Minnesota Workplace Safety Report 2009

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Minnesota Workplace Safety Report 2009

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In commemoration of its centennial, this report is dedicated to the memory of the victims of the Triangle Shirtwaist Fire and those who worked to improve working conditions following this tragedy.

Brian Zaidman

Executive summary

The number of occupational injury and illness cases in Minnesota's workplaces continued its downward trend after peaking at 159,000 cases in 1996. The most recent survey results show that during 2009, there were an estimated 78,100 recordable injury and illness cases; of which about 21,000 involved one or more days away from work. The comparable figures for 2008 were 87,900 total cases and 22,600 days-away-from-work cases. There were 61 work-related fatalities in 2009, a decrease from 65 fatalities in 2008 and 72 fatalities in 2007.

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 were $1.37 billion in 2009. In 2008, the average cost of an insured claim was approximately $8,600. 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 annual report 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 the U.S. Bureau of Labor Statistics. Information about Minnesota OSHA activities and programs is also presented, based on administrative statistics collected by the Minnesota Department of Labor and Industry.

Nonfatal occupational injuries and illnesses

Incidence rates

- Minnesota's total rate of workplace injuries and illnesses was 3.8 cases per 100 full-time-equivalent (FTE) workers in 2009, a drop from the 2008 rate of 4.2 cases. The rate has decreased 37 percent from the 2002 rate of 6.0 cases per 100 FTE workers. Minnesota's rate was below the national rate of 3.9 cases per 100 FTE workers.

- The rate of cases with days away from work, job transfer or restriction was 1.8 cases per 100 FTE workers in 2009, below the 2008 rate of 1.9 cases per 100 FTE workers, and 42 percent below the 2002 rate of 3.1 cases. Minnesota's rate was below the national rate of 1.9 cases per 100 FTE workers.

- The rate of cases with days away from work was 1.0 per 100 FTE workers in 2009, down from 1.1 cases per 100 FTE workers in 2008 and 1.7 cases in 2002. Minnesota's rate was below the national rate of 1.2 cases per 100 FTE workers.

- Minnesota's private-sector total recordable case rate has been slightly above the U.S. rate since 1996. For 2009, the total case rate was 3.8 cases per 100 FTE workers for the state versus 3.6 for the nation.

- National rates for public-sector establishments have only been available since 2008. In 2009, Minnesota's state and local government total recordable case rates were 3.9 cases and 4.4 cases per 100 FTE workers, respectively, below the respective U.S. rates of 4.6 cases and 6.3 cases per 100 FTE workers.

- Minnesota's industry sectors with the highest total injury and illness rates per 100 FTE workers were:
  (1) construction (5.7);
  (2) privately owned education and health services (5.6); and
  (3) natural resources and mining (5.4).

- Four separately identified health care industry groups — privately owned hospitals and nursing and residential care facilities with private, state government and local government ownership — were among the 10 industry subsectors with the highest total case rates.

- Among cases with any days away from work, the median number of days away from work was six days. Twenty-eight percent of the cases had only one or two days away from work and 24 percent of the cases had more than 20 days away from work.

Worker and injury characteristics

For cases with one or more days away from work, the survey provides information about characteristics of the injured workers, their jobs and their injuries.

- Men accounted for 52 percent of all workers and 61 percent of the injured workers, averaged over 2007 through 2009.

- The percentage of injured workers age 55 and older increased from an annual average of 11 percent during 1999 through 2001 to 18 percent during 2007 through 2009.

- Building and grounds cleaning and maintenance occupations had the highest rate of days-away-from-work cases of all the occupation groups during the 2007 through 2009 period, followed by transportation and material moving occupations and healthcare support occupations.

- Sprains and strains accounted for 41 percent of the 2009 cases with days away from work. The second-highest category was soreness and pain, with 11 percent of the cases.

- Workers injured their back more than any other body part, accounting for 26 percent of the cases, followed by multiple-part injuries, with 12 percent.

- The most common injury events were falling on the same level and overexertion in lifting.

- Floors and ground surfaces was the most frequent source of injury, followed by the injured worker's own motion or bodily position and containers.

- Musculoskeletal disorders accounted for 36 percent of the cases with days away from work in 2009.

Fatal occupational injuries

The 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* (such as asbestosis) are excluded.

