestion, or direct contact. All diagnosed occupational illnesses are recordable.

Occupational injury: Any injury, such as a cut, fracture, sprain, amputation, etc., which results from a work accident or from exposure involving a single incident in the work environment.

Recordable occupational injuries and illnesses: Any occupational injuries or illnesses which result in:

- (1) **Fatalities**, regardless of the time between the injury and death or the length of illness;
- (2) **Lost workday cases**, other than fatalities, that result in lost workdays; or,
- (3) **Nonfatal cases without lost workdays** which result in transfer to another job or termination of employment, require medical treatment, or involve loss of consciousness or restriction of work or motion. Includes any diagnosed occupational illnesses that are reported to the employer but are not classified as fatalities or lost workdays cases.

Standard Industrial Classification (SIC): A classification system developed by the Office of Statistical Standards, Executive Office to the President/Office of Management and Budget for use in classifying establishments by the type of activity in which they are engaged. Each establishment is assigned an industry code for its major activity, which is determined by the product or group of products produced or services rendered. Establishments may be classified in 2-digit, 3-digit, or 4-digit industries, according to the degree of

information available. Beginning with the 1989 survey, establishments are classified in industry groups based on the 1987 SIC manual. The 1972 SIC manual was used to define industry groups prior to 1989.

Total cases: Includes all recordable occupational injuries and illnesses.

Appendix B

Scope of Survey

The scope of the survey was limited to those private sector employers in the state of Oregon who had at least one employee during calendar year 1999 and included the following private industries: agriculture, forestry, and fishing, SIC 01-09; oil and gas extraction, SIC 13; construction, SIC 15-17; manufacturing, SIC 20-39; transportation and public utilities, SIC 41-49; wholesale trade, SIC 50-51; retail trade, SIC 52-59; finance, insurance, and real estate, SIC 60-67; and services, SIC 70-89. In addition, all state and local government SICs were in scope.

Excluded from the survey were the federal government, agricultural production employers with 10 or fewer employees, self-employed individuals, private households, railroad employers, and employers covered by the Coal Mine Health and Safety Act and the Metallic and Nonmetallic Mine Safety Acts. Although railroads and mining, except oil and gas extraction, were excluded from the survey, data for these industries were collected by federal agencies and are included in this report.

A total of 4,254 sample units were selected to participate in the 1999 survey. The original and two follow-up mailings, plus telephone calls, resulted in 3,380 usable replies, a 92.7 percent overall usable response rate. About 17 percent of the sample units were excluded from the final tabulation from which the usable response rate was generated. These excluded sample units were found to be either out of business, outside the scope of the survey, included in the report for another location, in receipt of duplicate survey forms for the same location, or without adequate address.

Additional data were obtained to supplement the mailed questionnaires. Data conforming to OSHA definitions for mining enterprises in Oregon were obtained from the Mine Safety and Health Administration (MSHA), which has statutory authority affecting occupational safety and health in coal, metal, and nonmetal mining. MSHA provided data for 242 mining establishments. Data from 19 establishments engaged in railroad transportation were obtained from the Federal Railroad Administration of the Department of Transportation.

In total, the 1999 survey data included reports from over 3,000 private establishments. Fifty-six reports were received from state government units, and 98 local government units reported.

Survey questionnaire

The survey questionnaire requests information regarding employment, total hours worked, and the tabulation of occupational injuries and illnesses by type, i.e., fatalities, lost workday cases, and nonfatal cases without lost workdays. Additional information is sought regarding the type of illnesses contracted, and the number of lost workdays and days of restricted work activity resulting from work-related injuries and illnesses. (See Appendix E for a sample of the survey form and instructions.)

Federal grant arrangements specify that the respondent fill out a single reporting form. The data are then used to develop both state and national estimates. This elimination of reporting duplication by respondents, in conjunction with the use of identical statistical techniques at the state and national levels, ensures maximum comparability of the estimates.

