

# Minnesota Workplace Safety Report: Occupational Injuries and Illnesses, 2002

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## Executive summary

About 120,500 Minnesotans were hurt at work or became ill from job-related causes in 2002, 33,500 of which involved days of away from work. An average of 75 Minnesotans a year were killed at work from 1998 through 2002.

These injuries, illnesses and deaths exact a toll on workers and their families; they also affect business costs and productivity. Workers' compensation in Minnesota cost an estimated \$1.3 billion in 2002. This does not count other costs, such as delayed production, hiring and training workers, pain and suffering, and those economic losses to workers and their families that are not covered by workers' compensation.

This report, part of an annual series, gives information about Minnesota's job-related injuries, illnesses and fatalities. Data sources are the *Survey of Occupational Injuries and Illnesses* and the *Census of Fatal Occupational Injuries*, both conducted by the U.S. Bureau of Labor Statistics. ***Because the Occupational Safety and Health Administration changed its injury and illness recordkeeping requirements, the data for 2002 are not comparable with data for prior years.***

### Nonfatal occupational injuries and illnesses

#### Incidence rates

- Minnesota's total rate of workplace injuries and illnesses was 6.0 cases per 100 full-time-equivalent (FTE) workers in 2002.
- The rate of cases with days away from work, job transfer or restrictions was 3.1 per 100 FTE workers in 2002.
- The rate of cases with days away from work (the most severely-injured workers) was 1.7 per 100 FTE workers in 2002.
- Minnesota's case rates were below their U.S. counterparts until the early 1990s, but have been above the U.S. rates since that time. For the private sector in 2002, the total case rate was 6.2 per 100 FTE workers for

the state versus 5.3 for the nation. The rate of cases with lost workdays was 3.1 for the state versus 2.8 for the nation.

- Minnesota's rate of cases with days away from work was roughly equal to the national rate starting in 1996. In 2002, the private-sector rate of cases with days away from work was 1.7 for the state and 1.6 for the nation.
- Data for 2002 indicate that among industry divisions (the broadest industry grouping), Minnesota's highest total injury and illness rates per 100 FTE workers were in:
  - (1) agriculture, forestry and fishing (10.8);
  - (2) construction (9.4); and,
  - (3) manufacturing (8.0).
- Five of the 10 major industry groups (the next more detailed industry classification) with the highest total case incidence rates were in manufacturing.
- The major industry groups with the highest numbers of cases with days away from work were health services (4,500 cases) and special trade contractors (2,000 cases). The top 10 industry groups accounted for 49 percent of all cases.

#### Worker and injury characteristics

For cases with days away from work, the survey provides information about demographic characteristics of the injured workers and the characteristics of their injuries. The results refer to injuries and illnesses occurring in 2002.

- Men accounted for 64 percent of the injured workers.
- Workers age 35 to 44 were the most common age group, accounting for 27 percent of the cases.
- The largest occupation group was equipment operators, fabricators and laborers, with 35 percent of the cases. The most common specific occupations were truck drivers and

nursing aides, orderlies and attendants.

- The most common types of injury were:
  - (1) sprains, strains and tears of muscles, joints and tendons (41 percent);
  - (2) soreness and pain (12 percent); and
  - (3) cuts and punctures (8 percent).
- The most common body parts affected were:
  - (1) the back (29 percent);
  - (2) upper extremities (20 percent); and
  - (3) lower extremities (19 percent).
- The most frequent events or exposures leading to the injury or illness were:
  - (1) overexertion (33 percent); and
  - (2) falls and slips (21 percent).
- Repetitive motion accounted for 4 percent of the cases.
- The most frequent sources of injury or illness were:
  - (1) the injured worker's bodily motion or position (18 percent); and
  - (2) floors and ground surfaces (16 percent).

## Fatal occupational injuries

The nationwide *Census of Fatal Occupational Injuries* covers all fatal work injuries in the private and public sectors regardless of program coverage; thus, it includes federal workers and self-employed workers along with all others. However, fatal *illnesses* (such as asbestosis) are excluded.

- In 2002, 81 Minnesotans were fatally injured on the job. For 1998 through 2002, Minnesota had an average of 75 fatal work injuries a year, consisting of approximately 58 wage-and-salary workers and 17 self-employed people.
- Among industry divisions, the highest total numbers of fatal injuries for 1998 through 2002 were in:
  - (1) agriculture, forestry, and fishing (92);
  - (2) construction (78);
  - (3) transportation and public utilities (52); and
  - (4) manufacturing (46).
- The most frequent causes of Minnesota's fatal work injuries for 1998 through 2002 were:
  - (1) transportation accidents (47 percent);
  - (2) contact with objects and equipment (25 percent); and
  - (3) falls (11 percent).

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# 1

## Introduction

Workplace injuries and illnesses continue to be a major concern, both in Minnesota and nationwide. The latest occupational injury and illness figures show that about 330 Minnesotans are hurt at work or become ill from job-related causes each day. This amounts to roughly 120,500 cases a year; about 33,500 of these cases involve one or more days away from work. An average of 75 Minnesotans a year were killed on the job from 1998 through 2002.

These injuries, illnesses and deaths exact a toll on workers and their families; they also affect business costs and productivity. Workers' compensation in Minnesota cost an estimated \$1.32 billion in 2002, or \$1.58 per \$100 of covered payroll. This includes indemnity benefits (for lost wages, functional impairment or death), medical treatment, rehabilitation, litigation, claims administration and other system costs. In 2001 (the most current data available), the average cost of an insured claim was \$5,540 (in 2003 dollars) for medical treatment plus indemnity benefits (indemnity benefits are paid in 21 percent of all cases). For those claims with indemnity benefits, the average medical and indemnity cost was much higher — \$21,800. Other workplace injury and illness costs are more difficult to measure, such as delayed production, hiring and training of new workers, pain and suffering, and those economic and non-economic losses to injured workers and their families that are not covered by workers' compensation.

This report is part of an annual series. It gives information, through 2002, about Minnesota's job-related injuries, illnesses and fatalities: their incidence, nature and causes; the industries in which they occur; and changes in their incidence over time. This information is important for improving the safety and health of Minnesota's workplaces and, thereby, reducing the burden of occupational injuries and illnesses on workers, families and employers.

### Data sources

This report presents data from three sources: the U.S. Bureau of Labor Statistics (BLS) annual *Survey of Occupational Injuries and Illnesses*; the BLS annual *Census of Fatal Occupational Injuries* (CFOI); and the OSHA Integrated Management Information System (IMIS). The BLS and CFOI data are available through 2002, and the IMIS data is available through 2003.

### BLS survey

The BLS survey, conducted jointly by the BLS and state agencies, is the primary source of workplace injury and illness data nationwide. Approximately 4,900 Minnesota employers participated in the 2002 survey. The survey includes all cases recorded on the Occupational Safety and Health Administration (OSHA) log, on which employers with 11 or more employees are required to record workplace injuries and illnesses. Employers with 10 or fewer employees that participate in the survey also record their cases on the OSHA log for the survey year. The survey data is collected from the log and from an additional set of questions regarding cases with at least one day off the job.

While the BLS survey provides the most complete, standardized set of data regarding workplace injuries and illnesses, the number of recordable cases from the survey is not an estimate of all workplace injuries and illnesses. The BLS survey does not include injuries to employers and sole proprietors, federal government employees, volunteers and family farm workers.

OSHA-recordable cases include: all work-related fatalities; nonfatal occupational illnesses; nonfatal occupational injuries that result in loss of consciousness; injuries requiring medical treatment other than first aid; any injury resulting in lost time from work, restricted work activity or transfer to another job after the day of

injury. An injury or illness is considered work-related if an event or exposure in the work environment caused or contributed to the condition or significantly aggravated a pre-existing condition.

Because of changes by OSHA to its recordkeeping requirements, *the data for 2002 are not comparable with data for prior years*. The recordkeeping changes affected what injuries and illness are recordable, how injuries and illnesses are categorized and how days away from work are counted. These changes make direct comparisons between the 2002 results and those for earlier year unreliable. The 2002 OSHA recordkeeping changes are discussed in more detail in Appendix A.

The survey defines different types of cases according to whether they have days off the job, job transfer or work restrictions. Because of the changes in the OSHA recordkeeping requirements, these definitions are slightly different than the definitions from previous years.

- Cases with days away from work, job transfer, or restriction (DART), as a combined group, are those cases with days when the injured worker is off the job *or* working with restrictions. In previous years, cases with days away from work or job restrictions were called lost-workday cases. DART cases consist of:
  - (1) days-away-from-work (DAFW) cases — those with any days off the job other than the day of injury (with or without additional days of restricted work or job transfer); and
  - (2) Cases with job transfer or restriction — those with job transfer or restricted work but no days off.
- Other recordable cases are cases with no days away from work, no job transfer and no work restrictions, but which meet the guidelines for recording the case.

These case types and other terms used in the BLS survey and the case types for previous years are more precisely defined in Appendix B.

An important issue with the BLS survey data is

sampling error, the random error in survey statistics that occurs because the statistics are estimated from a sample. This sampling error is greater for smaller categories, such as particular industries, because of smaller sample size. In previous reports, industry-specific incidence rates were averaged over three years to reduce sampling errors. However, because of the recordkeeping changes, it is not possible to average 2002 results with those of earlier years.

### Fatal injuries

The BLS, in cooperation with state and other federal agencies, conducts the nationwide *Census of Fatal Occupational Injuries* (CFOI). The CFOI program was developed to produce accurate, comprehensive, descriptive, timely, and accessible counts of fatal workplace injuries that occur during a given year. Fatalities caused by illnesses are excluded.

The CFOI provides a complete count of fatal work injuries by using multiple sources to identify, verify and profile these incidents. Source documents such as death certificates, workers' compensation reports, and federal and state agency administrative records are cross-referenced to gather key information about each workplace fatality. Two or more independent source documents are used to verify the work relationship of each fatal work injury.

### OSHA activity measures

The Minnesota Occupational Safety and Health Administration (MNOSHA) program includes the Occupational Safety and Health Compliance unit, which is responsible for compliance program administration, and the Workplace Safety Consultation unit, which provides free consultation services. Source statistics used in this report come from MNOSHA's Integrated Management Information System (IMIS), used by federal and state OSHA management to produce statistics regarding their programs.

### More data available

The BLS survey provides a large volume of information for the United States and most individual states. This information includes the number and incidence of injuries and illnesses by industry and establishment size. For DAFW

cases, the survey provides data about the characteristics of injuries and illnesses, how they occur, severity (number of days away from work), length of time on the job when injured, occupation and worker characteristics.

The Minnesota case counts and incidence rates for all publishable industries (see Appendix B) for survey years 1999 through 2002 are available on the DLI Web site at [www.doli.state.mn.us/dlistats.html](http://www.doli.state.mn.us/dlistats.html). Many other BLS survey data tables and charts for Minnesota are available at [www.doli.state.mn.us/blsstats.htm](http://www.doli.state.mn.us/blsstats.htm).

The Minnesota CFOI tables for 2000, 2001 and 2002 are available at [www.doli.state.mn.us/dlistats.html](http://www.doli.state.mn.us/dlistats.html).

The national BLS survey and CFOI statistics are available at [www.bls.gov/iif/](http://www.bls.gov/iif/). The national data, because of larger sample sizes, includes more detailed categories than the state data and produces smaller sampling errors. The BLS Web site also provides data for other states.

Some IMIS OSHA Compliance inspection data, accident investigation summaries and lists of frequently cited standards by industry are available at [www.osha.gov/oshstats/](http://www.osha.gov/oshstats/).

The MNOSHA annual report provides more-detailed statistics about MNOSHA activities than are presented in this report and is available at [www.doli.state.mn.us/pdf/osha2003report.pdf](http://www.doli.state.mn.us/pdf/osha2003report.pdf).

## Report organization

The next four chapters in this report describe the incidence and characteristics of occupational injuries and illnesses in Minnesota. Chapter 2 presents data about the number and incidence of Minnesota's workplace injuries and illnesses over time, focusing on the state as a whole. Chapter 3 provides statewide injury and illness statistics about industry and establishment size. Chapter 4 shows the frequencies of injured worker characteristics and injury characteristics for cases with days away from work. Chapter 5 provides more detailed BLS survey statistics about each industry division, and includes MNOSHA activity by industry.

Chapter 6 gives information about the state's fatal workplace injuries, using data from the CFOI program. Figures show the number of fatalities, the events causing the fatalities and characteristics of the fatally injured workers.

Chapter 7 provides information about MNOSHA compliance activities and consultation programs to help employers achieve safe and healthful workplaces.

Appendix A addresses the changes made to the OSHA recordkeeping requirements for 2002.

Appendix B provides a glossary of concepts and terms for understanding and using the BLS survey data.

Appendix C shows the Minnesota case rates and number of cases for each industry with publishable results for the 2002 BLS survey.

# 2

## Number and incidence of workplace injuries and illnesses

### Number of injury and illness cases

While incidence rates provide standardized measurements of injuries and illnesses, the number of cases shows the magnitude of the occupational injury and illness situation, and is an appropriate point for beginning this report.

On the basis of employers' responses to the *Survey of Occupational Injuries and Illnesses*, there were an estimated 120,500 recordable injury and illness cases in Minnesota in 2002. This number is greater than the labor force in all but four of Minnesota's 87 counties.

Figure 2.1 shows estimates of the number of nonfatal injuries and illnesses in Minnesota for 1992 through 2002. The estimates are based on data collected for the BLS survey and are not the same as the number of workers' compensation claims. Because of the OSHA recordkeeping changes, the 2002 estimates are not directly comparable with estimates from earlier years. To highlight this caveat, the 2002 data points are not connected to the earlier years.

- From 1992 to 2001, while employment increased 24 percent, the total number of cases decreased 9 percent, lost-workday (LWD) cases increased 1 percent and DAFW cases decreased 20 percent.
- The distribution of cases among the various case types in 2002 was consistent with the distribution in recent years.

### Incidence rate trends

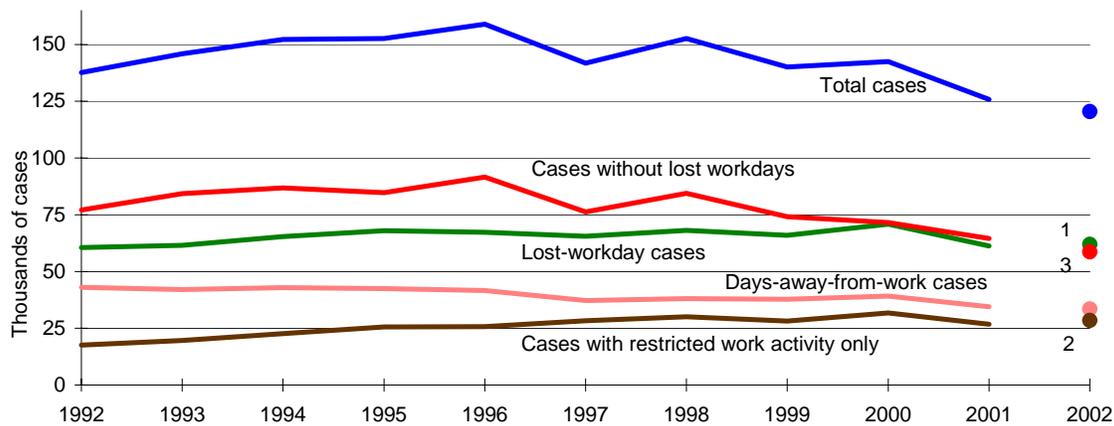
The incidence rates are statewide estimates based on the number of recordable injury and illness cases and the total hours of work reported by the employers participating in the survey. Figure 2.2 shows estimates of the incidence of nonfatal injuries and illnesses for Minnesota for 1992 through 2002, expressed as cases per 100 full-time-equivalent (FTE) workers. Both the private sector and state and local government are included.

While the total recordable case rate for 2002 is a lower number than the total case rate for 2001, recordkeeping changes make the two values noncomparable. Like Figure 2.1, the 2002 data points in Figure 2.2 are not connected to the earlier years to remind readers that the estimates are not directly comparable.

- Total case incidence rose through the late 1980s and early 1990s, and then started dropping in 1997. Minnesota's 2001 total case incidence rate and LWD case rate were the lowest in the history of the state survey.
- The DAFW case rate declined throughout this period, reaching its lowest level in 2001. In contrast, the rate for cases with restricted-work-activity-only increased through 1995, and has remained relatively level since then.
- These improvements in the injury and illness rates over the entire time period are the result of many factors. It is likely the result of a combination of changes in the mix of industries in Minnesota, decreases in the severity of LWD cases, changes in what happens after an injury or illness occurs and changes in reporting.<sup>1</sup>

<sup>1</sup> See the analysis by David R. Anderson, "Why did the claim rate fall in the 1990s?" *COMPACT*, August 2002 ([www.doli.state.mn.us/pdf/aug02-3.pdf](http://www.doli.state.mn.us/pdf/aug02-3.pdf)); and Hugh Conway and Jens Svenson, "Occupational injury and illness rates, 1992-96: Why they fell," *Monthly Labor Review*, November 1998.

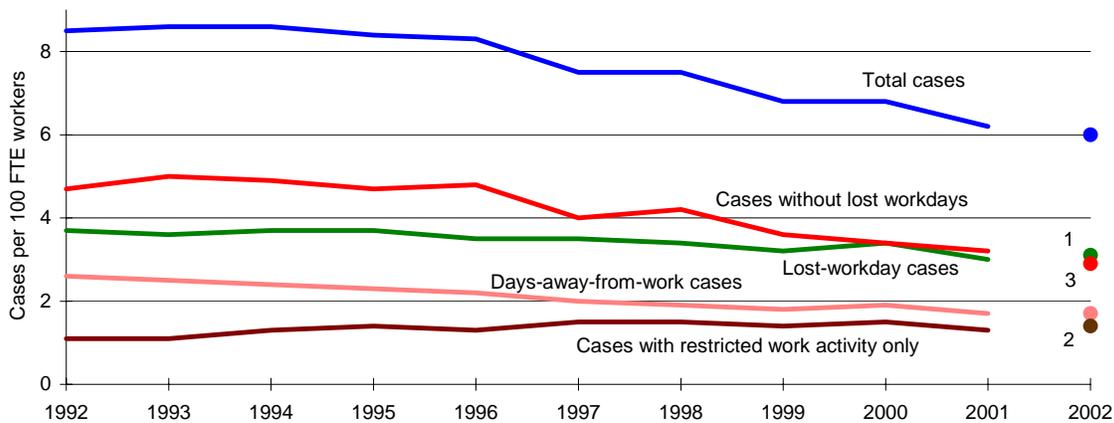
Figure 2.1 Number of injury and illness cases, Minnesota, 1992-2002



	Employment (1,000s)	Total cases (1,000s)	Lost-workday cases <sup>1</sup>		Days-away-from-work cases		Cases with restricted work activity only <sup>2</sup>		Cases without lost workdays <sup>3</sup>	
			Number (1,000s)	Pct. of total	Number (1,000s)	Pct. of total	Number (1,000s)	Pct. of total	Number (1,000s)	Pct. of total
1992	2,082	137.7	60.6	44%	43.0	31%	17.6	13%	77.1	56%
1996	2,329	159.0	67.3	42%	41.6	26%	25.7	16%	91.7	58%
2000	2,573	142.5	70.9	50%	39.2	28%	31.7	22%	71.6	50%
2001	2,576	125.8	61.3	49%	34.5	27%	26.8	21%	64.6	51%
2002	2,551	120.5	62.0	51%	33.5	28%	28.5	24%	58.6	49%

1. For 2002, cases with days away from work, job transfer, or restriction (DART).
2. For 2002, cases with job transfer or restriction.
3. For 2002, other recordable cases.

Figure 2.2 Injury and illness case incidence rates, Minnesota, 1992-2002



	Total cases per 100 FTE workers	Total lost-workday cases <sup>1</sup>	Days-away-from-work cases	Cases with restricted work activity only <sup>2</sup>	Cases without lost workdays <sup>3</sup>
1992	8.5	3.7	2.6	1.1	4.7
1996	8.3	3.5	2.2	1.3	4.8
2000	6.8	3.4	1.9	1.5	3.4
2001	6.2	3.0	1.7	1.3	3.2
2002	6.0	3.1	1.7	1.4	2.9

1. For 2002, cases with days away from work, job transfer, or restriction (DART).
2. For 2002, cases with job transfer or restriction.
3. For 2002, other recordable cases.

- A major reason for the drop in the overall incidence rates in 2001, and the continued low rates in 2002, was the relative shift in employment among industries, especially the drop in manufacturing employment. Manufacturing employment decreased by 4 percent from 2000 to 2001, and by nearly 6 percent from 2001 to 2002.

The number of total recordable cases in manufacturing decreased from an estimated 40,800 cases in 2000 to 31,000 cases in 2002, a 24 percent drop.

The decline in manufacturing employment is one indicator of the economic slowdown that occurred in 2001. The possible effects of the recession on injury and illness rates and workers' compensation claims reporting is discussed in the *Minnesota Workers' Compensation System Report, 2001*.<sup>2</sup> Injury rates are likely to decrease during economic slowdowns because of slower production and relatively few inexperienced workers.

## Comparing Minnesota with the nation

Figure 2.3 shows the rates of total cases, LWD (and DART) cases and DAFW cases in the private sector for Minnesota and the United States for 1992 through 2002. Rates are limited to the private sector because the national statistics are only available for the private sector.<sup>3</sup>

- For 2002, Minnesota's total rate was 6.2 per 100 FTE workers, while the U.S. rate was 5.3 cases. Minnesota's private-sector total case rate was below the national rate from 1985 to 1992, but has been above the U.S. rate since 1993. The total case rate has been significantly higher than the U.S. rate since 1995.

<sup>2</sup> The report is available at [www.doli.state.mn.us/pdf/wcfact01.pdf](http://www.doli.state.mn.us/pdf/wcfact01.pdf). The recession is discussed on pages 4, 14 and 27. See also David R. Anderson, "Will the recession affect work comp costs?" *Research Reporter*, May 2002 ([www.doli.state.mn.us/rr02may1.htm](http://www.doli.state.mn.us/rr02may1.htm)).

<sup>3</sup> In the BLS survey, participating states have the option to survey public-sector worksites. Because not all states choose this option, public-sector statistics are not available at the national level.

- Minnesota's DART rate for 2002 was 3.1, compared to 2.8 for the nation. Minnesota's DART rate was lower than the U.S. rate in the late 1980s, about the same as the U.S. rate during the early 1990s, and higher than the national rate beginning in 1995. This difference has been statistically significant since 1995.
- Statistically, since 1996, the DAFW case rates of Minnesota and the United States have not been significantly different.

Variations in the industry mix between Minnesota and other states lead to some differences in the overall rates. For example, Minnesota has a higher proportion of total employment in health services than do many other states.

Some of the difference between the Minnesota and U.S. total recordable case rates and DART rates may be due to completeness of reporting. Employers might not strictly adhere to the OSHA recordkeeping requirements for cases that do not result in days away from work and for cases that are not covered by workers' compensation insurance.

If employers in Minnesota maintained more complete OSHA logs than employers in other states, the Minnesota rate would be higher than the national rate, especially for cases without days away from work. Additionally, there would be less difference for the most serious cases.

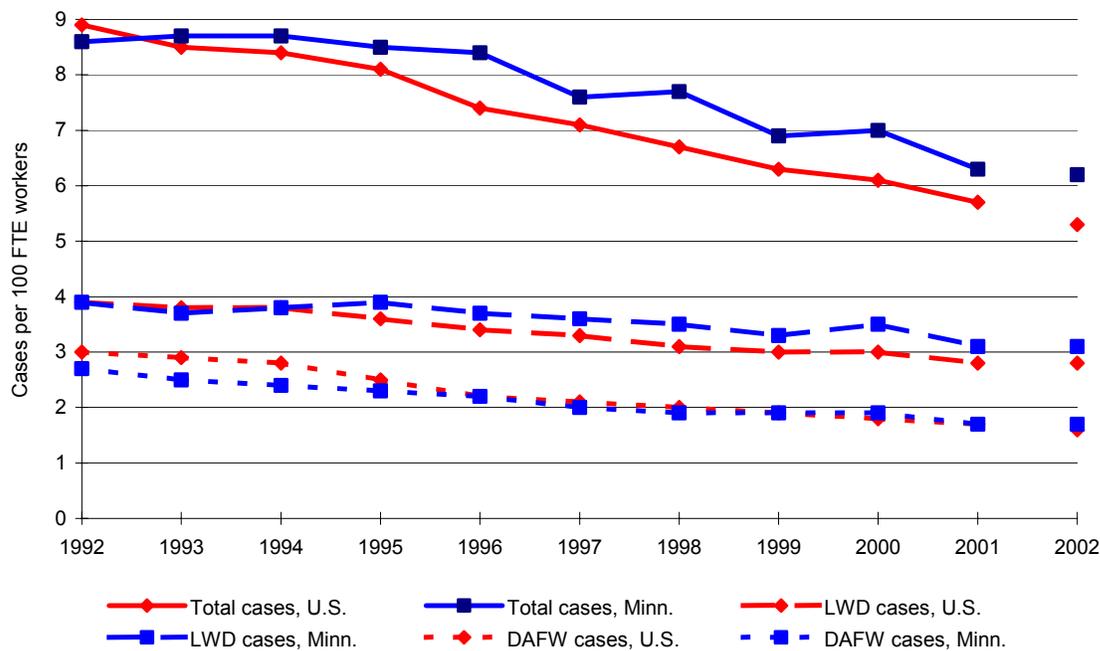
The incident rate data support this hypothesis. For the 1995 to 2002 period, Minnesota's rate for cases without days away from work stayed at least 0.6 cases per 100 FTE workers above the national rate, while the DAFW rate was not significantly different from the U.S. rate.