- Sixty-one Minnesotans were fatally injured on the job in 2009. For 2005 through 2009, Minnesota had an average of 73 fatal work injuries a year, consisting of approximately 51 wage-and-salary workers and 22 self-employed people.

- Among industry sectors in 2009, agriculture, forestry, fishing and hunting recorded the highest number of worker fatalities, with 20. Construction had the second-highest number of fatalities, with nine cases.

- The most frequent causes of Minnesota's fatal work injuries for 2009 were transportation accidents (38 percent) and contact with objects and equipment (23 percent).

Minnesota OSHA activities

During federal-fiscal-year 2010 (October 2009 through September 2010), Minnesota OSHA:

- conducted 2,691 compliance inspections affecting the workplaces of 172,200 workers;

- identified 5,535 violations of OSHA standards, resulting in the assessment of $3.9 million in penalties;

- conducted 1,064 worksite consultations that identified safety and health hazards, potentially costing employers $3.5 million in penalties; and

- conducted 539 worksite consultation training and intervention visits, plus many other safety and health presentations and seminars.

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Introduction

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 reducing the burden of occupational injuries and illnesses on workers, families and employers.

This report also provides a summary of Minnesota Occupational Safety and Health Administration (MNOSHA) compliance and safety consultation program activities, showing how these state programs are supporting employers' efforts to improve workplace safety.

Minnesota's employers reported fewer worker injuries and illnesses than had previously been recorded. The most recent occupational injury and illness figures show that during 2009, there were an estimated 78,100 recordable injury and illness cases; about 21,000 of these cases involved one or more days away from work. The figures for 2008 were 87,900 total cases and 22,600 cases with days away from work. These numbers are much lower than in 2000, when there were 142,500 total cases and 39,200 cases with days away from work.

There were 61 work-related fatal injuries in 2009, a decrease from 65 fatalities in 2008 and 72 fatalities in 2007. Only once before, in 2000, was the number of fatal workplace injuries below 70 cases.

Approximately 214 Minnesota workers were hurt at work or became ill from job-related causes each day during 2009. In addition to the physical and economic effects of injuries and illnesses on workers, employers pay the direct economic costs.[1] Workers' compensation in Minnesota cost an estimated $1.37 billion in 2009, or $1.35 per $100 of covered payroll.[2] This includes indemnity benefits (for lost wages, functional impairment or death), medical treatment, physical and vocational rehabilitation, dispute resolution, claims administration and other system costs.

For workers' compensation policies written in 2008 (the most current data available), the average amount of benefits paid for a workers' compensation claim was $8,600. For claims with cash benefits, 21 percent of all cases, the combined average medical and cash benefit cost was much higher — $36,700.

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 Minnesota OSHA Operating System Exchange (MOOSE) database. The BLS and CFOI statistics are available through 2009; MNOSHA statistics are available through 2010.

Occupational injury and illness survey

The annual SOII, conducted jointly by BLS and state agencies, is the primary nationwide source of workplace injury and illness data. Work establishments, randomly selected within industry and establishment size categories, provide data from their OSHA recordkeeping log summaries (OSHA 300A forms) and detailed data about cases with one or more days away from work (from OSHA 301 forms). The SOII is a mandatory survey; businesses selected to participate in the survey are required to provide their data. Approximately 5,000

[1] An example of an economic effect on workers is the three-day disability waiting period before workers become eligible for workers' compensation indemnity benefits.

[2] *Minnesota Workers' Compensation System Report 2009* (www.dli.mn.gov/RS/WcSystemReport.asp). This report provides statistics about workers' compensation benefit costs and is the source of the costs cited.

Minnesota work establishments participated in the 2009 SOII. Data were collected from 99.8 percent of the usable establishments in the survey sample.

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 business owners, sole proprietors, federal government employees, volunteers or family farm workers.[3]

Because of the time needed to produce the survey sample, the SOII does not include establishments that begin operation within six months of the start of the survey year or during the survey year, and it is often impossible to collect data from establishments that closed during or immediately after the survey year. Statistical weighting is used to make the collected responses numerically representative of their industry's employment, although the actual injury and illness records for new and closing establishments may differ from establishments under continuous operation.

Employers record work-related injury and illness cases on their OSHA log that:

- result in fatalities;
- result in loss of consciousness;
- require medical treatment other than first aid; or,
- result in lost time from work, restricted work activity or transfer to another job after the day of injury or onset of illness.