Sample design

The sample of Oregon's private and public sector employers was selected by the U.S. Bureau of Labor Statistics to produce estimates of the number of occurrences and incidence rates of occupational injuries and illnesses at a certain level of precision. Because the Occupational Safety and Health program required estimates by industry, the universe was first stratified into state government, local government, and private ownership, and then stratified into industries according to the *Standard Industrial Classification Manual, 1987 Edition*.

Studies conducted by the Bureau of Labor Statistics have generated the variance in incidence rates within the specified groups of industries. Using this measure of variance, the number of establishments in an industry, and the employment in large establishments, a sample size was determined for each industry. Industries with higher expected incidence rates tend to be subject to more variability and were allotted a proportionately larger sample than industries with lower rates. Industries dominated by a few large establishments required proportionately smaller samples (if all of the large establishments were sampled) than industries composed of small establishments.

The number of injuries and illnesses experienced by an establishment varies according to its number of employees. For this reason, all establishments within an industry were stratified into employment size groups. The selection of sample units was optimized by distributing the industry sample among the size groups in

proportion to the total employment in the industry, and the variation in the size groups. Larger establishments, then, were more likely to be part of the sample than small ones. Usually, establishments with more than 100 employees were certain to be sampled, although that figure was lower for industries with a relatively small total workforce.

Estimation procedures

The injury and illness data reported by the sampling units in each estimating cell were weighted (multiplied) by the inverse of the sampling ratio. For example, a sampled establishment representing itself and three other establishments was assigned a weight of four. The data it reported were multiplied by four in the estimation procedure.

The data were also benchmarked, or adjusted for nonresponse and for any new establishments which became part of the universe after the sample was drawn. Benchmarking equalizes the employment in each estimating cell to a known employment for the survey period. A benchmark factor was calculated for each estimating cell by dividing current employment estimates of the universe, or target employment by the weighted employment produced from the sample¹. Weighted data for each industry were then benchmarked to generate final estimates².

The Standardized Industry Mix (SIM) was used to compare Oregon incidence rates to national incidence rates. National employment figures (in hundreds) were

Footnotes (Estimation procedures)

$$1/ \quad B = T \left/ \sum_{i=1}^S \sum_{j=1}^{N_i} W_{ij} E_{ji} \right.$$

where: B = Benchmark factor for an estimating cell
 T = Target employment for the same estimating cell
 S = Number of size classes in the estimating cell
 N_i = Number of sample units in size class "i"
 W_{ji} = Weight of sample unit "j" in size class "i"
 E_{ji} = Survey employment for sample unit "j" in size class "i"

$$2/ \quad X = \left(\sum_{i=1}^S \sum_{j=1}^{N_i} W_{ij} X_{ji} \right) B$$

where: X = Benchmarked estimate of characteristics for an estimating cell
 S = Number of size classes in the estimating cell
 N_i = Number of sample units in size class "i"
 W_{ji} = Weight of sample unit "j" in size class "i"
 X_{ji} = Characteristics reported by sample unit "j" in size class "i"
 B = Benchmark factor for an estimating cell

used for target employment for the Oregon estimating cells. The resulting benchmark factors produce a standardized industry mix for computing SIM incidence rates at each aggregate industry level.

Industrial classification

Reporting units are classified into industries on the basis of their principal product or activity. Data for a reporting unit making more than one product or engaging in more than one activity are included under the industry indicated by the most important product or activity. Reporting units were classified according to the 1987 edition of the *Standard Industrial Classification Manual*.

Publication guidelines

The Occupational Safety and Health Survey tabulating system generates injury and illness estimates for over 1200 SIC industry levels in Oregon. This publication includes estimates at the four-digit SIC level in manufacturing, the three-digit SIC level in nonmanufacturing, and generally at the two-digit SIC level in government, unless one of the following situations occurs:

- (1) Estimates are for an industry with fewer than three companies. Moreover, if three or more companies are in the industry, the employment of one firm could not constitute more than 60 percent of the employment for the industry. This publication restriction was waived if permission in writing was secured from officials of the concerned companies.
- (2) 1999 annual average employment for the industry was less than 2,000 with the exception of the mining division.
- (3) The estimate was for an industry whose total cases incidence rate relative error exceeded 30.
- (4) The benchmark factor for an estimating cell was less than 0.82 or greater than 1.49.

