Minnesota Workplace Safety Report 2006

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Other Department of Labor and Industry staff members whose efforts made this report possible were: Char Chilson, Information Technology Services; Mike Seliga, Minnesota OSHA Workplace Safety Consultation; and Kelly Taylor, Minnesota OSHA Compliance.

Executive summary

Minnesota's occupational injury and illness rate remained at an all-time low in 2006, although the number of injuries and illnesses slightly increased. The most recent injury and illness figures show an estimated 107,100 recordable injury and illness cases in 2006; about 27,700 cases involved one or more days away from work. The comparable figures for 2005 were 104,100 total cases and 27,400 days-away-from-work cases. There were 78 work-related fatalities in 2006, down from 87 in 2005.

While the number of cases has decreased substantially during the past decade, these injuries, illnesses and deaths exact a toll on workers and their families and affect business costs and productivity. Workers' compensation costs in Minnesota approached $1.66 billion in 2006, about the same as in 2005. In 2004, the average cost of an insured claim was approximately $7,100. There are other costs of workplace injuries and illnesses that are more difficult to measure, such as delayed production, hiring and training replacement workers, and those economic and non-economic losses to injured 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 for the injuries, illnesses and fatalities are the *Survey of Occupational Injuries and Illnesses* and the *Census of Fatal Occupational Injuries*, both conducted jointly by the Minnesota Department of Labor and Industry and U.S. Bureau of Labor Statistics. ***Because the Occupational Safety and Health Administration changed its injury and illness recordkeeping requirements in 2002 and the Bureau of Labor Statistics changed its industry and occupation classification systems for the 2003 survey, the results for 2002 and later years are not comparable with results for prior years.*** Information about Minnesota OSHA activities and programs is also presented, based on administrative statistics collected by the agency.

Nonfatal occupational injuries and illnesses

Incidence rates

- Minnesota's total rate of workplace injuries and illnesses was 5.1 cases per 100 full-time-equivalent (FTE) workers in 2006, unchanged from 2005. This represents a 3.8 percent decrease from the 2004 rate of 5.3 cases per 100 FTE workers.

- The rate of cases with days away from work, job transfer or restriction was 2.4 cases per 100 FTE workers in 2006, unchanged from 2005 and slightly below the rate of 2.6 cases per 100 FTE workers in 2004.

- The rate of cases with days away from work (the most severely injured workers) was 1.3 per 100 FTE workers in 2006 and 2005.

- Minnesota's private-sector total case rate and lost-workday case rate have been significantly above the U.S. rates since 1996. For the private sector in 2006, the total case rate was 5.0 for the state versus 4.4 for the nation.

- Minnesota's rate of cases with days away from work has been roughly equal to the national rate since 1996; in 2006, both Minnesota and the nation had rates of 1.3 cases per 100 FTE workers.

- Minnesota's industry sectors with the highest total injury and illness rates per 100 FTE workers were:
  (1) agriculture, forestry, fishing and hunting (8.1);
  (2) construction (7.8);
  (3) manufacturing (6.8); and
  (4) health care and social assistance (6.8).

- Four of the 10 industry subsectors with the highest total case rates were in the manufacturing industry sector.

Worker and injury characteristics

For cases with days away from work, the survey provides information about characteristics of the injured workers and their injuries. The following results refer to injuries and illnesses occurring in 2006.

- Men accounted for 52 percent of the workers and for 63 percent of the injured workers.

- Workers age 35 to 44 and 45 to 54 years old were the most common age groups, each accounting for 25 percent of the cases.

- The occupation group with the most days-away-from-work cases was service workers, with 25 percent of the cases. The two most common specific occupations were laborers and freight, stock and material movers and nursing aides, orderlies and attendants.

- The most common types of injury were:
  (1) sprains, strains and tears of muscles, joints and tendons (39 percent); and
  (2) soreness and pain (10 percent).

- The most common body parts affected were:
  (1) the back (24 percent);
  (2) lower extremities (22 percent); and
  (3) upper extremities (21 percent).

- The most frequent events or exposures leading to the injury or illness were:
  (1) overexertion (30 percent); and
  (2) falls (19 percent).

- Repetitive motion accounted for 4 percent of the cases.

- The most frequent sources of injury or illness were:
  (1) floors and ground surfaces (17 percent) and
  (2) the injured worker's bodily motion or position (15 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. However, fatal *illnesses* are excluded.

- In 2006, 78 Minnesotans were fatally injured on the job. For 2002 through 2006, Minnesota had an average of 80 fatal work injuries a year, consisting of approximately 61 wage-and-salary workers and 19 self-employed people.

- Among industry sectors, the highest total numbers of fatal injuries for 2006 were in:
  (1) agriculture, forestry, fishing and hunting (23);
  (2) construction (13); and
  (3) transportation and warehousing (7).

- The most frequent causes of Minnesota's fatal work injuries for 2006 were:
  (1) transportation accidents (37 percent); and
  (2) contact with objects and equipment (35 percent).

Minnesota OSHA activities

During federal-fiscal-year 2007 (October 2006 through September 2007), MNOSHA:

- conducted 2,651 compliance inspections affecting the workplaces of 126,260 workers;
- found violations resulting in the assessment of $3.9 million in penalties;
- conducted 924 worksite consultations, which affected the workplaces of 92,150 workers and helped employers avoid $5.4 million in penalties; and
- conducted 693 worksite training and intervention visits, reaching more than 24,000 participants.

Contents

1
Introduction

Minnesota's workplaces remained safer for workers during 2006 than they had been for much of the preceding decade. The latest occupational injury and illness figures show that during 2006, there were an estimated 107,100 recordable injury and illness cases; about 27,700 cases involved one or more days away from work. The figures for 2005 were 104,100 total cases and 27,400 days-away-from-work cases. There were 78 work-related fatalities in 2006, a decrease from 87 fatalities in 2005.

Approximately 290 Minnesota workers were hurt at work or became ill from job-related causes each day during 2006. 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 $1.66 billion in 2006, or $1.66 per $100 of covered payroll. This includes indemnity benefits (for lost wages, functional impairment or death), medical treatment, physical and vocational rehabilitation, litigation, claims administration and other system costs.

- In 2004 (the most current data available), the average cost of an insured claim was $7,140 (in 2006 dollars) for medical treatment plus indemnity benefits (wage loss, disability and vocational rehabilitation).

- For claims with indemnity benefits, 21 percent of all cases, the combined average medical and indemnity cost was much higher — $30,400.

- Other workplace injury and illness costs are more difficult to measure, such as delayed production, hiring and training of new workers, and those economic and non-economic losses to injured workers and their families that are not covered by workers' compensation.

This report, part of an annual series, provides information 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 workplace safety and health and, thereby, reducing the burden of occupational injuries and illnesses on workers, families and employers.

This report also provides a summary of Minnesota OSHA activities, showing how these state programs are supporting employers' efforts to improve workplace safety.

Data sources

This report presents statistics from three sources: the U.S. Bureau of Labor Statistics (BLS) annual *Survey of Occupational Injuries and Illnesses* (SOII); the BLS *Census of Fatal Occupational Injuries* (CFOI); and the OSHA Integrated Management Information System (IMIS). BLS and CFOI statistics are available through 2006, and the IMIS results are available through September 2007 (the end of the 2007 federal fiscal year).

Occupational injury and illness survey

The annual SOII, conducted jointly by BLS and state agencies, is the primary source of workplace injury and illness data nationwide. Approximately 5,150 Minnesota employers in the private sector and state and local government participated in the 2006 SOII. The survey includes all cases recorded on the 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 SOII 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 SOII 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 SOII does not include injuries to employers, sole proprietors, federal government employees, volunteers or 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; and 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 in the OSHA recordkeeping requirements, ***the survey results for 2002 and later years are not comparable with the results for prior years.*** The recordkeeping changes affected what injuries and illnesses are recordable, how injuries and illnesses are categorized and how days away from work are counted. These changes make direct comparisons between the pre-2002 SOII and the 2002 and later SOII results unreliable.

Further changes in the categorization of industries and occupations took place in 2003. The industry coding changed from the 1997 Standard Industrial Classification (SIC) system to the 2002 North American Industry Classification System (NAICS).[1] Occupational coding changed from the 1990 Bureau of Census codes to the 2000 Standard Occupational Classification (SOC) system.[2] Exact comparisons of industry-specific and occupation-specific rates and numbers with results for earlier years are not possible.

The SOII defines different types of cases according to whether they have days off the job, job transfer or work restrictions. Because of changes in 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. Prior to 2002, 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 or illness (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 work beyond the initial day of the injury or illness.

- Other recordable cases are cases that have no days away from work, no job transfer and no work restrictions beyond the initial day of the injury or illness, but meet the guidelines for recording the case.

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

An important issue with the injury and illness 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.

Fatal injuries

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-

[1] Information about NAICS is available at www.census.gov/epcd/www/naics.html.
[2] Information about the SOC system is available at www.bls.gov/soc/home.htm.

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.

The CFOI results were categorized by NAICS industry codes and SOC occupation codes for the first time in 2003. Trends and direct comparisons with data from earlier years are not possible for industries and occupations.

OSHA activity measures

The Minnesota Occupational Safety and Health Administration (MNOSHA) program includes the Compliance unit, which is responsible for occupational safety and health 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.

Other available data

The SOII 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 detailed industries for survey years 2000 through 2006 are available on the DLI Web site at www.doli.state.mn.us/dlistats.html. Many other SOII data tables and charts for Minnesota are available at www.doli.state.mn.us/blsstats.htm.

The Minnesota CFOI tables are on the Web at www.doli.state.mn.us/dlistats.html. The national SOII and CFOI statistics are available at www.bls.gov/iif. The national data, because of larger sample sizes, includes more detailed categories than the state data and has 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.

The MNOSHA annual report provides detailed statistics about MNOSHA activities and is available at www.doli.state.mn.us/pdf/06mnosha_annualreport.pdf .

Report organization

The next three 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 by industry and establishment size. Chapter 4 describes the characteristics of workers and their injuries for days-away-from-work cases.

Chapter 5 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 6 provides information about MNOSHA activities and programs to help employers achieve safe and healthful workplaces.

Appendix A shows the major changes to OSHA's recordkeeping rule that became effective in 2002. Appendix B provides a glossary of concepts and terms for understanding and using the SOII data.

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Number and incidence of workplace injuries and illnesses

Number of injury and illness cases

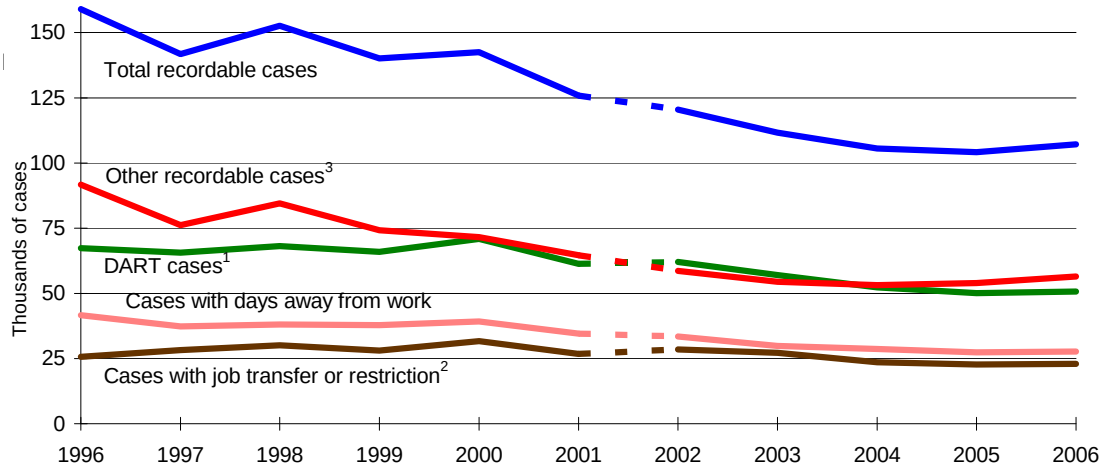
While incidence rates provide standardized measurements of injuries and illnesses, the number of cases shows the magnitude of the occupational injury and illness situation, and is an appropriate point for beginning this report.

On the basis of employers' responses to the *Survey of Occupational Injuries and Illnesses* (SOII), there were an estimated 107,100 recordable injury and illness cases in Minnesota in 2006.

Figure 2.1 shows estimates of the number of nonfatal injuries and illnesses in Minnesota for 1996 through 2006. 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 and later estimates are not directly comparable with estimates from earlier years. To highlight this caveat, there is a break in the data lines after 2001.

- From 2002 to 2006, while employment increased 3 percent, the estimated number of recordable cases decreased 11 percent.
- The distribution of cases among the various case types in 2006 was consistent with the distribution in recent years.

Figure 2.1 Number of injury and Illness cases, Minnesota, 1996-2006



Year of injury	Employ-ment (1,000s)	Total recordable cases (1,000s)	Cases with days away from work, job transfer, or restriction (DART)						Other recordable cases[3]	
			Total DART cases[1]		Cases with days away from work		Cases with job transfer or restriction[2]			
			Number (1,000s)	Pctg. of total	Number (1,000s)	Pctg. of total	Number (1,000s)	Pctg. of total	Number (1,000s)	Pctg. of total
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%
2004	2,560	105.5	52.3	50%	28.7	27%	23.6	22%	53.2	50%
2005	2,585	104.1	50.1	48%	27.4	26%	22.7	22%	54.0	52%
2006	2,629	107.1	50.7	47%	27.7	26%	23.0	21%	56.5	53%

1. For 2001 and earlier, lost-workday cases.
2. For 2001 and earlier, cases with restricted work activity only.
3. For 2001 and earlier, cases without lost workdays.

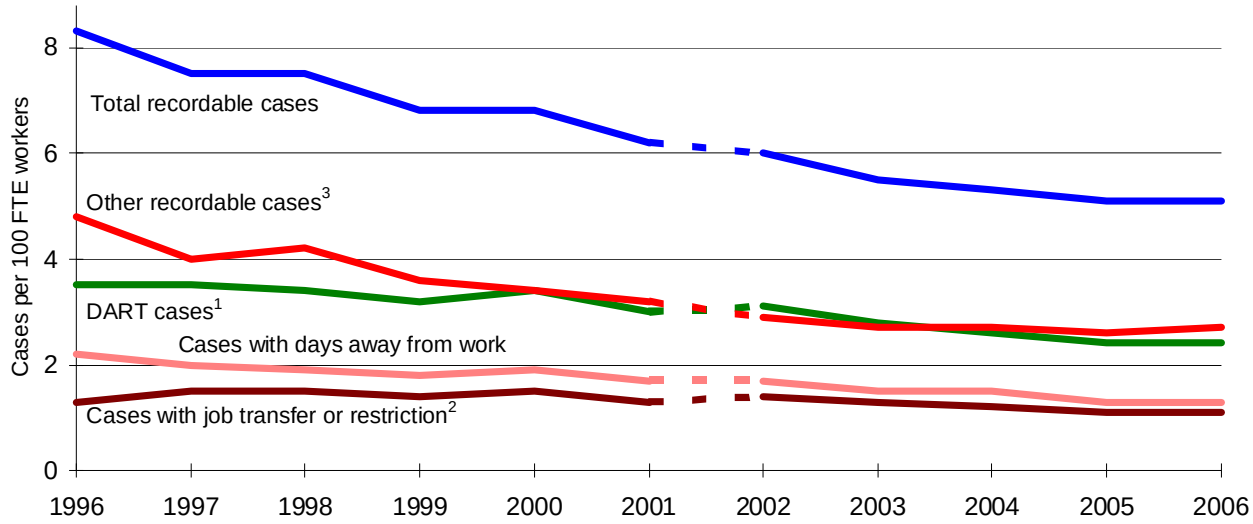
Incidence rate trends

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 1996 through 2006, expressed as cases per 100 full-time-equivalent (FTE) workers. All sectors, private and public, are included.

Because of the OSHA recordkeeping changes, the 2002 and later estimates are not directly comparable with estimates from earlier years. As in Figure 2.1, there is a break in the data lines after 2001.

- The total case incidence rate started dropping in 1997. Minnesota's 2006 total case rate and DART case rate were the lowest in the history of the state survey, matching the 2005 rates.
- The DAFW case rate declined throughout this period, reaching its lowest level in 2005 and 2006. In contrast, the rate for restricted-work-activity-only cases increased through 2000, and has since decreased.

Figure 2.2 Injury and illness cases per 100 FTE workers, Minnesota, 1996-2006



Year of injury	Total recordable cases	Cases with days away from work, job transfer, or restriction (DART): Total DART cases[1]	Cases with days away from work, job transfer, or restriction (DART): Cases with days away from work	Cases with days away from work, job transfer, or restriction (DART): Cases with job transfer or restriction[2]	Other recordable cases[3]
1996	8.3	3.5	2.2	1.3	4.8
2000	6.8	3.4	1.9	1.5	3.4
2004	5.3	2.6	1.5	1.2	2.7
2005	5.1	2.4	1.3	1.1	2.6
2006	5.1	2.4	1.3	1.1	2.7

1. For 2001 and earlier, lost-workday cases.
2. For 2001 and earlier, cases with restricted work activity only.
3. For 2001 and earlier, cases without lost workdays.

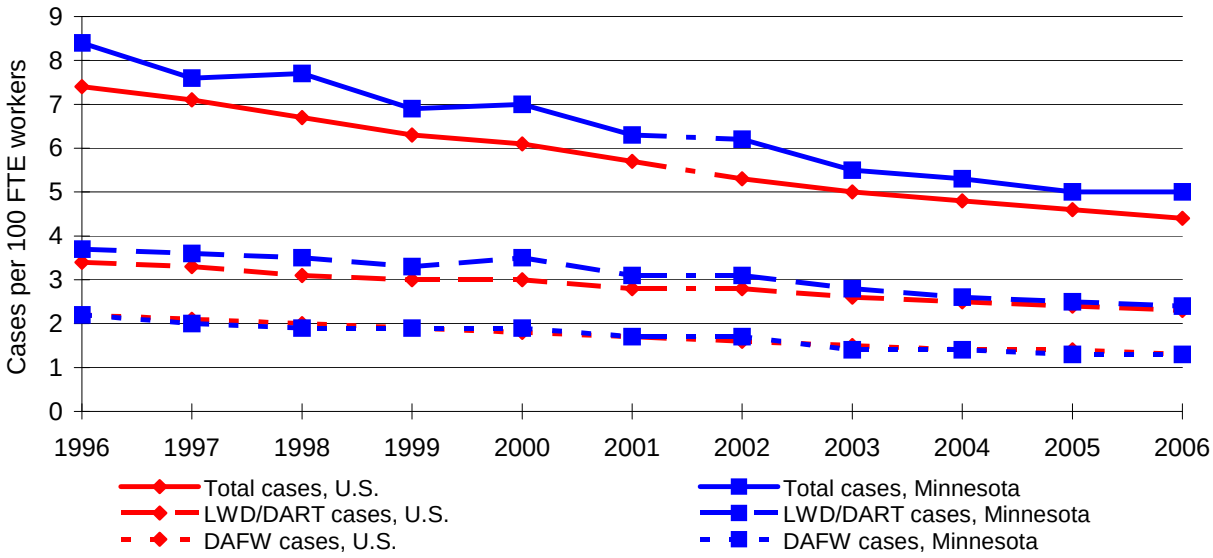
Comparing Minnesota with the nation

Figure 2.3 compares the rates of total cases, DART cases and DAFW cases in the **private sector** for Minnesota and the United States for 1996 through 2006.[3]

- Minnesota's 2006 total case rate was 5.0 per 100 FTE workers, while the U.S. rate was 4.4 cases. Minnesota's total case rate has been above the U.S. rate since 1993.
- Minnesota's DART rate for 2006 was 2.4, compared to 2.3 for the United States. Relative to the U.S. rate, Minnesota's lost-workday case rate was lower in the late 1980s, close during the early 1990s, higher from 1996 to 2000, and very close to the U.S. rate since 2001.
- Since 1986, Minnesota's DAFW case rate has been higher than the U.S. rate only twice, each time by only 0.1 cases per 100 FTE workers.