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.

The OSHA log categorizes recordable cases according to whether they have days off the job, job transfer or work restrictions.

- Cases with days away from work, job restriction or transfer (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 A. Employers are expected to understand the OSHA recordkeeping requirements well enough to properly identify and classify their cases and to count the days away from work and days of work restriction or job transfer. The DLI survey staff members monitor the survey responses and work with employers to correct their case classifications and day counts. Appendix B presents the information expected from employers and discusses the common errors made on the OSHA log and the subsequent report of the log results for the SOII.

Because of changes in 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 later results unreliable. Appendix C presents the recordkeeping changes that took effect in 2002 and how they might affect injury and illness statistics.

The industries and occupations categorization systems have also changed. The industry coding changed from the 1997 Standard Industrial Classification (SIC) system to the 2002 North American Industry Classification System

[3] Owners and partners in sole proprietorships and partnerships are not considered employees, but corporate officers who receive payment for their services are considered employees.

(NAICS)[4] in the 2003 SOII. The 2009 SOII introduced the 2007 version of NAICS. Occupational coding changed from the 1990 Bureau of Census codes to the 2000 Standard Occupational Classification (SOC) system[5] in the 2003 SOII. Exact comparisons of industry-specific and occupation-specific rates and numbers with results for earlier years are not possible.

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. Sampling errors are regularly reported as part of the SOII survey statistics.[6]

While the SOII offers the most complete national estimate of occupational injuries and illnesses, there is a concern about whether the SOII significantly undercounts these cases. This debate, and the research examining the extent of the SOII undercount, is summarized by John Ruser, the BLS Assistant Commissioner for Safety, Health and Working Conditions, who also provides information about steps the BLS is taking to improve the validity of the SOII estimates.[7] As part of the national effort to improve OSHA recordkeeping, the federal and state OSHA enforcement agencies have undertaken an emphasis program on recordkeeping.[8]

Census of Fatal injuries

BLS, in cooperation with state and other federal agencies, conducts the nationwide Census of Fatal Occupational Injuries (CFOI), which was created to produce accurate and comprehensive counts of fatal workplace injuries that occur each year. Fatalities caused by illnesses are excluded.

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

The CFOI results were categorized by NAICS industry codes and SOC occupation codes for the first time in 2003. Beginning with the 2009 data, the CFOI program began using the 2007 version of NAICS. Trends and direct comparisons with data from years prior to 2003 are not possible for industries and occupations.

MNOSHA activity measures

The 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 the MOOSE system. MNOSHA inspectors and consultants enter information following worksite visits. Data for training presentations, voluntary program participation and safety grant activity are maintained in separate file systems.

Other available data

The SOII provides a large volume of information about occupational injuries and illnesses 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, including cause, severity (number of days away from work), employee's length of time on the job when injured, occupation and other employee characteristics.

The Minnesota case counts and incidence rates for all detailed industries for survey years 2003 through 2009 are available at www.dli.mn.gov/RS/StatWSH.asp. The injury

[4] Information about NAICS is available at www.census.gov/e0s/www/naics.
[5] Information about the SOC system is available at www.bls.gov/soc.
[6] For the 2009 relative standard errors, see tables A1 to A4 at www.dli.mn.gov/RS/Excel/blssumtables08.xls.
[7] John W. Ruser, "Examining evidence on whether BLS undercounts workplace injuries and illnesses." *Monthly Labor Review*, August 2008, pp. 20-32.
[8] The national emphasis program is explained in OSHA Directive 10-02 (CPL 02) at www.osha.gov/OshDoc/Directive_pdf/CPL_02_10-02.pdf.

and illness incidence rates for Minnesota and the U.S. and for Minnesota's industry supersectors, from 1988 through 2009, are also available through this web page. The Minnesota CFOI tables for 2009 are available on at www.dli.mn.gov/RS/Excel/StatFatal.asp.

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 website also provides data for other states.

Some national and state 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 statistics about MNOSHA activities; the federal-fiscal-year 2010 will be available at www.dli.mn.gov/OSHA/PDF/annualreport10.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 DAFW 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 compliance and consultation activities and programs to help employers achieve safe and healthful workplaces.