Data for an unpublished industry are included in the total shown for the more comprehensive industry level of which it is a part.

Reliability of the estimates

The incidence rates and case estimates are based on an annual sample of Oregon employers and, as a result, may differ from figures that would have been obtained had a complete census of establishments been possible using the same procedures. As in any survey, the results are subject to errors of response and reporting, as well as sampling variability. Errors of response and reporting are minimized through comprehensive edit procedures and follow-up contacts with employers. Errors of sampling variability are minimized through the use of randomized stratified sampling techniques.

The relative standard error is a measure of sampling variability, that is, variations that occur by chance because only a sample of establishments are included in the survey. The relative standard error taken together with the characteristic's estimated value serves to define the confidence intervals or ranges that would include the comparable complete-coverage value. The chances are about two out of three that the estimate would have been produced in the range of one standard error above to one standard error below the estimated value, and about 19 out of 20 that the estimate would have been in the range of two standard errors above and below the estimated value. Furthermore, the chances are about 997 out of 1,000 that the estimated value of the characteristic would have been in the range of three relative standard errors above and below the estimated value.

The relative standard errors for the private sector estimates overall are displayed in Table B1. The use of these relative standard errors may be clarified by an example. The private sector has an estimated incidence rate for total recordable cases of 7.0 per 100 full-time workers and a relative standard error of 2.2 percent. The chances are 2 out of 3 that a complete census would produce a rate between 6.8 and 7.2 and the chances are 19 out of 20 that the rate produced from the complete count would be between 6.7 and 7.3. The chances are 997 out of 1,000, or 99.7 percent of the time, that the rate generated from a complete census would be between 6.5 and 7.5. Similar confidence intervals can be developed for the other survey-generated estimates by using the same methodology described above.

Table B1. Relative standard errors, private sector, Oregon, 1999

Division	Relative standard errors ²			
	Total cases	Lost workday cases	Nonfatal cases without lost workdays	Total lost workdays
Private sector¹	2.2	2.6	2.7	4.3
Agriculture, forestry, & fishing ¹	10.5	11.9	11.7	16.9
Construction	5.9	7.8	7.6	18.1
Manufacturing	3.7	4.1	4.6	6.9
Transportation & public utilities	5.0	6.7	7.9	9.0
Wholesale trade	7.0	8.3	8.4	13.7
Retail trade	5.0	8.1	5.7	13.0
Finance, insurance, & real estate	23.6	42.8	22.2	48.7
Services	5.9	6.6	7.8	9.8

¹ Excludes agricultural production employers with ten or fewer employees.

² The relative standard error in the range of one standard error is computed as:

$$\%RE(X) = 100 * (\sigma/X)$$

%RE(X) = Percentage of relative standard error for the characteristic,

σ = The standard deviation for the characteristic, and

X = Weighted benchmarked estimate of the characteristic

Appendix C

Instructions for Computing Incidence Rates for an Individual Firm

Incidence rates for an individual establishment or firm may be calculated by employers by using the same formula used to calculate industry-wide incidence rates from the annual Occupational Injury and Illness Survey. Employers may then compare their own work injury and illness rates to the overall rates in their industry in Oregon or the nation.

The formula requires: (1) the number of injuries and illnesses, and (2) the number of hours actually worked by all employees during the reference period. To produce an overall incidence rate:

(1) Determine the total number of lost workday cases and nonfatal cases without lost workdays. This may be done by adding the total for columns 2, 6, 9 and 13 of Occupational Injuries and Illnesses Log (OSHA No. 200).