However, one analysis of workers' compensation claims data provides corroborating evidence that Minnesota's total rate is indeed higher than the national rate.<sup>4</sup> Using workers' compensation insurer data provided to rating bureaus, Minnesota's rate of total workers' compensation cases per 100,000

<sup>4</sup> Florence Blum and John F. Burton, Jr., "Workers' compensation benefits: Frequencies and amounts 1995-1999." *Workers' Compensation Policy Review*, vol. 3, issue 6, November/December 2003.

workers averaged 11.2 percent above the national rate for the 1996 to 1999 period. This is the same average percentage that Minnesota’s total case rate was above the national total case rate for that period.

**Figure 2.3 Injury and illness case incidence rates for Minnesota and the United States, private sector, 1992-2002**



	Cases per 100 full-time-equivalent workers					
	Total cases		Lost-workday cases <sup>1</sup>		Days-away-from-work cases	
	Minnesota	United States	Minnesota	United States	Minnesota	United States
1992	8.6	8.9	3.9	3.9	2.7	3.0
1996	8.4	7.4	3.7	3.4	2.2	2.2
2000	7.0	6.1	3.5	3.0	1.9	1.8
2001	6.3	5.7	3.1	2.8	1.7	1.7
2002	6.2	5.3	3.1	2.8	1.7	1.6

1. For 2002, cases with days away from work, job transfer, or restriction (DART).

# 3

## An overview of nonfatal workplace injuries and illnesses in Minnesota

This chapter compares the injury and illness rates for the industry divisions and presents information about the incidence rates for different sizes of establishments. There is considerable variation in the injury and illness rates by industry and establishment size.

The 2002 injury and illness survey shows:

- agriculture, forestry and fishing had the highest total injury and illness rate (10.8 cases per 100 FTE workers), which was almost one and a half cases per 100 FTE workers higher than the rate for the next-highest industry, construction.
- establishments with 50 to 249 employees had the highest incidence rates, while establishments with 10 or fewer employees had the lowest rates.

### Incidence by industry division

Industries can be analyzed at different levels of detail. The *Survey of Occupational Injuries and Illnesses* uses the standard industrial classification (SIC) system to categorize industries. The SIC is established by the U.S. government and used for industry-based economic statistics.<sup>5</sup> The SIC uses a four-digit hierarchical code in which each successive digit indicates a finer level of detail. Industry division is the most aggregated industry grouping in the SIC. The two- and three-digit categories are referred to as “major industry groups” and “industry groups,” respectively.

Figure 3.1 shows Minnesota’s injury and illness rates for the case types by industry division and all industries combined. Industries are ranked by their total case rate.

- Agriculture, forestry and fishing had the highest incidence rates for all cases and for cases without lost workdays.
- Manufacturing had the highest rate for cases with job transfer or restrictions.
- Construction had the highest incidence rate for DAFW cases.
- The high rate for job transfer or restriction cases in manufacturing may be a result of the greater opportunities for restricted work in manufacturing establishments than at construction or agriculture, forestry and fishing worksites. Manufacturing was the only industry where the job transfer or restriction rate was higher than the DAFW rate.
- Transportation and public utilities had the second-highest DAFW case rate, although it had the fifth-highest total case rate.

Figure 3.2 compares the Minnesota private-sector industries’ 2002 total case incidence rates with the U.S. rate for that industry. With the exception of transportation and public utilities and finance, insurance and real estate, the Minnesota industry division rates are higher than the corresponding U.S. rates. Some of these differences result from differences in employment among the constituent industries in each division. The differences in agriculture, forestry and fishing, manufacturing, wholesale trade and services are statistically significant.

<sup>5</sup> Beginning with the survey for the 2003 injury and illness statistics, industries are classified according to the North American Industry Classification System (NAICS).

Figure 3.1 Incidence rates by industry division, Minnesota, 2002

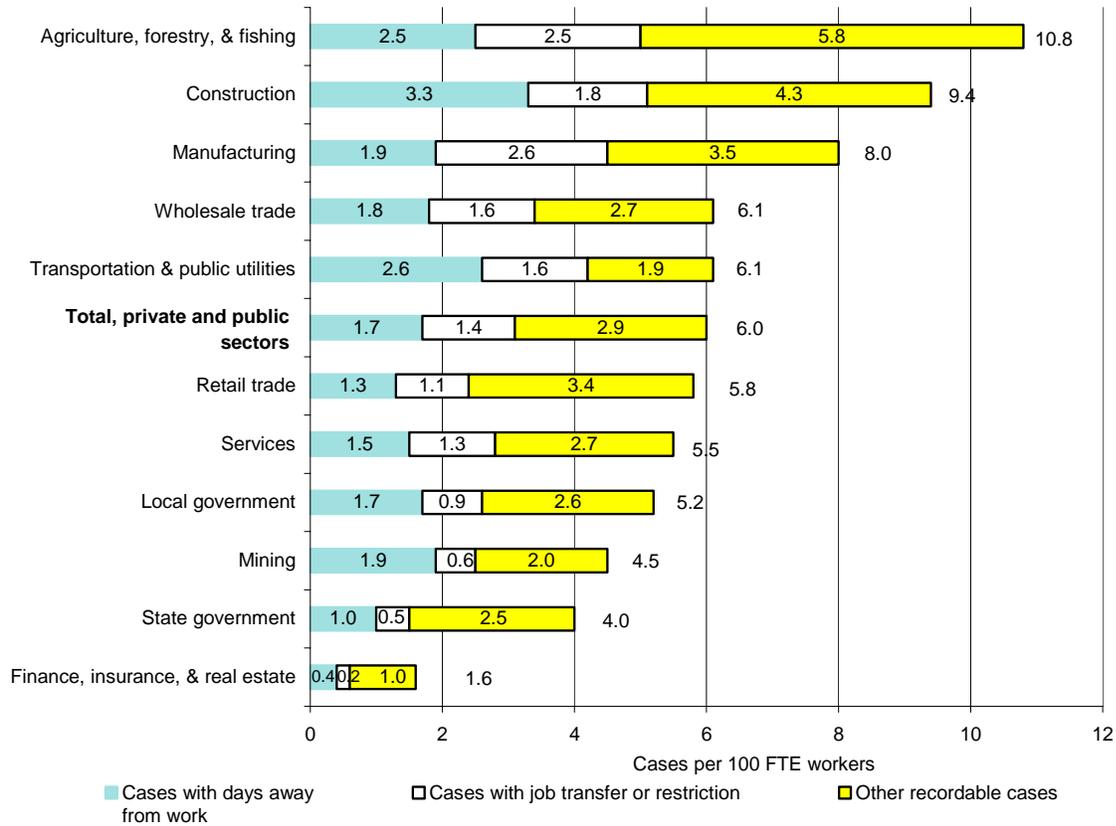
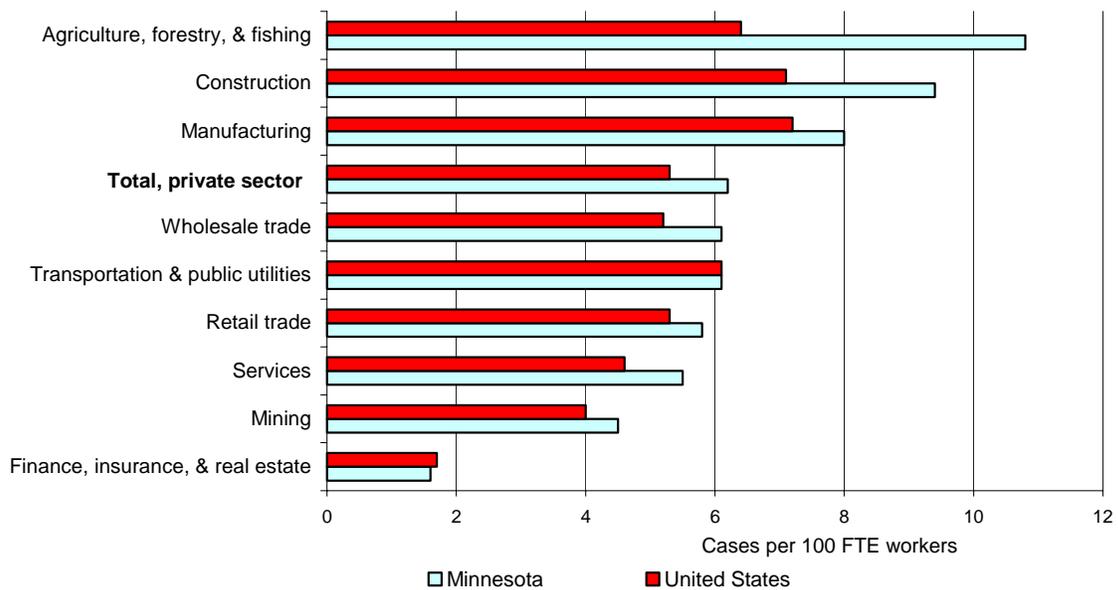


Figure 3.2 Incidence rates per 100 full-time workers for total nonfatal occupational injuries and illnesses by industry division, Minnesota and the United States, 2002



## Days away from work

Table 3.3 shows the median number of days away from work by industry division. As part of the OSHA recordkeeping changes for 2002, the number of days away from work is now counted by calendar days, not scheduled work days. This change makes the BLS count more compatible with the method used in Minnesota's workers' compensation system to measure duration away from work. However, unlike the workers' compensation method of counting duration, the BLS survey does not include the day of the event causing the injury or illness in the number of days away from work.

Tables showing the percentage of cases by the number of days away from work are available on the DLI Web site at [www.doli.state.mn.us/blsstats.htm](http://www.doli.state.mn.us/blsstats.htm).

- The median for all private-sector industries was five days. The median duration varied widely among the industries.
- Mining, with a DAFW case rate below the statewide rate, had the highest median duration. Finance, insurance and real estate, with the lowest DAFW incidence rate, had a higher median duration than manufacturing.
- The median duration of days away from work depends on a number of factors, including the most common types of injuries occurring in the industry, the average age of the injured workers and the ability of the workplaces to provide temporary work or restricted-duty work for injured workers.

Figure 3.3 Median days away from work, Minnesota, 2002

Industry division	Median days
Mining	33
Construction	8
Wholesale trade	7
Transportation & public utilities	7
Finance, insurance & real estate	7
State government	7
Retail trade	6
<b>All private sector industries</b>	5
Agriculture, forestry & fishing	5
Manufacturing	4
Services	4
Local government	3

### Major industry groups

The 10 industry groups (two-digit SIC classes) with the highest total case incidence rates in Minnesota are shown in Figure 3.4.

- Five of these 10 industries are in the manufacturing division.
- These industries accounted for 12 percent of the recordable cases in 2002.
- Four of the industries were not on the list in 2001.

The survey can also be used to identify the industries with the highest number of cases. Figure 3.5 shows the 10 industry groups with the highest number of DAFW cases, which are the most serious injury and illness cases.

- These 10 industries accounted for 16,300 DAFW cases, 49 percent of the total.
- Private-sector health services, which comprised 10 percent of employment in 2002, accounted for 14 percent of the DAFW cases. Most of the injured health care employees were working in hospitals and nursing homes. Many of the injured public-sector workers were also employed in health care.

Figure 3.4 Industry groups with the highest total case rates, Minnesota, 2002

Industry (and division <sup>1</sup> )	Total case rate
Transportation equipment (Man.)	18.3
Furniture and fixtures (Man.)	16.2
Agricultural production—livestock (AFF)	15.6
Primary metal industries (Man.)	15.1
Stone, clay, and glass products (Man.)	12.8
Agricultural production—crops (AFF)	12.0
Local govt. health services	11.4
Rubber and misc. plastics (Man.)	11.1
General building contractors (Con.)	11.1
Heavy construction, ex. building (Con.)	10.8

1. Man.: manufacturing; AFF: agriculture, forestry and fishing; Con.: construction.

Figure 3.5 Industry groups with the highest number of days-away-from-work cases, Minnesota, 2002

Industry (and division <sup>1</sup> )	DAFW cases (1,000)
Health services (Srv.)	4.5
Special trade contractors (Con.)	2.0
Trucking & warehousing (TPU)	1.5
Local government education	1.4
Wholesale trade—durable goods	1.3
Wholesale trade—nondurable goods	1.3
Food and kindred products (Man.)	1.3
Social services (Srv.)	1.1
Industrial machinery & equipment (Man.)	1.0
Printing and publishing (Man.)	0.8

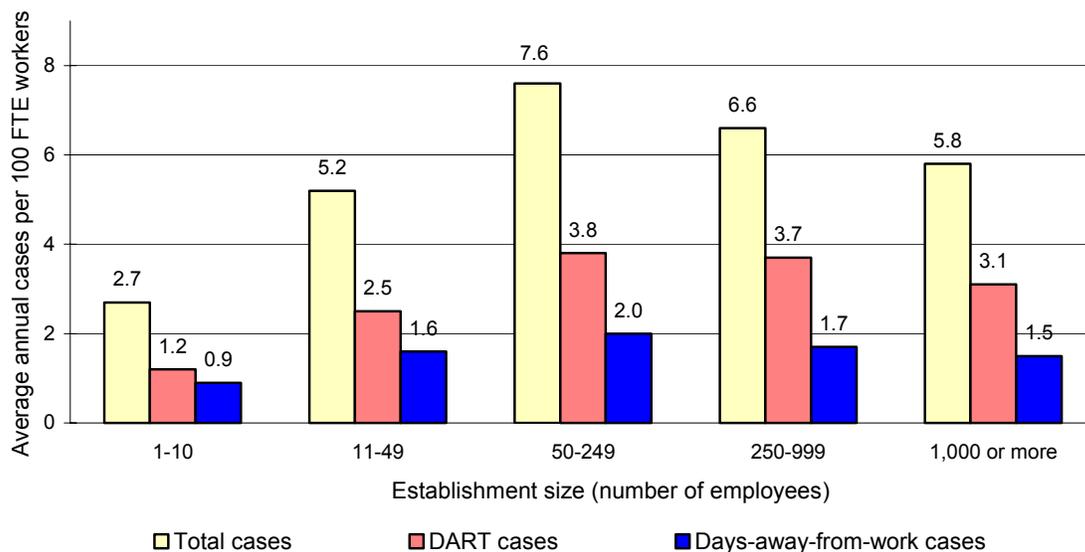
1. Man.: manufacturing; Srv.: services; Con.: construction; TPU: transportation and public utilities.

### Incidence by establishment size

The incidence of workplace injuries and illnesses also varies by establishment size. Figure 3.6 shows the case incidence by case type and establishment size, and presents the total case rates by establishment size and industry division.

- The rates of all three case types were lowest for the smallest establishments (1 to 10 employees), highest for midsize establishments (50 to 249 employees) and intermediate for the largest establishments (1,000 or more employees).
- For nearly all industries, the smallest establishments have lower total case rates than do the midsize ones (50 to 249 employees).
- Larger establishments, which have more safety resources available, have lower DAFW rates than the mid-size establishments in all industries except services and local government. In these two industries this change in the pattern is partly attributable to relatively high incidence rates in hospitals, where a significant proportion of workers in the largest establishment size class are employed.<sup>6</sup>

**Figure 3.6 Injury and illness case incidence rates by establishment size for private industry, Minnesota, 2002**



Industry division	Total recordable cases per 100 full-time-equivalent workers by establishment size (number of employees) <sup>1</sup>					
	All Sizes	1-10	11-49	50-249	250-999	1,000+
Agriculture, forestry and fishing	10.8	4.3	12.5	13.3	13.0	
Mining	4.5	4.7	5.6	4.2	4.3	
Construction	9.4	4.4	10.7	12.6	6.2	
Manufacturing	8.0	2.1	8.5	9.8	8.2	5.7
Transportation and public utilities	6.1	1.1	5.7	7.1		
Wholesale trade	6.1	2.4	5.8	7.9		
Retail trade	5.8	3.7	4.8	7.5		
Finance, insurance and real estate	1.6	2.5	1.5	1.3	1.4	1.1
Services	5.5	1.3	2.9	7.8	6.1	8.3
State government	4.0		1.1	5.3	5.5	3.1
Local government	5.2		3.2	5.1	5.3	6.3

1. Only cells with data meeting BLS publication standards are shown.

<sup>6</sup> Shown by unpublished data from the BLS survey.

# 4

## Characteristics of cases with days away from work

This chapter presents, for cases resulting in one or more days away from work, the statewide distributions of the demographic characteristics of the workers, their job characteristics, and the characteristics and causes of their injuries and illnesses.

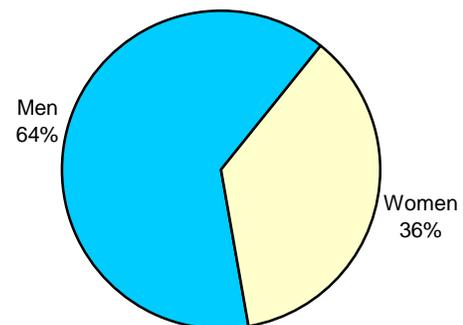
The information used to create these distributions is collected as part of the BLS survey. Employers participating in the survey provide the information for each case that resulted in days away from work.<sup>7</sup> Survey staff in the DLI Research and Statistics unit code the descriptions of the injury or illness and the incident into the appropriate nature, part of body, event, and source codes.

### Worker demographic characteristics

#### Gender

- The percentage of women among the DAFW cases increased from 36 percent in 2000, to 38 percent in 2001, and dropped back to 36 percent in 2002. Females comprised 48 percent of Minnesota's 2002 employment.
- The number of injured female workers has decreased, along with the total number of DAFW cases. In 1995, there were 14,300 women with DAFW cases, compared to 12,100 cases in 2002.

Figure 4.1 Gender of workers with days-away-from-work cases, Minnesota, 2002



<sup>7</sup> For employers with a significant number of cases (more than 30), a sampling scheme is used to select a reduced number of cases.

**Age**

- The age distribution of injured workers has changed significantly since 1995, reflecting the increasing average age of the work force. The U.S. Census showed that the median age of Minnesotan increased from 32.4 years in 1990 to 35.4 years in 2000.<sup>8</sup>
- The age of injured workers generally matched the age distribution of the labor force. Workers from 35 to 44 years of age accounted for 27 percent of the labor force and for 27 percent of the injured workers. Workers age 55 and older accounted for 13 percent of the labor force and 13 percent of the injured workers.
- The percentage of workers younger than age 35 decreased from 44 percent in 1995, to 36 percent in 2002, while the percentage of workers age 45 and older increased from 23 percent to 37 percent.
- Even though the total number of DAFW cases decreased by 9,000 from 1995 to 2002, the number of DAFW cases among workers age 55 and older increased by 980 cases, a 29 percent increase.

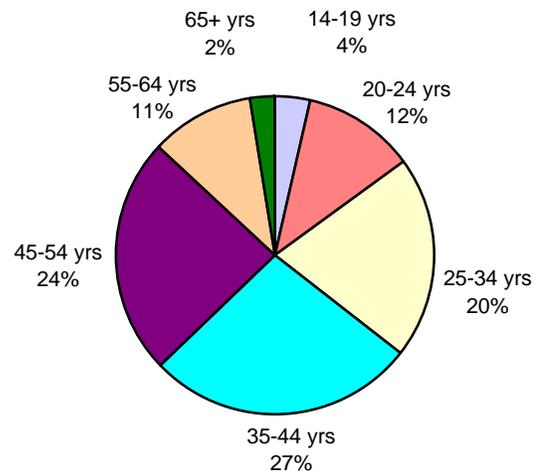
**Race or ethnic origin**

Some caution is needed in the analysis of race or ethnic origin, because 25 percent of the survey responses did not include the injured worker’s race or ethnic origin. The survey results reflect the increasing diversity of Minnesota’s workforce.

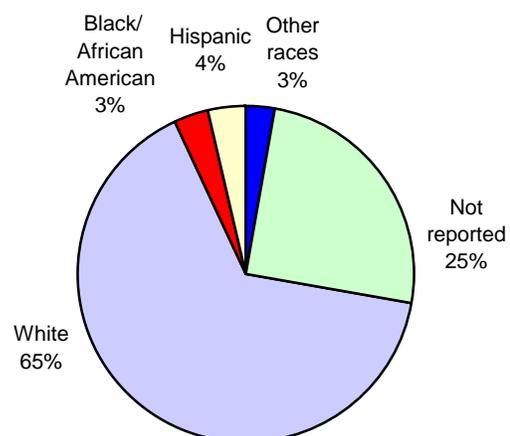
- While the total number of DAFW cases decreased by 9,000 from 1995 to 2002, the number of DAFW cases identifying nonwhite injured workers increased from 2,400 cases to 3,200 cases, a 31 percent increase.
- Minnesota employment estimates from the Current Population Survey for 2002 show that whites were 94 percent of employment.
- The reported number of Hispanic DAFW cases in 2002 was 76 percent higher than the number in 1995, and the percentage increased from 1.6 percent to 4.0 percent of all DAFW cases.

<sup>8</sup> Census 2000: Minnesota age profile. Minnesota Planning State Demographic Center, June 2003. <http://www.demography.state.mn.us/Cen2000profiles/cen00profage.html>.

**Figure 4.2** Age of workers with days-away-from-work cases, Minnesota, 2002



**Figure 4.3** Race or ethnic origin of workers with days-away-from-work cases, Minnesota, 2002



## Job characteristics

### Job tenure

A worker’s length of service with an employer is a general measure of the worker’s attainment of job skills. Injuries to workers with short job tenures may be indicative of workers who were not adequately trained or who did not meet all the physical requirements the job demanded.

- Thirty percent of the injured workers had been with their employers for less than one year at the time of injury. This percentage has not changed much since 1995.
- The distribution of job tenure among workers with DAFW cases varied greatly by industry: Workers with less than one year tenure accounted for 10 percent of mining cases but more than 40 percent of the cases in agriculture, forestry and fishing and in finance, insurance and real estate.

### Occupation

Occupation is presented both by broad category, in Figure 4.5, and by detailed occupation, in Figure 4.6.

- The percentage of operators, fabricators and laborers among DAFW cases decreased from 40 percent in 2000, to 35 percent in 2001 and 2002, an indication of the decrease in all injury and illness cases in the manufacturing industry. However, even with the decrease, operators, fabricators and laborers remained the largest occupation category of DAFW cases.
- The number of operators, fabricators and laborers among DAFW cases decreased by 20 percent from 2000, and by 28 percent from its 1995 level.