Appendix A provides a glossary of concepts and terms for understanding and using the SOII data. Appendix B provides some of the major OSHA log requirements and recordkeeping principles that form the basis of the SOII statistics. Appendix C shows the major changes in OSHA's recordkeeping rule that became effective in 2002.

2

An overview of nonfatal workplace injuries and illnesses in Minnesota

Numbers of injury and illness cases

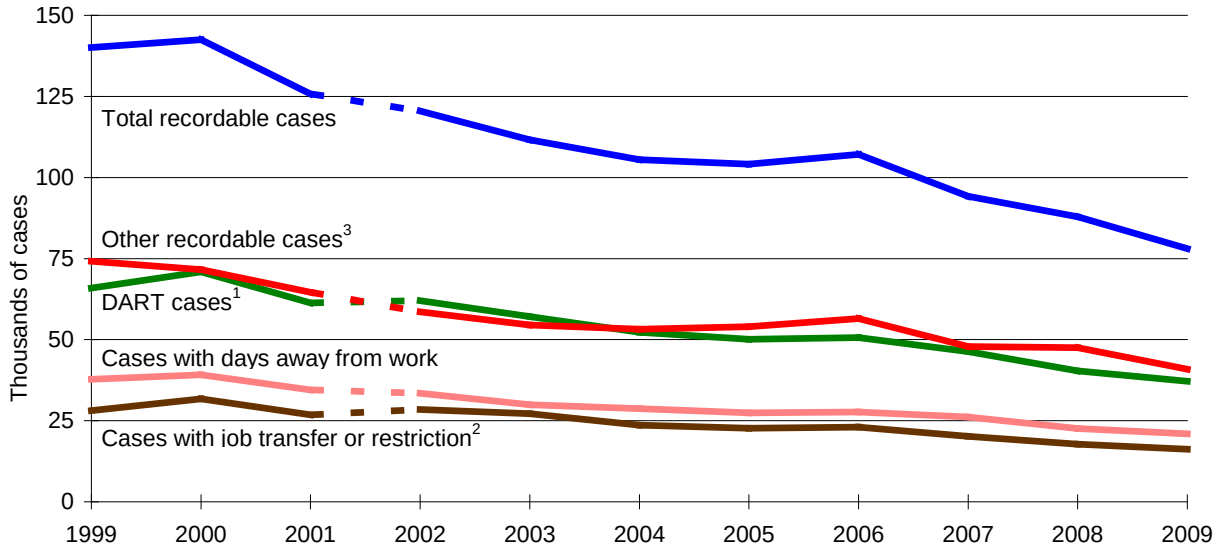
The number of cases shows the magnitude of the occupational injury and illness situation in Minnesota, a state with 160,000 work establishments and 2.6 million workers.

On the basis of employers' responses to the SOII, there were an estimated 78,100 OSHA-recordable injury and illness cases in Minnesota in 2009. This is the lowest number of cases ever reported in the SOII for Minnesota.

Figure 2.1 shows estimated numbers of nonfatal injuries and illnesses in Minnesota for 1999 through 2009 for the various case types. 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 between 2001 and 2002.

- From 2004 to 2009, while employment increased 2 percent, the estimated number of recordable cases decreased 26 percent.
- The distribution of cases among the various case types in 2009 was similar to the distribution in prior years.
- The number of "other" recordable cases decreased by 6,600 cases from 2008 to 2009, accounting for two-thirds of the total decrease.

Figure 2.1 Number of injury and illness cases, Minnesota, 1999-2009



Year of injury	Employ-ment (1,000s)	Total recordable cases (1,000s)	Total DART cases[1]		Cases with days away from work		Cases with job transfer or restriction[2]		Other recordable cases[3]	
			Number (1,000s)	Pctg. of total	Number (1,000s)	Pctg. of total	Number (1,000s)	Pctg. of total	Number (1,000s)	Pctg. of total
1999	2,517	140.1	65.9	47%	37.8	27%	28.1	20%	74.2	53%
2002	2,551	120.5	62.0	51%	33.5	28%	28.5	24%	58.6	49%
2007	2,642	94.2	46.3	49%	26.1	28%	20.2	21%	47.9	51%
2008	2,654	87.9	40.4	46%	22.6	26%	17.8	20%	47.5	54%
2009	2,600	78.1	37.2	48%	21.0	27%	16.2	21%	40.9	52%

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.