(2) Determine the total number of hours actually worked during the year by all employees from payroll or other time records. The hours worked figure should not include any nonwork time even though paid, such as vacation, sick leave, holidays, etc. (If actual hours worked are not available for employees paid on commission, salary, by the mile, etc., hours worked may be estimated on the basis of scheduled hours or eight hours per workday.)

The formula for computing the incidence rate is as follows:

(1) Number of injuries and illnesses x 200,000 = Incidence rate
 (2) Employee hours worked

This rate represents the number of injuries and illnesses occurring per 200,000 hours of work exposure or 100 full-time equivalent workers. The same base is used in computing the occupational injury and illness rates for Oregon and the nation.

An employer may compute rates for injuries, illnesses, lost workday cases, nonfatal cases without lost workdays, or the number of lost workdays. Simply replace the number of injuries and illnesses (1) in the formula with the measure for which the rate is being computed.

It is also possible to compute rates on a monthly, quarterly, or semi-annual basis or even by department, or any other groupings of employees. The formula, including the constant 200,000 remains the same. However, the time frame or department used for the number of injuries and illnesses (or other measure) should correspond to the hours worked figure (2) in the formula. For example, to compute a monthly rate, use the number of work injuries and illnesses for the month in the numerator and the number of employee hours worked for that month in the denominator.

Appendix D

Recordkeeping Summary

Basic recordkeeping concepts and guidelines are included with instructions on the back of form OSHA No. 200. The following summarizes the major

recordkeeping concepts and provides additional information to aid in keeping records accurately.

1. An injury or illness is considered work-related if it results from an event or exposure in the work environment. The work environment is primarily composed of: (1) the employer's premises, and (2) other locations where employees are engaged in work-related activities or are present as a condition of their employment. When an employee is off the employer's premises, work relationship must be established; when on the premises, this relationship is presumed. The employer's premises encompass the total establishment, not only the

primary work facility, but also such areas as company storage facilities. In addition to physical locations, equipment or materials used in the course of an employee's work are also considered part of the employee's work environment.

2. All work-related fatalities are recordable.
3. All work-related illnesses are recordable.
4. All work-related injuries are recordable if they require medical treatment or involve loss of consciousness, restriction of work or motion, or transfer to another job.

Recordable and nonrecordable injuries:

Each case is distinguished by the treatment provided; i.e., if the injury required medical treatment, it is recordable; if only first aid was required, it is not recordable. However, medical treatment is only one of several criteria for determining recordability. Regardless of treatment, if the injury involved loss of consciousness, restriction of work or motion, or transfer to another job, the injury is recordable.

Medical Treatment:

The following are generally considered medical treatment. Work-related injuries for which this type of treatment was provided or should have been provided are almost always recordable:

- Treatment of **infection**
- Application of **antiseptics** during second or subsequent visit to medical personnel
- Treatment of **second or third degree burn(s)**
- Application of **sutures** (stitches)
- Application of **butterfly adhesive dressing(s)** or **steri strip(s)** in lieu of sutures
- Removal of **foreign bodies embedded in eye**
- Removal of **foreign bodies** from wound; if procedure is **complicated** because of depth of embedment, size, or location
- Use of **prescription medications** (except a single dose administered on first visit for minor injury or discomfort)

- Use of hot or cold **soaking therapy** during second or subsequent visit to medical personnel
- Application of hot or cold **compress(es)** during second or subsequent visit to medical personnel
- **Cutting away dead skin** (surgical debridement)
- Application of **heat therapy** during second or subsequent visit to medical personnel
- Use of **whirlpool bath therapy** during second or subsequent visit to medical personnel
- **Positive X-ray diagnosis** (fractures, broken bones, etc.)
- **Admission to a hospital** or equivalent medical facility for treatment
- Use of **nonprescription medication** and administration of single dose of **prescription medications** on first visit for minor injury or discomfort
- **Soaking therapy** on initial visit to medical personnel or removal of bandages by **soaking**
- Application of hot or cold **compress(es)** during first visit to medical personnel
- Application of **ointments** to abrasions to prevent drying or cracking
- Application of **heat therapy** during first visit to medical personnel
- Use of **whirlpool bath therapy** during first visit to medical personnel
- **Negative X-ray diagnosis**
- **Observation** of injury during visit to medical personnel