Figure 4.4 Length of service of workers with days-away-from-work cases, Minnesota, 2002

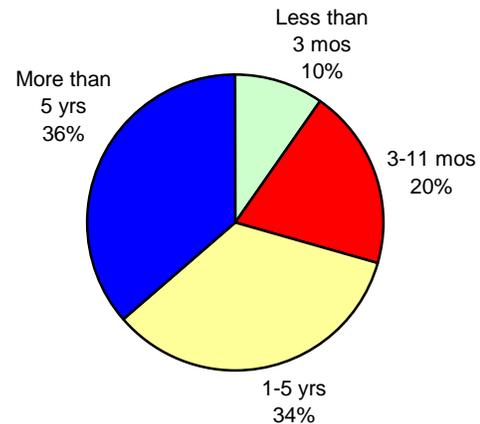
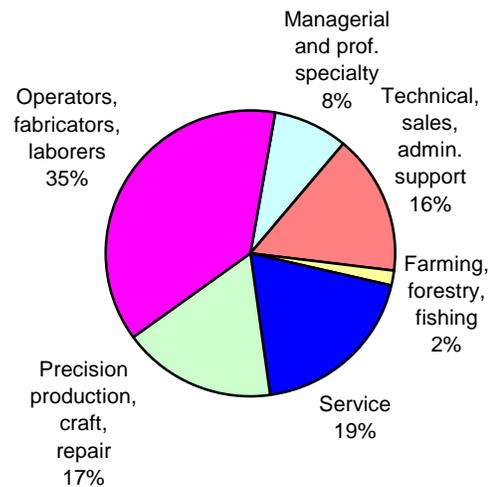
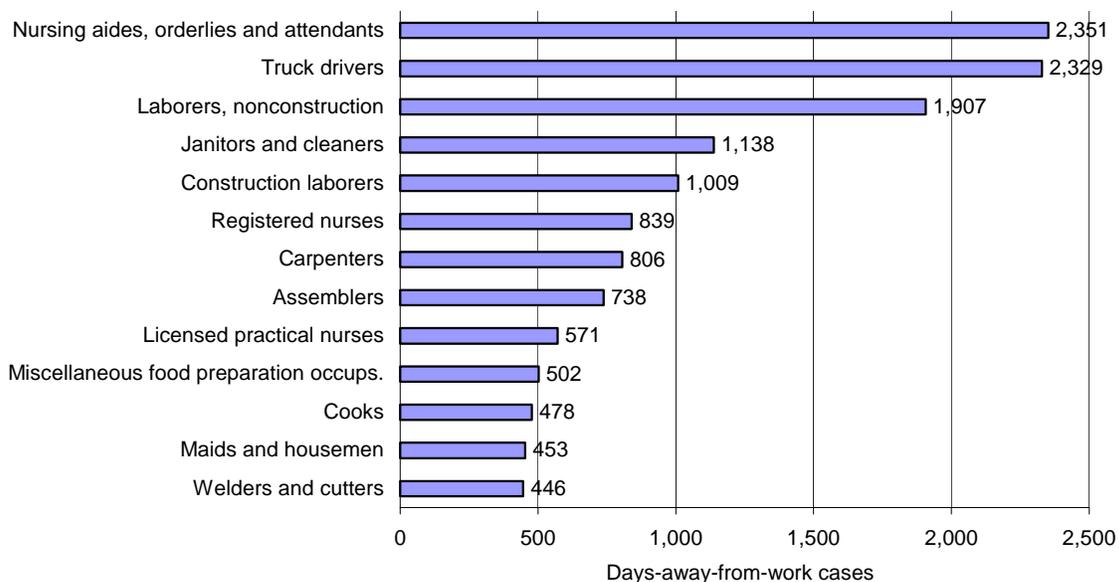


Figure 4.5 Occupation of workers with days-away-from-work cases, Minnesota, 2002



- The percentage of precision production, craft and repair workers also decreased from 2000 (20 percent) to 2002 (17 percent), but remained above its 1995 level (13 percent). Many of the workers in this occupation group are in the manufacturing industry.
- The number of cases for precision production, craft and repair workers decreased by 24 percent from 2000, although it was 5 percent above the number of cases in 1995.
- The detailed occupations with the highest numbers of cases were truck drivers and nursing aides, orderlies and attendants. These two occupations accounted for 16 percent of all DAFW cases. However, these two occupations have very different worker and injury profiles.
- Among truck drivers:
  - 99 percent of the injured workers were men;
  - 36 percent were from 35 to 44 years old, the largest age group;
  - 12 percent had been with their employer for less than three months and 40 percent had been with their employer for less than one year;
  - 45 percent were in the transportation and public utilities industry and 25 percent were in the wholesale industry;
- the median days away from work was nine days;
- 52 percent of the injuries were sprains and strains;
- 36 percent of the injuries were to the back; and
- the primary events causing injuries were overexertion (39 percent) and falls (35 percent). Transportation accidents accounted for 5 percent of the injuries.
- Among nursing aides, orderlies and attendants:
  - 89 percent of the injured workers were women;
  - 32 percent were from 16 to 24 years old and 26 percent were from 35 to 44 years old;
  - 14 percent had been with their employer for less than three months and 47 percent for less than one year;
  - the median days away from work was four days;
  - 69 percent of the injuries were sprains and strains;
  - 59 percent of the injuries were to the back;
  - 64 percent of the injuries were caused by overexertion, and 8 percent were due to assaults; and
  - health care patients were the source of 63 percent of the injuries.

Figure 4.6 Specific occupations with the highest number of cases, Minnesota, 2002



## Characteristics and causes of injuries and illnesses

This section presents information about the characteristics and causes of Minnesota’s workplace injuries and illnesses that result in DAFW cases. Characteristics include the nature of the injury or illness and the part of body affected. Causes consist of the event or exposure leading to the injury or illness and the source of injury or illness — the object, substance, person or environmental condition that directly produced or inflicted it.

As an example of how the four classifications combine to describe injuries and illnesses, consider an injury to a health care worker who sprains his back while helping a patient out of bed. The nature, or physical effect, is a sprain or strain; the part of body affected is his back; the event is overexertion while lifting; and the source is the patient.

For each of the classifications, a pie chart shows the distribution of the major descriptive groups and a table shows the 10 specific classification categories with the highest number of cases.

### Nature of injury or illness

- Sprains, strains and tears of muscles, tendons and joints accounted for 42 percent of the DAFW cases, a slight decrease from the 44 percent reported for 1998 through 2001.
- Reported cases of soreness and pain increased from 8 percent in 2001, to 12 percent in 2002.
- The most common specific nature of injury—sprains, strains, and tears—occurred primarily to the back, shoulder and knee. These injuries were often caused by worker motion and while lifting containers.
- Cuts and lacerations were most commonly reported in the retail trade and manufacturing industries. Most cuts were to fingers and hands.
- The majority of carpal tunnel syndrome cases were reported by women.

Figure 4.7 Nature of injury, Minnesota, 2002

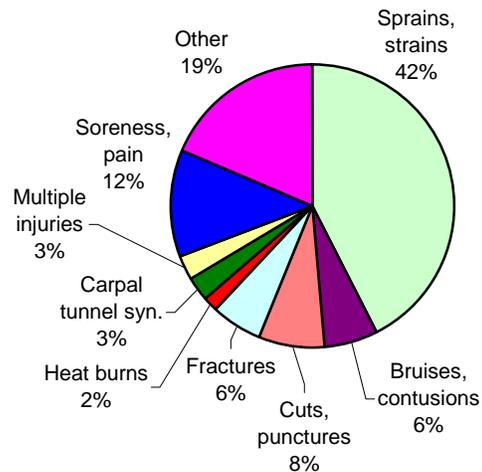


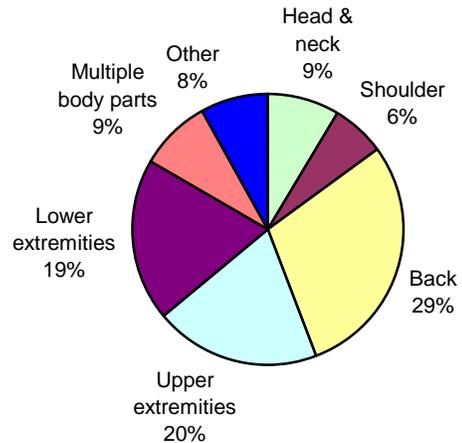
Figure 4.8 Most common detailed nature of injury classifications, Minnesota, 2002

Nature of injury	Number of cases
Sprains, strains, tears	14,220
Cuts, lacerations	2,250
Soreness, pain, hurt, except the back	2,090
Bruises, contusions	2,030
Back pain, hurt back	2,030
Fractures	1,940
Carpal tunnel syndrome	910
Hernia	842
Heat burns, scalds	570
Foreign bodies (superficial splinters, chips)	490

**Part of body**

- Injuries to the back continued to account for the largest proportion of cases. Back injuries have accounted for approximately 30 percent of the cases since at least 1993.
- The lumbar back, the most commonly injured part of the body, was most often injured by a sprain or strain, or with a more general description of back pain. Overexertion in lifting was the primary cause of lumbar back injuries.
- The most common injury to multiple body parts was sprains and strains. Nearly half the multiple body part injuries occurred as a result of falls.
- Most of the knee injuries were sprains and strains. Workers with knee injuries were away from work a median of 10 days.

**Figure 4.9** Part of body injured, Minnesota, 2002



**Figure 4.10** Most common detailed part of body classifications, Minnesota, 2002

Part of body injured	Number of cases
Back, lumbar region	5,210
Multiple body parts	2,880
Knees	2,660
Fingers(s), fingernail(s)	2,330
Shoulder, including clavicle, scapula	2,120
Wrist(s)	1,960
Ankle(s)	1,590
Eye(s)	1,210
Hand(s), except finger(s) location of diseases or disorders	1,000
	660

Event or exposure

- Overexertion continued to account for the largest proportion of cases.
- The most common specific event, overexertion in lifting, was most often cited for lifting containers, parts and materials, and health care patients.
- Falls to the floor, walkway or other surface commonly resulted in sprains and strains, fractures, and bruises and contusions.
- Overexertion in pulling or pushing objects often resulted in a back strain. The objects most commonly involved were machinery, parts and materials, containers and vehicles.

Figure 4.11 Event or exposure, Minnesota, 2002

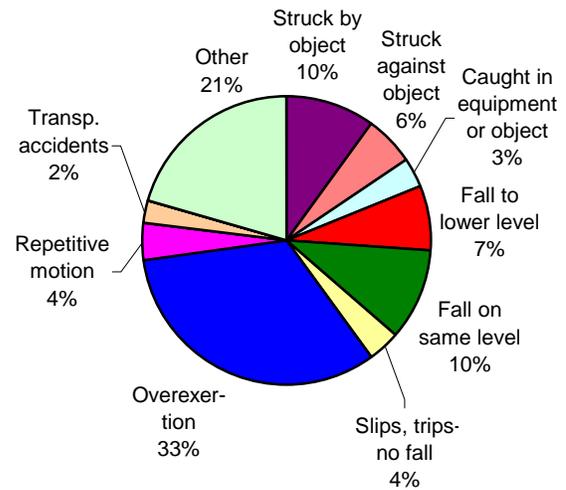


Figure 4.12 Most common detailed event or exposure classifications, Minnesota, 2002

Event or exposure	Number of cases
Overexertion in lifting	5,260
Fall to floor, walkway, or other surface	2,990
Overexertion in pulling or pushing objects	1,490
Bending, climbing, crawling, reaching, twisting	1,400
Slip, trip, loss of balance--without fall	1,230
Struck by falling object	1,070
Struck against stationary object	910
Fall from nonmoving vehicle	580
Contact with hot objects or substances	560
Overexertion in holding, carrying, turning, or wielding objects	560

Source of injury or illness

- Worker motion or position continued to be the most common injury source, accounting for 16 percent of the DAFW cases. This was slightly more cases than for workers injured by floors and ground surfaces.
- Floors and ground surfaces are often the source of injuries caused by falls.
- Workers with more than five years of job tenure accounted for 45 percent of the cases with the detailed source category, bodily motion or position. Worker motion or position is commonly associated with sprains and strains and repetitive motion injuries, including carpal tunnel syndrome. Injuries due to slips and trips are coded with bodily motion as the source.
- Women accounted for 87 percent of the injuries caused by health care patients. Injuries due to contact with health care patients was often in the process of lifting or helping move the patient and sometimes the result of an assault by the patient.
- Women accounted for 54 percent of the injuries caused by falls to floors of buildings. The resulting injuries often involved multiple body parts.

Figure 4.13 Source of injury or illness, Minnesota, 2002

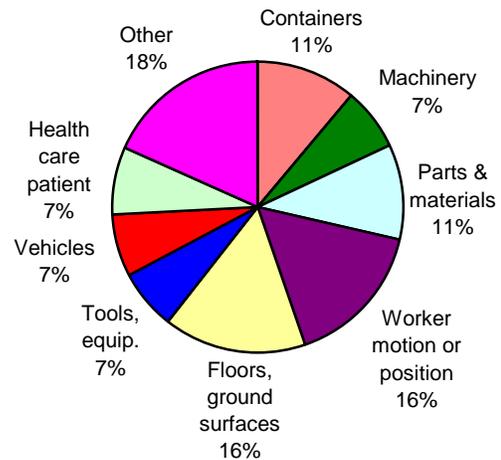


Figure 4.14 Most common detailed source of injury classifications, Minnesota, 2002

Source of injury or illness	Number of cases
Bodily motion or position of injured, ill worker	5,390
Health care patient or resident of health care facility	2,470
Floor of building	2,120
Boxes, crates, cartons	1,240
Truck	630
Ground	590
Chips, particles, splinters	520
Parking lots	510
Skids, pallets	510
Cart, dolly, handtruck	460

# 5

## Incidence and characteristics of workplace injuries and illnesses within industry divisions

This chapter presents the injury and illness survey results separately for each industry division. OSHA activity within each industry division is also presented. Each industry is presented as a two-page section.

Each industry division has a figure showing the total, LWD (and DART) and DAFW case incidence rates for the division as a whole, from 1992 through 2002. The accompanying table lists the major industry groups (two-digit SIC) and industry groups (three-digit SIC) in each division with publishable data reported in the survey, showing the 2002 incidence rate and the estimated number of recordable cases.

Because of the change in recordkeeping requirements, only the 2002 survey results are presented. In previous reports, the three-year average incidence rates were presented to show more stable rates than the single-year survey results. The BLS incidence rates are computed on samples that generally include less than one-tenth of the employers in an industry. The employer sample changes each year. This creates variations in the incidence rates due to the sampling itself. The BLS survey results showing the 2002 incidence rates and number of cases for each industry with publishable data are included in Appendix C.

For each industry division, the occupations with the highest percentage of DAFW cases in 2002 are listed and pie charts display the distribution of injury characteristics for the DAFW cases. The characteristics of the injured workers with DAFW cases are presented in the accompanying text.

The “Other” category in the pie charts include all classifications that do not account for at least 4 percent of the cases or that are not subcategories of the categories in the chart.

The final table for each industry shows the MNOSHA compliance and consultation activity for the years 2000 through 2003. For compliance activity, the table shows:

- the number of initial inspections conducted during the year;
- the percentage of those inspections that were conducted from the programmed inspection list, rather than as a result of imminent danger, complaints, fatalities or serious injuries;
- the percentage of all inspections resulting in at least one violation of a MNOSHA standard;
- the number of violations cited;
- the total amount of penalties assessed due to the violations; and
- the number of workers covered by the worksite inspections.

For consultation activity, the table shows:

- the number of worksites receiving visits from safety consultants;
- the percentage of consultation visits resulting in identification of safety and health hazards that would be violations of MNOSHA standards;
- the number of workers covered by the consultation visits; and
- the number of worksite visits that involved safety and health training, rather than the assessment of safety and health hazards.

It is possible for an establishment to receive services from both MNOSHA units – Compliance and Workplace Safety Consultation – during the same year. MNOSHA activity for all industries and descriptions of the MNOSHA programs are presented in Chapter 7.

## Agriculture, forestry and fishing

- For the division, the incidence rates were within the range of the 1999 to 2001 rates.
- DAFW cases accounted for 50 percent of the DART cases, lower than the 54 percent for all industries. This indicates that many of the injured workers were able to be accommodated by job transfer and job restrictions.
- Of the two major agricultural industry groups, agricultural production has higher incidence rates and accounts for slightly more cases.

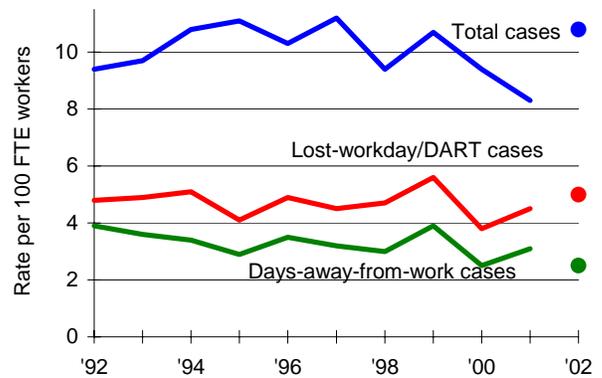
### Among DAFW cases in 2002

- Men accounted for 70 percent of the cases, down considerably from 91 percent in 2001.
- Workers from 35 to 44 years old made up 42 percent of the cases. Last year, workers from 20 to 24 years old made up 39 percent of the cases.
- Workers had been with the employer for less than three months in 23 percent of the cases, and between 3 months and 11 months in 19 percent of the cases.
- The farming, forestry and fishing occupational group was the largest occupational group and farm workers was the most common specific occupation.
- Sprains and strains were the most frequent injury type.
- Most of the injuries occurred to the back and upper extremities. Many of the upper extremity injuries occurred to the wrist and fingers.
- Overexertion, especially while lifting, was the most common injury event. Repetitive motion and getting caught in equipment or objects were the next most common injury events.
- Worker motion or position was the most common injury source. Vehicles and animals were each identified as the source of 17 percent of the injuries.

### MNOSHA activity in 2003

- Compliance inspections were similar in number to 2002, which was a large increase compared to earlier years. In both 2002 and 2003, six establishments were found to have violations.
- Consultation activity in agriculture increased substantially in 2003.

Figure 5.1 Incidence rates per 100 FTE workers, agriculture, forestry and fishing



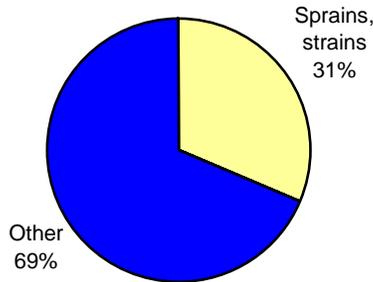
	SIC code	2002 rates			2002 total cases (1,000)
		Total	DART	Days away from work	
Agriculture, forestry, fishing		10.8	5.0	2.5	2.2
Agricultural production	01-02	14.4	7.1	2.8	1.2
Agricultural services	07	8.1	3.5	2.3	0.9

Figure 5.2 Occupations of workers with days away from work, agriculture, forestry and fishing, 2002

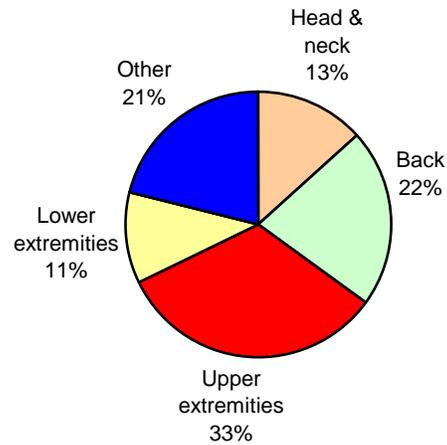
Occupation	Pct. of cases, 2002
Farm workers	31.5%
Laborers	19.0%

Figure 5.3 Injury characteristics, agriculture, forestry and fishing, 2002

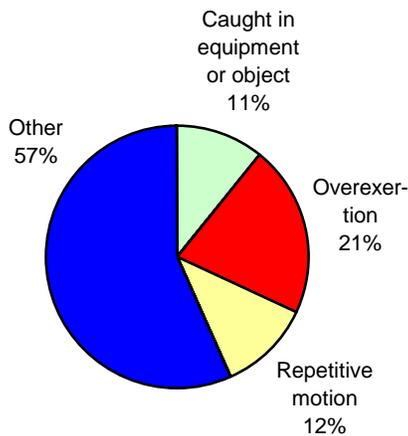
Nature of injury



Part of body injured



Event or exposure



Source of injury or illness

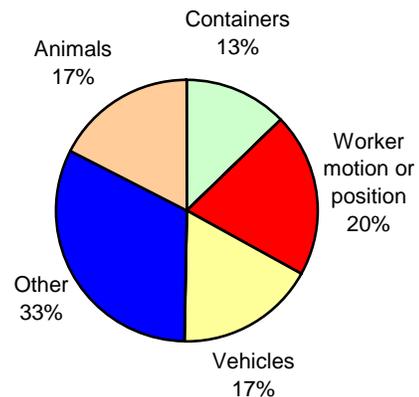


Figure 5.4 MNOSHA compliance and consultation activity, agriculture, forestry and fishing

Year	Compliance inspections						Consultation visits			
	Initial inspections	Pct. planned programmed	Pct. with violations	No. of violations	Penalties assessed	No. of workers covered	No. of worksites visited	Pct. with identified hazards	No. of workers at sites	No. of training visits
2000	6	33%	83%	17	\$ 43,690	348	0	--	--	0
2001	4	25%	25%	3	\$ 2,550	48	0	--	--	2
2002	10	60%	60%	20	\$ 5,410	194	3	100%	32	1
2003	11	64%	55%	10	\$ 2,245	170	8	75%	1,442	3

## Mining

- Mining is dominated by iron ore mining activity in northeastern Minnesota.
- About 250 workers had recordable injuries in 2002.
- Total case incidence rates have generally fallen since 1993. The incidence rates for 2002 were similar to the rates for previous years.

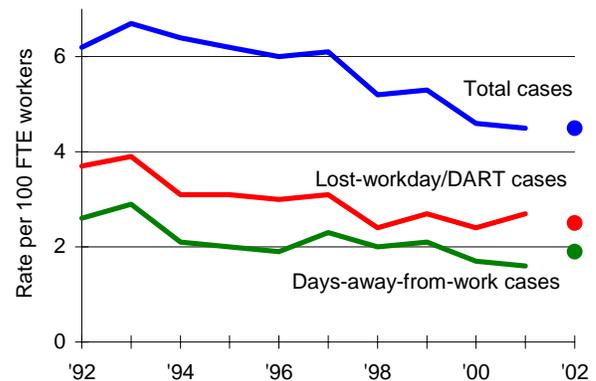
### Among DAFW cases in 2002

- Men accounted for 95 percent of the cases.
- Workers who were from 45 to 54 years old made up 39 percent of the cases, and another 30 percent were from 35 to 44 years old.
- Workers who had been with their employer for more than five years accounted for 77 percent of the cases.
- Precision production, craft and repair workers was the largest occupational group. The most common specific occupations were industrial machinery repairers and crushing and grinding machine operators.
- Sprains and strains were the most frequent injury type. The percentage with fractures was the highest of any industry.
- The back was the most commonly injured body area, followed by the lower extremities.
- Overexertion accounted for more than half the injuries.
- The most common injury source was ground surfaces.

### MNOSHA activity

- MNOSHA does not have jurisdiction over the mining industry, so a MNOSHA activity table is not available.

Figure 5.5 Incidence rates per 100 FTE workers, mining



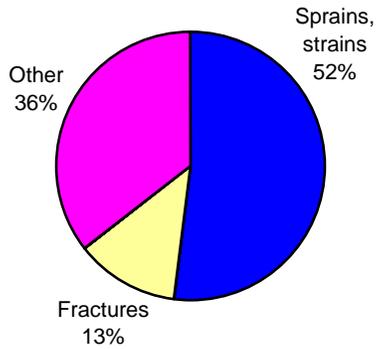
		2002 rates			2002 total cases (1,000)
		Total	DART	Days away from work	
Mining		4.5	2.5	1.9	0.2
Iron ores	101	4.3	2.5	2.2	0.2

Figure 5.6 Occupations of workers with days away from work, mining, 2002

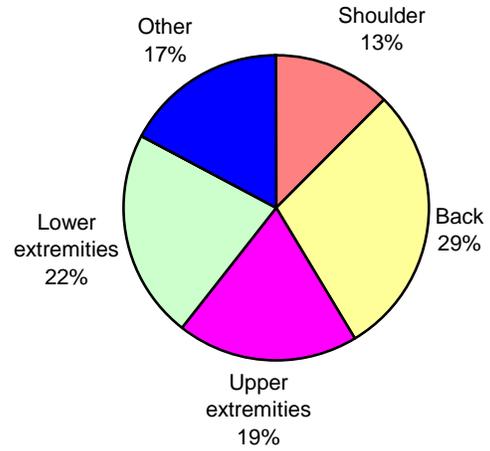
Occupation	Pct. of cases, 2002
Industrial machinery repairers	42.3%
Crushing and grinding machine operators	23.1%
Transportation and material moving	10.6%

Figure 5.7 Injury characteristics, mining, 2002

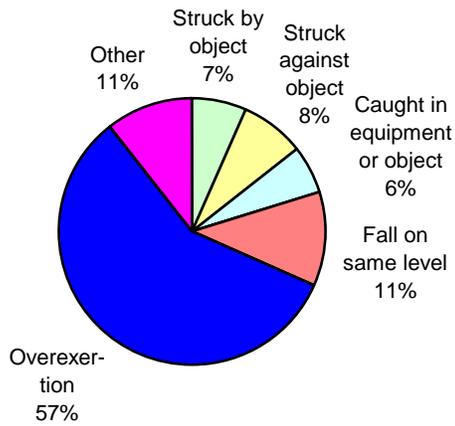
Nature of injury



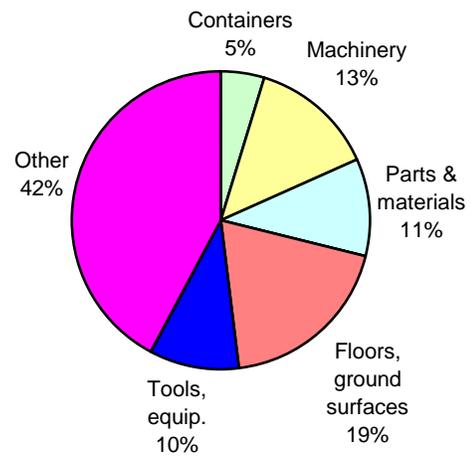
Part of body injured



Event or exposure



Source of injury or illness



## Construction

- The total case rate for 2002 was 9.4 cases per 100 FTE workers. Under the old recordkeeping rules, the lowest construction rate ever reported in the survey was 10.7 cases in 2001.
- DART cases were 65 percent of DAFW cases, compared to 54 percent for all industries, indicating the injured workers were less likely to have only work restrictions or job transfer.
- Construction has only 5.6 percent of private-sector employment, although it accounted for 9.2 percent of total cases and 11.7 percent of DAFW cases in the private sector.
- Although residential and nonresidential general building contractors had similar total case rates, the DAFW rate was much higher among residential general building contractors.
- Plumbing, heating and air conditioning contractors accounted for the greatest number of cases among the special trade contractors.