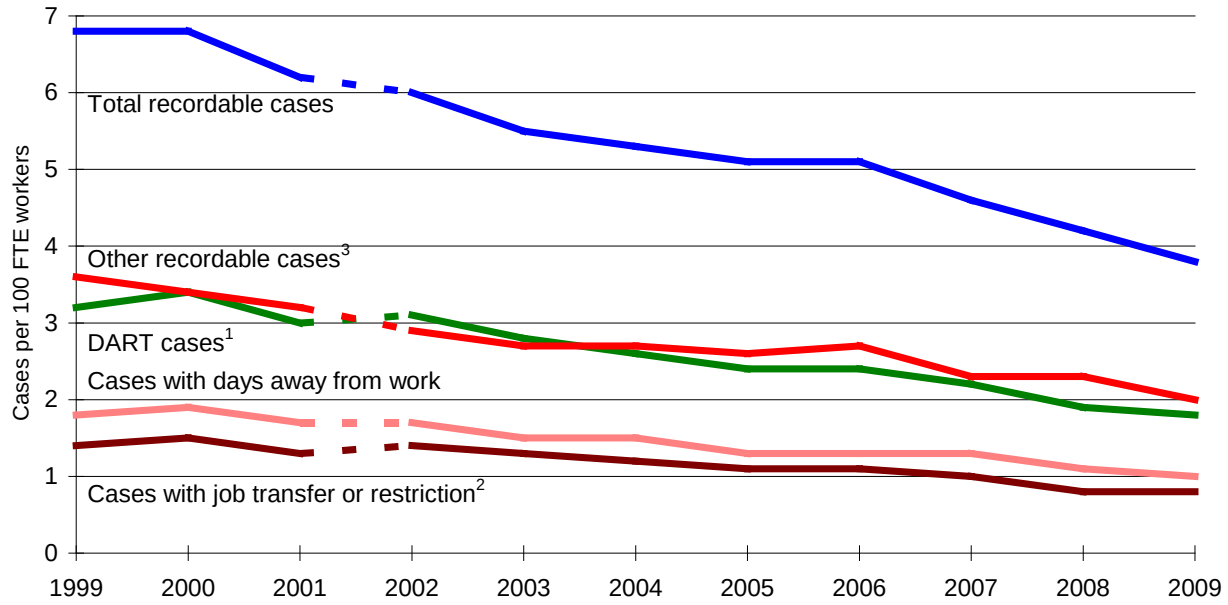
Incidence rates

Incidence rates relate the estimated number of recordable injury and illness cases to 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 1999 through 2009, expressed as cases per 100 full-time-equivalent (FTE) workers.

Because of the OSHA recordkeeping changes, the 2002 and later estimates are not directly comparable with estimates from earlier years. To highlight this change, there is a break in the data lines between 2001 and 2002.

- After peaking at a rate of 8.6 in 1993 and 1994, the total case rate has steadily decreased. Minnesota's 2009 total case rate of 3.8 cases per 100 FTE workers and DART case rate of 1.8 cases per 100 FTE workers were the lowest in the history of the state survey.
- The most significant rate decrease from 2008 to 2009 occurred for "other" recordable cases, which dropped from 2.3 cases per 100 FTE workers in 2008 to 2.0 in 2009.

Figure 2.2 Injury and illness cases per 100 FTE workers, Minnesota, 1999-2009



Year of injury	Total recordable cases	Total DART cases[1]	Cases with days away from work	Cases with job transfer or restriction[2]	Other recordable cases[3]
1999	6.8	3.2	1.8	1.4	3.6
2002	6.0	3.1	1.7	1.4	2.9
2007	4.6	2.2	1.3	1.0	2.3
2008	4.2	1.9	1.1	0.8	2.3
2009	3.8	1.8	1.0	0.8	2.0

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 1999 through 2009.[8]