Industry mix variations between Minnesota and other states may 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. Another source of difference is the proportion of DART and DAFW cases among total cases. This is discussed further in the next section. There may also be variations in reporting between Minnesota and other states, which may affect the rates.

Figure 2.3 Injury and illness case incidence rates for Minnesota and the United States, private sector, 1996-2006



	Cases per 100 full-time-equivalent workers					
	Total cases		LWD/DART cases[1]		Days-away-from-work cases	
	Minnesota	U.S.	Minnesota	U.S.	Minnesota	U.S.
1996	8.5	8.1	3.9	3.6	2.3	2.5
2000	7.0	6.1	3.5	3.0	1.9	1.8
2004	5.3	4.8	2.6	2.5	1.4	1.4
2005	5.0	4.6	2.5	2.4	1.3	1.4
2006	5.0	4.4	2.4	2.3	1.3	1.3

1. LWD cases are lost-workday cases (2001 and earlier). DART cases include cases with days away from work, job transfer or restriction (2002-2006).

[3] Participating states have the option to include public-sector worksites in the SOII. Because not all states choose this option, public-sector statistics are not available at the national level.

Minnesota relative to other states

The ranking of Minnesota's incidence rates with those from other states provides a context for the current level and recent trend in Minnesota's injuries and illnesses. The results reinforce the comparison of Minnesota and the national rates.

Figure 2.4 shows Minnesota's ranking on injury and illness rates and on two rate ratios. Comparable private-sector data is available for 41 states for 2000 and for 42 states in 2004, 2005 and 2006. Lower rates are ranked lower.

- Minnesota has a middle-range ranking on all measures.

- Minnesota's 2004 ranking improved noticeably from 2000 on four of the five incidence rates and has remained below the 2000 ranks since then. The ranking for other recordable cases has increased since 2000.

- Total cases can be divided into two broad categories, DART cases and other recordable cases (see Appendix B for definitions of the case types). A low percentage of DART cases among all cases may indicate that employers are recording many low-severity cases on their OSHA logs or that the state has a low overall severity level. DART cases comprised 48 percent of Minnesota's recordable cases in 2006, the ninth lowest percentage. This is a large change from 2000, when Minnesota ranked 28th lowest.

- DART cases can be divided into DAFW and cases with job transfer or restriction. A low percentage of DAFW cases among DART cases may signal that employers are making work accommodations generally available to injured workers. Minnesota had the 16th lowest DAFW percentage among DART cases in 2006, at 55 percent.

These relative rankings must be viewed cautiously due to recent research about the completeness of the case counts compiled through the SOII system. State-to-state variations in employee injury reporting and employer recordkeeping might affect rates.

Figure 2.4 Ranking of Minnesota's private-sector injury and illness rates with other states (lower rates have lower rankings)

Incidence rate	2000 (41 states)	2004 (42 states)	2005 (42 states)	2006 (42 states)
Total cases	28	23	21	25
Cases with days away from work, job transfer or restriction (DART)[1]	29	20	20	21
Cases with days away from work (DAFW)	25	17	14	17
Cases with job transfer or restriction[2]	34	27	26	26
Other recordable cases	25	27	24	30
DART (or LWD) rate as percentage of total case rate	28	15	15	9
DAFW rate as percentage of DART (or LWD) rate	10	16	15	16

[1] For 2000, lost-workday cases (LWD).

[2] For 2000, cases with days of restricted work activity only.

3

An overview of nonfatal workplace injuries and illnesses in Minnesota

This chapter compares injury and illness rates by industry and presents information about incidence rates by establishment size. There is considerable variation in the injury and illness rates by industry and establishment size.

The 2006 injury and illness survey shows:

- construction had the highest total case rate, 7.8 cases per 100 FTE workers, followed by manufacturing with a rate of 6.8 cases.

- 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. As shown in Appendix A, there are 20 industry sectors in the NAICS classification. NAICS uses a six-digit hierarchical code in which each successive digit after the second digit indicates a finer level of detail. Industry sectors use the first two NAICS digits. For brevity of presentation, the SOII results are often presented in supersectors. The 11 supersectors include from one to four sectors. Because the state and local government sector-level results are concentrated in a few services and public administration, these statistics are reported as totals for state and local government, respectively.

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

- Construction had the highest incidence rates for all cases, for DAFW cases and for other recordable cases.

- Manufacturing had the second-highest total case rate and the highest rate for cases with job transfer or restrictions.

- Manufacturing and trade, transportation and utilities were the only sectors with job transfer or restriction rates that were higher than their DAFW rates.

Figure 3.2 compares the 2006 rates for each supersector with their respective 2005 rates. The 2006 total case rates were lower than the 2005 rates for six of the supersectors, the same rate in both years for one industry, and higher in 2006 than in 2005 for five supersectors. The 2006 rate was lower than the 2005 rate for two of the four highest-rate supersectors.

Figure 3.3 compares Minnesota's private-sector 2006 total case incidence rates with the U.S. rate for each supersector. With the exception of financial activities and other services, the Minnesota industry rates were higher than the corresponding U.S. rates. Some of these rate differences may result from different employment distributions among the constituent industries in each supersector. Only the rate differences for the three highest rate industry supersectors in Minnesota were statistically significantly higher than the corresponding U.S. rates.

Figure 3.1 Incidence rates by industry supersector, Minnesota, 2006

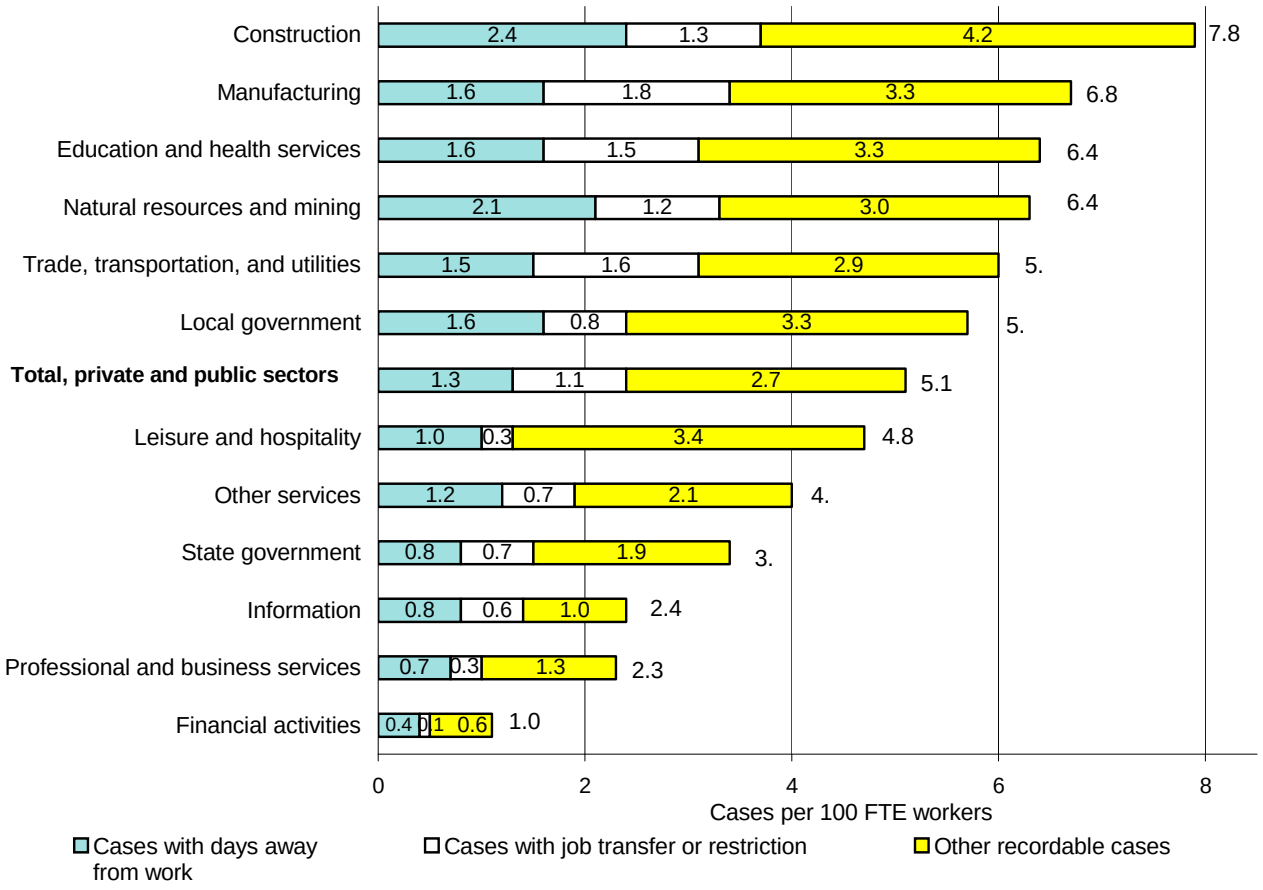


Figure 3.2 **Incidence rates per 100 FTE workers for total nonfatal occupational injuries and illnesses by industry supersector, Minnesota, 2005 and 2006**

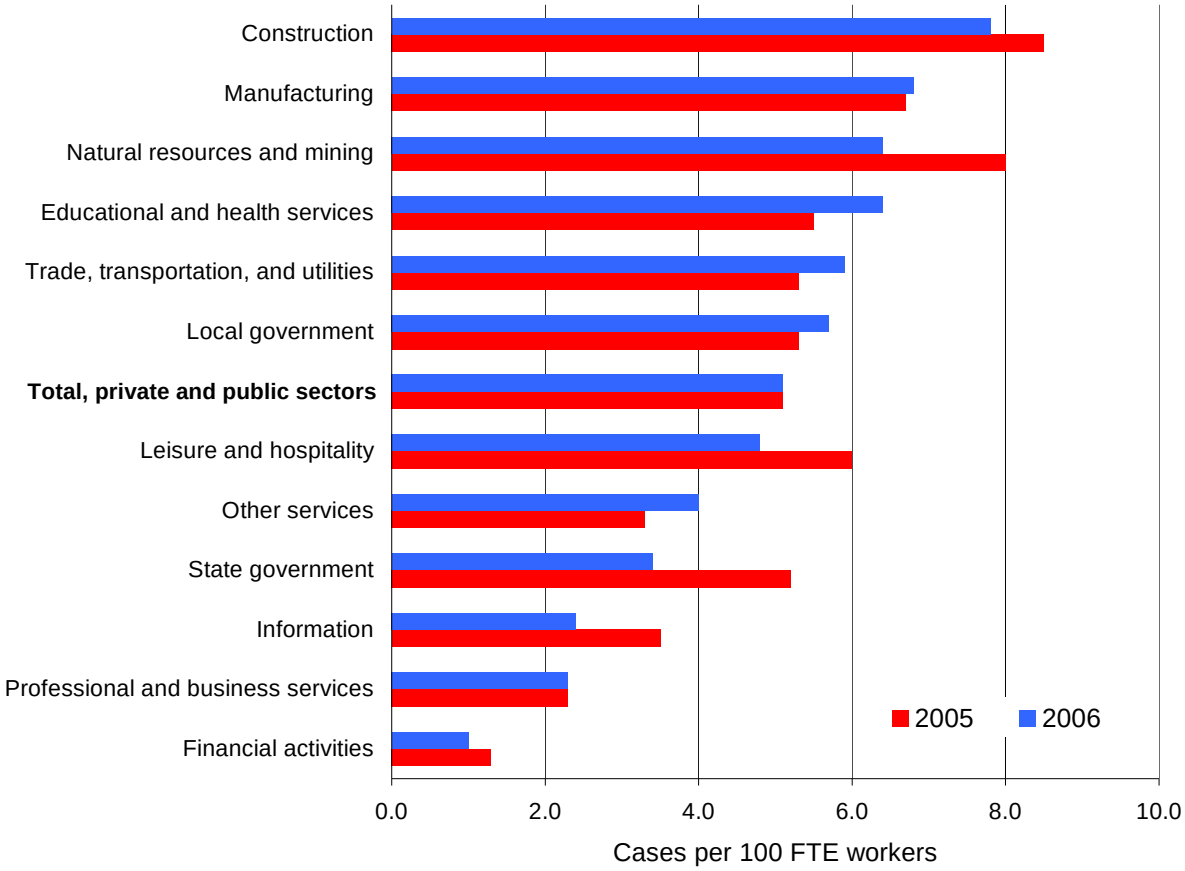


Figure 3.3 **Incidence rates per 100 FTE workers for total nonfatal occupational injuries and illnesses by industry supersector, private sector, Minnesota and United States, 2006**

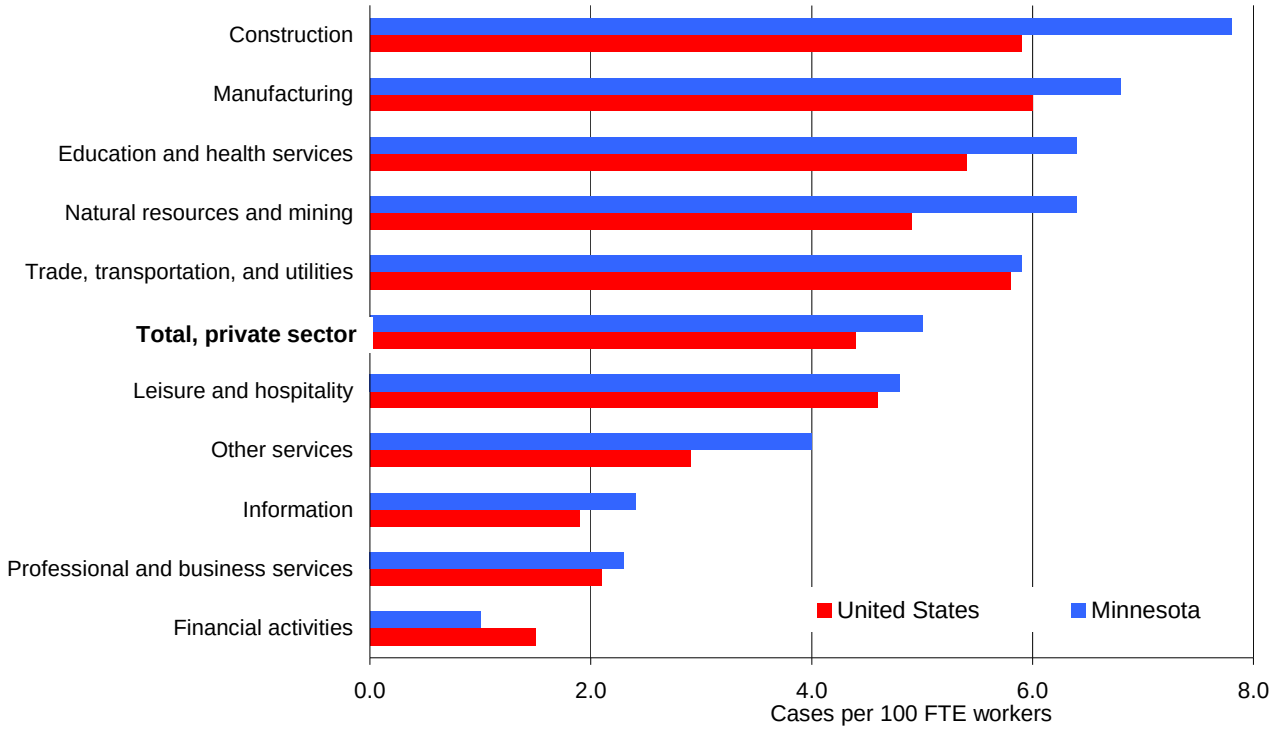


Figure 3.4 Percentage of total cases and employment by industry supersector, 2006

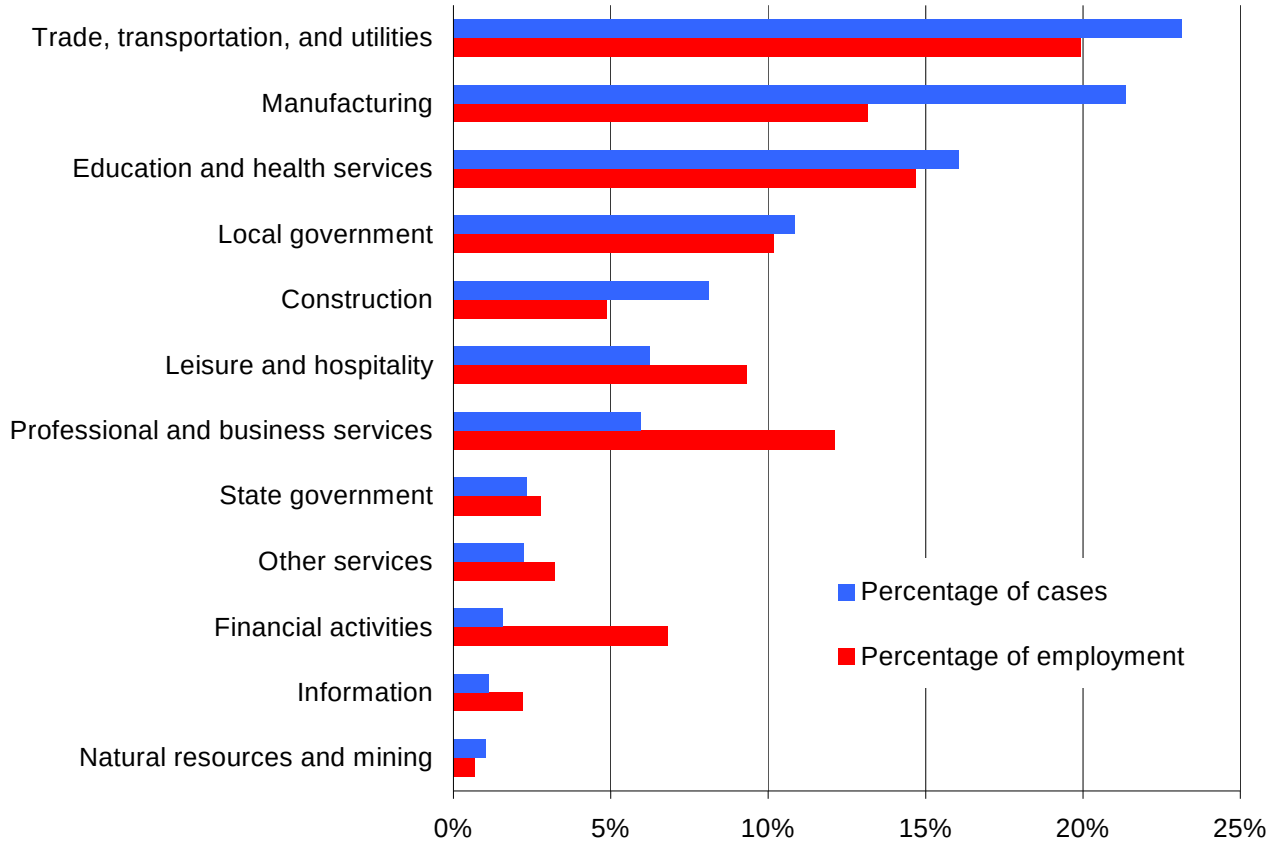


Figure 3.4 compares the percentage of employment for each of the supersectors with the percentage of total cases reported. Cases and employment (measured by total hours worked) are the components for calculating the case rates. Industries with higher percentages of cases compared to employment have the highest total case rates, as shown in Figure 3.1.