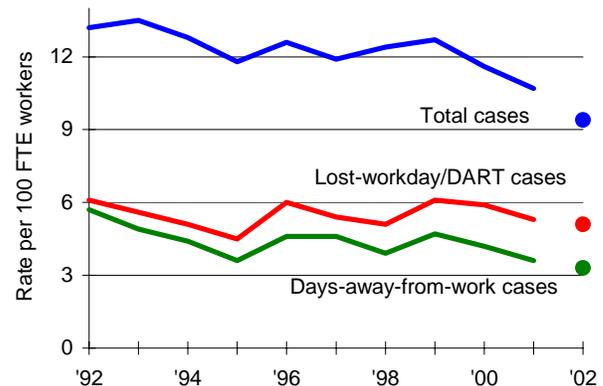
### Among DAFW cases in 2002

- Men were 98 percent of the cases.
- Workers from 25 to 34 years old accounted for 27 percent of the cases, the largest group.
- Workers with less than one year of job tenure made up 40 percent of the cases.
- The precision production, craft and repair category accounted for 63 percent of cases, with laborers and carpenters being the most common specific occupations.
- The most common injury was sprains and strains.
- The back and the lower extremities, primarily the knees and ankles, were the most commonly injured body areas.
- Overexertion, primarily from lifting objects, and falls were the most common injury events.
- The most common injury sources were parts and materials and the ground.

### MNOSHA activity

- Compliance activity increased in 2003, with more inspections and more violations than in previous years. Most inspections are planned and the majority result in at least one violation.
- Compared to 2002, the number of consultation visits decreased slightly in 2003, although it remained above the number in earlier years. The number of training visits increased by 49 percent.

Figure 5.8 Incidence rates per 100 FTE workers, construction



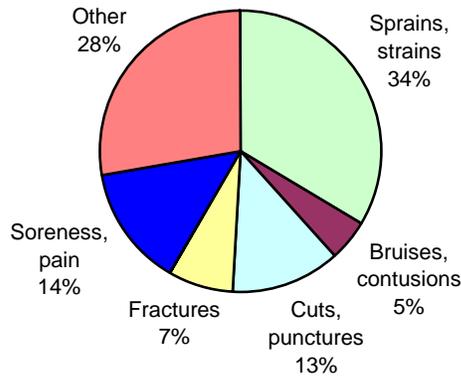
	SIC code	2002 rates			2002 total cases (1,000)
		Total	DART	Days away from work	
Construction		9.4	5.1	3.3	9.9
General bldg. contractors	15	11.1	5.3	3.7	2.5
Residential bldg. const.	152	11.3	6.3	5.3	1.3
Nonresidential bldg. const.	154	11.0	4.3	1.9	1.2
Heavy const., ex. bldg.	16	10.8	6.0	4.2	1.5
Highway & street const.	161	9.8	4.5	3.4	0.6
Heavy const., ex. hwy	162	11.5	7.1	4.8	0.9
Special trade contractors	17	8.6	4.8	3.0	5.9
Plumbing, heating, air-conditioning	171	11.0	5.2	3.2	2.0
Electrical work	173	5.7	2.2	1.2	0.8
Masonry, stonework, plastering	174	10.1	4.8	3.2	0.9

Figure 5.9 Occupations of workers with days away from work, construction, 2002

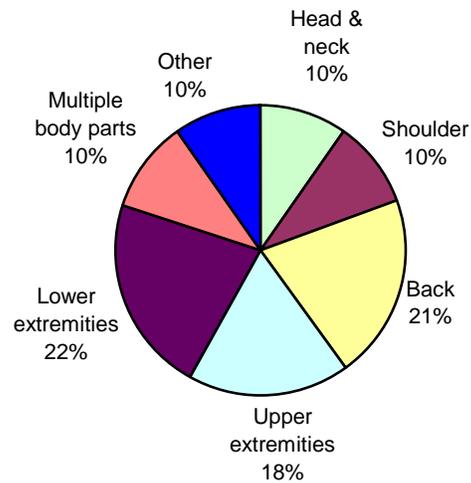
Occupation	Pct. of cases, 2002
Laborers	27.1%
Carpenters	20.2%
Plumbers, pipefitters, and steamfitters	8.1%
Insulation workers	5.3%
Supervisors	4.2%
Roofers	3.6%
Electricians	3.5%

Figure 5.10 Injury characteristics, construction, 2002

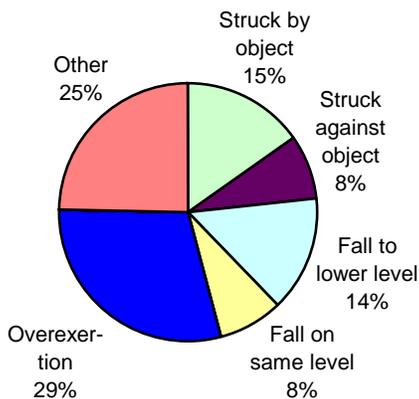
Nature of injury



Part of body injured



Event or exposure



Source of injury or illness

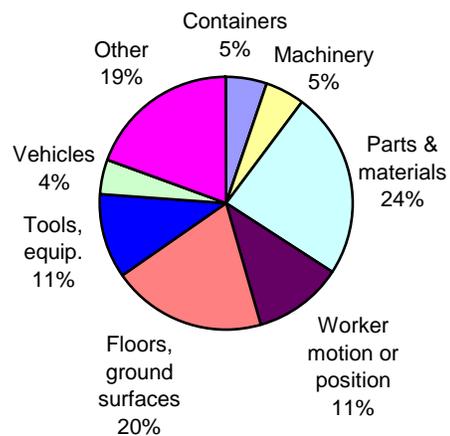


Figure 5.11 MNOSHA compliance and consultation activity, construction

Year	Compliance inspections					Consultation visits				
	Initial inspections	Pct. planned programmed	Pct. with violations	No. of violations	Penalties assessed	No. of workers covered	No. of worksites visited	Pct. with identified hazards	No. of workers at sites	No. of training visits
2000	1,034	83%	66%	1,266	\$715,219	6,227	460	98%	11,273	54
2001	1,106	87%	82%	1,407	\$769,471	6,405	505	92%	12,630	73
2002	899	87%	66%	1,142	\$676,634	5,036	579	98%	11,819	81
2003	1,411	92%	65%	1,501	\$659,120	7,411	541	75%	9,162	121

## Manufacturing

- The total case rate for 2002 was 8.0 cases per 100 FTE. Under the old recordkeeping rules, the lowest manufacturing rate reported in the survey was 7.9 cases in 2001.
- DAFW cases accounted for 42 percent of the DART cases, much lower than the overall rate of 54 percent. This indicates that work with job restrictions and job transfers were used to accommodate injured workers more often than in other industries.
- Motor vehicles and equipment manufacturing (SIC 371) had the highest total case rate, although its 2001 rate of 32.0 cases was its lowest rate since 1992 and its 2002 rate was 26.6 cases.

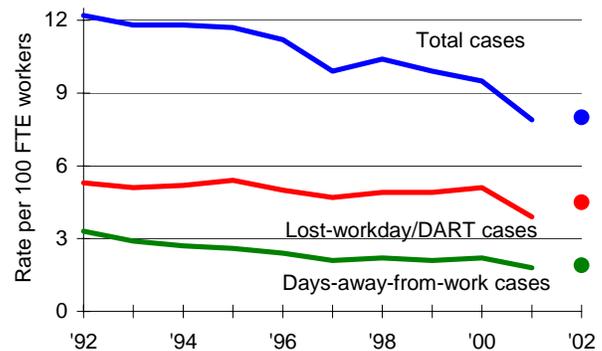
### Among DAFW cases in 2002

- Men accounted for 74 percent of the cases.
- The most common injured worker age group was workers from 35 to 44 years old with 30 percent of the cases.
- Workers on their jobs for more than five years made up 42 percent of the cases.
- Occupations in the operators, fabricators and laborers category accounted for 71 percent of cases, with miscellaneous machine operators, assemblers and laborers being the most common specific occupations.
- Upper extremities and the back were the most commonly injured body areas, followed by the lower extremities. Other than the back, the most commonly injured specific parts were fingers and wrists.
- Manufacturing accounted for 38 percent of the eye injuries.
- Overexertion, especially while lifting objects, was the most common injury event.
- The most common injury source was the workers' motion or bodily position. Many workers were injured handling various parts and materials.

### MNOSHA activity

- All of the compliance activity indicators increased in 2003, with more than 100 additional initial inspections than in 2002. Most of the inspections were programmed, due to the injury rates at the worksites.
- Consultation visits also increased in 2003. More training visits were provided in manufacturing than for any other industry.

Figure 5.12 Incidence rates per 100 FTE workers, manufacturing



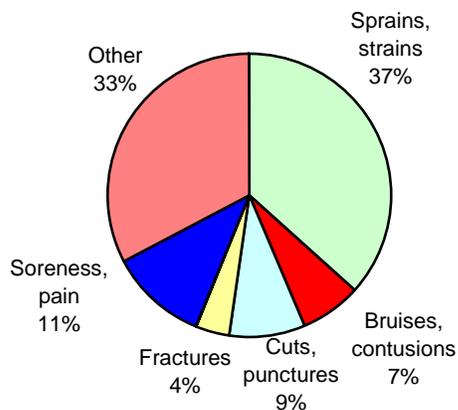
	SIC code	2002 rates			2002 total cases (1,000)
		Total	DART	Days away from work	
Manufacturing		8.0	4.5	1.9	31.0
Food & kindred products	20	10.6	6.7	2.4	5.5
Meat products	201	15.6	9.4	1.8	2.6
Dairy products	202	8.9	6.1	2.0	0.8
Lumber & wood products	24	10.4	6.8	3.5	2.1
Furniture & fixtures	25	16.2	8.0	3.5	1.0
Paper & allied products	26	4.9	2.5	1.3	1.3
Printing & publishing	27	6.7	3.7	1.8	3.3
Commercial printing	275	9.0	5.3	2.4	2.1
Chemicals & allied prod.	28	4.9	3.2	1.3	0.5
Rubber & plastics products	30	11.1	5.7	2.1	1.9
Stone, clay, glass products	32	12.8	7.7	3.2	1.2
Primary metal industries	33	15.1	9.9	4.5	1.1
Fabricated metal products	34	7.2	4.1	2.0	2.3
Structural metal products	344	12.2	7.7	3.4	1.2
Industrial machinery & equip.	35	7.3	3.3	1.6	4.5
General indust. machinery	356	7.6	4.8	2.0	0.6
Refrig. & service machinery	358	6.2	4.1	1.8	0.4
Electronic & other electric equipment	36	5.3	2.3	1.3	1.4
Transportation equipment	37	18.3	10.0	3.5	2.6
Motor vehicles & equip.	371	26.6	14.4	5.2	1.7
Instruments & related prod.	38	3.0	1.7	0.8	1.1
Misc. manuf. industries	39	6.3	3.5	0.9	0.4

Figure 5.13 Occupations of workers with days away from work, manufacturing, 2002

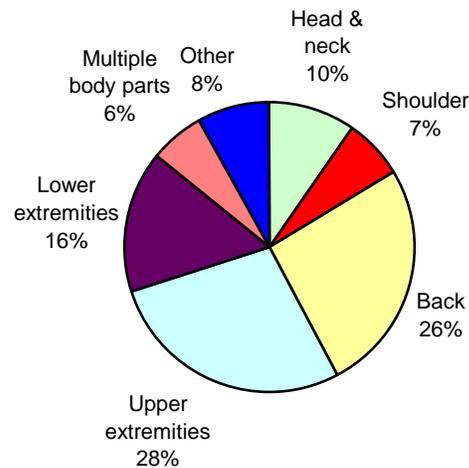
Occupation	Pct. of cases, 2002
Misc. machine operators	18.0%
Assemblers	9.0%
Laborers	8.9%
Welders and cutters	5.0%
Printing press operators	3.5%
Truck drivers	3.3%
Production supervisors	3.0%

Figure 5.14 Injury characteristics, manufacturing, 2002

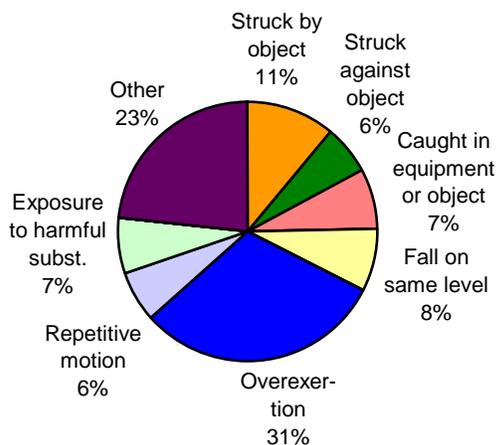
Nature of injury



Part of body injured



Event or exposure



Source of injury or illness

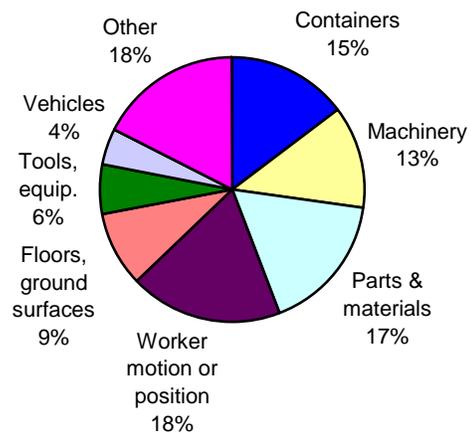


Figure 5.15 MNOSHA compliance and consultation activity, manufacturing

Year	Compliance inspections					Consultation visits				
	Initial inspections	Pct. planned programmed	Pct. with violations	No. of violations	Penalties assessed	No. of workers covered	No. of worksites visited	Pct. with identified hazards	No. of workers at sites	No. of training visits
2000	489	66%	77%	1,813	\$ 836,380	46,137	111	95%	8,362	85
2001	454	75%	76%	1,706	\$ 781,400	36,641	93	97%	8,500	115
2002	646	79%	75%	2,039	\$ 862,110	46,538	123	98%	20,137	102
2003	750	89%	78%	2,238	\$1,170,362	64,129	156	90%	11,125	200

### Transportation and public utilities

- The total case rate of 6.0 cases in 2001 was the lowest transportation and public utilities (TPU) rate ever reported in the survey.
- The 2002 rate for total recordable cases was 6.1 per 100 FTE.
- DART cases accounted for 69 percent of all recordable TPU cases, much higher than the statewide total of 51 percent. Similarly, DAFW cases accounted for 43 percent of all TPU cases, compared to 28 percent for all industries combined. This indicates that reported TPU cases are, on average, more severe than in most other industries.
- TPU was second-highest, after mining, in the percentage of DAFW cases with more than 30 days away from work.
- The total recordable case rate ranged from 3.0 in telephone communication to 8.3 for trucking and warehousing.
- Most of the TPU cases were in trucking and warehousing and air transportation.

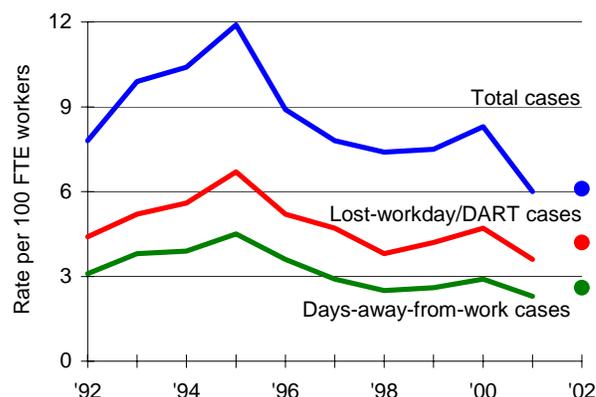
#### Among DAFW cases in 2002

- Men accounted for 79 percent of the cases.
- The 35 to 44 year-old age group was the most common, with 32 percent of the cases.
- Only 5 percent of the injured workers were with their employer for less than three months, while 38 percent had been with their employer for more than five years.
- Workers in the operators, fabricators and laborers occupation category made up 60 percent of the cases, with truck drivers being the most common specific occupation.
- The back and the lower extremities, especially the knees, were the most commonly injured body parts.
- Overexertion, primarily in lifting objects, was the most common injury event.
- The most common injury source was the floor and ground surfaces, a result of the many fall injuries.
- Semitrailer trucks injured many workers.

#### MNOSHA activity

- Compliance activity returned to its 2000 and 2001 level, although a higher percentage of the inspections were planned/programmed visits.
- Consultation activity returned to its 2000 level.

Figure 5.16 Incidence rates per 100 FTE workers, transportation and public utilities



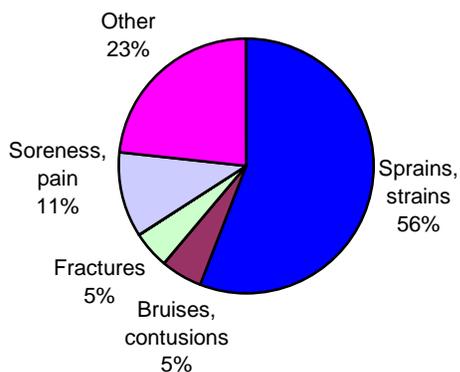
	SIC code	2002 rates			2002 total cases (1,000)
		Total	DART	Days away from work	
Transportation & public utilities		6.1	4.2	2.6	7.0
Railroad transportation	40	3.3	2.2	1.8	0.2
Local & interurban pass. transit	41	6.9	4.2	3.0	0.7
Trucking & warehousing	42	8.3	6.6	4.8	2.6
Transportation by air	45	8.0	6.1	2.4	2.0
Communication	48	3.4	1.7	1.1	0.8
Telephone communication	481	3.0	1.4	0.9	0.4
Electric, gas & sanitary services	49	5.7	2.9	1.7	0.8
Electric services	491	6.0	2.8	2.1	0.5

Figure 5.17 Occupations of workers with days away from work, transportation and public utilities, 2002

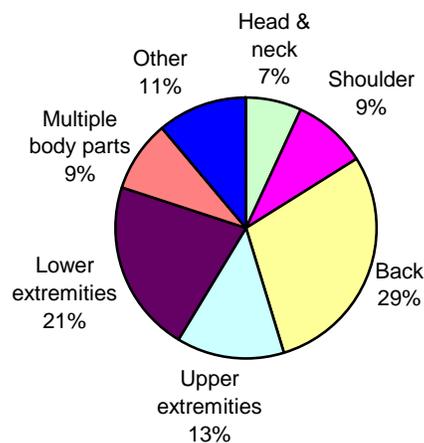
Occupation	Pct. of cases, 2002
Truck drivers	35.4%
Technicians and related support	11.2%
Freight, stock, and material handlers	9.8%
Bus drivers	6.3%
Bus, truck, and stationary engine mechanics	6.2%

Figure 5.18 Injury characteristics, transportation and public utilities, 2002

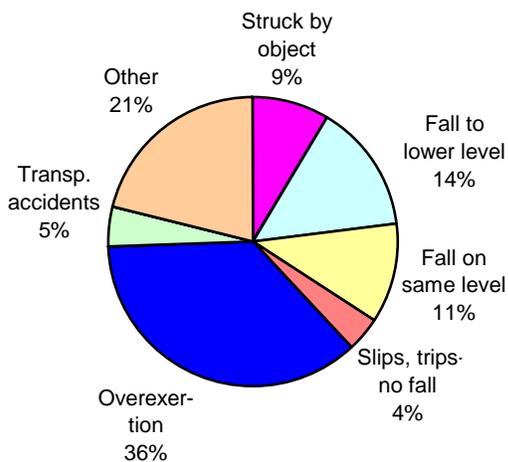
Nature of injury



Part of body injured



Event or exposure



Source of injury or illness

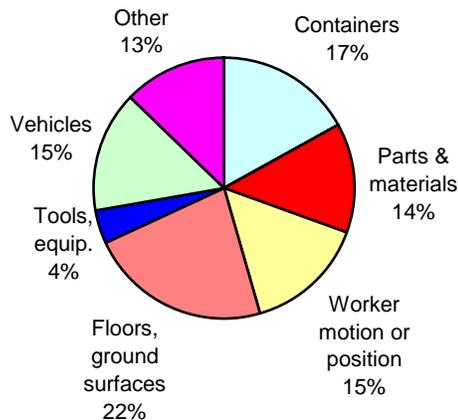


Figure 5.19 MNOSHA compliance and consultation activity, transportation and public utilities

Year	Compliance inspections					Consultation visits				
	Initial inspections	Pct. planned programmed	Pct. with violations	No. of violations	Penalties assessed	No. of workers covered	No. of worksites visited	Pct. with identified hazards	No. of workers at sites	No. of training visits
2000	59	54%	64%	122	\$ 65,200	8,031	17	100%	1,326	6
2001	61	36%	53%	89	\$155,217	5,271	7	86%	611	3
2002	47	55%	50%	57	\$ 50,843	8,039	9	89%	489	14
2003	59	66%	63%	94	\$ 39,907	3,414	15	80%	1,066	6

## Wholesale trade

- The total reported case rate was 6.1 cases per 100 FTE. The average total case rate from 1999 to 2001 was 6.6 cases, under the old recordkeeping rules.
- Among the wholesale trade industries reported in the survey, the total case rate ranged from a high of 8.9 cases per 100 FTE in lumber and construction materials to a low of 2.9 cases in professional and commercial equipment.

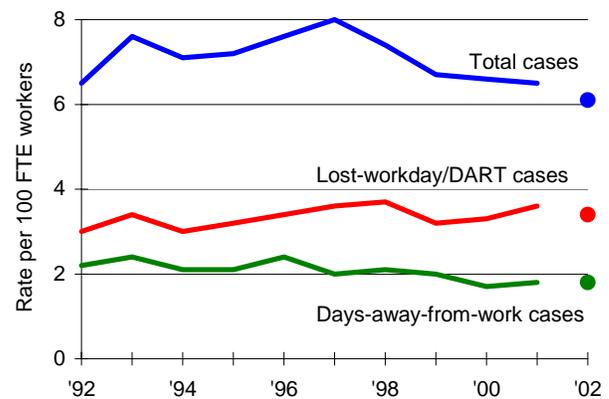
### Among DAFW cases in 2002

- Men accounted for 89 percent of the cases.
- The 35 to 44 year-old age group was the most common, accounting for 26 percent of the injured workers, followed closely by the 45 to 54 year-old group, with 25 percent of the cases.
- Injured workers who were with their employer for less than one year accounted for 34 percent of cases.
- Workers in the operators, fabricators and laborers occupation category comprised 66 percent of the cases, with truck drivers and laborers being the most common specific occupations.
- Sprains and strains accounted for 45 percent of the injuries.
- The back was the most commonly injured body part.
- Overexertion, primarily in lifting objects such as boxes and crates, was the most common injury event.
- Containers were the most common injury source. Many workers were also injured by falling to the ground.

### MNOSHA activity

- The number of compliance inspections increased dramatically compared to the 2002 level. The number of workers covered by the 2003 inspections was more than the numbers from 2001 and 2002 combined.
- Although the number of consultation visits decreased in 2003, there were increases in the number of workers covered and in training visits.