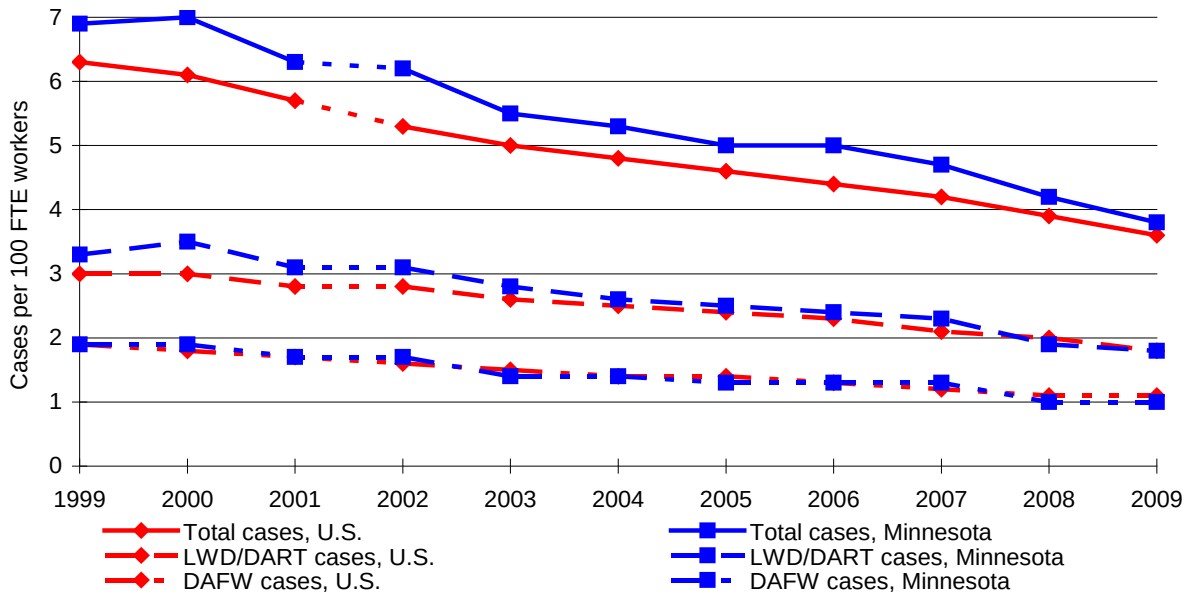
- Minnesota's 2009 private-sector total case rate was 3.8 cases per 100 FTE workers, while the U.S. rate was 3.6 cases. Minnesota's total case rate has been above the U.S. rate since 1993. The current difference is the smallest between the two rates since 1993, when Minnesota's rate was 8.7 cases and the U.S. rate was 8.5 cases.

- Minnesota's DART rate for 2009 was 1.8 cases per 100 FTE workers, the same as the national rate. Relative to the U.S. rate, Minnesota's lost-workday/DART case rate was lower in the late 1980s, close during the early 1990s, higher from 1996 to 2003, and has been very close to the U.S. rate since 2004.

- Minnesota's DAFW case rate has been almost identical to the U.S. DAFW rate since 1996.

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. There may also be variations in reporting between Minnesota and other states, which may affect the estimated rates.

Figure 2.3 Injury and illness case incidence rates for Minnesota and the United States, private sector, 1999-2009



	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.
1999	6.9	6.3	3.3	3.0	1.9	1.9
2002	6.2	5.3	3.1	2.8	1.7	1.6
2007	4.7	4.2	2.3	2.1	1.3	1.2
2008	4.2	3.9	1.9	2.0	1.0	1.1
2009	3.8	3.6	1.8	1.8	1.0	1.1

1. LWD cases are lost-workday cases (2001 and earlier). DART cases include cases with days away from work, job transfer or restriction (2002-2008).

[8] Prior to 2008, participating states had the option to include public-sector worksites in the SOII. Because not all states chose this option, public-sector statistics are not available at the national level prior to 2008.

For 2009, the combined incidence rates for the public and private sectors are available for both Minnesota and the U.S. Figure 2.4 shows Minnesota's total case rate, DART rate and DAFW rate were lower than the corresponding national rates. These comparisons need to be made cautiously, however, because of differences between the types and proportions of industries in Minnesota and nationally.

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 2.5 shows Minnesota's ranking for injury and illness rates and for the ratio of DART cases to the total case rate. Comparable private-sector data is available for 42 states in 2006 and 2007, for 41 states in 2008 and for 40 states in 2009. Lower rates are ranked lower.

- Minnesota maintained its ranking decreases in total cases, DART cases and cases with job transfer or restriction from 2008 to 2009.
- Minnesota's rankings for DAFW cases increased, but remained below its rankings in 2006 and 2007.
- The total case rate can be divided into two broad categories: the DART case rate and the other recordable case rate (see Appendix A for definitions of the case types). When the DART rate is low compared to the total case rate, this may indicate employers are recording many low-severity cases on their OSHA logs or the state has a low overall severity level. The DART case rate was 47 percent of Minnesota's total case rate in 2009, the 11th lowest percentage among all the states reporting. In 2008, the DART rate was 45 percent of the total case rate.