- Trade, transportation and utilities, with 20 percent of Minnesota's employment, accounted for 23 percent of the cases.
- Manufacturing had 21 percent of the cases and was the third-largest employment supersector, with 13 percent of employment.
- Education and health services were the third-highest supersector for total cases (16 percent) and second-largest supersector for employment (15 percent).
- Construction had a noticeably higher percentage of total cases compared to its percentage of total employment, accounting for 8 percent of the cases and 5 percent of employment.

Days away from work

As part of the OSHA recordkeeping changes for 2002, days away from work are counted by calendar days, not scheduled work days. This change makes the SOII count more compatible with the method used in Minnesota's workers' compensation system to measure days away from work. However, unlike workers' compensation, the SOII number of days does not include the day of the event causing the injury or illness.

Table 3.5 shows the median number of days away from work for 2005 and 2006 by industry supersector. While the median is not as sensitive as the mean to outliers, the weighting system used by BLS to compute the SOII estimates sometimes results in large year-to-year variations.

- The median for all industries was five days, unchanged since 2000. The median duration varied widely among the industries and by year within industry.

- For 2006, financial activities had the highest median duration, at nine days. In 2005, its median duration was five days, and three other industries had the highest median, at seven days.

- The median number of days away from work depends on many factors, including the most common types of injuries occurring in the industry, the average age of the injured workers and the ability of employers to provide temporary work or restricted-duty work for injured workers.

Figure 3.5 Median days away from work by industry supersector, Minnesota, 2005 and 2006

Industry	2005	2006
Financial activities	5	9
Information	7	8
Construction	7	7
Natural resources and mining	7	5
Local government	5	5
Manufacturing	5	5
Other services	5	5
State government	5	5
Total, private and public	5	5
Trade, transportation, and utilities	5	5
Leisure and hospitality	4	5
Professional and business services	4	4
Education and health services	4	4

Results by industry subsector

Some safety and health resources, such as Minnesota OSHA compliance inspections, need to be prioritized to those industries with the highest injury and illness rates and the highest numbers of cases. Figure 3.6 shows the industry subsectors (three-digit NAICS classes) with the highest total case incidence rates in Minnesota.

- Four of these 10 subsectors are in the manufacturing sector and two are in health care and social assistance.
- Rates for couriers and messengers, and local government nursing and residential care were noticeably lower than in 2005.

The industry subsectors with the highest DAFW *case incidence rates* in Minnesota are shown in Figure 3.7.

- Three of these 10 subsectors, covering nursing homes, are in the health care and social assistance sector.
- Even though the DAFW rate for local government nursing and residential care facilities is the second-highest of any industry subsector, its rate improved substantially from the 2003 rate of 8.0 DAFW cases per 100 FTE.

Figure 3.8 shows the industry subsectors with the highest *number* of DAFW cases. Only two industries are listed in both figures 3.7 and 3.8. Only one of the five industries with the highest DAFW rates, private-sector nursing and residential care facilities, is among the top 10 industries with the highest number of cases.

- These 10 industries accounted for 12,320 DAFW cases, 44 percent of the state's total.
- The industries represent a wide variety of Minnesota workplaces. These 10 subsectors come from seven different industry sectors.

Figure 3.6 Industry subsectors with the highest total case rates, Minnesota, 2006

Industry subsector[1]	Cases per 100 FTE workers
Utilities (local government)	15.7
Nursing and residential care (state gov.)	14.4
Primary metal manufacturing	14.3
Nursing and residential care (local gov.)	12.7
Beverage and tobacco product mfg.	11.9
Transportation equipment mfg.	11.4
Furniture and related product mfg.	10.9
Couriers and messengers	10.5
Animal production	10.4
Building material and garden eqpt. dealers	10.4

[1] Industry subsectors use the first three NAICS digits.

Figure 3.7 Industry subsectors with the highest rates of days-away-from-work cases, Minnesota, 2006

Industry subsector	DAFW cases per 100 FTE
Nursing and residential care (state gov.)	6.7
Nursing and residential care (local gov.)	6.2
Couriers and messengers	3.9
Transit and ground passenger transp. (local government)	3.9
Primary metal manufacturing	3.5
Animal production	3.5
Nonmetallic mineral product mfg.	3.2
Warehousing and storage	3.1
Nursing and residential care (private)	2.8
Specialty trade contractors	2.8
Furniture and related product mfg.	2.8

Figure 3.8 Industry subsectors with the highest number of days-away-from-work cases, Minnesota, 2006

Industry subsector	DAFW cases[1]
Specialty trade contractors	1,950
Nursing and residential care (private)	1,640
Hospitals (private)	1,570
Administrative and support services	1,450
Public administration (local government)	1,270
Educational services (local government)	990
Food sevices and drinking places	970
Fabricated metal product manufacturing	840
Merchant wholesalers, durable goods	820
Merchant wholesalers, nondurable goods	820

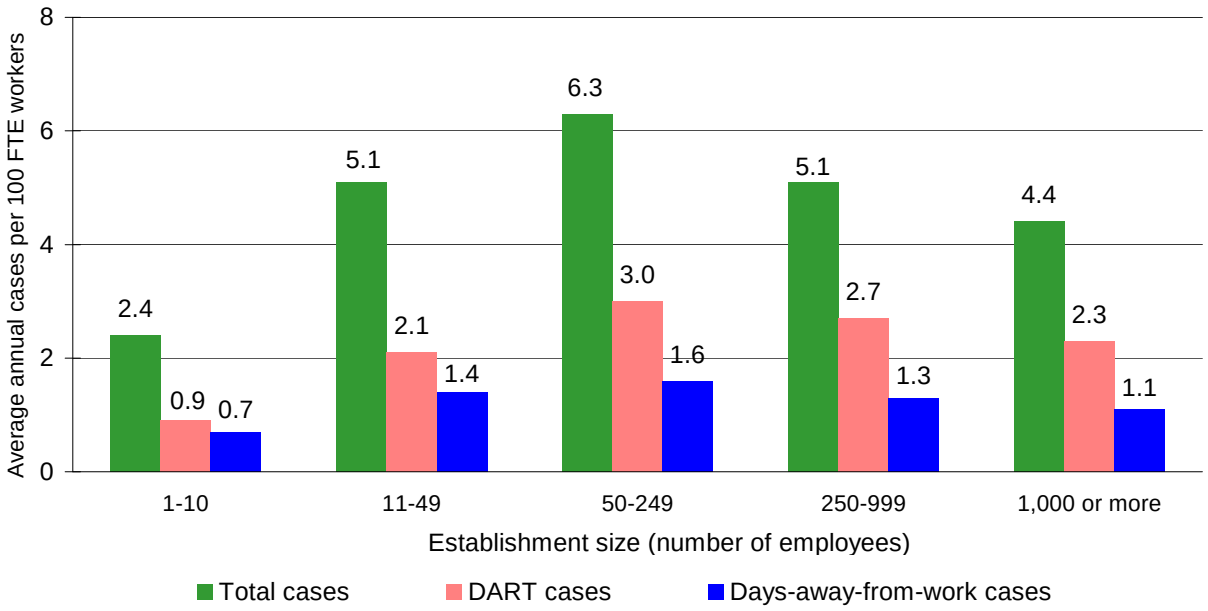
[1] Number of cases is rounded to nearest 10.

Incidence by size

The incidence of reported workplace injuries and illnesses varies by establishment size. Figure 3.9 shows case incidence by case type and establishment size, and presents the total case rates by establishment size and industry.

- Incidence rates are lowest for the smallest establishments (one to 10 employees).
- Mid-sized establishments (50 to 249 employees) have the highest rates for all three case types.
- The total case incidence rates are changing in different directions for the different size groups. The 2006 total case incidence rates for establishments with one to 10 workers and for 11 to 49 workers are higher than in 2004 and 2005, while the rates for size groups with 50 or more workers decreased from the previous two years.
- The total case incidence rate for establishments with 1,000 or more workers decreased from 5.3 cases per 100 FTE workers in 2004, to 4.8 cases in 2005, and to 4.4 cases in 2006, a 17 percent decrease.
- For nearly all industries, the smallest establishments have lower total case rates than do the midsize establishments.

Figure 3.9 Injury and illness case incidence rates by establishment size for private industry, Minnesota, 2006



Industry supersector	Total recordable cases per 100 full-time-equivalent workers by establishment size (number of employees)[1]					
	All Sizes	1-10	11-49	50-249	250-999	1,000+
Natural resources and mining	6.4	1.2	9.1	9.1	3.8	--
Construction	7.8	5.5	8.0	9.4	8.6	--
Manufacturing	6.8	3.3	7.5	8.8	6.0	4.2
Trade, transportation, and utilities	5.9	2.6	5.7	7.6	6.0	8.4
Information	2.4	--	--	--	2.6	1.7
Financial activities	1.0	0.0	--	--	0.8	0.7
Professional and business services	1.9	0.0	--	3.9	1.1	0.3
Education and health services	6.4	2.1	4.1	7.1	6.9	7.3
Leisure and hospitality	4.8	--	4.3	6.2	7.6	--
Other services	4.0	--	--	5.8	5.6	--
State government	3.4	--	3.9	4.8	3.0	3.4
Local government	5.7	--	8.7	4.5	6.6	5.9

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

4

Characteristics of cases with days away from work

This chapter presents, for cases resulting in one or more days away from work, statistics about the demographic characteristics of the workers, their job characteristics, the characteristics and causes of their injuries and illnesses, and the timing of the event or exposure.

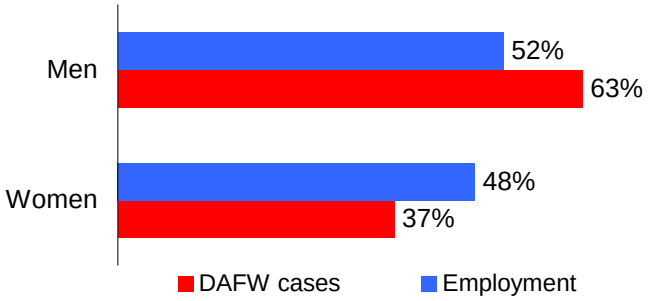
Employers participating in the survey provide descriptions for each DAFW case.[4] DLI Policy Development, Research and Statistics survey staff members code the descriptions into the appropriate categories for nature of injury or illness, part of body affected, event or exposure, and source of injury or illness.

Worker demographic characteristics

Gender

- The percentage of women among DAFW cases decreased from 39 percent in 2005, to 37 percent in 2006. This percentage has varied between 35 percent and 39 percent since 1995. Women comprised 48 percent of Minnesota's 2006 employment.
- The percentage of women among DAFW cases varies greatly by industry. Women accounted for 84 percent of private-sector education and health services cases, 69 percent of local government education and health services cases, and 37 percent of leisure and hospitality cases. In construction, women comprised 2 percent of the cases.
- The incidence rate for private industry DAFW cases was 147.4 cases per 10,000 FTE workers for men and 105.2 cases per 10,000 FTE workers for women.

Figure 4.1 Gender of all workers and workers with days-away-from-work cases, Minnesota, 2006



[4] For employers with a significant number of DAFW cases (more than 15), a sampling scheme is used to select a reduced number of cases.

Age

- The age distribution of injured workers has changed significantly during the past decade, reflecting the increasing average age of the workforce. BLS reported the median age of the U.S. labor force has increased from 35.9 years in 1988, to 38.7 years in 1998, and will reach 40.7 years in 2008.[5]
- With the declining DAFW case rate, this means there are fewer seriously injured workers, but injured workers now tend to be older than those a decade ago.[6]
- The age distribution of injured workers with DAFW cases (Figure 4.2) is very similar to the age distribution of employed workers.[7]
- The percentage of injured workers who were younger than age 35 decreased from 46 percent in 1996 to 35 percent in 2006, while the percentage of injured workers who were age 45 and older increased from 25 percent to 40 percent (Figure 4.3).
- Even though the total number of DAFW cases decreased by 13,900 cases from 1996 to 2006, the estimated number of cases among workers age 65 and older increased by 100 cases.
- The incidence rates (per 10,000 FTE workers) for private industry DAFW cases was highest for workers 20 to 24 years old (173 cases) and lowest for workers 16 to 19 years old (78 cases) (Figure 4.4).
- The median days away from work generally increased with age (Figure 4.5). Workers age 45 and older had an average injury rate, although they tended to have more days away from work following an injury.

Figure 4.2 Age of workers with days-away-from-work cases, Minnesota, 2006

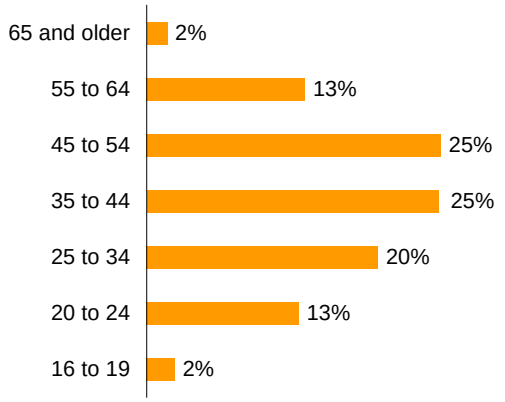


Figure 4.3 Distribution of age of workers with days-away-from-work cases, Minnesota, 1996-2006

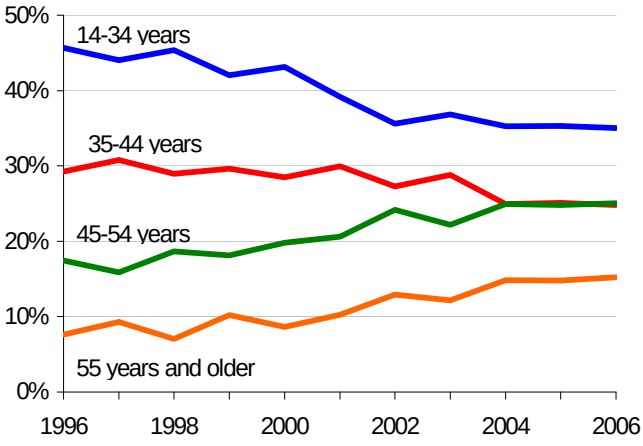
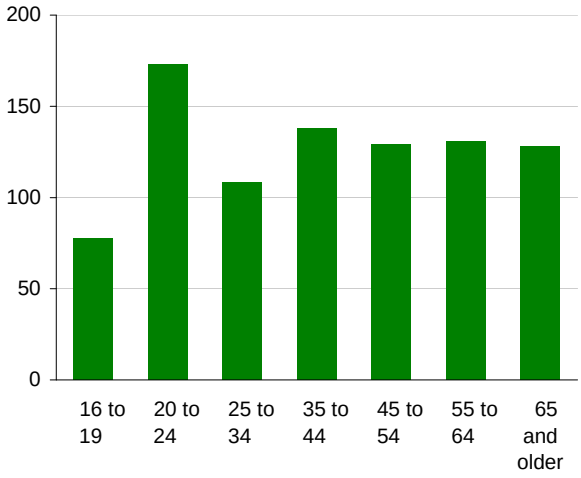


Figure 4.4 Incidence rate for cases with days away from work by age group, Minnesota, 2006



[5] U.S. Bureau of Labor Statistics, *Working in the 21st Century*, 2001. www.bls.gov/opub/working/home.htm.
[6] This trend has been analyzed using Minnesota workers' compensation data in "Changing worker demographics lead to changing injury characteristics," COMPACT, February 2005. www.doli.state.mn.us/pdf/feb05-2.pdf
[7] Current Population Statistics, *Geographic Profile of Employment and Unemployment*, 2006. Bureau of Labor Statistics. www.bls.gov/lau/ptable14full2006.pdf

Race or ethnic origin

Some caution is needed in the analysis of race or ethnic origin, because 30 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.

- Although there were 13,900 fewer DAFW cases in 2006 compared to 1996, representing a 33 percent decrease, the number of DAFW cases identifying nonwhite injured workers remained nearly unchanged, with 2,840 cases reported in 1996 and 2,830 cases reported in 2006.

- Nonwhite workers accounted for 15 percent of the cases with a reported race or ethnicity in 2006, compared to only 9 percent in 1996 (Figure 4.7). Employment estimates from the *Current Population Survey* for 2006 show that white workers accounted for 91 percent of Minnesota's employment.

- The reported number of Hispanic workers with DAFW cases in 2006 was 23 percent higher than the number in 1996. The number of DAFW cases among black workers decreased by 4 percent.