Figure 5.20 Incidence rates per 100 FTE workers, wholesale trade



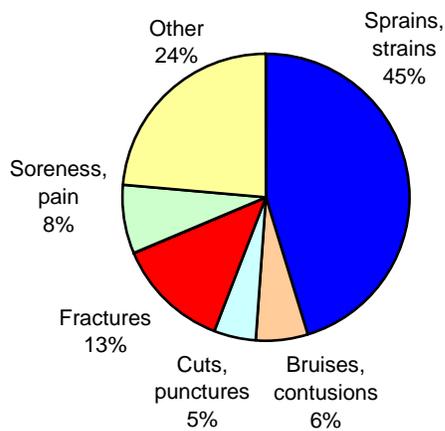
	SIC code	2002 rates			2002 total cases (1,000)
		Total	DART	Days away from work	
Wholesale trade		6.1	3.4	1.8	8.5
Motor vehicles, parts & supplies	501	8.8	5.3	2.9	0.9
Lumber & const. materials	503	8.9	4.9	2.9	0.6
Prof. & commercial equip. Machinery, equip. & supplies	504	2.9	1.5	0.8	0.6
Groceries & related products	514	7.2	2.8	1.6	1.2
		8.0	5.7	2.3	1.9

Figure 5.21 Occupations of workers with days away from work, wholesale trade, 2002

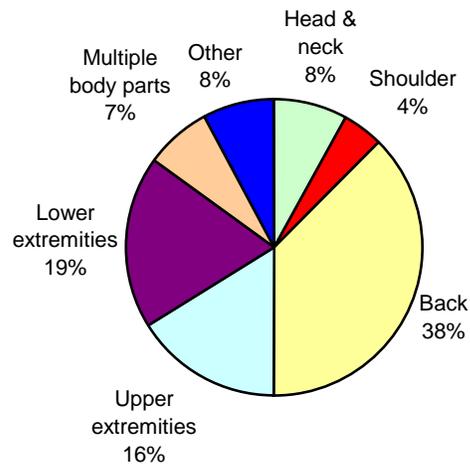
Occupation	Pct. of cases, 2002
Truck drivers	22.8%
Laborers	22.7%
Technicians and related support	5.3%
Driver-sales workers	4.9%
Stock and inventory clerks	4.5%
Freight, stock and material handlers	4.4%

Figure 5.22 Injury characteristics, wholesale trade, 2002

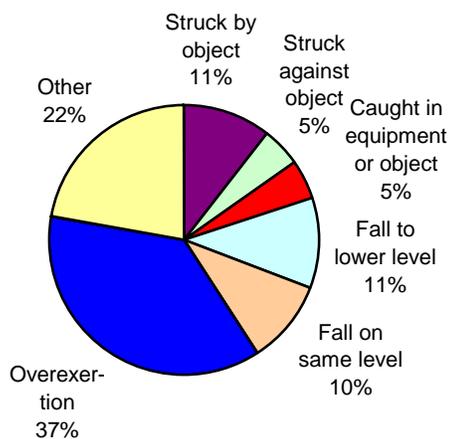
Nature of injury



Part of body injured



Event or exposure



Source of injury or illness

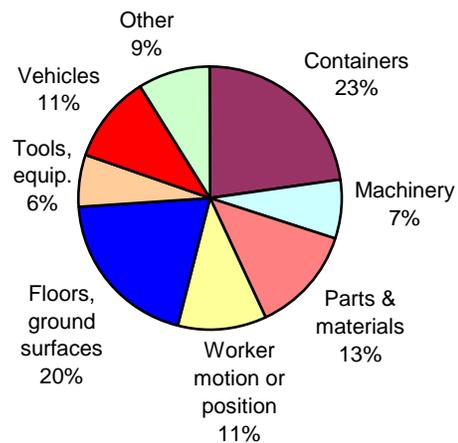


Figure 5.23 MNOSHA compliance and consultation activity, wholesale trade

Year	Compliance inspections					Consultation visits				
	Initial inspections	Pct. planned programmed	Pct. with violations	No. of violations	Penalties assessed	No. of workers covered	No. of worksites visited	Pct. with identified hazards	No. of workers at sites	No. of training visits
2000	60	77%	78%	169	\$109,340	3,719	7	100%	1,334	2
2001	79	73%	68%	231	\$283,493	4,077	2	100%	58	1
2002	45	73%	60%	88	\$ 63,870	2,532	13	100%	373	2
2003	83	78%	81%	229	\$153,613	6,689	8	75%	1,442	3

## Retail trade

- For the retail division, the total reported case rate for 2002 was 5.8 cases per 100 FTE.
- Retail trade accounted for about 22 percent of employment and 18 percent of total injury and illness cases.
- Food stores had the highest injury rate among the retail industry groups.
- Workers in restaurants and bars accounted for 28 percent of all retail division cases, but only 12 percent of the DART cases.

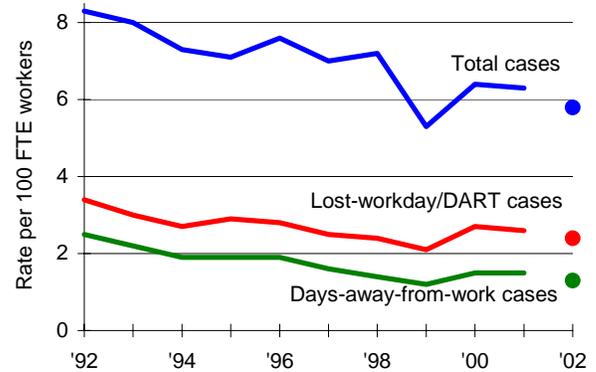
### Among DAFW cases in 2002

- Men accounted for 61 percent of the cases.
- Workers from 45 to 54 years old were the most common age group, with 24 percent of the cases; 22 percent of the injured workers were 35 to 44 years old.
- Eight percent of the injured retail workers were 16 to 19 years old, the highest percentage of any industry division.
- Workers who were with their employer for less than one year accounted for 35 percent of the cases.
- The technical, sales and administrative support occupation category made up 35 percent of the cases. The most common specific occupations were cooks and food preparers and sales workers.
- The upper extremities, especially fingers, were the most commonly injured parts, followed closely by the back and lower extremities.
- Overexertion, primarily in lifting objects, was the most common injury event. Many of the injuries were caused by workers being struck by or against objects, resulting in cuts.
- The most common injury sources were worker motion or position and containers.

### MNOSHA activity

- Compliance activity increased in 2003, with nearly half of the inspections being planned/programmed. There was a large increase in the number of violations.
- Consultation activity decreased significantly compared to earlier years.

Figure 5.24 Incidence rates per 100 FTE workers, retail trade



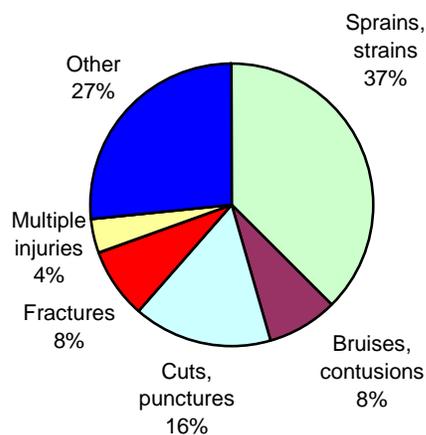
	SIC code	2002 rates			2002 total cases (1,000)
		Total	DART	Days away from work	
<b>Retail trade</b>		<b>5.8</b>	<b>2.4</b>	<b>1.3</b>	<b>18.2</b>
Bldg. materials & garden Lumber & other bldg. materials	52	7.2	3.8	2.2	1.4
General merchandise stores	53	7.0	3.4	1.9	3.1
Food stores	54	9.2	4.1	2.1	3.4
Auto dealers & service stations	55	5.6	2.6	1.4	2.6
New & used car dealers	551	7.1	2.8	1.8	1.5
Apparel & accessory stores	56	3.1	0.9	0.6	0.4
Furniture & home furnishings	57	4.6	3.2	1.7	1.0
Eating & drinking places	58	5.5	1.0	0.6	5.1
Miscellaneous retail	59	2.8	1.6	0.9	1.2

Figure 5.25 Occupations of workers with days away from work, retail trade, 2002

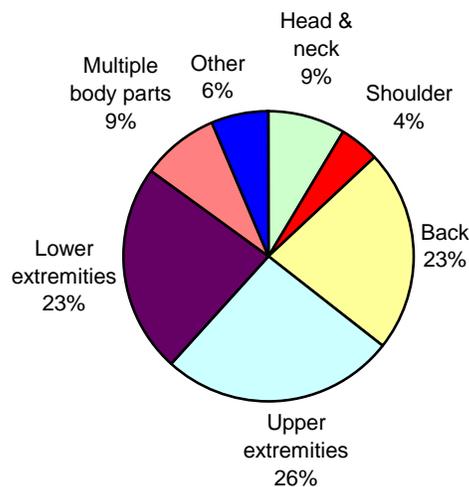
Occupation	Pct. of cases, 2002
Cooks and food preparation	13.4%
Sales workers	12.2%
Sales supervisors	8.4%
Automobile mechanics	7.3%
Cashiers	5.9%
Laborers	7.5%
Truck drivers	4.8%
Stock handlers and baggers	4.7%

Figure 5.26 Injury characteristics, retail trade, 2002

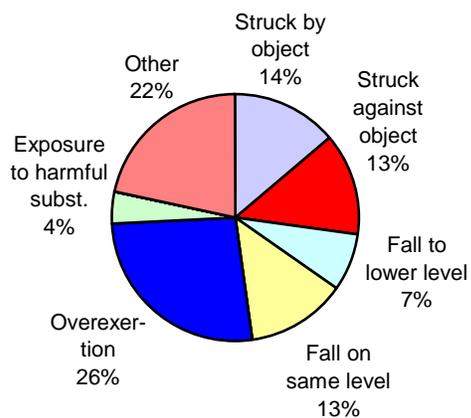
Nature of injury



Part of body injured



Event or exposure



Source of injury or illness

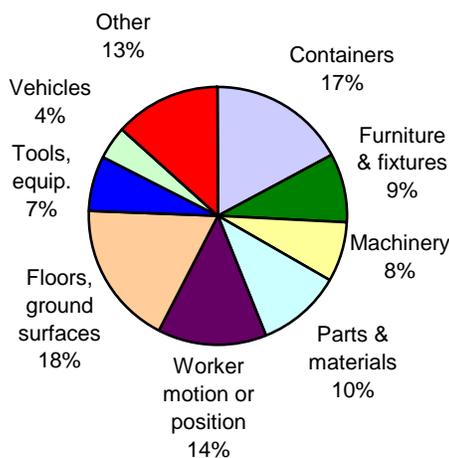


Figure 5.27 MNOSHA compliance and consultation activity, retail trade

Year	Compliance inspections						Consultation visits			
	Initial inspections	Pct. planned programmed	Pct. with violations	No. of violations	Penalties assessed	No. of workers covered	No. of worksites visited	Pct. with identified hazards	No. of workers at sites	No. of training visits
2000	35	29%	63%	83	\$ 44,862	1,095	5	100%	150	1
2001	37	38%	63%	53	\$ 20,785	2,286	6	100%	337	1
2002	27	22%	50%	28	\$ 15,287	1,754	9	100%	661	2
2003	46	46%	48%	90	\$ 37,315	1,788	3	100%	94	1

### Finance, insurance and real estate

- This industry had the lowest injury rates of any industry. Total case rates have remained stable since 1997, and the LWD and DAFW rates have remained below one case per 100 full-time-equivalent workers since 1993.
- DART cases accounted for only 38 percent of total cases, compared to 51 percent for all industries, indicating most cases are not severe injuries.
- Injuries in the real estate major industry group occur primarily among workers of residential and nonresidential building operator firms.

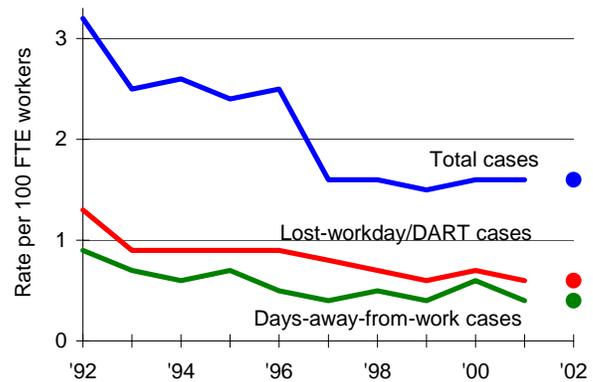
#### Among DAFW cases in 2002

- Women accounted for 64 percent of the cases.
- Workers from 35 to 44 years old were the most common injured worker age group, with 56 percent of the cases.
- Injured workers who were with their employer for between three months and one year comprised 43 percent of the cases.
- More than half of the injured workers were in the technical, sales and administrative support occupation category; administrative support was the most common specific occupation.
- Sprains and strains accounted for more than half of the injuries.
- The lower extremities, especially knees, were the most commonly injured body parts.
- Overexertion, primarily in lifting objects, was the most common injury event, followed closely by slips and trips, without falling.
- The most common injury source was worker motion or position, consistent with both overexertion and slip injuries.

#### MNOSHA activity

- Compliance activity remained low, with most visits the result of worker complaints. The low activity level is consistent with the very low incidence rates in this industry.
- There were no consultation workplace visits and only one training visit occurred.

Figure 5.28 Incidence rates per 100 FTE workers, finance, insurance and real estate



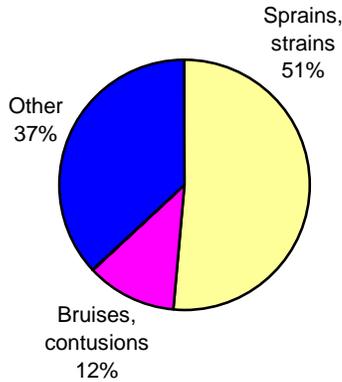
		2002 rates			2002 total cases (1,000)
		Total	DART	Days away from work	
Finance, insur. & real estate	SIC code	1.6	0.6	0.4	2.4
Real estate	65	3.6	1.5	1.1	0.8

Figure 5.29 Occupations of workers with days away from work, finance, insurance and real estate, 2002

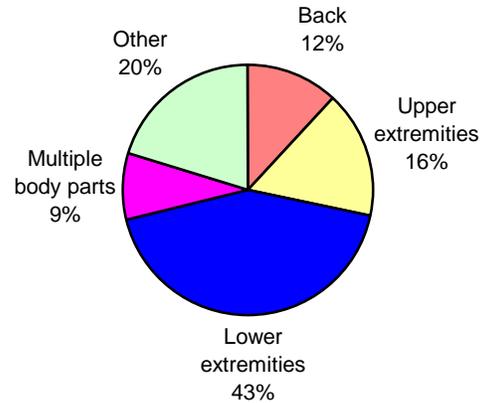
Occupation	Pct. of cases, 2002
Administrative support, incl. clerical	46.3%
Mechanics and repairers	18.2%
Groundskeepers and gardeners	8.5%
Janitors and cleaners	7.6%

Figure 5.30 Injury characteristics, finance, insurance and real estate, 2002

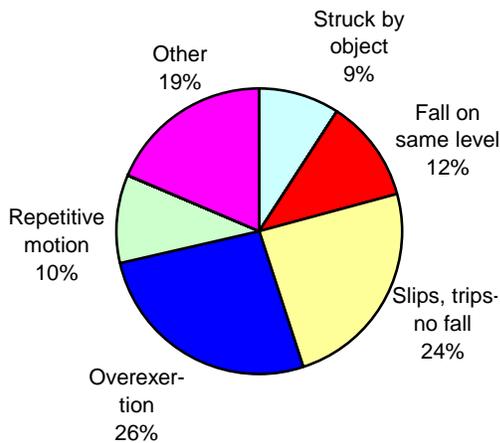
Nature of injury



Part of body injured



Event or exposure



Source of injury or illness

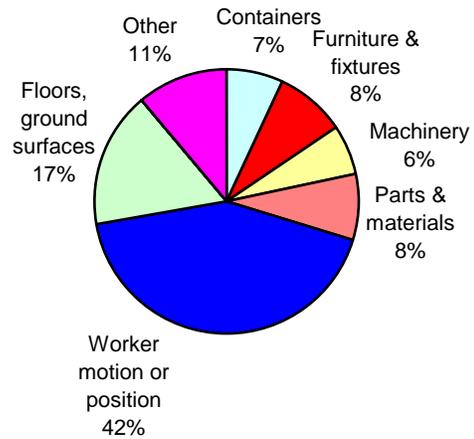


Figure 5.31 MNOSHA compliance and consultation activity, finance, insurance and real estate

Year	Compliance inspections					Consultation visits				
	Initial inspections	Pct. planned programmed	Pct. with violations	No. of violations	Penalties assessed	No. of workers covered	No. of worksites visited	Pct. with identified hazards	No. of workers at sites	No. of training visits
2000	11	9%	55%	23	\$ 5,525	292	0	--	--	5
2001	4	0%	50%	7	\$ 2,080	75	0	--	--	3
2002	4	0%	75%	7	\$ 5,590	57	0	--	--	4
2003	5	20%	60%	8	\$ 5,150	19	0	--	--	1

## Services

- For the division, all three case incidence rates in 2002, using the new recordkeeping requirements, remained at or near the average rates for 1999 to 2001.
- Sixty percent of the service industry injuries occurred to workers in health services, primarily nursing facilities and hospitals. These industries had the highest incidence rates among service industries.

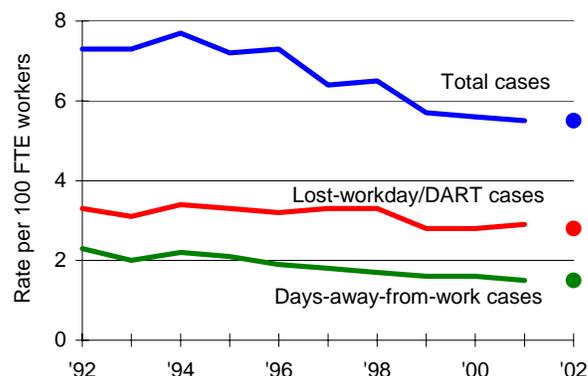
### Among DAFW cases in 2002

- Women accounted for 70 percent of the cases.
- Workers 35 to 44 years old accounted for 26 percent of the cases.
- Injured workers who were with their employer for less than one year made up 34 percent of the cases.
- Service occupations accounted for 44 percent of the cases, and 21 percent were in managerial and professional specialty occupations, the highest percentage of any industry. Health care occupations, primarily nursing aides, orderlies and attendants and nurses were the most common specific occupations.
- Nearly half of the injuries were sprains and strains, and the back was the most commonly injured body part. The service industry had the highest back injury percentage of any industry.
- Overexertion, primarily in lifting, was the most common injury event. Among private sector industries, services accounted for 91 percent of workers injured by accidents or violent acts.
- Health care patients were the most common source of injury, often while being lifted. The worker's own motion or position injured many others.

### MNOSHA activity

- Compliance activity decreased in 2003, mostly due to completion of the nursing home inspection focus in 2002. The number of nursing home inspections dropped by 70 percent. Even so, 42 percent of the workers covered by inspections worked in nursing homes.
- Consultation activity also decreased in 2003. Nursing homes accounted for a large part of the consultation activity, with 44 percent of the worksite visits.

Figure 5.32 Incidence rates per 100 FTE workers, services



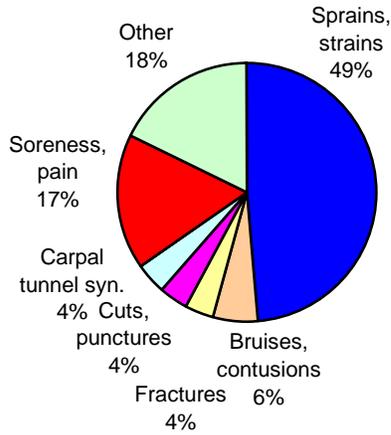
	SIC code	2002 rates			2002 total cases (1,000)
		Total	DART	Days away from work	
Services		5.5	2.8	1.5	28.4
Hotels, other lodging places	70	5.9	3.5	1.6	1.0
Personal services	72	5.2	3.5	1.9	1.0
Business services	73	2.2	0.7	0.4	1.9
Auto repair, serv., & parking	75	3.7	2.3	1.5	0.7
Misc. repair services	76	3.9	2.7	2.2	0.2
Amusement & rec. services	79	5.9	3.1	1.6	1.0
Health services	80	9.3	4.7	2.5	17.1
Nursing & pers care facil.	805	19.4	11.9	5.2	6.6
Hospitals	806	11.3	5.5	3.4	7.6
Home health care services	808	6.0	2.9	1.6	0.4
Education services	82	2.8	1.3	0.9	0.6
Social services	83	6.5	3.8	1.9	3.8
Residential care	836	8.0	4.7	1.9	1.8

Figure 5.33 Occupations of workers with days away from work, services, 2002

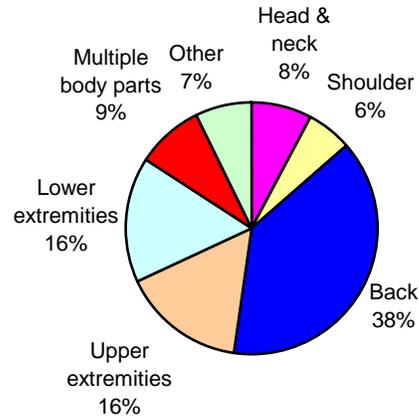
Occupation	Pct. of cases, 2002
Nursing aides, orderlies, and attendants	26.1%
Registered nurses	9.3%
Licensed practical nurses	6.3%
Maids and housemen	5.0%
Social workers	4.4%
Janitors and cleaners	3.1%
Laborers	2.7%
General office clerks	2.6%

Figure 5.34 Injury characteristics, services, 2002

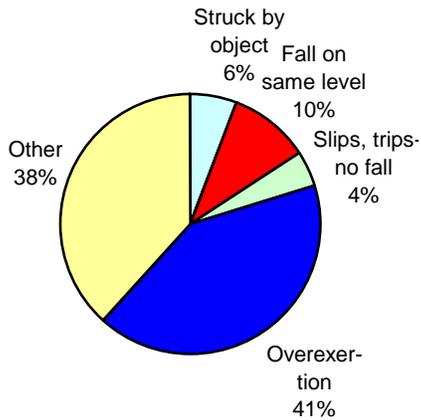
Nature of injury



Part of body injured



Event or exposure



Source of injury or illness

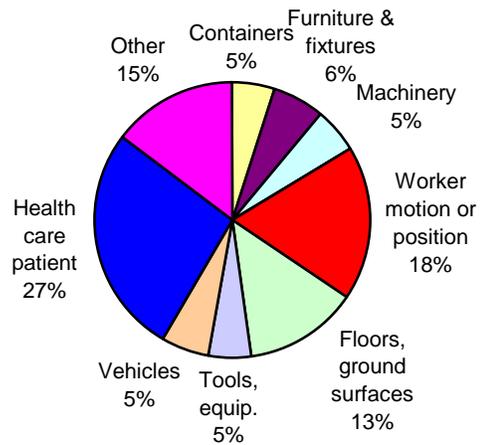


Figure 5.35 MNOSHA compliance and consultation activity, services

Year	Compliance inspections					Consultation visits				
	Initial inspections	Pct. planned programmed	Pct. with violations	No. of violations	Penalties assessed	No. of workers covered	No. of worksites visited	Pct. with identified hazards	No. of workers at sites	No. of training visits
2000	108	50%	68%	210	\$116,380	5,549	40	100%	2,948	73
2001	81	28%	65%	146	\$ 64,170	5,836	43	98%	4,396	95
2002	165	67%	70%	331	\$151,042	13,740	76	100%	7,146	82
2003	97	51%	65%	145	\$202,762	7,951	56	89%	5,538	47

### State government

- For the division, the 2002 incidence rates stayed close to the averages for the 1999 to 2001 period.
- DART cases comprised only 38 percent of all cases, significantly below the overall percentage of 51 percent.
- Employees at state government education institutions, particularly state colleges and universities, constituted the largest group of injured workers.