Figure 2.4 Injury and illness case incidence rates for Minnesota and the United States, public and private sectors, 2009

Case type	Minnesota rate	U.S. rate
Total cases	3.8	3.9
DART cases	1.8	1.9
DAFW cases	1.0	1.2
Cases with job transfer or restriction only	0.8	0.8
Other recordable cases	2.0	2.0

Figure 2.5 Ranking of Minnesota's private-sector injury and illness rates with other states (lower rates result in lower rankings)

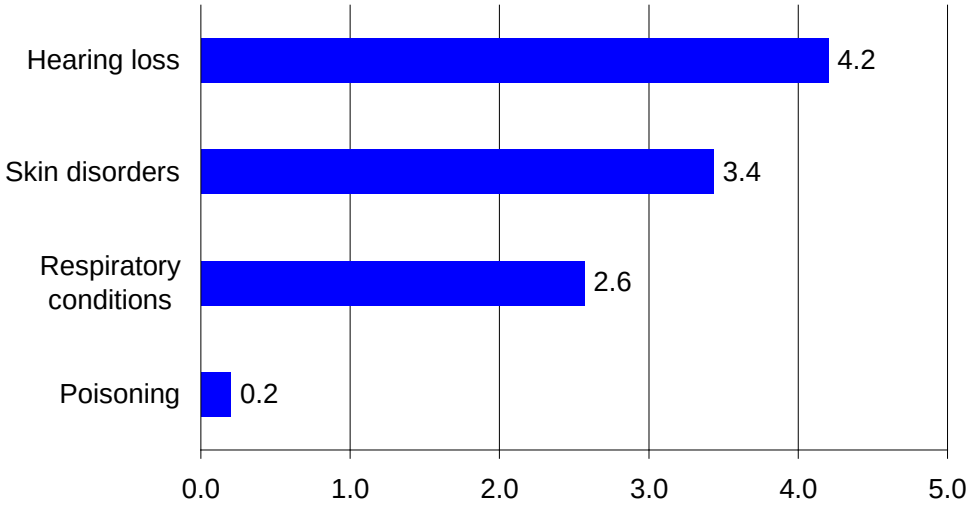
Incidence rate	2006 (42 states)	2007 (42 states)	2008 (41 states)	2009 (40 states)
Total cases	25	24	19	18
DART cases	21	21	15	15
DAFW cases	17	19	8	13
Cases with job transfer or restriction	26	24	19	18
Other recordable cases	30	26	27	22
DART rate as percentage of total case rate	9	14	3	11

Incidence of illnesses

The SOII statistics include estimates of the number and rate of claims of specific illnesses for all case types. These illnesses are skin diseases or disorders, respiratory conditions, poisoning and hearing loss. These illnesses are counted for all case types, unlike the more-detailed data available only for DAFW cases. In 2009, there were an estimated 1,700 cases with one of these illnesses. The rates per 10,000 FTE workers for these conditions are shown in Figure 2.6, averaged over the 2007 to 2009 period because of the large year-to-year fluctuations in incidence rates.

- Noise-induced hearing loss is defined as a change in hearing threshold relative to a baseline audiogram. Hearing loss has the highest incidence rate of the illnesses.
- The second most common illness type is skin diseases or disorders. These are illnesses involving the worker's skin that are caused by work exposure to chemicals, plants or other substances.
- Respiratory conditions are illnesses associated with breathing hazardous biological agents, chemicals, dust, gases, vapors or fumes at work.
- Poisoning includes disorders evidenced by abnormal concentrations of toxic substances in blood, other bodily fluids, tissues or the breath that are caused by the ingestion or absorption of toxic substances into the body.

Figure 2.6 Annual average incidence rates per 10,000 FTE workers for specific illnesses, all recordable cases, Minnesota, 2007-2009



3
Injuries and illnesses by industry

This chapter compares injury and illness rates and distribution of cases by industry and establishment size, showing the considerable variation in results by industry and size.