Figure 4.5 Median days away from work by age group, Minnesota, 2006

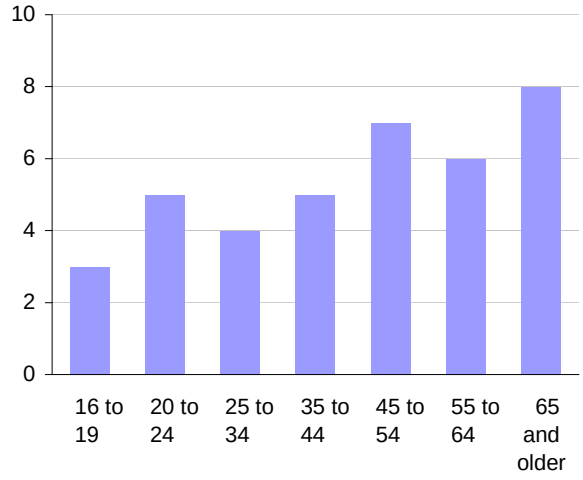


Figure 4.6 Race or ethnic origin of workers with days-away-from-work cases, Minnesota, 2006

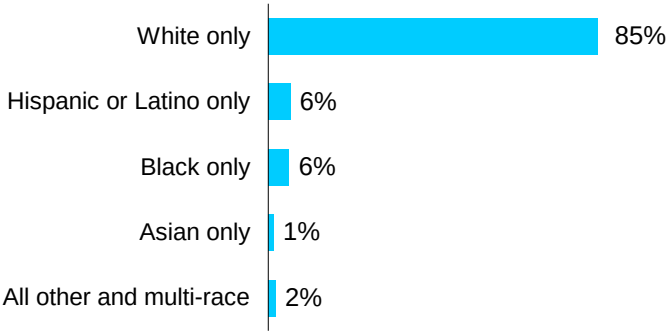
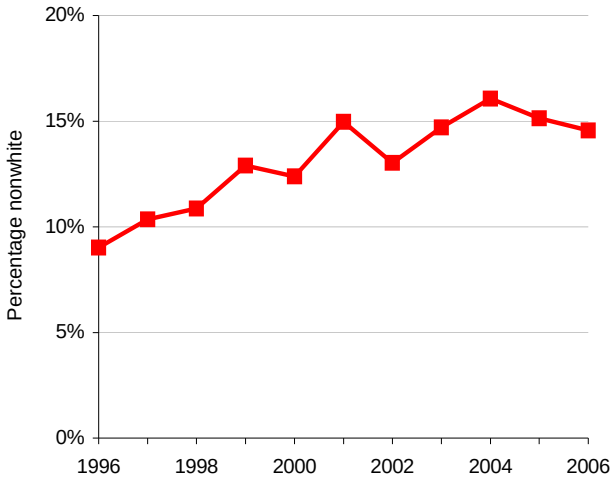


Figure 4.7 Percentage of nonwhite workers among days-away-from-work cases, Minnesota, 1996-2006



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. Workers with short job tenures include new entrants and re-entrants to the workforce, those who lost jobs but found new jobs during the previous year and workers who had voluntarily changed employers during the previous year. 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 new jobs demanded.

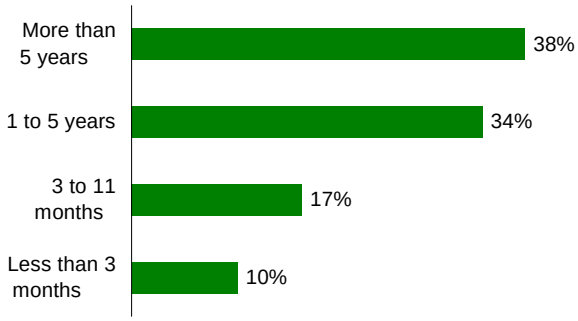
Young workers usually have shorter job tenure than older workers. The general increase in worker age will lead to an increase in the average job tenure of injured workers.

- Employees with less than one year of service with their employer accounted for 27 percent of the DAFW cases, within the range reported during the past decade.

- According to the *Current Population Survey* statistics for January 2006,[8] the national proportion of wage and salary workers with a year or less of tenure with their current employer was 24 percent, while 29 percent had from one to five years of job tenure and 47 percent had more than five years.

- The distribution of job tenure among workers with DAFW cases varied greatly by industry, reflecting the relative amounts of labor turnover and risk of injury. Workers with less than one year of job tenure accounted for 47 percent of the cases in professional and business services, and for 37 percent of the cases in construction, but only 12 percent of the cases in state and local government.

Figure 4.8 Length of service of workers with days-away-from-work cases, Minnesota, 2006



[8] News release, Bureau of Labor Statistics, *Employee tenure in 2006*, Sept. 8, 2006. State-level job tenure statistics are not published.

Occupation

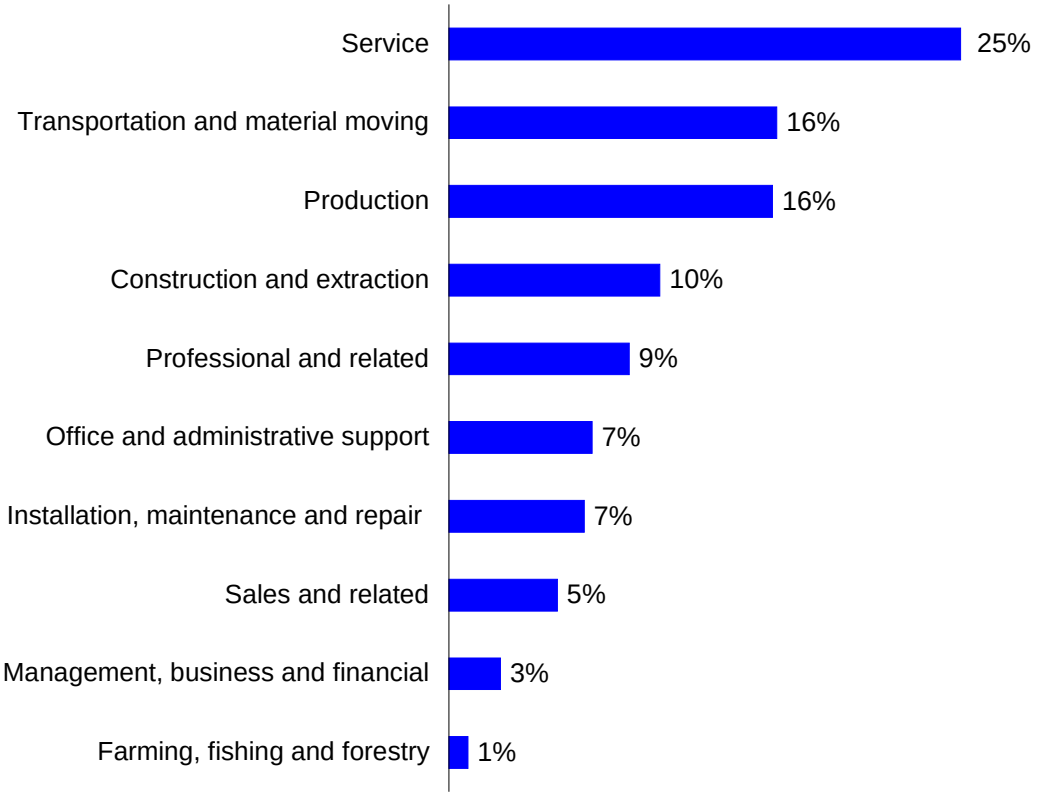
Occupations describe a set of characteristics based on the job duties, skills, education or experience needed to accomplish work tasks. Some occupations are concentrated in certain industries, such as nursing aides working in the hospital and nursing home industries. However, many other occupations, such as management, sales and office support, are found in a wide range of industries.[9] Workers in the same or similar occupations often encounter similar work conditions, which affect their safety and health.

Occupation is presented by broad category in Figure 4.9, by major groups in Figure 4.10 and by detailed occupation in Figure 4.11. A few broad categories are the same as major groups (e.g., production and sales).

Figure 4.9 shows the percent distribution of DAFW cases by broad occupation category. These results generally reinforce the broad industry category results, shown in Figure 3.1. The three highest-percentage occupation groups accounted for 58 percent of the DAFW cases and for 34 percent of workers.

- Service occupations, such as nursing aides, law enforcement workers, cooks and building maintenance workers, has been the largest occupation category since 2003 (when the current occupation category system was first used).
- Transportation and material moving occupations, the second-largest occupation group among DAFW cases, includes truck drivers, airline workers and unskilled manual laborers (nonconstruction).

Figure 4.9 Occupation of workers with days-away-from-work cases, Minnesota, 2006



[9] The 2004 Minnesota occupational staffing matrix, showing the distribution of occupations by industry, is available at www.deed.state.mn.us/lmi/tools/oes/staffing_patterns.htm.

- Production occupations, the third-largest occupation group among DAFW cases, includes assemblers, food processing workers and woodworkers.

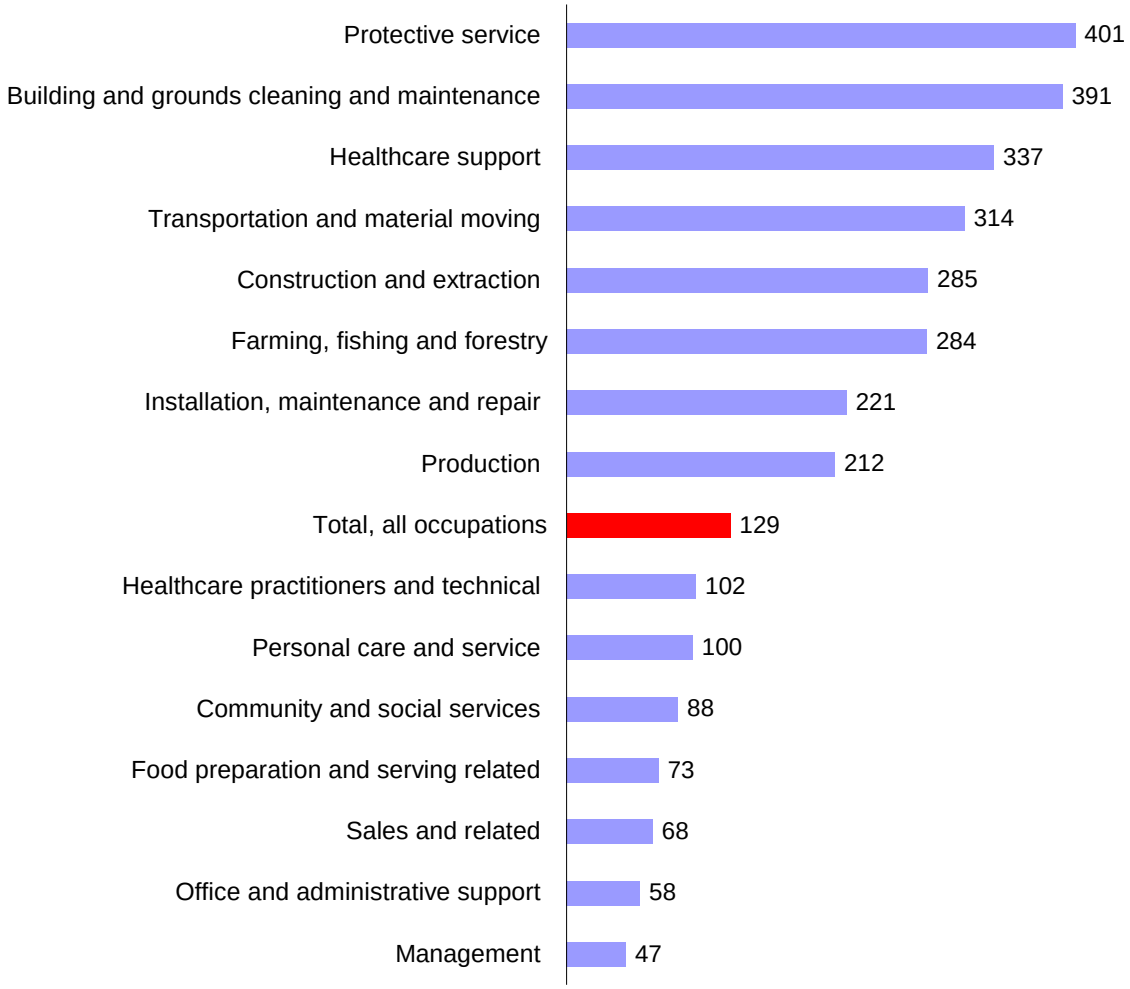
- The differences in occupations in private-sector industries are further revealed by the rate of DAFW cases per 10,000 workers, shown in Figure 4.10.[10] This figure shows that the rates for protective services and building and grounds cleaning and maintenance occupations are more than three times the statewide average.

- Nursing aides, orderlies and attendants, serving in all types of facilities, are included in the healthcare support occupation group.

- Many occupations, especially those where most of the work takes place in an office environment, have very low DAFW rates.

- Most of the injured workers in the two occupations with the highest DAFW case rates are males (protective services, 89 percent males, and building and grounds cleaning and maintenance, 59 percent males). In contrast, 90 percent of the injured workers in the healthcare support occupations are females.

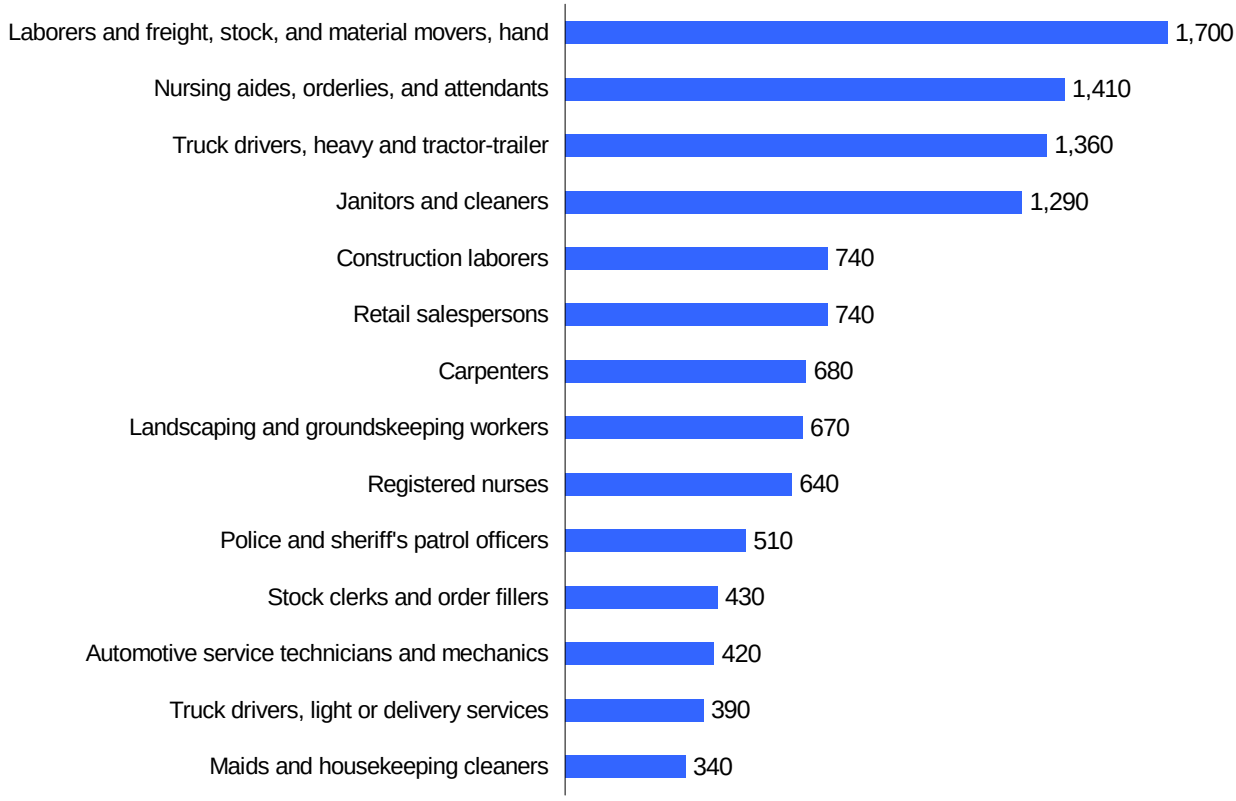
Figure 4.10 Incidence rates of days-away-from-work cases by occupation group, per 10,000 FTE workers, private sector, Minnesota, 2006



[10] These rates are based on the number of workers, not on full-time equivalent workers, and are not comparable to the incidence rates reported in previous chapters.

- The detailed occupations with 340 or more DAFW cases across all sectors are shown in Figure 4.11. The four specific occupations with at least 1,000 DAFW cases accounted for 21 percent of all DAFW cases.

Figure 4.11 Specific occupations with the highest number of cases, Minnesota, 2006



Injury and illness characteristics

Each DAFW case is characterized by the nature of the injury or illness, the part of the body affected, the event or exposure leading to the injury or illness and the source of the injury or illness. Additional measures of injury and illness events are the time of day, time on the job and day of week the injury occurred or illness began.

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

Nature of injury or illness

The nature of injury or illness identifies the principal physical characteristic(s) of the injury or illness.

- Sprains, strains and tears of muscles, tendons and joints accounted for 39 percent of the DAFW cases, continuing a decrease from the 48 percent average for the 1997 to 1999 period. The number of cases of sprains, strains and tears has dropped by 30 percent since 2001, from 15,500 cases to 10,790 cases in 2006.

- The percentage of cuts, lacerations and punctures, the fourth-most-frequent nature of injury, increased from 6 percent of the cases during 2004 and 2005 to 9 percent for 2006.

- Figure 4.13 shows some of the characteristics of private-sector cases with each of the four most-frequent detailed nature of injury codes.

- Fractures stand out from the other three types of injury, because it is more common among workers age 45 and older and results in long durations away from work.

Figure 4.12 Nature of injury, Minnesota, 2006

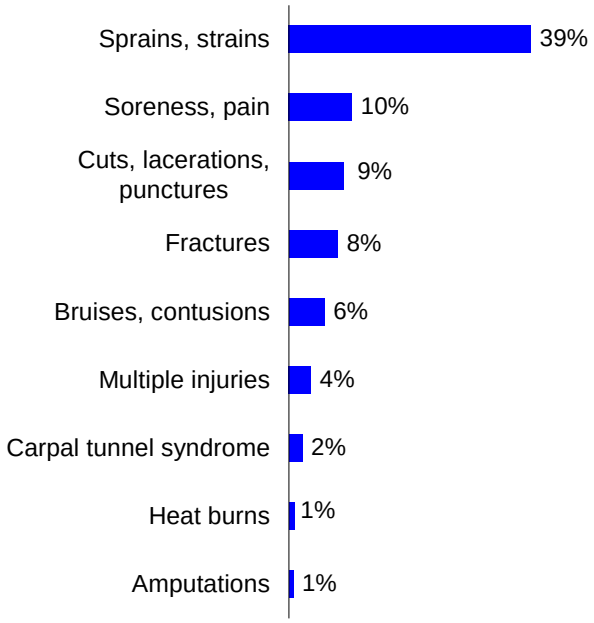


Figure 4.13 Characteristics profiles of cases with the four most-common types of nature of injury, private sector, Minnesota, 2006

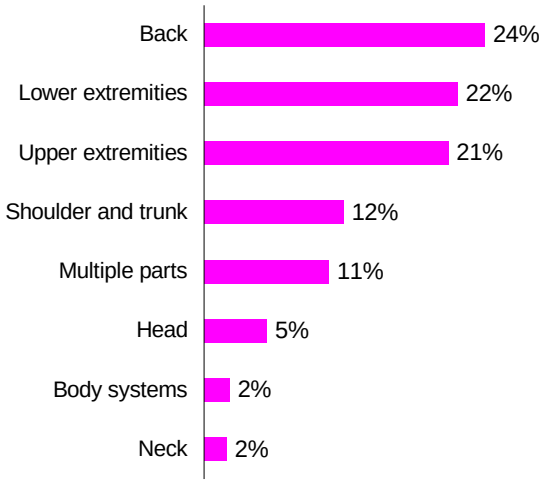
Characteristic	Sprains, strains, tears	Fractures	Cuts, lacerations	Nonback soreness, pain
Total cases	9,320	1,900	1,830	1,400
Women	41%	21%	14%	53%
Age				
34 years or younger	32%	30%	61%	36%
35-44 years	30%	19%	16%	29%
45-54 years	25%	35%	15%	20%
55 years or older	13%	16%	8%	15%
Job tenure				
Less than 1 year	28%	30%	35%	24%
1-5 years	35%	39%	39%	41%
More than 5 years	37%	31%	26%	35%
Median days away	5	21	3	6
Most common event day(s)	Monday	Monday	Monday	Wednesday

Part of body

The part of body affected identifies the part of the body directly affected by the previously identified nature of injury or illness.