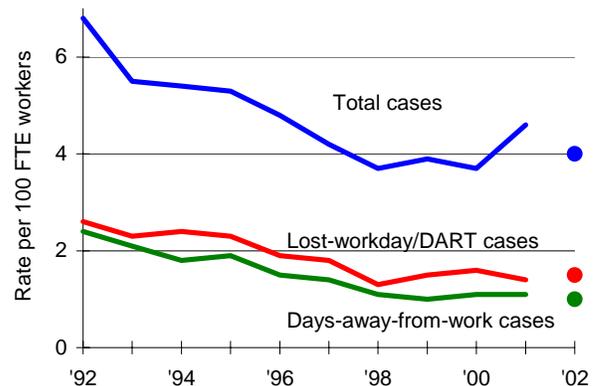
#### Among DAFW cases in 2002

- Men accounted for 55 percent of the cases.
- Workers from 45 to 54 years old made up 36 percent of the cases; 29 percent were from 35 to 44 years old.
- Injured workers who were with their employer for more than five years accounted for 66 percent of the cases, a result of the generally long job tenure of state government workers.
- Service occupation workers were 38 percent of the cases. Nursing aides, orderlies and attendants and correctional institution officers were the most common specific occupations.
- Sprains and strains accounted for 38 percent of the injuries; the back was the most commonly injured body part.
- Overexertion, primarily in lifting, was the most common injury event. State government workers had the highest percentage of injuries due to assaults and other violent acts.
- Many of the lifting injuries resulted while caring for health care facility patients.

#### MNOSHA activity

- There were fewer inspections in both 2002 and 2003 than in 2000 and 2001. Most compliance inspections in 2002 and 2003 were planned-programmed inspections. However, there were significantly fewer violations found.
- The amount of consultation activity to state government worksites increased dramatically in 2003, with a 10-fold increase in the number of workers at sites visited.

Figure 5.36 Incidence rates per 100 FTE workers, state government



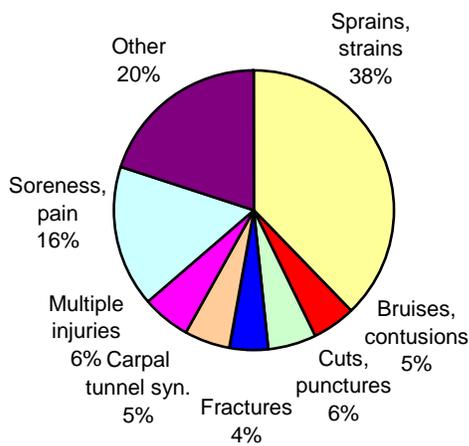
	SIC code	2002 rates			2002 total cases (1,000)
		Total	DART	Days away from work	
State government		4.0	1.5	1.0	2.4
Construction		7.2	4.4	2.1	0.3
Services		3.7	1.2	1.1	1.3
Health services	80	8.5	6.0	4.9	0.3
Education services	82	3.4	0.7	0.6	1.0
Public administration		3.7	1.6	0.7	0.8

Figure 5.37 Occupations of workers with days away from work, state government, 2002

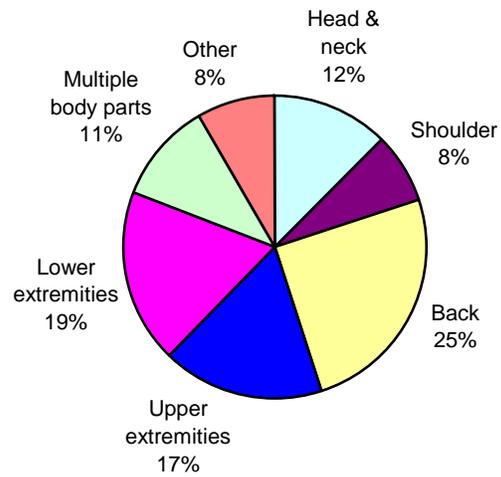
Occupation	Pct. of cases, 2002
Nursing aides, orderlies, and attendants	13.6%
Correctional institution officers	10.8%
Construction trades	9.7%
Janitors and cleaners	6.6%
Licensed practical nurses	6.1%
Mechanics and repairers	5.7%
General office clerks	4.4%

Figure 5.38 Injury characteristics, state government, 2002

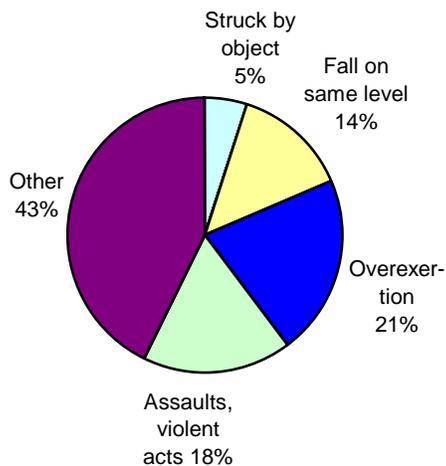
Nature of injury



Part of body injured



Event or exposure



Source of injury or illness

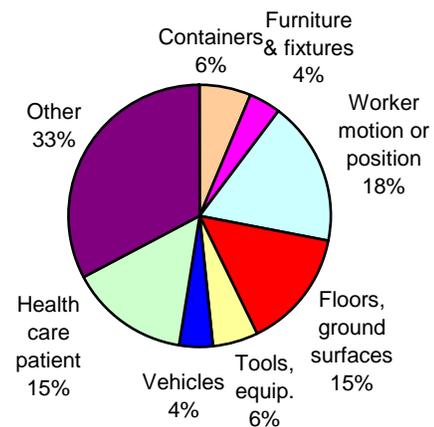


Figure 5.39 MNOSHA compliance and consultation activity, state government

Year	Compliance inspections						Consultation visits			
	Initial inspections	Pct. planned programmed	Pct. with violations	No. of violations	Penalties assessed	No. of workers covered <sup>1</sup>	No. of worksites visited	Pct. with identified hazards	No. of workers at sites	No. of training visits
2000	13	15%	62%	31	\$ 30,870	500	17	100%	384	46
2001	13	15%	50%	15	\$ 8,260	760	5	80%	597	47
2002	7	43%	43%	4	\$ 1,650	750	8	88%	485	36
2003	8	63%	63%	6	\$ 4,400	320	25	56%	5,049	28

1. Estimate based on proportion of public sector inspections and total public sector workers covered.

## Local government

- For the division, the total recordable case rate was 5.2 cases per 100 FTE in 2002. The average rate for 1999 to 2001 was 6.1 cases, using the old recordkeeping guidelines.
- Local public schools accounted for 40 percent of the cases.
- Local government hospitals and nursing and personal care facilities have among the highest case rates of any industry in the state.

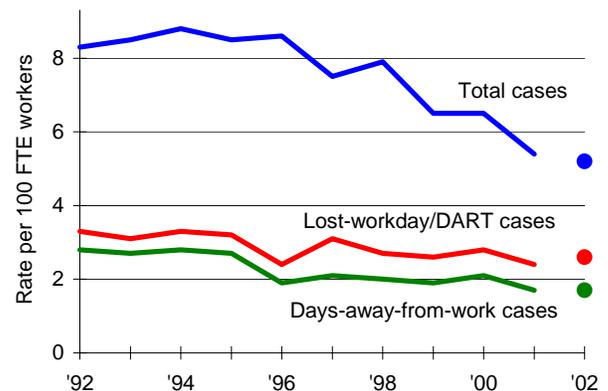
### Among DAFW cases in 2002

- Men accounted for 55 percent of the cases. Among service providers, such as health care and education, 58 percent of the injured workers were women. Among public administration agencies, such as police and fire protection, 77 percent of the injured workers were men.
- Workers from 45 to 54 years old comprised 30 percent of the cases; 27 percent were 35 to 44 years old.
- Workers who were with their employer for longer than five years accounted for 59 percent of the cases.
- Service occupation workers were 47 percent of the cases. Janitors and cleaners was the most common specific occupation.
- Sprains and strains accounted for 43 percent of the injuries.
- The back was the most commonly injured body part; knees and multiple-part injuries were also frequently identified.
- Overexertion, primarily in lifting, was the most common injury event. Compared to other industries, local government workers had the highest percentage of injuries due to transportation accidents.
- The most common injury sources were floors and other ground surfaces, the worker's motion or position and vehicles, primarily buses.

### MNOSHA activity

- Most compliance inspections were planned/programmed inspections, and there were fewer inspections in both 2001 and 2002 than in 2000.
- Local government continued to receive a high number of worksite visits, with an increasing number of visits in each of the last two years.

Figure 5.40 Incidence rates per 100 FTE workers, local government



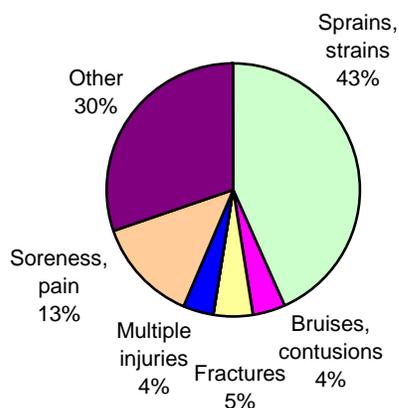
	SIC code	2002 rates			2002 total cases (1,000)
		Total	DART	Days away from work	
Local government		5.2	2.6	1.7	10.4
Services		5.3	2.5	1.7	6.8
Health services	80	11.4	5.7	3.5	1.8
Hospitals	806	10.6	4.5	2.7	1.3
Education services	82	4.3	2.1	1.5	4.2
Public administration		4.5	2.3	1.5	2.9

Figure 5.41 Occupations of workers with days away from work, local government, 2002

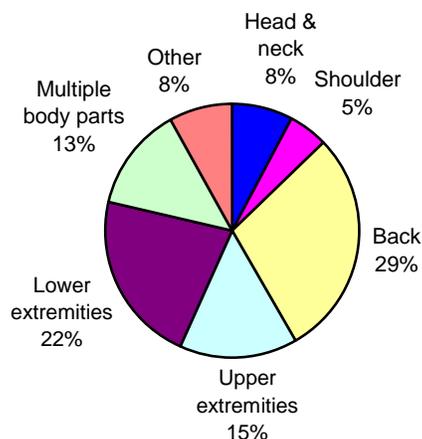
Occupation	Pct. of cases, 2002
Janitors and cleaners	17.6%
Teachers	8.3%
Sheriffs, bailiffs, other law enforcement	7.2%
Nursing aides, orderlies, and attendants	7.0%
Cooks and food preparation	6.5%
Bus drivers	6.2%
Teachers' aides	5.2%
Construction trades	4.8%
Police and detectives	4.3%
Social workers	3.0%
Registered nurses	3.0%

Figure 5.42 Injury characteristics, local government, 2002

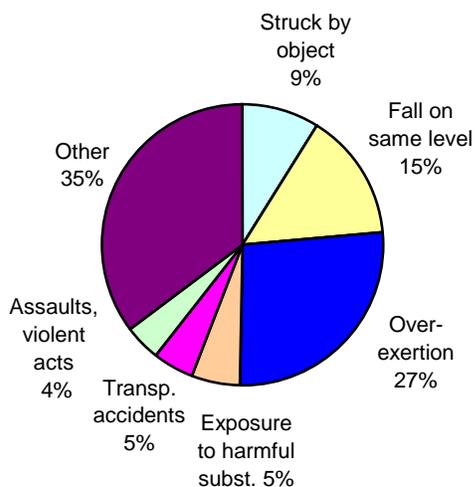
Nature of injury



Part of body injured



Event or exposure



Source of injury or illness

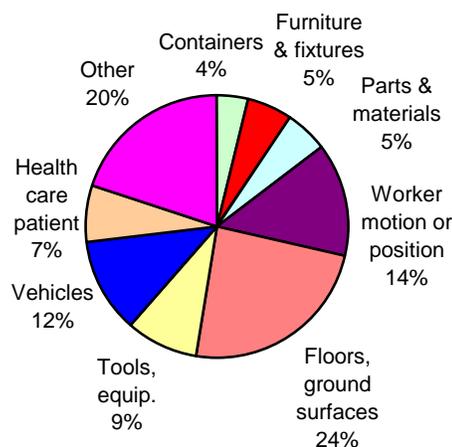


Figure 5.43 MNOSHA compliance and consultation activity, local government

Year	Compliance inspections						Consultation visits			
	Initial inspections	Pct. planned programmed	Pct. with violations	No. of violations	Penalties assessed	No. of workers covered <sup>1</sup>	No. of worksites visited	Pct. with identified hazards	No. of workers at sites	No. of training visits
2000	109	76%	64%	202	\$ 112,374	4,240	84	100%	1,486	80
2001	76	76%	61%	143	\$ 136,188	4,190	65	97%	1,457	73
2002	95	80%	72%	173	\$ 146,450	10,160	76	98%	1,481	48
2003	96	79%	42%	99	\$ 79,764	3,890	86	93%	1,906	47

1. Estimate based on proportion of public sector inspections and total public sector workers covered.

# 6

## Fatal occupational injuries

In 2002, 81 Minnesota workers were fatally injured on the job. This is an increase from 76 fatalities in 2001, and slightly more than the 1997 through 2001 annual average of 78 fatalities. Nationwide, 5,524 workers were fatally injured during 2002.

These and other findings are from the nationwide *Census of Fatal Occupational Injuries* (CFOI), conducted by the BLS with state and other federal agencies. The Department of Labor and Industry collects CFOI data for the state of Minnesota.

The CFOI covers all fatal work injuries in the private and public sectors, whether the workplaces concerned are covered by the Occupational Safety and Health Act or other federal or state laws, or are outside the scope of regulatory coverage. For example, the CFOI includes federal employees and resident armed forces, even though they have different legal and regulatory coverage than other workers. It also includes self-employed and unpaid family workers, including family farm workers. Work-related fatal illnesses (e.g., asbestosis, silicosis and lead poisoning) are excluded from the CFOI because many occupational illnesses have long latency periods and are difficult to link to work.

The CFOI provides a complete count of fatal work injuries by using multiple sources to identify, verify and profile these incidents. The sources include death certificates, coroners' reports, workers' compensation reports and news media reports.

The BLS recently published a chartbook describing fatal work injury data from 1995 through 1999 for the nation and for each state.<sup>9</sup> The charts illuminate the details of fatal injuries from a variety of perspectives. This report is available at no charge and can be ordered from the Chicago BLS office at (312) 353-1880.

<sup>9</sup> Fatal occupational injuries in the United States, 1995-1999. U.S. Department of Labor, Bureau of Labor Statistics, 2003. Report 965.

### Counting fatalities

The CFOI count of work-related fatalities differs in important ways from other workplace fatality statistics. The CFOI is a count of all work-related deaths caused by injuries, and excludes deaths caused by illnesses. Fatalities to all workers, including self-employed workers, are tabulated in the state of occurrence. Thus, a truck driver from Minnesota, who works for a Minnesota trucking company, killed in an accident in Texas would be counted as a Texas CFOI fatality.

The workers' compensation count of fatalities only includes workers covered by a Minnesota workers' compensation insurance policy. Self-employed workers are not included. Fatalities caused by illnesses are included. A Minnesota truck driver killed in another state would be included in the Minnesota workers' compensation fatality count if Minnesota workers' compensation benefits were paid. In 2002, there were 53 workers' compensation fatalities.

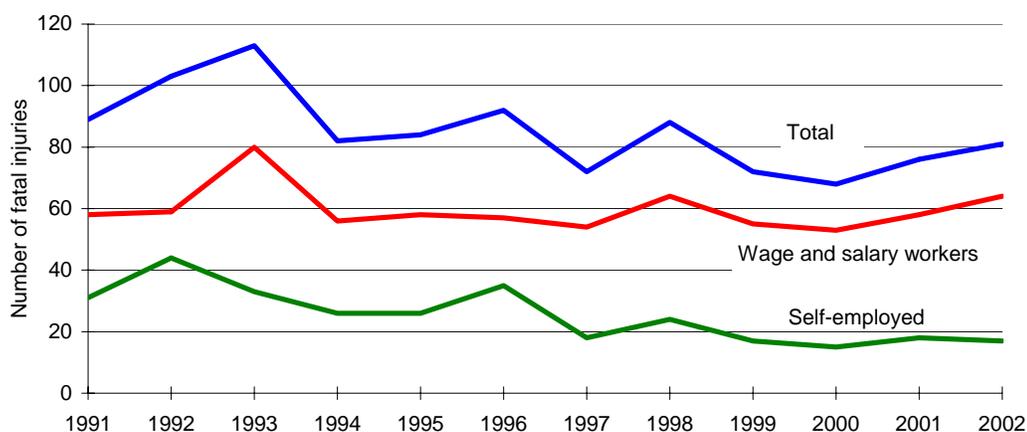
MNOSHA investigated 26 fatalities in 2002. MNOSHA investigates all employee deaths that are under MNOSHA jurisdiction and result from an accident or illness caused by or related to a workplace hazard. Not included are fatalities caused by traffic accidents, airplane crashes, mining accidents, farm accidents and accidents to the self-employed, federal workers and railroad workers.

MNOSHA investigates fatalities to determine cause, whether any MNOSHA standards were violated, and whether the promulgation of additional standards might help prevent similar incidents.

### Number and rate of fatal injuries

- Figure 6.1 shows Minnesota had from 68 to 113 fatal work injuries a year from 1991 through 2002.
- For wage-and-salary workers, the annual fatality toll ranged from 53 to 64, except for 1993, when it reached 80.
- For self-employed workers, the annual fatality figure ranged from 15 to 44. The drop in fatalities of self-employed workers since 1996 has been the main source of the decrease in total annual fatalities.
- The fatality toll for 1998 through 2002 was 385, an average of 78 workers a year. This consisted of 57 wage-and-salary workers and 21 self-employed workers.
- Fatal injuries for the self-employed were 21 percent of the 2002 total, far higher than the 9 percent self-employed share of total state employment.<sup>10</sup>
- Figure 6.2 shows the Minnesota fatality rate since 1992. The 2002 fatality rate was 2.9 deaths per 100,000 employed, an increase from the 2001 rate of 2.8. The long-term trend in Minnesota’s fatality rate has been downward since the early 1990’s.
- The fatality rate for self-employed workers (6.7) was two and a half times higher than the rate for wage and salary workers (2.6). This is consistent with national patterns.<sup>11</sup>
- For the entire United States, the fatality rate for 2002 was 4.0 deaths per 100,000 employed. This was a decrease from the rate of 4.3 deaths per 100,000 employed in both 2000 and 2001 (excluding fatalities related to the Sept. 11, 2001 attacks).

Figure 6.1 Fatal work injuries in Minnesota, 1991-2002<sup>1</sup>



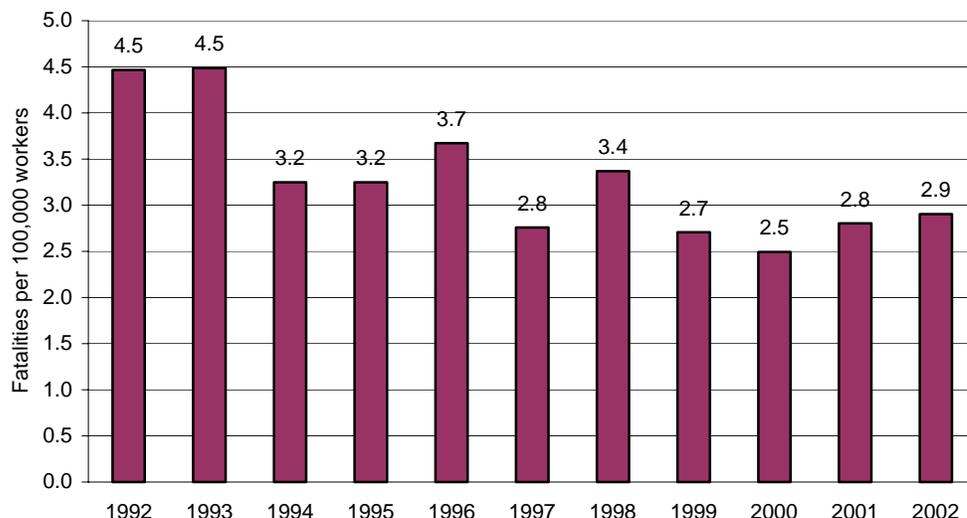
1. Includes private sector plus local, state and federal government (including resident armed forces). Includes self-employed and unpaid family workers, including family farm workers. Excludes fatal illnesses.

Year of death	Wage & salary workers	Self-employed	Total
1993	80	33	113
1996	57	35	92
2000	53	15	68
2001	58	18	76
2002	64	17	81
Avg. 1998-2002	58.3	16.7	75.0

<sup>10</sup> Geographic Profiles bulletin of Current Population Survey data from BLS for 2002.

<sup>11</sup> Stephen M. Pegula, Occupational fatalities: self-employed workers and wage and salary workers. *Monthly Labor Review*, March 2004, pp 30-40.

Figure 6.2 Minnesota fatalities per 100,000 workers<sup>1</sup>



1. Fatalities and workers exclude workers under age 16 or in the military.

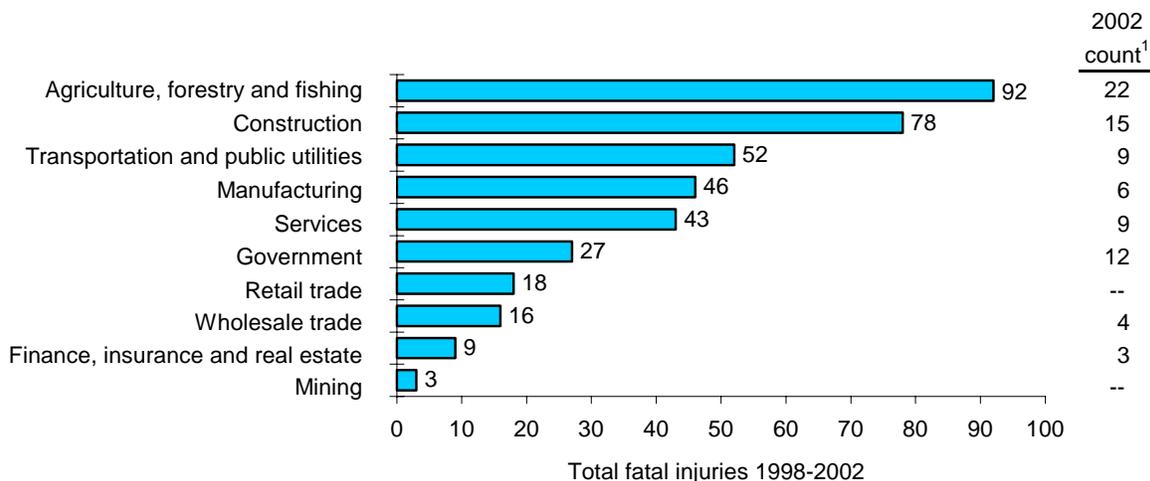
### Fatalities by industry division

Figure 6.3 shows the number of Minnesota’s fatal work injuries by industry division for 1998 through 2002. More detailed information about the fatalities in agriculture, forestry and fishing and construction is provided later in this chapter.

- The highest numbers of fatal injuries were in agriculture, forestry and fishing and construction. Together, they accounted for 47 percent of all fatalities for the 1998 through 2002 period.

- The number of fatalities in agriculture, forestry and fishing has varied in recent years from a high of 32 fatalities in 1996, to lows of 16 fatalities in 2000 and 2001.
- The number of fatalities in construction has varied from a high of 23 fatalities in 1998, to a low of 10 fatalities in 1997.
- With six fatalities in 2002, manufacturing posted its lowest number of fatalities since the CFOI started in 1991.

Figure 6.3 Number of fatal work injuries by industry division, 1998-2002 and 2002 count



1. Dashes indicate that the number of fatalities in that industry does not meet CFOI publication criteria.

Figure 6.4 Event or exposure causing fatal work injury, 1998-2002 average<sup>1</sup>

Event or exposure	Total number of fatalities	Percentage of total
<b>Total</b>	<b>385</b>	<b>100.0%</b>
<b>Transportation incidents</b>	<b>182</b>	<b>47.3</b>
Highway incident	113	29.4
Collision between vehicles, mobile equipment	53	13.8
Jack-knifed or overturned—no collision	31	8.1
Nonhighway incident, except rail, air, water	25	6.5
Worker struck by vehicle, mobile equipment	21	5.5
<b>Contact with objects and equipment</b>	<b>96</b>	<b>24.9</b>
Struck by object	51	13.2
Caught in or compressed by equipment or objects	27	7.0
Caught in or crushed in collapsing materials	18	4.7
<b>Falls</b>	<b>42</b>	<b>10.9</b>
Fall from roof	13	3.4
<b>Exposure to harmful substances or environments</b>	<b>30</b>	<b>7.8</b>
Contact with electric current	16	4.2
<b>Assaults and violent acts</b>	<b>19</b>	<b>4.9</b>
Homicides	14	3.6
<b>Fires and explosions</b>	<b>7</b>	<b>1.8</b>

1. Includes private sector plus local, state and federal government (including resident armed forces). Includes self-employed and unpaid family workers, including family farm workers. Excludes fatal illnesses.

## Characteristics of fatal injury events

Fatal occupational injuries are described by the type of event causing the fatality, the source of the fatal injury, and the workers' location and activity. Figure 6.4 shows the event or exposure causing fatal work injuries in Minnesota during 1998 through 2002.