First Aid Treatment:

The following are generally considered first aid treatment (e.g., one-time treatment and subsequent observation of minor injuries) and should not be recorded if the work-related injury does not involve loss of consciousness, restriction of work or motion, or transfer to another job:

- Application of **antiseptics** during first visit to medical personnel
- Treatment of **first degree burn(s)**
- Application of **bandage(s)** during any visit to medical personnel
- Use of **elastic bandage(s)** during first visit to medical personnel
- Removal of **foreign bodies not embedded in eye** if only irrigation is required
- Removal of **foreign bodies** from wound, if procedure is **uncomplicated**, and is, for example, by tweezers or other simple technique

The following procedure, by itself, is not considered medical treatment:

- Administration of **tetanus shot(s)** or **booster(s)**. However, these shots are often given in conjunction with the more serious injuries. Consequently, injuries requiring tetanus shots may be recordable for other reasons.

Reminder: Work-related injuries requiring only First Aid Treatment and that do not involve any of the conditions in item 4 above are not recordable.

Source: U.S. Department of Labor, Bureau of Labor Statistics from *Recordkeeping Guidelines for Occupational Injuries and Illnesses*.

Survey of Occupational Injuries and Illnesses, 1999

Appendix E



US Department of Labor
Bureau of Labor Statistics

Read our letter for important information

Please correct Your Company Address

W

We estimate that it will take an average of 1 hour to complete this survey (ranging from 30 minutes to 4 hours per package), including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing this information. If you have any comments regarding the estimates or any other aspect of this survey, including suggestions for reducing this burden, please send them to the Bureau of Labor Statistics, Occupational Safety and Health Statistics (1220-0045), 2 Massachusetts Avenue, N.E., Washington, DC 20212. Persons are not required to respond to the collection of information unless it displays a currently valid OMB control number.
DO NOT SEND THE COMPLETED FORM TO THIS ADDRESS.

The Bureau of Labor Statistics and the State agency collecting this information will use the information you provide for statistical purposes only. To the full extent permitted by law, this information will be held in confidence and will not be disclosed without the written consent of your establishment.

OMB No. 1220-0045
Approval expires 09-30-00
BLS-9300 W06

Part 1: Summary of 1999 Occupational Injuries and Illnesses

All establishments must complete this part of the survey, even if there were no occupational injuries and illnesses during 1999. This form tells us about the number of employees in your establishment and the number of hours they worked. It also gives us a summary of any occupational injuries and illnesses that did occur during 1999.

If you have already provided the **Occupational Safety and Health Administration (OSHA)** with this information, you may attach a copy of their form instead of completing Part 1. If you choose to attach the OSHA form, go to **What's Next**.

To answer the questions below, you'll need

- ▶ information about employment and hours worked from your payroll, and
- ▶ your completed copy of the 1999 *Log and Summary of Occupational Injuries and Illnesses* (OSHA No. 200).

Tell us about your establishment's employees and the hours they worked

Be sure the information you supply refers **only** to the establishment(s) noted on the cover under **Reporting Site**.

1. What is the average number of employees who worked for your establishment during 1999?

If this number isn't available, you can estimate it this way:

- ▶ **Add** together the number of employees your establishment paid in every pay period during 1999. Include all employees: full-time, part-time, temporary, seasonal, salaried, and hourly.
- ▶ **Divide** that answer by the number of pay periods your establishment had in 1999. Be sure to include any pay periods when you had no employees.
- ▶ **Round** the answer to the next highest whole number. Write the rounded number in the blank marked *Employment average*.