- The percentage of back injuries decreased from 26 percent of the cases during 2003 and 2004, and 27 percent of cases in 2005, to 24 percent of the cases in 2006. Back injuries accounted for about 30 percent of the cases during most of the 1990s.
- The number of cases with back injuries has decreased substantially in recent years, from 9,700 cases in 2002 to 6,700 cases in 2006, a 31 percent decline.
- Among the detailed body part categories, the lumbar back was the most-frequently injured part of the body. Lumbar back injuries are mostly sprains or strains, or have a more general description of back pain. Overexertion in lifting and the worker's own bodily motion were the primary causes of lumbar back injuries. These injuries most frequently occurred on Mondays.

Figure 4.14 Part of body injured, Minnesota, 2006



- The most-common injury to multiple body parts was sprains and strains. Multiple body part injuries occurred most often as a result of falls and overexertion. Women accounted for 55 percent of the multiple-part injury cases. Multiple part injuries occurred at a higher rate to workers age 55 and older.

- Among the most-common injured body parts, workers with knee injuries had the longest median time away from work, at eight days. Knee injuries were much more common among workers with more than five years of job tenure.

- Finger injuries resulting in days away from work were most common among workers younger than 35 years. Finger injuries were much more common among men than women.

Figure 4.15 Characteristics profiles of cases with the four most-frequently injured body parts, private sector, Minnesota, 2006

Characteristic	Lumbar back	Multiple body parts	Knee(s)	Finger(s)
Total cases	3,190	2,360	2,100	1,970
Percent women	39%	55%	33%	22%
Age				
34 years or younger	31%	30%	23%	56%
35-44 years	29%	31%	32%	17%
45-54 years	22%	19%	26%	17%
55 years or older	18%	21%	19%	9%
Job tenure				
Less than 1 year	25%	28%	21%	32%
1-5 years	37%	38%	33%	44%
More than 5 years	38%	34%	46%	24%
Median days away	4	4	8	4
Most common event day(s)	Monday	Wednesday	Wednesday	Monday

Event or exposure

The event or exposure describes the manner in which the injury or illness was produced or inflicted by the source of injury or illness.

- Overexertion continued to account for the largest proportion of cases. The percentage of overexertion cases decreased from 35 percent in 2004 to 30 percent in 2006. The number of overexertion cases also decreased, from 9,940 in 2004 to 8,270 in 2006, a 17 percent decrease.

- The most-common specific event, overexertion in lifting, was most-often cited for lifting containers, health care patients, and parts and materials. These events caused sprains and strains and soreness, most commonly to the back. One-third of all back injuries were the result of overexertion in lifting. Overexertion in lifting was more common among younger workers than older workers.

- Falls to the floor, walkway or other surfaces commonly resulted in sprains and strains, fractures, and bruises and contusions. The majority of these injuries occurred to women.

- Workers younger than age 35 accounted for the 41 percent of workers with injuries caused by being struck by an object. These accidents rarely occurred to workers age 55 and older.

Figure 4.16 Event or exposure, Minnesota, 2006

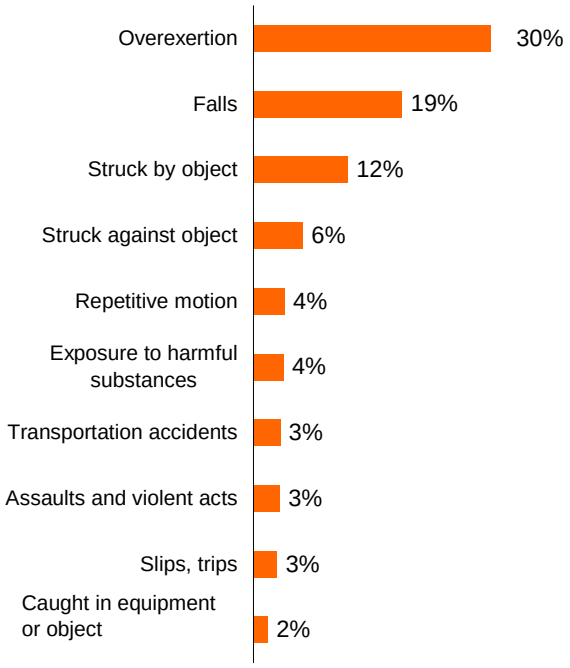


Figure 4.17 Characteristics profiles of cases with the four most-common types of event or exposure, private sector, Minnesota, 2006

Characteristic	Overexertion in lifting	Fall to floor, walkway	Overexertion in pulling or pushing	Struck by falling object
Total cases	3,410	1,990	1,150	1,090
Percent women	43%	63%	42%	15%
Age				
34 years or younger	37%	16%	36%	41%
35-44 years	23%	30%	22%	26%
45-54 years	25%	26%	31%	27%
55 years or older	15%	27%	10%	5%
Job tenure				
Less than 1 year	26%	23%	31%	34%
1-5 years	36%	39%	27%	31%
More than 5 years	38%	38%	42%	35%
Median days away	5	4	6	5
Most common event day(s)	Tues., Thurs.	Wednesday	Tuesday	Wednesday

Source of injury or illness

The source of injury or illness identifies the object, substance, bodily motion or exposure that directly produced or inflicted the previously identified injury or illness.

- Floors, walkways and ground surfaces became the most-common source of injury for the first time in 2004. Floors, walkways and ground surfaces are often the source of injuries caused by falls.

- Bodily motion or position refers to injuries caused by the free motion of the worker's body, which most often results in stress or strain to particular body parts. Injuries due to slips and trips are coded with the worker's bodily motion as the source. Bodily motion or position cases accounted for 15 percent of the DAFW cases in 2006, down from 17 percent in 2003. There were approximately 1,000 fewer overexertion cases than in 2003.

- The number of injuries caused by containers also decreased by nearly 1,000 cases from 2003 to 2006.

- The percentage of private-sector workers with the detailed source category of bodily motion or position increased with increasing job tenure; workers with more than five years of job tenure accounted for 44 percent of the cases. These injuries were most common on Mondays, and half the cases resulted in more than seven days away from work.

- Women accounted for 56 percent of the injuries caused by falls to floors of buildings. This is similar to the percentage of women among cases caused by falls to floors (Fig. 4.17).

- Women accounted for 90 percent of the injuries caused by health care patients. Injuries due to contact with health care patients often happened in the process of lifting or helping move a patient and sometimes were the result of an assault by a patient. Health care patient injuries were most common to younger workers.
- Injuries involving boxes, crates and cartons were more likely to involve younger workers, although workers with longer job tenures also had a higher percentage of these cases.

Figure 4.18 Source of injury or illness, Minnesota, 2006

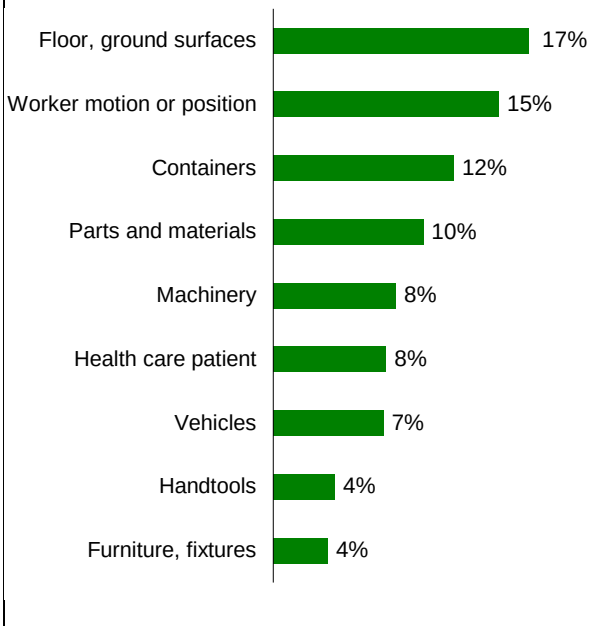


Figure 4.19 Characteristics profiles of cases with the four most-common source of injury or illness, private sector only, Minnesota, 2006

Characteristic	Bodily motion or position of worker	Floor of building	Health care patient	Boxes, crates, cartons
Total cases	3,460	1,750	1,530	1,040
Percent women	37%	56%	90%	35%
Age				
34 years or younger	27%	22%	45%	34%
35-44 years	30%	31%	30%	21%
45-54 years	25%	24%	17%	26%
55 years or older	18%	24%	8%	19%
Job tenure				
Less than 1 year	18%	25%	30%	27%
1-5 years	39%	41%	42%	35%
More than 5 years	44%	35%	28%	38%
Median days away	7	5	5	5
Most common event day(s)	Monday	Wednesday	Thursday	Mon.-Fri.

Work-related musculoskeletal disorders

BLS uses the SOII results to produce an estimate of the number of cases with work-related musculoskeletal disorders (WMSDs) among the DAFW cases. Although employers do not directly identify WMSDs on the OSHA log, information about the injured body part and the event or exposure is combined to produce this estimate. BLS defines WMSDs as disorders of the muscles, nerves, tendons, ligaments, joints, cartilage and spinal discs that **are not caused** by slips, trips, falls, motor-vehicle accidents or other similar accidents. Because of the recordkeeping changes in 2002 that directly addressed WMSD issues (see column at right), comparisons with 2001 and earlier years may be the result of a combination of changes in job safety and the effects of the recordkeeping changes.

- The number of DAFW cases with WMSDs in Minnesota has decreased 39 percent since 2000, reaching a low of 9,930 cases in 2006. During this period, non-WMSD cases decreased by 22 percent.

- WMSD cases accounted for 36 percent of the DAFW cases in 2006, compared to 43 percent of the cases in 1999.

- The incidence rates for WMSD cases reached their lowest rates for all three ownership sectors in 2006.

- Among private-sector industries, health care had the highest proportion of DAFW cases with WMSD injuries, with 49 percent, and retail trade was second highest, with 45 percent. In local government health care, 60 percent of the DAFW cases were due to WMSD injuries.

WMSD recordkeeping changes

The OSHA recordkeeping changes implemented in 2002 make direct comparisons with pre-2002 results unreliable. Statistics from earlier years are provided to show readers the longer-term trend.

Recordkeeping changes that affected the number of reported WMSD cases include:

- 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.

- 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.

- WMSDs are recordable when general OSHA log recording criteria are met.[11] Previously, WMSDs were recordable under the general criteria *or* when identified through a clinical diagnosis or diagnostic test.

[11] OSHA log recording criteria are explained in "Recordkeeping 101: Tracking injuries, illnesses puts you in control," *Safety Lines*, Minnesota Department of Labor and Industry, Winter 2005. www.doli.state.mn.us/safeline.html

Figure 4.20 Number of WMSD and non-WMSD DAFW cases, Minnesota, 1998-2006

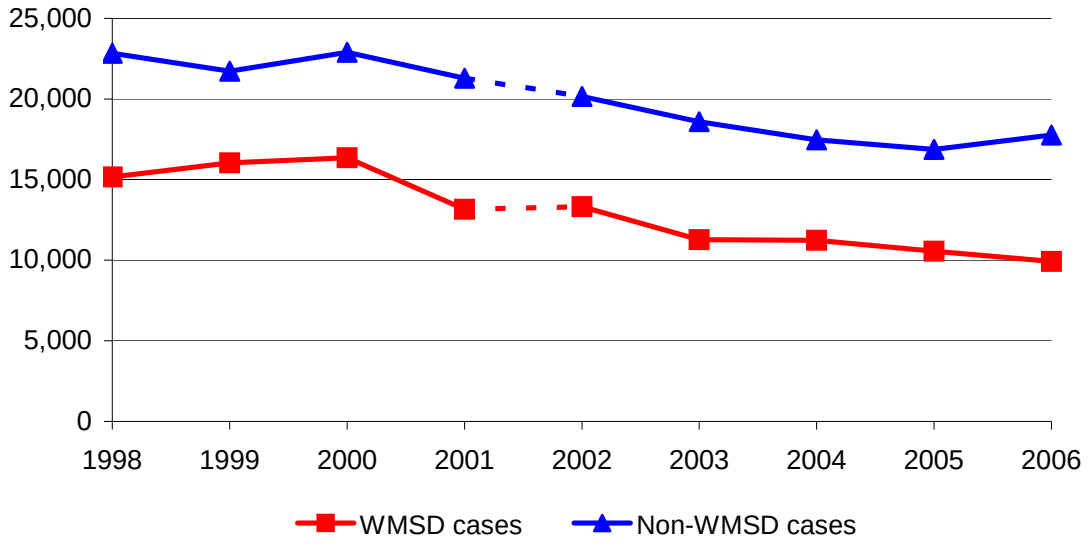


Figure 4.21 Number and incidence rate of WMSD cases involving days away from work, Minnesota, 1998-2006

Year	Private industry		State government		Local government	
	Number	Incidence rate[1]	Number	Incidence rate[1]	Number	Incidence rate[1]
1998	13,550	76.4	360	46.0	1,240	71.0
1999	14,520	80.5	230	33.3	1,290	68.7
2000	14,870	80.5	230	37.9	1,240	68.7
2001	11,830	66.7	200	31.5	1,130	55.1
2002	12,030	68.7	210	35.5	1,070	53.5
2003	9,940	55.8	230	37.2	1,090	54.0
2004	9,770	56.3	240	43.1	1,230	65.4
2005	9,000	50.0	290	49.7	1,270	64.1
2006	8,730	47.3	210	29.0	990	48.7

1. Incidence rates represent the number of cases per 10,000 full-time workers.
Source: Bureau of Labor Statistics, U.S. Department of Labor.

Time of injury or illness

The time of injury or illness has three dimensions: the time of day of the event, the worker's hours on the job before the event occurred and the day of the week of the event. The percentages reported below are based on cases with reported data; 18 percent of the cases did not include a time of event and 20 percent did not include the hours on the job before the event.

- The four hours from 8 a.m. to noon accounted for 36 percent of all injuries and illnesses with days away from work. The four hours from noon to 4 p.m. accounted for an additional 27 percent of the cases. This means 37 percent of the DAFW cases occurred at times other than between 8 a.m. and 4 p.m.
- The four-hour morning period had the highest percentage of DAFW cases for all industry supersectors except for professional and business services.
- Employees on the job from two to four hours incurred 36 percent of all DAFW cases. This is consistent with the high percentage of morning cases. Workers on the job for fewer than two hours accounted for 33 percent of the cases.
- There was a steady decrease in the percentage of cases as the workweek progressed.
- Mondays were the most-common or second-most-common injury day in almost all industries. The pattern was very different in leisure and hospitality, where injuries and illnesses were most common on Tuesdays and Wednesdays, and in education and health services, which peaked on Wednesdays and Thursdays.

Figure 4.22 Time of event, Minnesota, 2006

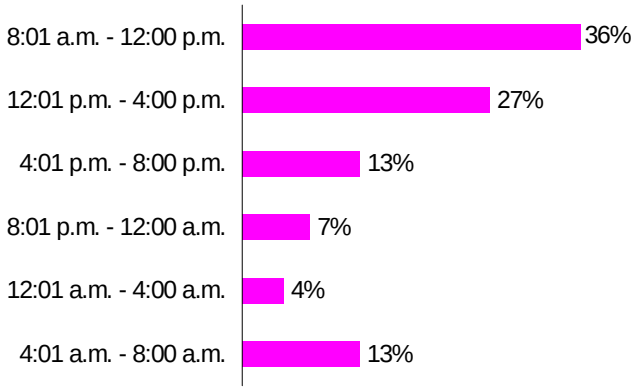


Figure 4.23 Hours on the job before event occurred, Minnesota, 2006

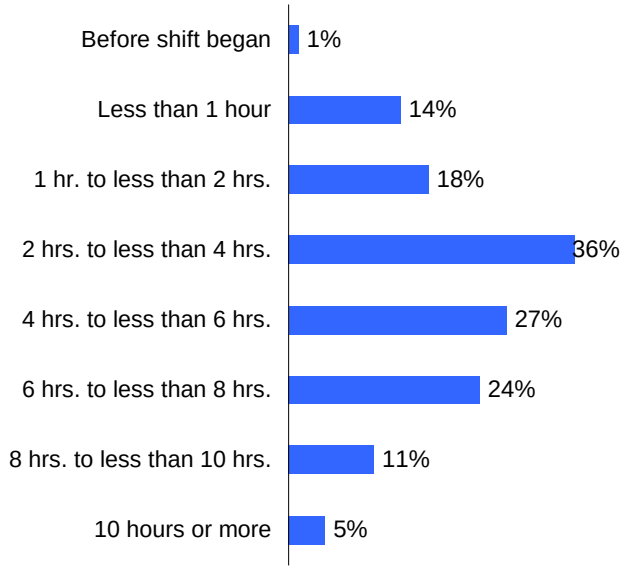
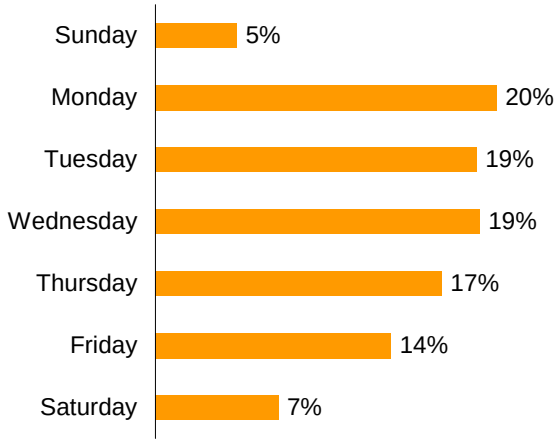


Figure 4.24 Day of week, Minnesota, 2006



5
Fatal occupational injuries

In 2006, 78 Minnesota workers were fatally injured on the job. This is a decrease from the 87 fatalities in 2005, but more than the 72 fatalities in 2003. Nationwide, 5,840 workers were fatally injured during 2006, an increase from the 5,734 fatalities in 2005.

These and other findings are from the nationwide *Census of Fatal Occupational Injuries* (CFOI), conducted by 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.

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 where they occurred. 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 fatality claims includes only 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 2006, there were 52 workers' compensation fatality claims.