- The most common event causing fatal injuries was transportation incidents, accounting for 47 percent of all fatal work injuries. These incidents consisted primarily of highway incidents (motor vehicles traveling on roads), but also included nonhighway incidents (motor vehicles on farm and industrial premises) and workers being struck by vehicles.
- The second most frequent cause was contact with objects and equipment (25 percent). These cases included workers being struck by an object, caught in or compressed by equipment or objects, such as running machinery, and caught in or crushed by collapsing materials, as in trench cave-ins.
- Assaults and violent acts accounted for 5 percent of the workplace fatalities. Assaults accounted for one-third of fatalities in retail stores. Homicide, mostly by shooting, was the most frequent type of assault and violent act. Other assault fatalities were caused by suicide and attacks by animals. Assaults were the second-leading cause of fatalities among women, accounting for 14 percent of their deaths.
- The most common sources of the fatalities were: highway vehicles (32 percent); floors, walkways and ground surfaces (14 percent); and machinery (12 percent).
- The most common locations of work-related fatalities were: streets and highways (35 percent); industrial premises (22 percent); and farms (20 percent).
- Operating a transportation vehicle was the most common worker activity at the time of the fatality (45 percent). The next most common worker activity was constructing, repairing and cleaning (23 percent).

## Characteristics of fatally injured workers

Figures 6.5 through 6.8 show the percentages of the demographics and occupations of fatally injured workers for 1998 through 2002.

### Gender

- Men accounted for the overwhelming majority of fatally injured workers (91 percent).
- Eleven women, 14 percent of the total, were fatally injured in 2002, the highest annual total ever in the CFOI program, which started in 1991.
- Among the industries with the highest percentage employment of women — retail trade, services and government, women accounted for 32 percent of the fatalities.

### Age

- Fatally injured workers had a wide age distribution, with the greatest numbers among workers 35 to 44 years of age and 45 to 54 years of age.
- The age of fatally injured workers has been gradually increasing, matching the aging of the entire workforce. The percentage of fatalities to workers 45 years and older increased from 47 percent during the 1992 to 1996 period, to 51 percent during the 1998 to 2002 period.

Figure 6.5 Gender of fatally injured workers, 1998-2002

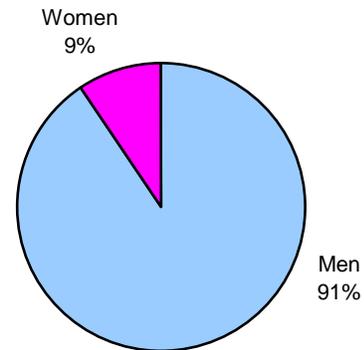
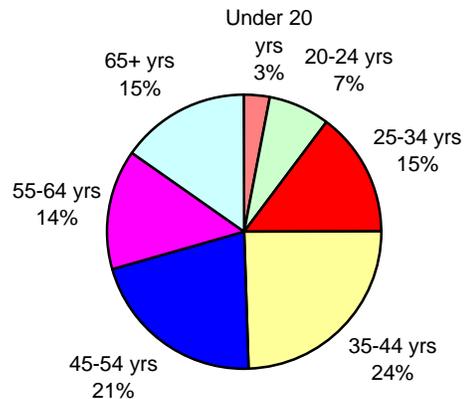


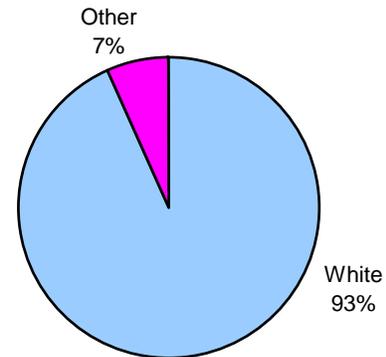
Figure 6.6 Age of fatally injured workers, 1998-2002



**Race**

- White workers accounted for 93 percent of the fatalities. White, nonminority people account for 89 percent of the working-age population in Minnesota. For 1998 and 1999, Hispanic workers were listed as either white or black race. Beginning in 2000, the CFOI counted Hispanics as a separate racial/ethnic category.
- In the services industry, 15 percent of the 1998 to 2002 fatalities were to nonwhite workers.

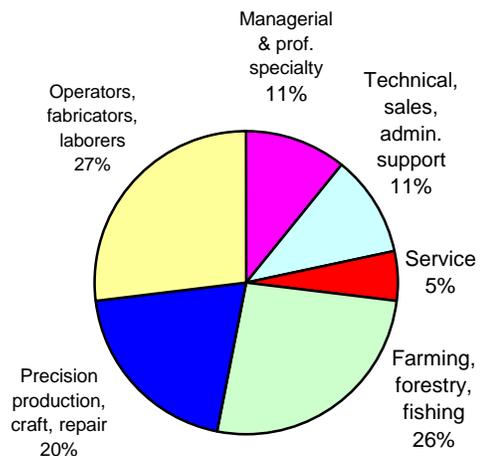
**Figure 6.7 Race of fatally injured workers, 1998-2002**



**Occupation**

- Fatally injured workers were concentrated in the occupation groups of operators, fabricators and laborers (27 percent) and farming, forestry and fishing (26 percent).
- The largest occupation among operators, fabricators and laborers was truck drivers, who accounted for 13 percent of all the fatally injured workers from 1998 through 2002.
- Nearly all the work fatalities among farming, forestry and fishing workers were to farmers and farm operators. Farm workers accounted for 16 percent of the fatalities.
- The precision production, craft and repair occupations include the construction trades, which accounted for 13 percent of the fatalities.

**Figure 6.8 Occupation of fatally injured workers, 1998-2002**



### Fatalities in agriculture, forestry and fishing

Agriculture, forestry and fishing (agriculture) had the highest number of fatalities of any industry for nine of the past 12 years. The fatality rate in agriculture (excluding forestry and fishing) was 21.0 per 100,000 employed in 2002. These statistics are based on all fatalities from 1998 through 2002.

- Agriculture accounted for 24 percent of all fatalities (92 of 385 fatalities).
- Self-employed workers were 86 percent of the agriculture fatalities.
- Men were 98 percent of the fatalities.
- The fatally injured workers were older than in other industries: 64 percent were 55 years and older.
- Farmers and farm managers accounted for 80 percent of the fatalities. Farm workers comprised another 17 percent of the cases.
- The most common type of event causing fatalities was transportation incidents (40 percent). Most of these incidents involved tractors.
- Another 39 percent of fatalities were caused by contact with objects and equipment, with farmers being struck by objects or caught in running equipment.
- Seventy-nine percent of the fatalities occurred at farms or around farm residences, and 19 percent occurred on roads.

### Fatalities in construction

Construction had the highest number of fatalities for three of the past 12 years, and had the second-highest number of fatalities for seven of those years. The fatality rate in construction was 10.2 per 100,000 employed in 2002. These statistics are based on all fatalities from 1998 through 2002.

- Construction accounted for 20 percent of all fatalities (78 of 385 fatalities).
- Wage and salary workers were 96 percent of the fatally injured construction workers.
- Men were 99 percent of the fatalities.
- The fatally injured workers were distributed among all age groups, with the highest concentration in the 35 to 44 year age range (26 percent).
- Construction trades workers accounted for 54 percent of the fatalities, and laborers accounted for another 23 percent.
- Three types of events accounted for 90 percent of construction fatalities: falls (32 percent), contact with objects and equipment (32 percent), and transportation incidents (26 percent).
- The most common fatal falls were falls from roofs and scaffolds.
- Many of the fatalities caused by contact with objects and equipment occurred by being struck by falling objects.
- The most common type of transportation incidents was vehicle collisions on roads.
- Fifty-six percent of the fatalities occurred on construction sites and 26 percent occurred on roads.

# 7

## Workplace safety programs and services of the Department of Labor and Industry

The Department of Labor and Industry (DLI) has a variety of programs and services to help employers maintain safe and healthful workplaces. Minnesota has an approved state occupational safety and health plan under the federal Occupational Safety and Health Act (OSHA). Minnesota operates its plan under the Minnesota Occupational Safety and Health Act of 1973 (MNOSHA) and its related standards.

DLI administers MNOSHA through two work-units, each with a focus on different parts of MNOSHA. The Compliance unit is responsible for compliance program administration, which includes conducting enforcement inspections, adoption of standards and operation of other related MNOSHA activities. The Workplace Safety Consultation (WSC) unit provides free consultation services, on request, to help employers prevent workplace injuries and diseases by identifying and correcting safety and health hazards. Both divisions disseminate information about workplace safety and health standards.

### Further information

For further information about MNOSHA requirements, standards and procedures, contact the Compliance unit by phone at (651) 284-5050 or 1-877-470-6742, by fax at (651) 284-5741, by e-mail at [OSHA.Compliance@state.mn.us](mailto:OSHA.Compliance@state.mn.us), and on the Web at [www.doli.state.mn.us/mnosha.html](http://www.doli.state.mn.us/mnosha.html).

For further information about WSC services and programs, contact WSC by phone at (651) 284-5060 or 1-800-657-3776, by fax at (651) 284-5739, by e-mail at [OSHA.Consultation@state.mn.us](mailto:OSHA.Consultation@state.mn.us) or on the Web at [www.doli.state.mn.us/wsc.html](http://www.doli.state.mn.us/wsc.html).

### Occupational safety and health compliance

#### Workplace inspections

The department to conducts workplace inspections to determine whether employers are complying with safety and health standards. The inspectors are trained in OSHA standards and in recognition of safety and health hazards. With certain exceptions, inspections are required to be without advance notice. Employers are required to allow the inspector to enter work areas without delay and must otherwise cooperate with the inspection.

MNOSHA's compliance program is based on a system of inspection priorities. The priorities, highest to lowest, are:

- imminent danger (established from reports by employees or the public or from observation by an OSHA compliance investigator),
- fatal accidents and catastrophes (accidents causing hospitalization of three or more employees),
- employee complaints (not concerning imminent danger),
- programmed inspections (which target high-hazard employers and industries), and,
- follow-up inspections (for determining whether previously cited violations have been corrected).

Employers found to have violated MNOSHA standards receive citations for the violations and are assessed penalties based on the seriousness of the violations. These employers are also required to correct the violations. Employers and employees may appeal citations, penalties and the time periods allowed for correcting violations.

Figure 7.1 shows statistics for compliance inspections from federal fiscal years (FFY) 1996 through 2003. More detailed statistics about MNOSHA activity are available from the MNOSHA annual report, on the Web at <http://www.doli.state.mn.us/pdf/osha2003report.pdf>.

- During the most recent five-year period, 1999 through 2003, an average of 2,020 inspections were conducted annually, covering an average of 87,000 workers.
- The increase in the number of inspections conducted in 2003 was due to an increased emphasis on field inspections. The number of safety inspections per 100 hours of inspector work time increased from 2.8 inspections in 2002 to 4.1 in 2003.
- Two-thirds of inspections resulted in at least one violation. Among inspections with violations, an average of three violations were cited.
- A total of 20,000 violations were cited from 1999 through 2003, resulting in an average annual assessment of \$3 million.
- During 2003, MNOSHA Compliance initiated inspections for 26 fatalities and 24 serious-injury incidents. Additional details about these incidents and the investigations are available on the Web at [http://www.doli.state.mn.us/pdf/03\\_fatal\\_log.pdf](http://www.doli.state.mn.us/pdf/03_fatal_log.pdf).
- The MNOSHA Compliance unit also performs outreach activities. Compliance staff members present information about MNOSHA standards and other workplace safety topics to employer organizations, safety professionals, unions and labor-management organizations. During FFY 2003, Compliance staff members participated in 36 outreach sessions.
- Construction safety is a major focus for both the inspections and outreach efforts. During calendar-year 2003, 58 percent of the programmed inspections were at construction worksites. Nearly 300 construction managers and supervisors attended the construction safety breakfast programs.

Figure 7.1 Minnesota OSHA Compliance inspections

Federal fiscal year <sup>1</sup>	Inspections conducted	Employees covered <sup>2</sup>	Inspections with violations	Violations	Penalties assessed (\$ millions) <sup>3</sup>
1996	2,131	76,882	1,217	4,029	\$2.48
1997	1,775	64,515	964	2,786	\$1.90
1998	2,062	73,898	1,291	3,829	\$2.76
1999	1,876	103,029	1,255	3,957	\$3.15
2000	1,991	84,575	1,368	4,068	\$3.28
2001	1,953	73,451	1,342	3,855	\$3.29
2002	1,691	68,113	1,165	3,462	\$2.61
2003	2,604	107,314	1,797	4,653	\$2.83

1. Federal fiscal years are from Oct. 1 of the preceding year to Sept. 30 of the indicated year.

2. "Employees covered" refers to the number of employees who were affected by the scope of the inspection, but not always all employees at a facility.

3. These are the originally-assessed amounts of penalties.

Source: OSHA Integrated Management Information System.

Figure 7.2 shows the most commonly cited OSHA standards violations for 2003.

- Violations associated with compliance with the A Workplace Accident and Injury Reduction (AWAIR) Act and the Employee Right-To-Know Act were the most commonly cited standards.

Under the AWAIR Act — also part of the state's Occupational Safety and Health Act — employers in high-hazard industries must develop and implement a written safety and health plan to reduce workplace injuries and illnesses.

Under the Employee Right-To-Know Act and its standards — part of the state's Occupational Safety and Health Act — employers must evaluate their workplaces for the presence of hazardous substances, harmful physical agents and infectious agents, and determine which employees are routinely exposed to these substances and agents. Identified employees must be provided with appropriate training and readily accessible written information about identified hazardous substances and agents in their work areas. Containers, work areas and equipment must be labeled to warn employees of associated hazardous substances or agents.

**Figure 7.2 Minnesota OSHA's most frequently cited standards, 2003**

Standard <sup>1</sup>	Description	Frequency
MN Statutes 182.653 subd. 8	A Workplace Accident and Injury Reduction (AWAIR) program	249
MN Rules 5206.0700 subp.1B	Employee Right-To-Know written program	120
MN Rules 5206.0700 subp.1	Employee Right-To-Know training	115
29 CFR 1910.147(c)(4)	Development and use of lockout/tagout procedures	114
MN Rules 5205.0116 subp. 1 & 2	Forklifts — monitoring for carbon monoxide	111
MN Statutes 182.653 subd. 2	General Duty Clause — unsafe working condition	98
29 CFR 1910.151(c)	Emergency eyewash/shower facilities	98
29 CFR 1926.501(b)(1)	Fall protection in construction — general requirements	98
29 CFR 1926.501(b)(13)	Fall protection in residential construction	95
29 CFR 1926.451(g)(1)	Fall protection on scaffolds above 10 feet	86
29 CFR 1910.178(l)	Forklifts — operator training	85
29 CFR 1910.212(a)(1)	Machine guarding — general requirements	83
MN Rules 5206.0700 subp.1G	Employee Right-To-Know training frequency	79
29 CFR 1910.242(b)	Compressed air used for cleaning	78
29 CFR 1910.23(c)(1)	Guardrails for open-sided floors	66
29 CFR 1910.134(a)(2)	Respiratory protection program	66
29 CFR 1910.212(a)(3)(ii)	Point of operation guarding of machines	65
29 CFR 1926.652(a)(1)	Use of sloping or protective systems to prevent excavation cave-ins	61
MN Rules 5205.1200 subp. 3-5	Frequent and periodic inspections of cranes and hoists	56
29 CFR 1910.219(d)(1) and (e)(2)	Machine guarding — belts and pulleys	55
29 CFR 1926.100(a)	Hard hats in construction	55
29 CFR 1910.147(c)(6)	Periodic inspections of energy control procedures (lockout/tagout)	52
29 CFR 1910.305(d)	Electrical hazards involving switchboards and panelboards	51

1. 29 CFR refers to the U.S. Code of Federal Regulations Title 29, which covers the U.S. Department of Labor.

Source: OSHA Integrated Management Information System.

## Workplace Safety Consultation

WSC offers a variety of workplace safety services. These services are voluntary, confidential and separate from the MNOSHA Compliance unit.

### Workplace consultations

WSC offers a free consultation service to help employers prevent workplace accidents and diseases by recognizing and correcting safety and health hazards. This service is targeted primarily toward smaller businesses in high-hazard industries, but is also available to public-sector employers. During FFY 2003, WSC conducted 1559 worksite safety and health visits and interventions.

WSC safety and health professionals conduct the on-site consultations. During consultations, employers are assisted in determining how to improve workplace conditions and practices to comply with MNOSHA regulations and to reduce accidents and illnesses and their associated costs. The consultants make recommendations dealing with all aspects of an effective safety and health program.

No citations are issued or penalties proposed as a result of WSC consultations. Employers are obligated to correct, in a timely manner, any serious safety and health hazards found. As shown in the industry-specific tables in Chapter 5, consultants identify hazards in 80 percent of the visits. Information about an employer is not reported to the MNOSHA Compliance unit, unless the employer fails to correct the detected safety and health hazards within a specified period. This has happened only once in the past nine years.

WSC visits in 2003 resulted in the identification and correction of safety and health hazards that would have cost employers approximately \$3.3 million in MNOSHA penalties.

### Safety and health training seminars

WSC provides seminars to help employers and employees understand and comply with safety and health regulations and to develop and implement mandatory programs, including Employee Right-To-Know, AWAIR and labor-

management safety committees. The seminars provide information that safety directors, supervisors, safety committee members and employees can use to help train their coworkers. Many of the WSC seminars are coordinated and conducted with nine training-partner organizations throughout the state, which include community and technical colleges, labor-management associations and government training centers.

During 2003, WSC conducted 454 safety and health training sessions for 16,900 participants.

### Labor-management safety committees

MNOSHA also requires all public and private employers with more than 25 employees, and smaller employers in high-hazard industries, to establish and use a joint labor-management safety committee. Employees must select their safety committee representatives and the committee must meet regularly.

The WSC Labor-Management Safety Committee program emphasizes safety committee structure through a joint effort with the state Bureau of Mediation Services. This program reinforces the importance of labor-management cooperation in workplace safety issues to help prevent workplace injuries. Services include interpretation of OSHA standards, training in self-inspection techniques and instruction for preparing and implementing education and training programs.

WSC provides training to companies and large groups about the elements of effective labor-management safety committees. During FFY 2003, WSC conducted 106 training and assistance visits.

### Loggers' safety education program

WSC also provides one-day logger safety training (LogSafe) seminars throughout the state. To receive workers' compensation premium rebates from the Targeted Industry Fund, logging employers must maintain current workers' compensation insurance and they or their employees must have attended, during the previous year, a Logsafe seminar or a seminar approved by DLI. WSC conducted 207 LogSafe seminars during FFY 2003, attended by 5,412 logging employers and employees. An

additional six safety sessions were conducted for sawmill workers.

Additionally, WSC conducts training sessions for public-sector employers and employees who are involved in tree removal. Their logging work usually relates to cleanup following storms or other circumstances. In many cases, the trees are damaged and hazardous to work on by workers for whom logging is not a daily activity. WSC conducted 55 public-sector logging training sessions.

### Safety Grants Program

The Safety Grants Program is a 100-percent state-funded program that awards funds up to \$10,000 to qualifying employers for projects designed to reduce the risk of injury and illness to their employees. The project must be consistent with the recommendations of a safety and health inspection. Qualified applicants must match the grant money awarded.

During state fiscal-year 2003, WSC awarded \$1.9 million to 252 employers. From 2000 through 2003, safety grants totaling \$6.1 million were combined with \$13.6 million in employer contributions for a total of \$19.8 million in workplace safety improvements.

State government units, nursing homes, manufacturers and construction employers were the four most frequent recipients of safety grants, accounting for 46 percent of the grant funds.

### Workplace Violence Prevention Program

The Workplace Violence Prevention Program helps employers and employees reduce the incidence of violence in their workplaces by providing on-site consultation, telephone assistance, education and training seminars, inspections, and a resource center. This program is targeted toward workplaces at high risk of violence, such as convenience stores, service stations, taxi and transit operations, restaurants and bars, motels, guard services, patient care facilities, schools, social services, residential care facilities and correctional institutions.

The Workplace Violence Prevention Program is a 100-percent state-funded program. In FFY

2003, WSC presented 79 violence prevention outreach presentations, covering 2,677 employers and employees.

### MNSHARP

The Minnesota Safety and Health Achievement Recognition Program (MNSHARP) is a voluntary program that assists small high-hazard employers in achieving safety and health improvements and recognizes them for doing so. For program purposes, high-hazard employers are those in high-hazard industries (e.g., construction and food processing) or special-emphasis industries (e.g., fabricated metals manufacturing and nursing homes) and those with higher-than-average lost-workday injury and illness rates for their industry. Eligibility is limited to employers with fewer than 500 workers at the worksite and priority is given to employers with fewer than 100 workers.

MNSHARP participants receive a free comprehensive safety and health consultation survey from WSC, which results in a one-year action plan. Within a year, in consultation with WSC, participants must correct hazards identified in the initial survey and develop and implement an effective safety and health program with full employee involvement. The goal is to reduce the employer's total injury and illness rate and lost-workday case rate to a point below the national industry average for at least one year. Participants must also consult in advance with WSC about changes in work processes or conditions that might introduce new hazards.

After a year, a second on-site visit occurs to determine whether the employer has met these requirements and the injury and illness reduction goal. If so, the employer receives a MNSHARP "Certificate of Recognition" and is exempted from programmed MNOSHA Compliance inspections for one year. (Inspections will occur in the event of imminent danger, fatalities or other catastrophes, formal complaints or referrals, or as follow-up to previously cited violations.)

Certified MNSHARP employers may apply annually for certification renewal. If an on-site survey by WSC determines the employer continues to meet program requirements, the employer's certification is renewed and it

continues to be exempt from programmed MNOSHA Compliance inspections.

All eight MNSHARP employers certified in earlier years retained certification in FFY 2003. Two new employers joined the program in FFY 2003, and another two employers joined in FFY 2004. Nine of the 12 employers are manufacturers. The total injury and illness case rates for these employers are generally half the national rates for their industries.

### **MNSTAR**

MNSTAR is a voluntary program patterned after the federal Voluntary Protection Program.<sup>12</sup> It is available to Minnesota employers of all sizes. In

comparison with MNSHARP, MNSTAR has more rigorous requirements and confers a higher level of recognition on certified employers. There are currently 12 MNSTAR employers.

MNSTAR relies mainly on employer self-assessment and requires an extensive application, including submission of written safety and health policies and procedures. After one or more on-site safety and health surveys, the employer will qualify for MNSTAR status if all eligibility requirements have been met, including an injury and illness rate below the state and national averages for the industry. MNSTAR recognition exempts the employer from programmed MNOSHA Compliance inspections for three years.

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<sup>12</sup> See [www.osha.gov/oshgrogs/vpp](http://www.osha.gov/oshgrogs/vpp)

# Appendix A

## Major changes to OSHA's recordkeeping rule in 2002

To remove some of the subjectivity involved in making decisions about what injuries and illnesses employers need to record on the *OSHA Log of Work-Related Injuries and Illnesses*, OSHA instituted changes in its recordkeeping requirements, which became effective Jan. 1, 2002. By improving the consistency in recordkeeping by employers, these changes should also improve the quality of the estimates produced by the BLS *Survey of Occupational Injuries and Illnesses*, which relies on the OSHA log records.

To disseminate information about the new recordkeeping requirements, all employers participating in the 2002 BLS survey were sent new OSHA log packets with introductory material. During 2002, the Workplace Safety Consultation unit of MNOSHA traveled throughout the state, conducting 53 training sessions about the new recordkeeping requirements.

Additional information about the new recordkeeping requirements and the changes to the OSHA log for 2004 is available on the DLI Web site at:  
<http://www.doli.state.mn.us/recordkeeping.html>.

The following are some of the major changes and how they might affect the estimates produced by the BLS survey.