Example

Acme construction pays its employees 26 times each year. During 1999,

<u>in this pay period</u>	<u>Acme paid this many employees</u>
1	10
2	0
3	15
4	30
5	40
↓	↓
24	20
25	15
26	1
	830 (sum)

Because Acme has 26 pay periods, it would divide its sum by 26.

$$830 \text{ divided by } 26 = 31.92$$

Acme would round 31.92 to 32 and write that number in the blank marked *Employment average*.

_____ *Employment average*

2. How many hours did your employees (salaried as well as hourly employees actually work during 1999?

Do **not** include vacation, sick leave, holidays, or any other non-work time, even if employees were paid for it. If your establishment keeps records of only the hours paid or if you have employees who are not paid by the hour, please estimate the hours that the employees actually worked.

_____ *Total hours worked*

If this number isn't available, you can use this worksheet to estimate it.

Optional Worksheet

- _____ **Find** the number of full-time employees in your establishment for 1999.
- X _____ **Multiply** by the number of work hours for a full-time employee in a year.
- _____ This is the number of full-time hours worked.
- + _____ **Add** the number of any overtime hours as well as the hours worked by other employees (part-time, temporary, seasonal).
- _____ **Round** the answer to the next highest whole number. Write the rounded number in the blank marked *Total hours worked*.

3. Put an X in the box next to all the conditions that might have affected your answers to #1 and #2.

- | | |
|---|---|
| <input type="checkbox"/> Nothing unusual happened | <input type="checkbox"/> Natural disaster or adverse weather condition |
| <input type="checkbox"/> Strike or lockout | <input type="checkbox"/> Shorter work schedules or fewer pay periods than usual |
| <input type="checkbox"/> Shutdown or layoff | <input type="checkbox"/> Longer work schedules or more pay periods than usual |
| <input type="checkbox"/> Seasonal work | <input type="checkbox"/> Other reason: _____ |

4. Did you have ANY occupational injuries or illnesses during 1999?

- Yes. Go to the next section, ***Tell us about the injuries and illnesses during 1999.***
- No. Go to ***Sign This Form*** on the back cover.

Tell us about the injuries and illnesses during 1999

If you had occupational injuries or illnesses during 1999, follow these steps.

- 1 Go to your completed 1999 *Log and Summary of Occupational Injuries and Illnesses* (OSHA No. 200) Form.
- 2 Look at the total line on the last page.
- 3 Copy the 1999 totals from your OSHA No. 200 form into the columns below. If more than one establishment is noted on the front cover under ***Reporting Site***, add together the total lines from all OSHA No. 200 forms to get the 1999 totals for all establishments. Then copy those totals into the columns below.

Total Injures

Copy these total from columns (1)-(6):

Deaths as a result of injury (column 1)	Injuries with days away from work, or restricted workdays or both (column 2)	Injuries with days away from work (column 3)	Total days away from work (column 4)	Total days of restricted work activity (column 5)	Injuries without lost workdays (column 6)
_____	_____	_____	_____	_____	_____

Total Types of Illnesses

Copy these totals from columns (7a)-(7g):

Skin diseases or disorders (column 7a)	Dust diseases of the lungs (column 7b)	Respiratory conditions due to toxic agents (column 7c)	Poisoning (column 7d)	Disorders due to physical agents (column 7e)	Disorders associated with repeated trauma (column 7f)	Other occupational illnesses (column 7g)
_____	_____	_____	_____	_____	_____	_____

Total Illnesses

Copy these totals from columns (8)-(13):

Deaths as a result of illness (column 8)	Illnesses with days away from work, or restricted workdays or both (column 9)	Illnesses with days away from work (column 10)	Total days away from work (column 11)	Total days of restricted work activity (column 12)	Illnesses without lost workdays (column 13)
_____	_____	_____	_____	_____	_____

What's next

Look at the totals you copied into column (3) and (10) above (look for the bold lines).

- ▷ If you had NO cases in both columns (3) and (10), you are finished with the survey. Go to ***Sign This Form*** on the back cover.
- ▷ If you HAD cases in either column (3) or column (10), go to ***Part 2: Reporting Cases with Days Away from Work.***