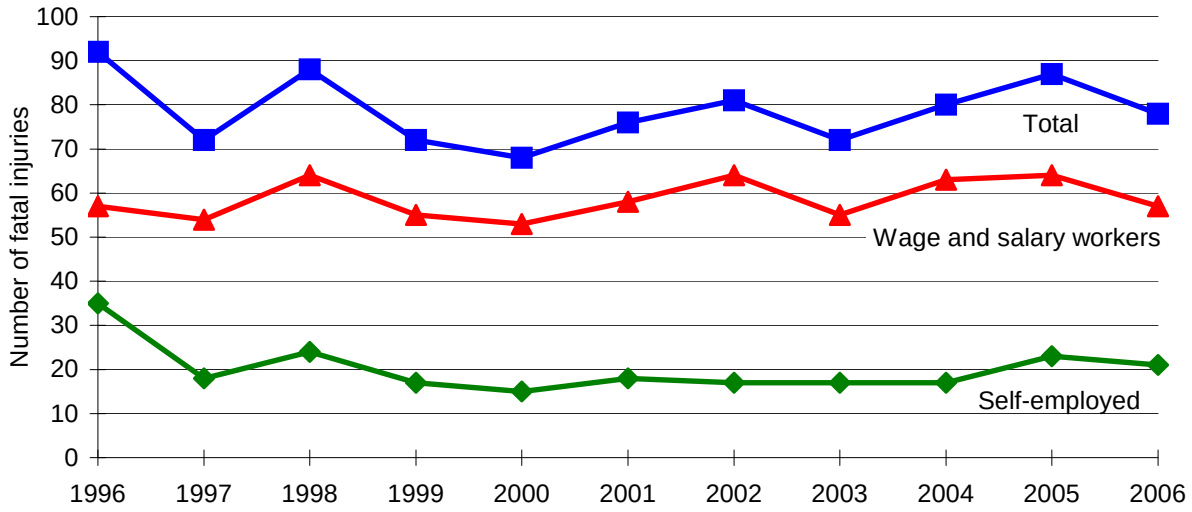
MNOSHA investigated 25 fatality events in 2006. MNOSHA investigates all employee deaths that are under MNOSHA jurisdiction and result from an accident or illness caused by or related to a workplace hazard. Not included are fatalities caused by traffic accidents, airplane crashes, mining accidents, farm 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 additional standards might help prevent similar incidents.

Number and rate of fatal injuries

- Figure 5.1 shows Minnesota had from 68 to 92 fatal work injuries a year from 1996 through 2006.
- For wage-and-salary workers, the annual fatality toll ranged from 53 to 64.
- For self-employed workers, the annual fatality figure ranged from 35 to 15. The number of self-employed worker fatalities remained below 20 from 1999 through 2004.
- The fatality toll for 2002 through 2006 was 398, resulting in a five-year average of 80 workers a year. This consisted of 61 wage-and-salary workers and 19 self-employed workers.
- Fatal injuries for the self-employed were 27 percent of the 2006 total, far higher than the estimated 11 percent self-employed share of total state employment.[12]
- Figure 5.2 shows the Minnesota fatality rate since 1996. The 2006 fatality rate was 2.8 deaths per 100,000 employed, below the rates for the previous two years. The long-term trend in Minnesota's fatality rate has been downward since the early 1990s.
- For the entire United States, the fatality rate for 2006 was 4.0 deaths per 100,000 employed, unchanged from 2005.

Figure 5.1 Fatal work injuries, Minnesota, 1996-2006[1]

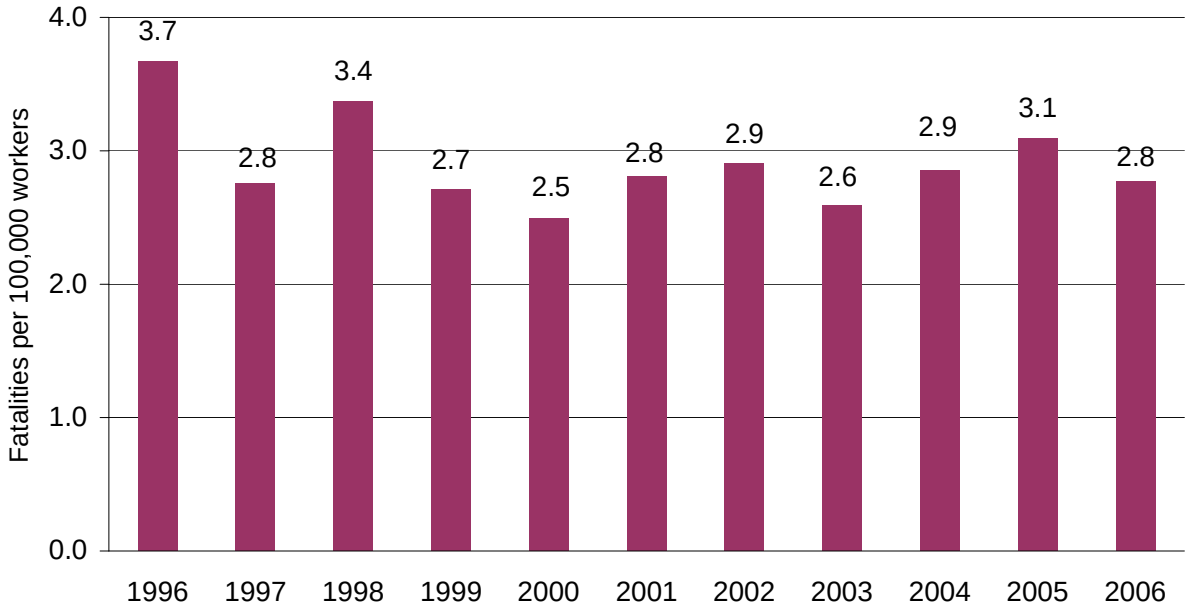


[1] Includes private sector plus local, state and federal government (including resident armed forces). Includes self-employed and unpaid family workers, including family farm workers. Excludes fatal illnesses.

Year of death	Wage & salary workers	Self-employed	Total
1996	57	35	92
2000	53	15	68
2003	55	17	72
2004	63	17	80
2005	64	23	87
2006	57	21	78
Avg. 2002-2006	60.6	19.0	79.6

[12] American Community Survey, 2006.

Figure 5.2 Fatal work injuries per 100,000 workers,[1] Minnesota, 1996-2006



1. Rate calculations exclude workers younger than age 16 or in the military.

Fatalities by metropolitan area

The CFOI program also produces fatality counts for metropolitan areas, even those that cross state boundaries. The number of fatalities within the metropolitan areas is strongly influenced by the types of industries and occupations concentrated in each area. This is one reason why the Rochester metropolitan area, with twice the population of the Grand Forks metropolitan area, has only slightly more fatalities.

Because there are relatively low numbers of fatalities in some of the metropolitan areas, Figure 5.3 shows the combined fatalities for 2005 and 2006 in order to meet CFOI publication guidelines.

Figure 5.3 Number of fatal work injuries for metropolitan areas, 2005 and 2006

Metropolitan area	Counties	Annual average employment, 2006[1]	Fatalities 2005 +2006
Duluth, MN-WI	MN — Carlton, St. Louis; WI — Douglas	131,900	7
Fargo, ND-MN	ND — Cass; MN — Clay	115,900	6
Grand Forks, ND-MN	ND — Grank Forks; MN — Polk	53,100	9
Minneapolis-St. Paul-Bloomington, MN-WI	MN — Anoka, Carver, Chisago, Dakota, Hennepin, Isanti, Ramsey, Scott, Sherburne, Washington, Wright; WI — Pierce, St. Croix	1,788,000	65
Rochester, MN	MN — Dodge, Olmsted, Wabasha	106,600	11
St. Cloud, MN	MN — Benton, Stearns	100,400	6 [2]

[1] Employment estimates from the Current Employment Statistics program of the Bureau of Labor Statistics.
[2] Fatalities are for 2006 only.

Fatalities by industry sector

Figure 5.4 shows the number of Minnesota's fatal work injuries by industry sector for 2006. The six government worker fatalities are distributed among the various industry sectors.

- The highest number of fatal injuries was in agriculture, forestry, fishing and hunting. Agricultural crop production accounted for 15 of the 23 fatalities in that sector, and animal production accounted for another six fatalities. Contact with objects and equipment was the most-common event causing the fatalities.
- The number of fatalities in construction has varied from a high of 23 fatalities in 1998, to a low of 10 fatalities in 1997 and 2003. For 2006, the number of fatalities was slightly below the average for the previous three years, 17 fatalities. The most common event causing the fatalities in 2006 was contact with objects and equipment.
- Transportation and warehousing, the third-highest fatality industry sector, had eight fatalities, the same number of fatalities as the average for the previous three years. The most-common cause of the fatalities was highway transportation accidents.

Figure 5.4 Number of fatal work injuries by industry sector, Minnesota, 2006

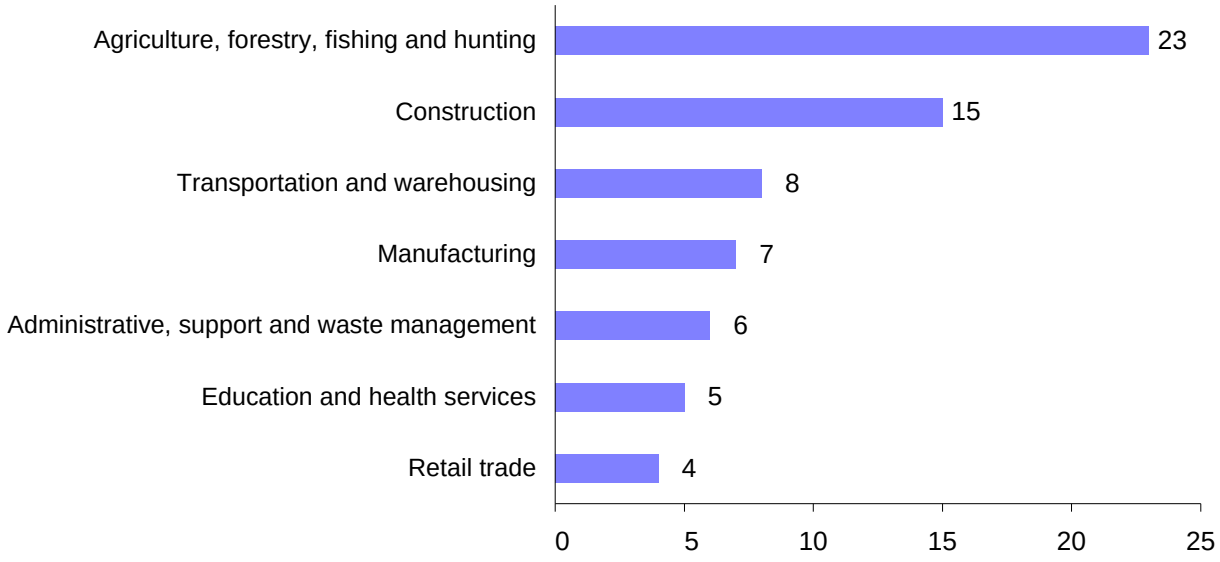


Figure 5.5 Event or exposure causing fatal work injury, Minnesota

Event or exposure	2006		2003-2006	
	Number of fatalities	Percentage of fatalities	Number of fatalities	Percentage of fatalities
Total	**78**	**100.0%**	**317**	**100.0%**
Transportation accidents	**29**	**37.2%**	**122**	**38.5%**
Highway accident	13	16.7%	65	20.5%
Collision between vehicles, mobile equipment	6	7.7%	32	10.1%
Noncollision accident	7	9.0%	24	7.6%
Jack-knifed or overturned — no collision	6	7.7%	21	6.6%
Nonhighway accident, except rail, air, water	10	12.8%	29	9.1%
Noncollision accident	8	10.3%	22	6.9%
Pedestrian, nonpassenger struck by vehicle, mobile equipment	5	6.4%	18	5.7%
Contact with objects and equipment	**27**	**34.6%**	**89**	**28.1%**
Struck by object	14	17.9%	48	15.1%
Struck by falling object	9	11.5%	38	12.0%
Caught in or compressed by equipment or objects	6	7.7%	21	6.6%
Caught in running equipment or machinery	4	5.1%	14	4.4%
Caught in or crushed in collasping materials	7	9.0%	20	6.3%
Falls	**9**	**11.5%**	**42**	**13.2%**
Fall to lower level	6	7.7%	36	11.4%
Assaults and violent acts	**5**	**6.4%**	**37**	**11.7%**
Assaults and violent acts by person(s)	3	3.8%	25	7.9%
Exposure to harmful substances or environments	**5**	**6.4%**	**16**	**5.0%**
Contact with electric current	3	3.8%	8	2.5%

1. Includes private sector plus local, state and federal government (including resident armed forces), 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 worker's location and activity. Figure 5.5 shows the event or exposure causing fatal work injuries in Minnesota during 2006 and for the entire 2003 through 2006 period. Overall, the distribution of events in 2006 was very similar to the distribution in the four-year period.

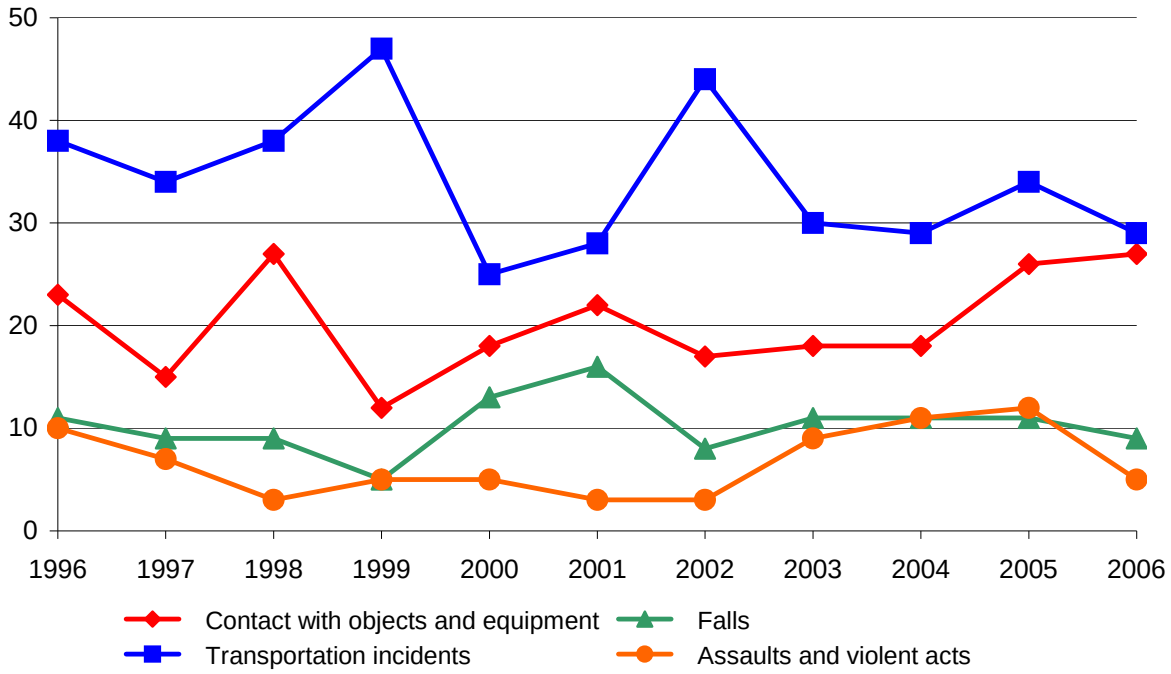
- The most-common event causing fatal injuries was transportation incidents, accounting for 37 percent of all fatal work injuries. These incidents consisted primarily of highway incidents (motor vehicles traveling on roads), but also included nonhighway incidents (motor vehicles on farm and industrial premises) and workers being struck by vehicles.

- The second most-frequent cause was contact with objects and equipment (35 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.

- There were five fatalities due to assaults and violent acts in 2006, well below the four-year average of nine fatalities.

- The most-common sources of the fatalities were highway vehicles (24 percent); machinery (13 percent); and floors, walkways and ground surfaces (12 percent).
- Figure 5.6 shows the trend in the numbers of fatalities among the major event categories. The relative order of the events has remained very consistent, with assaults occasionally matching the number of falls.

Figure 5.6 Number of fatal occupational injury events, Minnesota, 1996-2006



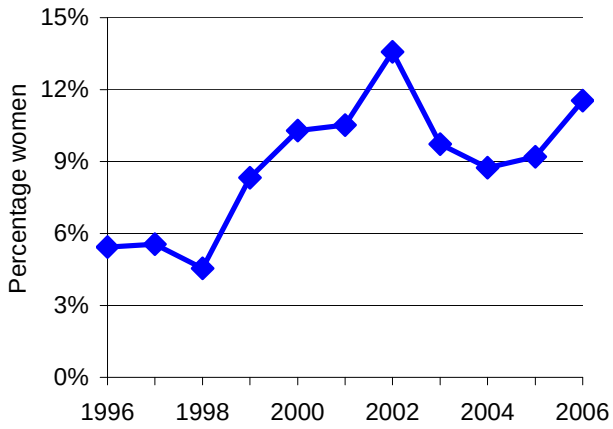
Characteristics of fatally injured workers

Figures 5.7 through 5.10 show the distributions of demographic characteristics and occupations of fatally injured workers.

Gender

- Men accounted for 88 percent of fatally injured workers in 2006. Since 1999, women have accounted for at least 8 percent of the fatally injured workers.
- Nine women were fatally injured in 2006, the highest number since 2002.

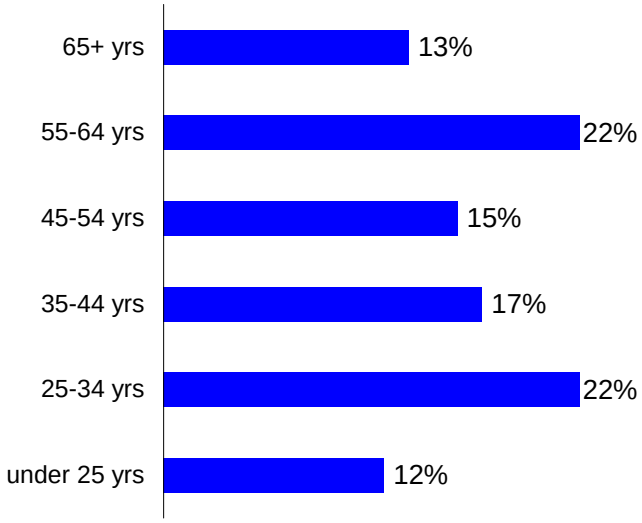
Figure 5.7 Gender of fatally injured workers, Minnesota, 1996-2006



Age

- Fatally injured workers had a wide age distribution, with the greatest numbers among workers 25 to 44 years of age and 55 to 64 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, and to 53 percent during the 2003 to 2006 period.