- Where a pre-existing (non-work-related) condition is present, a case is recordable only if a significant aggravation by a workplace event or exposure occurs. A significant aggravation is any of the following, if caused by the occupational event or exposure:
  1. death;
  2. loss of consciousness;
  3. one or more days away from work;
  4. one or more days of restricted work or job transfer; or
  5. medical treatment.
- Under the old requirements, any aggravation of a pre-existing condition by a workplace event or exposure makes a case recordable. This change clarifies when to record cases involving pre-existing conditions. **This change will reduce the number of cases.**
- An aggravation of a case where signs or symptoms have not been resolved is not a new case, even if the aggravation was caused by a new event or exposure. Previously, each new event or exposure was treated as a new case. **This change will reduce the number of cases.**
- Under the previous requirements, a cumulative trauma disorder was considered a new case if no care was received for the previous 30 days. The new requirements have no such criteria. In the absence of a new work-related event or exposure, the reappearance of signs or symptoms may be treated as part of the previous case. **This change will reduce the number of cases.**
- Under the previous requirements, all work-related illnesses were recordable. Under the new requirement, work-related illnesses are recordable only if they meet the general recording criteria applicable to all injuries and illnesses. **This change will tend to reduce the number of cases.**
- Restricted work activity occurs when an employee cannot perform all of his or her routine job functions, which are defined as any duty regularly performed at least once a week. The previous requirements defined normal job duties as any duty the worker would be expected to do throughout the calendar year. **This change will reduce the number of cases of restricted work activity.**
- Restricted work activity limited to the day of injury does not make a case recordable. Under the previous requirements, restricted work limited to the day of injury was a

- recordable case. **This change will reduce the number of cases of restricted work activity and may also reduce the total number of cases.**
- The counting of days away from work and days of restricted work activity changed from workdays to calendar days. To the extent that employers previously only counted workdays, **this will increase the number of cases of days away from work and days of restricted work activity. This will also increase the number of days for both categories.**
  - The new criteria allow employers to cap the number of days at 180. Previously, there was no cap on the count of days. This change will not affect the calculation of the median number of days away from work or the distribution of cases by days away from work.
  - Changes and clarifications to what is considered first aid (not recordable) and what is considered medical treatment (recordable) may result in slight changes in the number of recordable cases. The new criteria include a comprehensive list of first aid, so that less discretion is needed to know when a case should or should not be recorded. To the extent that different employers may have interpreted treatments and first aid differently, **it is unclear how the total number of recordable cases will be affected.**
  - A significant injury or illness diagnosed by a licensed health care provider is recordable, even if it does not result in death, days away from work, restricted work or job transfer, medical treatment beyond first aid or loss of consciousness. This list includes cancer, chronic irreversible diseases, a fractured or cracked bone, or a punctured eardrum. The previous criteria only included fractures and second and third degree burns. **This may increase the total number of cases.**
  - All work-related needlestick injuries and cuts from sharp objects that are contaminated with another person's blood or other potentially infectious material are recordable as injuries. Previously, these cases were recordable only if they met the criteria for all injuries or if sero-conversion was present. **This will increase the number of reported needlestick cases.**
  - Work-related musculoskeletal disorders (WMSDs) are recordable when general recording criteria are met. Previously, WMSDs were recordable under the general criteria or when identified through a clinical diagnosis or diagnostic test. **This will tend to reduce the number of WMSD cases.**

# Appendix B

## Definitions of key concepts in the BLS *Survey of Occupational Injuries and Illnesses*

The U.S. Bureau of Labor Statistics conducts the annual *Survey of Occupational Injuries and Illnesses* to provide nationwide and state-level information about work-related injuries and illnesses, including their number and incidence.<sup>13</sup> The survey includes all nonfatal cases recorded by participating employers on their OSHA 300 logs (the form used to record injuries and illnesses in 2002). Injuries and illnesses logged by employers conform with definitions and recordkeeping guidelines set by the Occupational Safety and Health Administration.

**Work-related** injuries and illnesses are events or exposures in the work environment that caused or contributed to the condition or significantly aggravated a pre-existing condition.

**Recordable cases**, for 2002, include work-related injuries and illnesses that result in:

- death;
- loss of consciousness;
- days away from work;
- restricted work activity or job transfer;
- medical treatment (beyond first aid); or
- significant work related injuries or illnesses that are diagnosed by a physician or other licensed health care professional. These include any work-related case involving cancer, chronic irreversible disease, a fracture or cracked bone, or a punctured eardrum.

Additional criteria that can result in a recordable case include:

- any needlestick injury or cut from a sharp object that is contaminated with another person's blood or other potentially infectious material;
- any case requiring an employee to be medically removed under the requirements of an OSHA health standard;

- tuberculosis infection as evidenced by a positive skin test or diagnosis by a physician or other licensed health care professional after exposure to a known case of active tuberculosis.

Some of the differences between recordable cases for 2002 and for previous years are discussed in Appendix A. Information about the recordkeeping guidelines is available at [www.doli.state.mn.us/recordkeeping.html](http://www.doli.state.mn.us/recordkeeping.html).

**Occupational injury** is any wound or damage to the body resulting from an event in the work environment.

**Occupational illness** is any abnormal condition or disorder, other than one resulting from an occupational injury, caused by exposure to factors associated with employment. It includes acute and chronic illnesses or diseases that may be caused by inhalation, absorption, ingestion or direct contact.

For injuries prior to 2002, the following definitions apply:

**Days away from work** are days after the injury or onset of illness when the employee would have worked but does not because of the injury or illness.

**Days of restricted work activity** are days after the injury or onset of illness when the employee works reduced hours, has restricted duties, or is temporarily assigned to another job because of the injury or illness.

**Lost workday (LWD) cases** are cases that involve days away from work, days of restricted work activity, or both.

1. *Lost workday cases involving days away from work* (DAFW cases) are cases that result in days away from work or a

<sup>13</sup> The survey and other BLS occupational safety and health statistics are described in greater detail in Chapter 9 of the *BLS Handbook of Methods*, at [www.bls.gov/opub/hom/homtoc.htm](http://www.bls.gov/opub/hom/homtoc.htm).

combination of days away from work and days of restricted work activity.

2. *Lost workday cases involving restricted work activity* are cases that result in restricted work activity only.

**Cases without lost workdays** are recordable cases with no days away from work or days with restricted work activity.

For injuries in 2002, the following definitions apply:

**Days away from work, days of restricted work activity or job transfer (DART)** are cases that involve days away from work, or days of restricted work activity or job transfer, or both.

1. *Cases involving days away from work (DAFW)* are cases requiring at least one day away from work with or without days of job restriction.
2. *Job transfer or restriction cases* occur when, as a result of a work-related injury or illness, an employer or health care professional keeps, or recommends keeping an employee from doing the routine functions of his or her job or from working the full workday that the employee would have been scheduled to work before the injury or illness occurred.

**Other recordable cases** are recordable cases that do not involve death, days away from work or days of restricted work activity or job transfer.

For all survey years, the following definitions apply:

**Publishable industry data** are summary data about an industry selected for publication in the survey that meet the BLS reliability and confidentiality criteria. As part of the survey sample selection process, states decide which industries will include enough surveyed companies to provide potentially publishable data. The remaining industries are grouped into residual industries that provide data for the next-higher level of categorization.

The reliability criteria consider changes in an industry's employment during the survey period, the relative standard error for the number of lost workday cases and whether there is a minimum level of employment in that industry. The confidentiality criteria are used to ensure that the identity of data providers and the nature of their data cannot be determined. Industries must have more than six employees and three employers; there must be at least one reported case; one company cannot contribute more than 60 percent of employment or report more than 90 percent of the cases; and the total recordable case rate must be at least 0.05.

**Median days away from work** is the measure used to summarize the varying lengths of absences from work among the cases with days away from work. The median is the halfway point in the distribution: half the cases involved more days and half involved fewer days.

**Incidence rates** represent the number of injuries and illnesses per 100 full-time workers. They are 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 full-time-equivalent workers (working 40 hours a week, 50 weeks a year).

**Nature of injury or illness** names the principal physical characteristic of a disabling condition, such as sprain/strain, cut/laceration or carpal tunnel syndrome.

**Part of body affected** is directly linked to the nature of injury or illness cited, for example, back sprain, finger cut, or wrist and carpal tunnel syndrome.

**Event or exposure** signifies the manner in which the injury or illness was produced or inflicted, for example, overexertion while lifting or fall from ladder.

**Source of injury or illness** is the object, substance, exposure or bodily motion that directly produced or inflicted the disabling condition cited. Examples are a heavy box, a toxic substance, fire/flame and bodily motion of the injured worker.

# Appendix C

## Incidence rates and numbers of cases from the BLS Survey of Occupational Injuries and Illnesses

Nonfatal occupational injuries and illnesses by industry and case type, Minnesota, 2002

Industry <sup>2</sup>	SIC code <sup>3</sup>	Incidence rates <sup>1</sup>				Number of cases			
		Total recordable cases	Cases with days away from work, job transfer, or restriction		Other recordable cases	Total recordable cases	Cases with days away from work, job transfer, or restriction		Other recordable cases
			Total	Cases with days away from work <sup>4</sup>			Total	Cases with days away from work <sup>4</sup>	
<b>All Industries including</b>		6.0	3.1	1.7	2.9				
<b>State and local government<sup>5</sup></b>						120.5	62.0	33.5	58.6
<b>Private Industry<sup>5</sup></b>		6.2	3.2	1.7	3.0	107.8	55.9	29.4	51.9
<b>Agriculture, forestry and fishing<sup>5</sup></b>		10.8	5.0	2.5	5.9	2.2	1.0	0.5	1.2
Agricultural production <sup>5</sup>	01-02	14.4	7.1	2.8	7.4	1.2	0.6	0.2	0.6
Agricultural production—crops <sup>5</sup>	01	12.0	4.7	1.6	7.3	0.3	0.1	( 8 )	0.2
Agricultural production—livestock <sup>5</sup>	02	15.6	8.2	3.4	7.4	0.9	0.5	0.2	0.4
Agricultural services	07	8.1	3.5	2.3	4.7	0.9	0.4	0.3	0.5
<b>Mining<sup>6</sup></b>		4.5	2.5	1.9	2.0	0.2	0.1	0.1	0.1
Metal mining <sup>7</sup>	10	4.3	2.5	2.2	1.9	0.2	0.1	0.1	0.1
Iron ores <sup>7</sup>	101	4.3	2.5	2.2	1.9	0.2	0.1	0.1	0.1
<b>Construction</b>		9.4	5.1	3.3	4.3	9.9	5.3	3.5	4.6
General building contractors	15	11.1	5.3	3.7	5.8	2.5	1.2	0.8	1.3
Residential building construction	152	11.3	6.3	5.3	5.0	1.3	0.7	0.6	0.6
Nonresidential building construction	154	11.0	4.3	1.9	6.7	1.2	0.5	0.2	0.7
Heavy construction, except building	16	10.8	6.0	4.2	4.8	1.5	0.8	0.6	0.7
Highway and street construction	161	9.8	4.5	3.4	5.3	0.6	0.3	0.2	0.3
Heavy construction, except highway	162	11.5	7.1	4.8	4.4	0.9	0.6	0.4	0.4
Special trade contractors	17	8.6	4.8	3.0	3.8	5.9	3.3	2.0	2.6
Plumbing, heating, air-conditioning	171	11.0	5.2	3.2	5.7	2.0	0.9	0.6	1.0
Electrical work	173	5.7	2.2	1.2	3.5	0.8	0.3	0.2	0.5
Masonry, stonework and plastering	174	10.1	4.8	3.2	5.3	0.9	0.4	0.3	0.5
<b>Manufacturing</b>		8.0	4.5	1.9	3.6	31.0	17.1	7.4	13.8
Durable goods		8.0	4.3	2.0	3.7	17.8	9.6	4.4	8.2
Lumber and wood products	24	10.4	6.8	3.5	3.6	2.1	1.4	0.7	0.7
Millwork, plywood and structural members	243	10.9	7.4	3.4	3.5	1.5	1.0	0.5	0.5
Millwork	2431	9.5	5.9	3.3	3.6	0.8	0.5	0.3	0.3
Furniture and fixtures	25	16.2	8.0	3.5	8.2	1.0	0.5	0.2	0.5
Stone, clay and glass products	32	12.8	7.7	3.2	5.1	1.2	0.7	0.3	0.5
Primary metal industries	33	15.1	9.9	4.5	5.2	1.1	0.7	0.3	0.4
Fabricated metal products	34	7.2	4.1	2.0	3.1	2.3	1.3	0.6	1.0
Fabricated structural metal products	344	12.2	7.7	3.4	4.5	1.2	0.8	0.3	0.5
Metal forgings and stampings	346	8.7	4.4	2.5	4.3	0.3	0.2	0.1	0.2
Industrial machinery and equipment	35	7.3	3.3	1.6	4.0	4.5	2.0	1.0	2.5

Industry <sup>2</sup>	SIC code <sup>3</sup>	Incidence rates <sup>1</sup>				Number of cases			
		Total recordable cases	Cases with days away from work, job transfer, or restriction		Other recordable cases	Total recordable cases	Cases with days away from work, job transfer, or restriction		Other recordable cases
			Total	Cases with days away from work <sup>4</sup>			Total	Cases with days away from work <sup>4</sup>	
Farm and garden machinery	352	15.1	7.9	5.6	7.2	0.5	0.3	0.2	0.3
Metalworking machinery	354	6.0	1.9	1.0	4.1	0.3	0.1	0.1	0.2
General industrial machinery	356	7.6	4.8	2.0	2.8	0.6	0.4	0.2	0.2
Computer and office equipment	357	2.2	1.1	0.3	1.1	0.4	0.2	0.1	0.2
Refrigeration and service machinery	358	6.2	4.1	1.8	2.0	0.4	0.3	0.1	0.1
Industrial machinery, n.e.c.	359	9.4	3.5	1.9	5.9	1.2	0.4	0.2	0.8
Industrial machinery, n.e.c.	3599	9.9	3.3	1.9	6.6	1.0	0.3	0.2	0.7
Electronic and other electric equipment	36	5.3	2.3	1.3	3.0	1.4	0.6	0.3	0.8
Electronic components and accessories	367	3.7	1.4	0.8	2.3	0.5	0.2	0.1	0.3
Transportation equipment	37	18.3	10.0	3.5	8.4	2.6	1.4	0.5	1.2
Motor vehicles and equipment	371	26.6	14.4	5.2	12.2	1.7	0.9	0.3	0.8
Instruments and related products	38	3.0	1.7	0.8	1.2	1.1	0.6	0.3	0.5
Measuring and controlling devices	382	1.9	0.9	0.7	0.9	0.2	0.1	0.1	0.1
Medical instruments and supplies	384	3.5	2.3	0.9	1.2	0.7	0.5	0.2	0.3
Miscellaneous manufacturing industries	39	6.3	3.5	0.9	2.8	0.4	0.2	0.1	0.2
<b>Nondurable goods</b>		8.1	4.6	1.9	3.4	13.2	7.6	3.1	5.6
Food and kindred products	20	10.6	6.7	2.4	3.9	5.5	3.5	1.3	2.0
Meat products	201	15.6	9.4	1.8	6.3	2.6	1.5	0.3	1.0
Meat packing plants	2011	19.5	13.2	2.7	6.3	0.9	0.6	0.1	0.3
Sausages and other prepared meats	2013	7.4	3.9	1.5	3.4	0.4	0.2	0.1	0.2
Poultry slaughtering and processing	2015	19.7	11.2	1.3	8.6	1.3	0.7	0.1	0.6
Dairy products	202	8.9	6.1	2.0	2.9	0.8	0.5	0.2	0.2
Preserved fruits and vegetables	203	9.9	7.6	4.1	2.3	0.6	0.4	0.2	0.1
Grain mill products	204	4.2	2.5	1.1	1.6	0.3	0.2	0.1	0.1
Paper and allied products	26	4.9	2.5	1.3	2.5	1.3	0.7	0.3	0.7
Paper mills	262	8.0	3.1	2.0	4.9	0.3	0.1	0.1	0.2
Paperboard containers and boxes	265	5.4	3.2	1.7	2.1	0.3	0.2	0.1	0.1
Printing and publishing	27	6.7	3.7	1.8	3.0	3.3	1.8	0.8	1.5
Newspapers	271	5.1	2.2	1.4	2.8	0.4	0.2	0.1	0.2
Commercial printing	275	9.0	5.3	2.4	3.7	2.1	1.3	0.6	0.9
Chemicals and allied products	28	4.9	3.2	1.3	1.7	0.5	0.3	0.1	0.2
Rubber & miscellaneous plastics products	30	11.1	5.7	2.1	5.4	1.9	1.0	0.4	0.9
Miscellaneous plastics products, n.e.c.	308	10.6	5.4	2.1	5.2	1.6	0.8	0.3	0.8
<b>Transportation and public utilities<sup>8</sup></b>		6.1	4.2	2.6	1.9	7.0	4.9	2.9	2.1
Railroad transportation <sup>8</sup>	40	3.3	2.2	1.8	1.1	0.2	0.1	0.1	0.1
Local and inter-urban passenger transit	41	6.9	4.2	3.0	2.8	0.7	0.4	0.3	0.3
Trucking and warehousing	42	8.3	6.6	4.8	1.8	2.6	2.0	1.5	0.5
Trucking and courier services, except air	421	8.5	6.7	5.0	1.8	2.4	1.9	1.4	0.5
Transportation by air	45	8.0	6.1	2.4	1.9	2.0	1.5	0.6	0.5
Transportation services	47	0.8	0.2	0.1	0.6	0.1	( <sup>10</sup> )	( <sup>10</sup> )	( <sup>10</sup> )
Communications	48	3.4	1.7	1.1	1.7	0.8	0.4	0.2	0.4
Telephone communications	481	3.0	1.4	0.9	1.6	0.4	0.2	0.1	0.2
Electric, gas and sanitary services	49	5.7	2.9	1.7	2.9	0.8	0.4	0.2	0.4
Electric services	491	6.0	2.8	2.1	3.1	0.5	0.2	0.2	0.3
<b>Wholesale and retail trade</b>		5.9	2.7	1.5	3.2	26.7	12.2	6.6	14.5
Wholesale trade		6.1	3.4	1.8	2.7	8.5	4.8	2.5	3.8
Wholesale trade — durable goods	50	5.7	2.8	1.6	2.8	4.5	2.3	1.3	2.3
Motor vehicles, parts and supplies	501	8.8	5.3	2.9	3.5	0.9	0.5	0.3	0.3
Lumber and construction materials	503	8.9	4.9	2.9	4.0	0.6	0.3	0.2	0.3
Professional and commercial equipment	504	2.9	1.5	0.8	1.4	0.6	0.3	0.2	0.3
Machinery, equipment and supplies	508	7.2	2.8	1.6	4.4	1.2	0.5	0.3	0.7
Wholesale trade — nondurable goods	51	6.6	4.1	2.1	2.5	4.0	2.5	1.3	1.5
Groceries and related products	514	8.0	5.7	2.3	2.2	1.9	1.4	0.6	0.5

Industry <sup>2</sup>	SIC code <sup>3</sup>	Incidence rates <sup>1</sup>				Number of cases			
		Total recordable cases	Cases with days away from work, job transfer, or restriction			Total recordable cases	Cases with days away from work, job transfer, or restriction		
			Total	Cases with days away from work <sup>4</sup>	Other recordable cases		Total	Cases with days away from work <sup>4</sup>	Other recordable cases
Retail trade		5.8	2.4	1.3	3.4	18.2	7.4	4.1	10.8
Building materials and garden supplies	52	7.2	3.8	2.2	3.4	1.4	0.8	0.4	0.7
Lumber and other building materials	521	6.9	3.9	2.4	3.0	0.9	0.5	0.3	0.4
General merchandise stores	53	7.0	3.4	1.9	3.6	3.1	1.5	0.8	1.6
Department stores	531	7.1	3.5	1.9	3.5	2.9	1.5	0.8	1.4
Food stores	54	9.2	4.1	2.1	5.0	3.4	1.5	0.8	1.9
Grocery stores	541	9.2	3.9	2.1	5.3	3.0	1.3	0.7	1.8
Automotive dealers and service stations	55	5.6	2.6	1.4	3.0	2.6	1.2	0.7	1.4
New and used car dealers	551	7.1	2.8	1.8	4.3	1.5	0.6	0.4	0.9
Apparel and accessory stores	56	3.1	0.9	0.6	2.2	0.4	0.1	0.1	0.3
Furniture and homefurnishings stores	57	4.6	3.2	1.7	1.4	1.0	0.7	0.4	0.3
Eating and drinking places	58	5.5	1.0	0.6	4.5	5.1	0.9	0.6	4.2
Miscellaneous retail	59	2.8	1.6	0.9	1.2	1.2	0.7	0.4	0.5
<b>Finance, insurance and real estate</b>		1.6	0.6	0.4	1.0	2.4	0.9	0.6	1.5
Real estate	65	3.6	1.5	1.1	2.1	0.8	0.3	0.2	0.5
<b>Services</b>		5.5	2.8	1.5	2.7	28.4	14.3	7.8	14.0
Hotels and other lodging places	70	5.9	3.5	1.6	2.4	1.0	0.6	0.3	0.4
Hotels and motels	701	6.0	3.7	1.7	2.3	1.0	0.6	0.3	0.4
Personal services	72	5.2	3.5	1.9	1.7	1.0	0.7	0.4	0.3
Business services	73	2.2	0.7	0.4	1.5	1.9	0.6	0.4	1.2
Auto repair, services and parking	75	3.7	2.3	1.5	1.3	0.7	0.4	0.3	0.3
Miscellaneous repair services	76	3.9	2.7	2.2	1.3	0.2	0.1	0.1	0.1
Amusement and recreation services	79	5.9	3.1	1.6	2.8	1.0	0.5	0.3	0.5
Health services	80	9.3	4.7	2.5	4.6	17.1	8.6	4.5	8.5
Nursing and personal care facilities	805	19.4	11.9	5.2	7.4	6.6	4.1	1.8	2.5
Hospitals	806	11.3	5.5	3.4	5.8	7.6	3.7	2.3	3.9
Home health care services	808	6.0	2.9	1.6	3.1	0.4	0.2	0.1	0.2
Educational services	82	2.8	1.3	0.9	1.5	0.6	0.3	0.2	0.3
Residential care	836	8.0	4.7	1.9	3.3	1.8	1.0	0.4	0.7
<b>State and local government</b>		4.9	2.3	1.6	2.6	12.8	6.1	4.1	6.7
<b>State government</b>		4.0	1.5	1.0	2.4	2.4	0.9	0.6	1.4
<b>Construction</b>		7.2	4.4	2.1	2.8	0.3	0.2	0.1	0.1
<b>Services</b>		3.7	1.2	1.1	2.5	1.3	0.4	0.4	0.9
Health services	80	8.5	6.0	4.9	--	0.3	0.2	0.2	--
Educational services	82	3.4	0.7	0.6	2.7	1.0	0.2	0.2	0.8
<b>Public administration</b>		3.7	1.6	0.7	2.2	0.8	0.3	0.2	0.4
<b>Local government</b>		5.2	2.6	1.7	2.6	10.4	5.2	3.5	5.2
<b>Services</b>		5.3	2.5	1.7	2.8	6.8	3.2	2.2	3.6
Health services	80	11.4	5.7	3.5	5.7	1.8	0.9	0.6	0.9
Hospitals	806	10.6	4.5	2.7	6.1	1.3	0.6	0.3	0.8
Educational services	82	4.3	2.1	1.5	2.2	4.2	2.0	1.4	2.2
<b>Public administration</b>		4.5	2.3	1.5	2.2	2.9	1.5	1.0	1.4

<sup>1</sup> 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 year  
200,000 = base for 100 equivalent full-time workers (working 40 hours a week, 50 weeks a year).

<sup>2</sup> Totals include data for industries not shown separately.

<sup>3</sup> *Standard Industrial Classification Manual*, 1987 Edition.

<sup>4</sup> Days-away-from-work cases include those which result in days away from work with or without job transfer or restriction.

<sup>5</sup> Excludes farms with fewer than 11 employees.

<sup>6</sup> Data for Mining (Division B in the *Standard Industrial Classification Manual*, 1987 edition) include establishments not governed by the Mine Safety and Health Administration (MSHA) rules and reporting, such as those in Oil and Gas Extraction. Data for mining operators in coal, metal, and nonmetal mining are provided to BLS by the Mine Safety and Health Administration, U.S. Department of Labor. Independent mining contractors are excluded from the coal, metal, and nonmetal mining industries. These data do not reflect the changes OSHA made to its recordkeeping requirements effective January 1, 2002; therefore estimates for these industries are not comparable with estimates for other industries.

<sup>7</sup> Data for mining operators in this industry are provided to BLS by the Mine Safety and Health Administration, U.S. Department of Labor. Independent mining contractors are excluded. These data do not reflect the changes OSHA made to its recordkeeping requirements effective January 1, 2002; therefore estimates for these industries are not comparable with estimates for other industries.

<sup>8</sup> Data for employers in railroad transportation are provided to BLS by the Federal Railroad Administration, U.S. Department of Transportation. These data do not reflect the changes OSHA made to its recordkeeping requirements effective January 1, 2002; therefore estimates for these industries are not comparable with estimates for other industries.

<sup>9</sup> Incidence rate less than 0.05.

<sup>10</sup> Fewer than 50 cases.

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

n.e.c. = not elsewhere classified.

-- Indicates data not available.

Source: Bureau of Labor Statistics, U.S. Department of Labor, *Survey of Occupational Injuries and Illnesses*, in cooperation with the Minnesota Department of Labor and Industry.