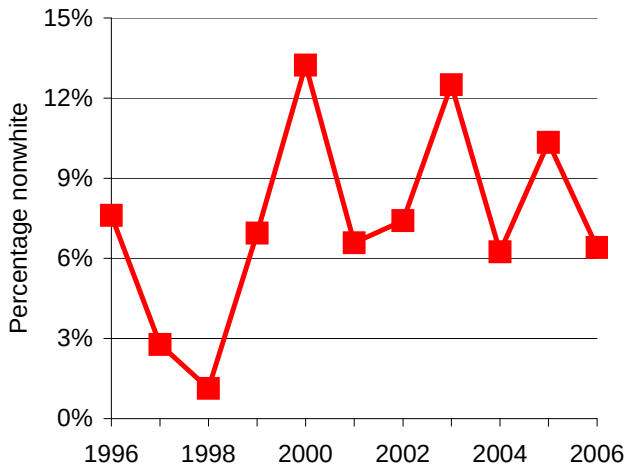
Figure 5.8 Age of fatally injured workers, Minnesota, 2006



Race

- White workers accounted for 94 percent of the fatalities in 2006.
- Since 1999, the percentage of fatalities to nonwhite workers has ranged from 6 percent to 13 percent, with considerable annual variation.

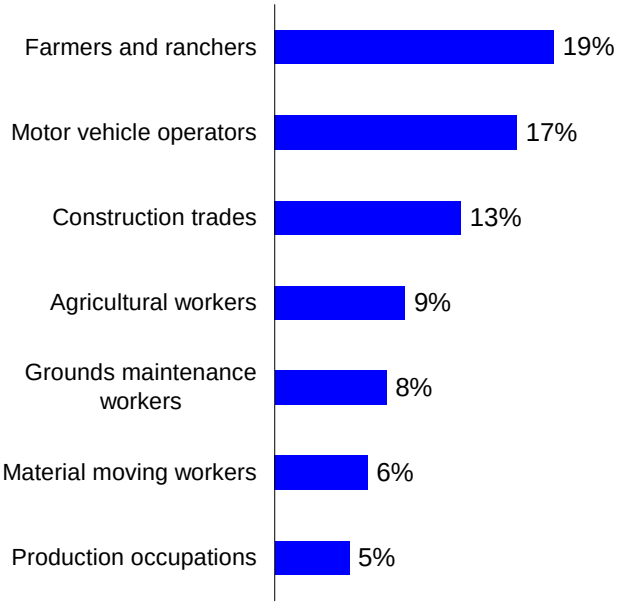
Figure 5.9 Race of fatally injured workers, Minnesota, 1996-2006



Occupation

- Fatally injured workers were concentrated in the occupation groups of motor-vehicle operators and farmers and ranchers.
- Farm and agricultural-related occupations together accounted for 28 percent of the fatalities.
- The most-common occupation among the motor-vehicle operators was heavy and tractor-trailer truck drivers.
- The four most-common occupation groups for 2006 were also the most common groups, in the same order, for the entire 2003 to 2006 period.

Figure 5.10 Occupation of fatally injured workers, Minnesota, 2006

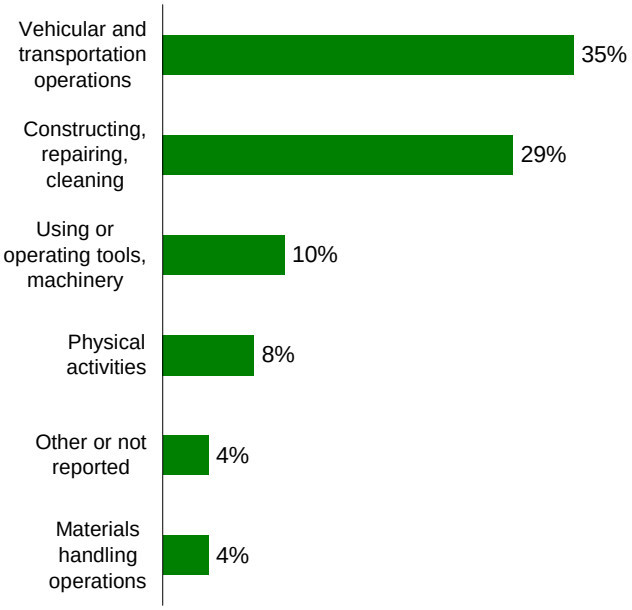


Worker activity

The worker activity results indicate the broad category of the fatally injured worker's activity at the time of the event.

- More than one-third of the fatalities in 2006 occurred while the workers were operating vehicles. This category accounted for 25 of the 29 transportation accident fatalities.
- Vehicular and transportation operations accounts for seven of the eight fatalities in transportation and warehousing, and for nine of the 23 fatalities in agriculture.
- The next most-common activity, constructing, repairing and cleaning, was the most-common worker activity among the fatalities in construction and manufacturing.

Figure 5.11 Activity of fatally injured workers, Minnesota, 2006

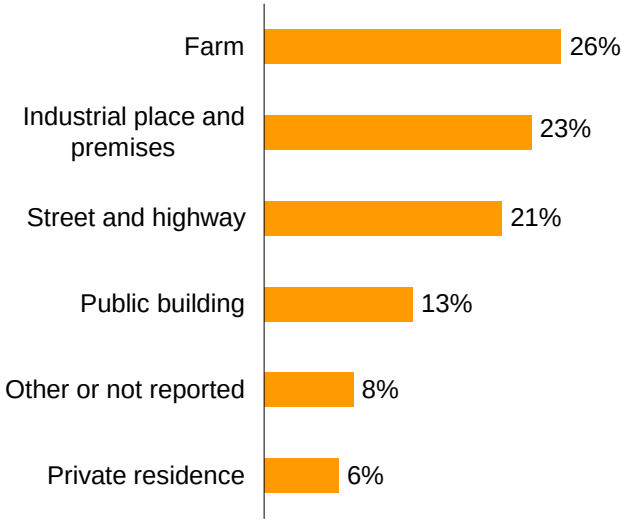


Location

The location of the fatality indicates, in broad terms, the type of place where the fatal event occurred.

- Consistent with the high proportion of fatalities in agriculture, farms were the most-common event location for fatalities in 2006.
- For the first time since 1997, streets and highways were not the most-common fatality location.
- There were 18 fatalities at industrial places and premises in 2003, 2004 and 2006, and 21 fatalities in 2005.

Figure 5.12 Fatal incident location, Minnesota, 2006



6

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 consultation services, on request, to help employers prevent workplace injuries and illnesses by identifying and correcting safety and health hazards. Both units provide 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 and on the Web at 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 or on the Web at www.doli.state.mn.us/wsc.html.

Occupational safety and health compliance

Workplace inspections

MNOSHA Compliance conducts workplace inspections to determine whether employers are complying with safety and health standards. With few 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.

The MNOSHA Compliance program is based on a system of inspection priorities. The priorities, from 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);
- referrals (from safety, health and government professionals);
- 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 6.1 shows statistics for compliance inspections from federal fiscal-years (FFY) 1997 through 2007. More statistics describing MNOSHA activity are available from the MNOSHA annual report, on the Web at www.doli.state.mn.us/pdf/osha2007report.pdf.

- During the most recent five-year period, FFY 2003 through FFY 2007, an average of 2,600 inspections were conducted annually, covering an average of 113,600 workers (Figure 6.1). MNOSHA compliance inspections resulted in the identification of 5,140 violations of OSHA standards in FFY 2007, the highest number ever.

- During FFY 2007, 69 percent of inspections resulted in at least one violation cited. Among inspections with violations, an average of 2.8 violations was cited.

- Serious, willful and repeat violations accounted for 67 percent of the safety violations and for 70 percent of the health violations cited in FFY 2007. The average penalty for these violations was $783.

- As shown in Figure 6.2, the majority of inspections in almost every industry were planned, programmed inspections.

- The construction industry accounted for 37 percent of the inspections and for 19 percent of the violations. 94 percent of the construction compliance visits were for planned, programmed inspections.

- Manufacturing accounted for 38 percent of the inspections and for 57 percent of the violations. 86 percent of the manufacturing compliance visits were for planned, programmed inspections.

- MNOSHA Compliance initiated inspections for 23 fatalities during calendar-year 2007 and for 25 fatalities during 2006. From 2002 through 2006, 37 percent of the fatality investigations were in the construction industry. Falls and crushing incidents accounted for 58 percent of the fatalities investigated.

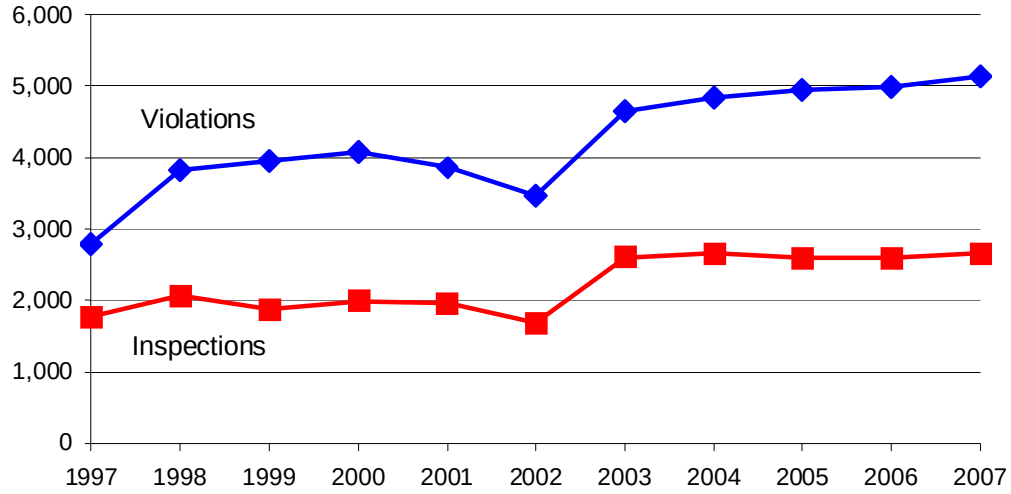
- MNOSHA Compliance initiated inspections for 37 serious-injury incidents during 2007 and for 35 incidents during 2006. From 2002 through 2006, 64 percent of the serious injuries investigated involved workers injured by falls and crushing incidents and injuries resulting in amputation. Additional details about the fatality and serious injury incident investigations are available at www.doli.state.mn.us/oshainfo.html.

- MNOSHA Compliance 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 2007, Compliance staff members conducted 90 outreach presentations for 3,888 people. In conjunction with the Minnesota Safety Council, MNOSHA Compliance conducted nine training sessions for 221 participants about the new crane-operator certification standard.

- Construction safety is a major focus for both the inspections and outreach efforts. More than 40 percent of programmed inspections were conducted at construction worksites. Five construction-safety breakfasts were organized, with 545 construction managers and supervisors in attendance.

- MNOSHA established the 75/25 program in FFY 2004. This is a penalty-reduction incentive program available to qualified employers that links workers' compensation claims and MNOSHA Compliance penalties. This program allows an employer to obtain a 75 percent reduction in penalties if that employer reduces the number of workers' compensation claims submitted by 25 percent within the following one-year period. Participants are encouraged to use WSC services to achieve this goal. Since its inception, 95 employers have entered the 75/25 program and 67 employers have completed the program, with 38 employers successfully achieving the 25 percent claims reduction. Information about this program is on the Web at www.doli.state.mn.us/75_25program.html.

Figure 6.1 MNOSHA Compliance inspections, federal fiscal-years 1997-2007[1]

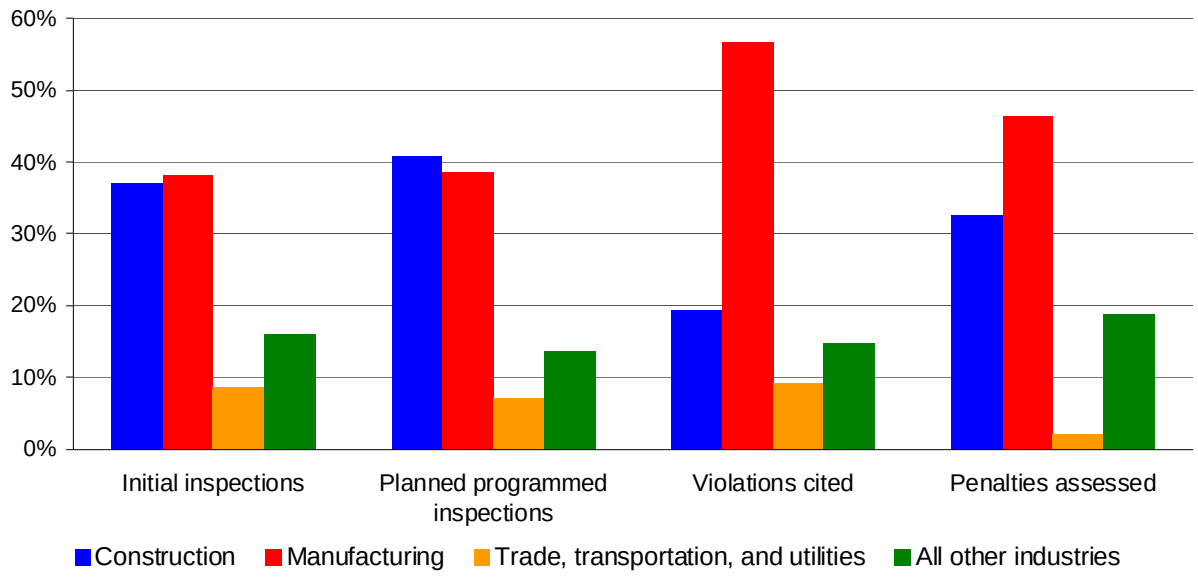


Federal fiscal-year [1]	Inspections conducted	Employees covered [2]	Inspections with violations	Violations	Penalties assessed ($ millions)[3]
1997	1,775	64,515	964	2,786	$1.90
1998	2,062	73,898	1,291	3,829	$2.76
1999	1,876	103,029	1,255	3,957	$3.15
2000	1,991	84,575	1,368	4,068	$3.28
2001	1,953	73,451	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
2004	2,663	112,648	1,872	4,846	$3.52
2005	2,591	128,491	1,821	4,938	$4.07
2006	2,593	93,244	1,876	4,986	$3.75
2007	2,651	126,260	1,836	5,140	$3.85

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: Minnesota OSHA Operations System Exchange database.

Figure 6.2 MNOSHA Compliance inspections by industry, federal fiscal-year 2007



Industry	NAICS code(s)	Initial inspections	Planned programmed inspections	Violations cited	Penalties assessed[1]
Natural resources and mining	11, 21	20	15	60	$ 43,900
Agriculture, forestry, fishing and hunting	11	17	13	53	$ 40,800
Construction	23	1,004	943	1,012	$ 1,139,375
Manufacturing	31-33	1,036	893	2,976	$ 1,614,805
Trade, transportation, and utilities	42-49,22	233	163	487	$ 72,150
Wholesale trade	42	69	58	156	$ 156,225
Retail trade	44-45	50	25	100	$ 69,300
Transportation and warehousing	48-49	101	73	210	$ 315,325
Utilities	22	13	7	21	$ 17,300
Information	51	19	14	17	$ 14,550
Financial activities	52-53	8	3	4	$ 3,600
Professional and business services	54-56	61	36	84	$ 88,125
Education and health services	61-62	105	80	217	$ 210,075
Health care and social assistance	62	58	42	113	$ 100,350
Leisure and hospitality	71-72	23	13	68	$ 51,150
Other services	81	29	11	58	$ 27,675
State government	all	10	4	18	$ 44,550
Local government	all	159	138	245	$ 170,325

1. These are the originally assessed amounts of penalties.
Source: Minnesota OSHA Operations System Exchange database.

Figure 6.3 shows the most-commonly cited OSHA standards violations for 2007. These are very similar to the list of citations for previous years.

- Violations associated with the A Workplace Accident and Injury Reduction (AWAIR) Act have been the most-frequently cited for many years.

- Other commonly cited violations are associated with the Employee Right-To-Know Act, lockout/tagout procedures and construction fall protection.

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 6.3 Minnesota OSHA's most-frequently cited standards, calendar-year 2007

Standard[1]	Description	Frequency
General Industry		
MN Statutes 182.653 subd. 8	A Workplace Accident and Injury Reduction (AWAIR) program	227
MN Rules 5206.0700 subp.1B	Employee Right-To-Know written program deficiencies	223
MN Rules 5206.0700 subp.1	Overall Employee Right-To-Know training program	220
29 CFR 1910.151(c)	Emergency eyewash/shower facilities	166
29 CFR 1910.212(a)(1)	Machine guarding — general requirements	129
29 CFR 1910.147(c)(6)(i)	Periodic inspections of energy control procedures (lockout/tagout)	99
MN Rules 5206.0700 subp.1G	Respiratory protection program	97
29 CFR 1910.147(c)(4)(i)	Development and use of lockout/tagout procedures	96
29 CFR 1910.242(b)	Compressed air used for cleaning	88
MN Rules 5205.0116 subp. 1	Forklifts — monitoring for carbon monoxide	82
Construction		
29 CFR 1926.501(b)(1)	Fall protection in construction — unprotected sides and edges	80
29 CFR 1926.451(g)(1)	Fall protection on scaffolds above 10 feet	70
1926.501(b)(13)	Fall protection — residential	62
MN Statutes 182.653 subd. 8	A Workplace Accident and Injury Reduction (AWAIR) program	61
MN Statutes 182.653 subd. 2	General Duty Clause — unsafe working condition	52
29 CFR 1926.652(a)(1)	Use of sloping or protective systems to prevent excavation cave-ins	36
29 CFR 1926.501(b)(11)	Fall protection on steep roofs	34
29 CFR 1926.501(b)(10)	Fall protection for roofing work on low-slope roofs	33
29 CFR 1910.1052(c)(1)	Railings on stairways	24
1926.150(c)(1)(i)	Fire extinguishers	21

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

Source: Minnesota OSHA Operations System Exchange database.

Partnerships

MNOSHA Compliance continues to support and strengthen relationships with organizations that represent safety and health best practices. MNOSHA Compliance currently has four partnerships. The partnerships target high-hazard industries with a history of serious injuries and illnesses.

Construction Health and Safety Excellence (CHASE)-Minnesota – Associated General Contractors of Minnesota / Associated Building Contractors (ABC)
The goal of these partnerships is to reduce the number of injuries, illnesses and fatalities affecting participants by three percent annually. To achieve these results, these programs focus on the four leading causes of construction deaths, falls, struck-by, caught in/between and electrocutions, and the development of comprehensive written safety and heath programs. Regular audits are conducted. There are three levels of participation in the CHASE/ABC Partnerships.

Ford
MNOSHA, the UAW International Union, and the Ford Motor Company are committed to providing Ford employees a healthful and safe work place and to demonstrate leadership, responsibility and accountability in furthering worker health and safety improvements. The goal is to reduce recordable injuries and illnesses at each Ford location through the creation of a pro-active health and safety culture and a cooperative non-adversarial relationship that optimizes the resources of all parties. This partnership includes all states in federal Region V.

35W Bridge Demolition and Removal
On August 1, 2007, the I-35W bridge in Minneapolis collapsed, killing 13 people. The bridge was a vital link over the Mississippi River and one of the most-heavily-utilized bridges in Minnesota. Following this disaster, the Minnesota Department of Transportation (MN/DOT) contracted Carl Bolander & Sons Co., for the demolition and removal of the collapsed bridge. The removal was completed in October 2007, with the assistance of a partnership developed between MNOSHA Compliance and WSC; the Minnesota Department of Transportation (MN/DOT); Carl Bolander & Sons Co.; other project contractors and subcontractors; and other state and federal agencies. The project and partnership were an overwhelming success; completing over 100,000 hours of work without a lost-time injury.

35W Bridge Construction
With the removal complete, MN/DOT selected Flatiron/Manson, A Joint Venture, to build the I-35W replacement bridge. Following this selection, a new partnership was developed, to again ensure that hazardous conditions are identified and injuries are eliminated. The partners involved include MNOSHA, MN/DOT, Flatiron/Manson and other subcontractors. The partnership is dedicated to the safety and health of all employees throughout this project.

MNOSHA Compliance has dedicated two compliance assistance positions to work with the safety and health representatives of MN/DOT, Flatiron/Manson, and other subcontractors on the 35W bridge rebuild project. The two positions assist with the identification of hazardous conditions and potential abatement solutions on this project. With zero injuries being the ultimate goal of the project, a strategy has been developed which includes conducting a daily Job Hazard Analysis prior to any work being conducted, which is communicated to all employees involved. Additionally, daily safety inspections are conducted by onsite safety personnel and weekly safety inspections are conducted by the partners. All inspections are conducted to identify hazardous conditions and ensure that these conditions are abated immediately. Additional goals include increasing the level of safety and health training for all employees at the worksite and assisting with the implementation of an effective AWAIR program for all contractors and subcontractors.

The safety and health of the employees conducting this bridge rebuild will remain the number one goal. To reach these goals the partnership has established a six-foot fall protection rule for all activities and a mandatory personal protective equipment rule (including hardhats, high-visibility clothing, protective eyewear, and protective footwear).

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 free consultation services 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, and is available to public-sector employers. During FFY 2007, WSC conducted 1,592 worksite safety and health visits, training and assistance visits, and interventions.

WSC safety and health professionals conduct the on-site consultations. During the consultation visits, the safety and health consultants help employers determine how to improve workplace safety practices and working conditions to comply with, and exceed, 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 any serious safety and health hazards found. Consultants identify hazards in 99 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.

Figure 6.4 shows statistics for WSC visits to worksites for FFY 1997 through 2007.

- The number of consultation visits increased significantly in FFY 2002 and has remained at near 1,000 visits annually.
- The number of employees covered by the consultation visits reached more than 100,000 for the first time in FFY 2006.
- WSC visits in FFY 2007 identified safety and health hazards that would have cost employers approximately $5.4 million in MNOSHA Compliance penalties. This averages to nearly $5,800 for each on-site consultation. These hazards were corrected by the employers.

Figure 6.5 shows statistics for WSC services to worksites for some industries during FFY 2007.

- Construction sites accounted for 68 percent of initial consultation visits.
- Manufacturing and health care workplaces accounted for many of the remaining consultation visits and training contacts.

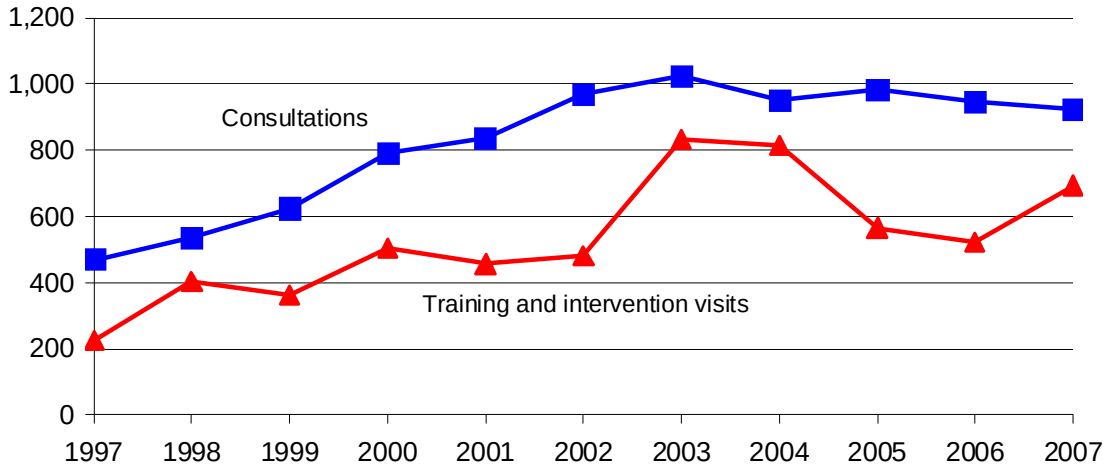
Safety and health seminars

WSC provides seminars and training opportunities 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. During FFY 2007, WSC conducted 693 worksite training and intervention visits, reaching more than 24,000 participants.

The training activities included these notable events:

- three full-day educational sessions for the United Building Centers, which has a safety alliance with WSC;
- safety training sessions for the National Roofing Association, through an alliance with the Twin Cities Roofing Contractors Association;
- nine classes about ladder safety and construction health hazards, through an alliance with the Builders Association of Minnesota;
- seven 10-hour construction safety courses conducted for minority and nonprofit organizations;

Figure 6.4 Workplace Safety Consultation visit activity, federal fiscal-years 1997-2007



Federal fiscal-year[1]	Consultations conducted	Employees covered[2]	Visits with identified hazards	Training and intervention visits	Potential penalties avoided ($ millions)
1997	470	75,071	346	225	$1.60
1998	535	63,579	413	404	$2.53
1999	625	62,816	554	364	$2.73
2000	790	88,016	736	505	$2.43
2001	835	61,191	715	456	$2.93
2002	971	77,988	882	482	$3.23
2003	1,026	64,985	877	832	$3.48
2004	953	66,377	761	816	$3.30
2005	983	72,704	973	567	$4.20
2006	946	103,933	913	522	$4.30
2007	924	92,150	890	693	$5.40

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 affected by the scope of the consultation visit.

Source: OSHA Integrated Management Information System.

Figure 6.5 Workplace Safety Consultation activity for selected industries, federal fiscal-year 2007

Industry	NAICS code	Initial visits	Employees covered	Training assistance and interventions	People trained
Logging	113310	14	51	81	3,069
Construction	23	666	9,287	128	10,032
Manufacturing	31-33	75	11,470	108	4,324
Trade, transportation and utilities	42-49, 22	9	255	20	209
Nursing and residential care	623	51	8,330	13	1,193
Leisure and hospitality	71-72	8	483	29	420
Other services	81	18	355	26	405
State and local government	all	3	653	23	598

Source: OSHA Integrated Management Information System.

- a statewide series of construction breakfasts;
- 11 training sessions covering fall hazards and health exposures for a residential construction re-licensing program at Hennepin Technical College; and,
- 17 ergonomics training presentations about identifying and evaluating ergonomic risk-factors, managing ergonomic risk-factors and back safety.

Loggers' Safety Education Program

The Loggers' Safety Education Program (LogSafe) provides logging industry safety training through eight-hour seminars throughout the state. The goal of the program is to help reduce injuries and illnesses in the logging industry through onsite consultation services, outreach, and training seminars. 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.

During FFY 2007, WSC conducted 20 logger safety seminars with 446 employees and 562 employers in attendance. WSC also conducted 134 safety training interventions with 3,056 participants. Additionally, 13 on-site consultations and three follow-up visits were conducted.

WSC also conducts training sessions for public-sector employers and employees who are involved in tree removal following storms or other circumstances. In many cases, the trees are damaged and hazardous to work with for workers not routinely doing logging. Thirteen training sessions for the public sector about chain saw safety were conducted with 288 employees and five employers in attendance.

Safety Grants Program

The Safety Grants Program is a 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. Projects must be consistent with the recommendations of a safety and health inspection. Qualified applicants must match the grant money awarded.

During state fiscal-year 2007, WSC awarded $407,000 to 89 employers. These grants were applied toward projects with a total cost of $1.8 million.

Workplace Violence Prevention Program

The Workplace Violence Prevention Program, also state-funded, helps employers and employees reduce the incidence of workplace violence 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.

In FFY 2007, WSC presented 12 violence prevention outreach presentations, covering 400 employers and employees. WSC also made 10 violence-related interventions where the employer was contacted by telephone or in writing, and approximately 30 referrals to police, OSHA enforcement, the state Attorney General's office or other governmental agencies.

Ergonomics assistance

In response to recommendations by the Ergonomics Task-force, which convened during the summer of 2002, WSC added two ergonomics specialist positions to help employers reduce the occurrence of work-related musculoskeletal disorders (WMSDs). The main responsibilities of the positions are to educate Minnesota employers and employees about the recognition and control of risk factors associated with WMSDs. This is being accomplished through development of training and education presentations and materials, on-site ergonomics evaluations and posting resources on the WSC Web pages.

In an effort to maximize the effect of the on-site ergonomics evaluations, the initial efforts have focused on the nursing home industry. WSC enlisted 26 nursing homes in this effort. The participating homes have received ergonomics

consultations to help manage ergonomic risk-factors that contribute to worker injury. Detailed measurements are being taken as part of this industry focus to help WSC learn how to improve ergonomics-related services and to evaluate the changes at the nursing homes.

Safe patient-handling

WSC administers Minnesota's new safe patient-handling program, passed by the Legislature in 2007. The Safe Patient Handling Act (Minnesota Statutes §182.6551 through 182.6553) requires licensed health care facilities in Minnesota to adopt a written safe-patient-handling policy and establish a safe-patient-handling committee by July 1, 2008. The written policy must establish a plan to minimize manual lifting of patients by Jan. 1, 2011, through the use of patient-handling equipment. The law also provides $500,000 for the safe-patient-handling grant program administered by DLI.

The statutes enacted a grant program to provide assistance to health care facilities — defined as hospitals, outpatient surgical centers and nursing homes — with the purchase of safe patient-handling equipment, training about safe patient-handling and training about the use of safe patient-handling equipment. In January 2008, 67 health care facilities statewide were awarded $7,700 matching grants by the WSC unit. Plans to continue safe-patient-handling grants through the ongoing Safety Grants program are being considered.

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 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. Achievement of MNSHARP status requires that the employer's total injury and illness rate and DART case rate be 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 participant has met these requirements and the injury and illness reduction goal. If these requirements are met, the worksite 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 participants may apply annually for certification renewal. If an on-site survey by WSC determines the employer continues to meet program requirements, the certification is renewed and the participant continues to be exempt from programmed MNOSHA Compliance inspections.

Four new participants were certified into MNSHARP during FFY 2007, bringing the total to 28 certified programs. The majority of the program participants are manufacturers. Another seven employers entered MNSHARP deferral status, during which they must complete their action plan. Four other worksites are currently working toward deferral status for FFY 2008. A list of MNSHARP sites is presented in the MNOSHA Annual Report, available at www.doli.state.mn.us/pdf/07mnosha_annualreport.pdf.

The total case incidence rates of the MNSHARP employers during 2007 averaged 53 percent below the 2006 national rate for their industries, and their DART rates averaged 63 percent below their national industry rates.

Construction Safety Pilot Program

In FFY 2007, WSC launched one of the nation's first safety and health achievement recognition programs for the construction industry. MNSHARP Construction provides incentives and on-site support for large, long-term (18 months or longer) construction worksites and works with the general contractors to develop, implement and continually improve the effectiveness of their workplace safety and health programs. This includes on-site hazard identification, training, education and technical assistance.

The goal of the program is to reduce injury and illness rates below the national average for their particular industry. Participating employers with effective safety and health site-specific programs are exempt from MNOSHA Compliance programmed inspections for one year. The exemption is renewable on an annual basis until the project is complete.

The program was well-received in its first year. Twenty-five major construction project employers have asked to participate in the program. Of those major construction project employers, seven contractors demonstrated a reasonable promise of achieving agreed-upon milestones and timeframes and were granted a pre-MNSHARP status. Those milestones and timeframes are based on a full-service safety and health consultation visit, a comprehensive assessment of their safety and health management system, and remediation of all hazards identified by the WSC Workplace Safety and Health Assessment Team. This categorization bestows major construction project employers an exemption for routine MNOSHA Compliance inspections for up to one year while the company works on achieving the goals. WSC is still working with 18 of the remaining major construction project employers.

From the seven projects that achieved pre-MNSHARP status, three construction projects have completed the agreed-upon milestones and been awarded MNSHARP Construction employer certification.

MNSTAR

The Minnesota Star (MNSTAR) program is a voluntary program patterned after the federal Voluntary Protection Program.[13] It is available to Minnesota employers of all sizes. Compared to MNSHARP, MNSTAR has more rigorous requirements and confers a higher level of recognition on certified 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, employers qualify for MNSTAR status if all eligibility requirements have been met, including an injury and illness rate below the state and national averages for their industry. MNSTAR recognition exempts employers from programmed MNOSHA Compliance inspections for three years.

Six new MNSTAR sites were certified during FFY 2007, bringing the total to 24 worksites with MNSTAR certification. Fifteen of the worksites are manufacturers, and two are in construction.

During 2007, the total case incidence rates of the general-industry MNSTAR employers averaged 56 percent below the 2006 national rates for their industries and their DART rates averaged 70 percent below the national rates. The construction employers' total case incidence rates averaged 92 percent lower than their national rates and they did not report any DART cases.

[13] See www.osha.gov/dcsp/vpp/index.html.

MNOSHA performance

Minnesota OSHA sets its strategic and performance goals in five-year strategic plans. Some of the performance goals for the 2004 to 2008 strategic plan use BLS survey results. The complete MNOSHA annual report is available at www.doli.state.mn.us/pdf/06mnosha_annualreport.pdf.

The current Minnesota OSHA strategic plan has performance goals to reduce the days-away-from work (DAFW) case incidence rate by 15 percent for a set of inspection emphasis industries. The industries, listed in Figure 6.6, were identified through a combination of factors, including the number of workers in the industry and the industry's DART rate.

The only rate available to use for the baseline period is for 2003, because the pre-2003 BLS rates are not directly comparable. The 2003 and 2006 DAFW rates and case count estimates are shown in Figure 6.6.

The value of targeting these emphasis industries is shown at the bottom of Figure 6.6; these industries, which account for 23 percent of the work establishments and 30 percent of employment, account for 44 percent of the DAFW cases.

Establishments in the emphasis industries receive considerable attention from MNOSHA. During FFY 2006, 77 percent of programmed compliance inspections and 83 percent of the consultation initial visits were in the emphasis industries.

Figure 6.6 Minnesota OSHA emphasis industries for the 2004-2008 strategic plan

Industry name (NAICS)	NAICS code	Establishments 2007	Wage and salary employment 2007	DAFW rate 2003	DAFW cases 2003	DAFW rate 2006	DAFW cases 2006	Change in rates 2003-2006	Change in cases 2003-2006
Logging	1133	202	744	na	na	na	na	na	na
Construction	23	18,402	120,403	2.8	2,870	2.4	2,650	-14%	- 8%
Food manufacturing	311	787	42,752	1.4	620	1.7	700	21%	13%
Animal slaughtering and processing[1]	3116	137	15,581	1.6	260	1.1	170	-31%	-35%
Wood product manufacturing	321	391	14,732	2.6	410	2.5	400	- 4%	- 2%
Paper manufacturing	322	146	11,735	1.6	210	1.5	190	- 6%	-10%
Printing and related support activities	323	964	31,261	1.4	430	1.0	310	-29%	-28%
Plastics and rubber products mfg.	326	403	15,542	1.5	240	1.2	190	-20%	-21%
Foundries[2]	3315	52	4,725	2.4	120	3.5	200	46%	67%
Architectural and structural metals manufacturing	3323	298	8,268	2.9	240	1.7	150	-41%	-38%
Machinery manufacturing	333	866	33,904	1.2	420	1.9	630	58%	50%
Motor vehicle manufacturing	3361	13	1,843	3.5	100	3.6	50	3%	-50%
Furniture and related product mfg.	337	684	12,343	2.4	300	2.8	360	17%	20%
Lumber and other construction materials merchant wholesalers	4233	362	5,560	4.0	200	0.9	50	-78%	-75%
Motor vehicle and parts dealers	441	2,310	33,235	1.2	380	1.4	430	17%	13%
Gasoline stations	447	2,581	23,062	1.6	280	0.6	90	-63%	-68%
Couriers and messengers	492	339	10,451	5.3	440	3.9	300	-26%	-32%
Telecommunications	517	1,005	14,221	0.9	130	1.4	190	56%	46%
Nursing care facilities[2,3]	6231	410	44,484	3.1	1,350	2.8	1,180	-10%	-13%
Traveler accommodations[2]	7211	1,241	26,842	1.5	230	1.6	270	7%	17%
State and local government	all	6,797	338,360	1.6	4,310	1.4	3,850	-13%	-11%
Emphasis industry total		38,390	810,048		13,280		12,190		- 8%
State total (excludes federal gov.)		166,736	2,656,578	1.5	29,860	1.3	27,690	-13%	- 7%
Percentage of state total		23%	30%		44%		44%		

1. Animal slaughtering and processing is an industry group in the food processing subsector.

2. DAFW numbers and rates are not available for this industry; the rate for the three-digit NAICS industry is reported and the number of DAFW cases is estimated. This applies to to NAICS 7211 for 2006 only.

3. Data shown for private sector only. Public sector facilites included in "state and local government."

Sources: BLS *Quarterly Census of Employment and Wages* and *Annual Survey of Occupational Injuries and Illnesses*.

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, that became effective Jan. 1, 2002. By improving the consistency in recordkeeping by employers, these changes should improve the quality of the estimates produced by the BLS *Survey of Occupational Injuries and Illnesses (SOII)*, which relies on the OSHA log records.

To disseminate information about the new recordkeeping requirements, all employers participating in the 2002 SOII 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 www.doli.state.mn.us/recordkeeping.html.

The following are some of the major changes and how they might affect the SOII estimates.

- 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 tends to 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 tends to 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 tends to 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 tends 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 tends to 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 tends to**

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 tends to 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 tends to reduce the number of WMSD cases.**

Appendix B

Definitions of key concepts in the *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.[14] The survey includes all nonfatal cases recorded by participating employers on their OSHA 300 logs. 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 and later years, 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; or
- 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 before and after 2002 are discussed in Appendix A. Information about the recordkeeping guidelines is available at 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 combination of days away from work and days of restricted work activity.

[14] 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.

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 and later, 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 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 is summary data about an industry selected for publication in the survey that meets 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 the identity of data providers and that the nature of their data cannot be determined.

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-equivalent workers. They are calculated as: (N/EH) x 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 the 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.