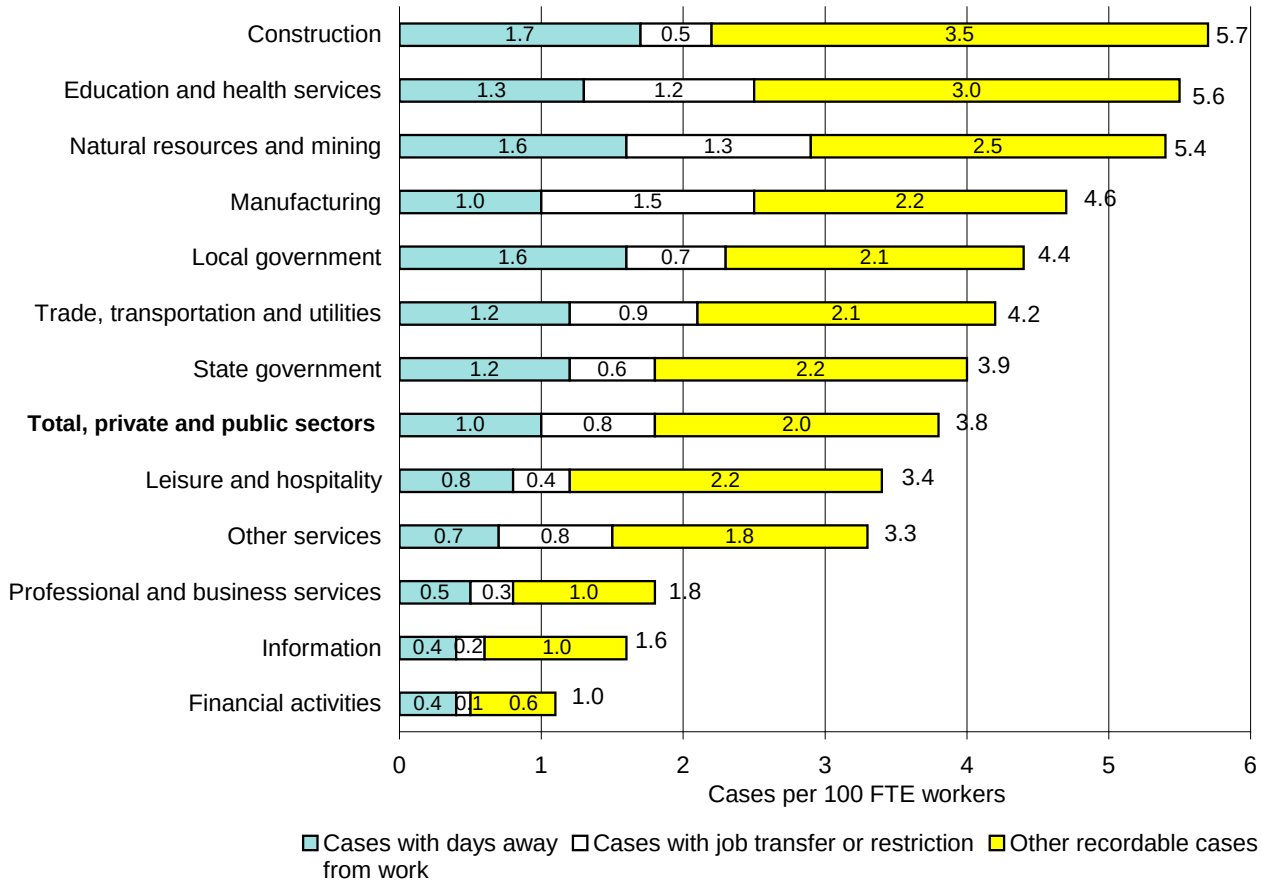
The 2009 injury and illness survey shows:

- construction, private ownership education and health services, and natural resources and mining had the highest total case rates, with more than five cases per 100 FTE workers;
- 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 supersector

Industries can be analyzed at different levels of detail. 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 each type of ownership — private, state government and local government — there are 20 industry sectors in NAICS. For brevity of presentation,

Figure 3.1 Incidence rates by industry supersector[1], Minnesota, 2009



1. Except for state and local government, all supersectors include only privately owned establishments.

the SOII results are often presented in supersectors. The 11 supersectors include from one to four industry sectors. The state government and local government supersectors include all establishments in these ownership types regardless of industry code. Employment in these supersectors is concentrated in education and health services and in public administration.

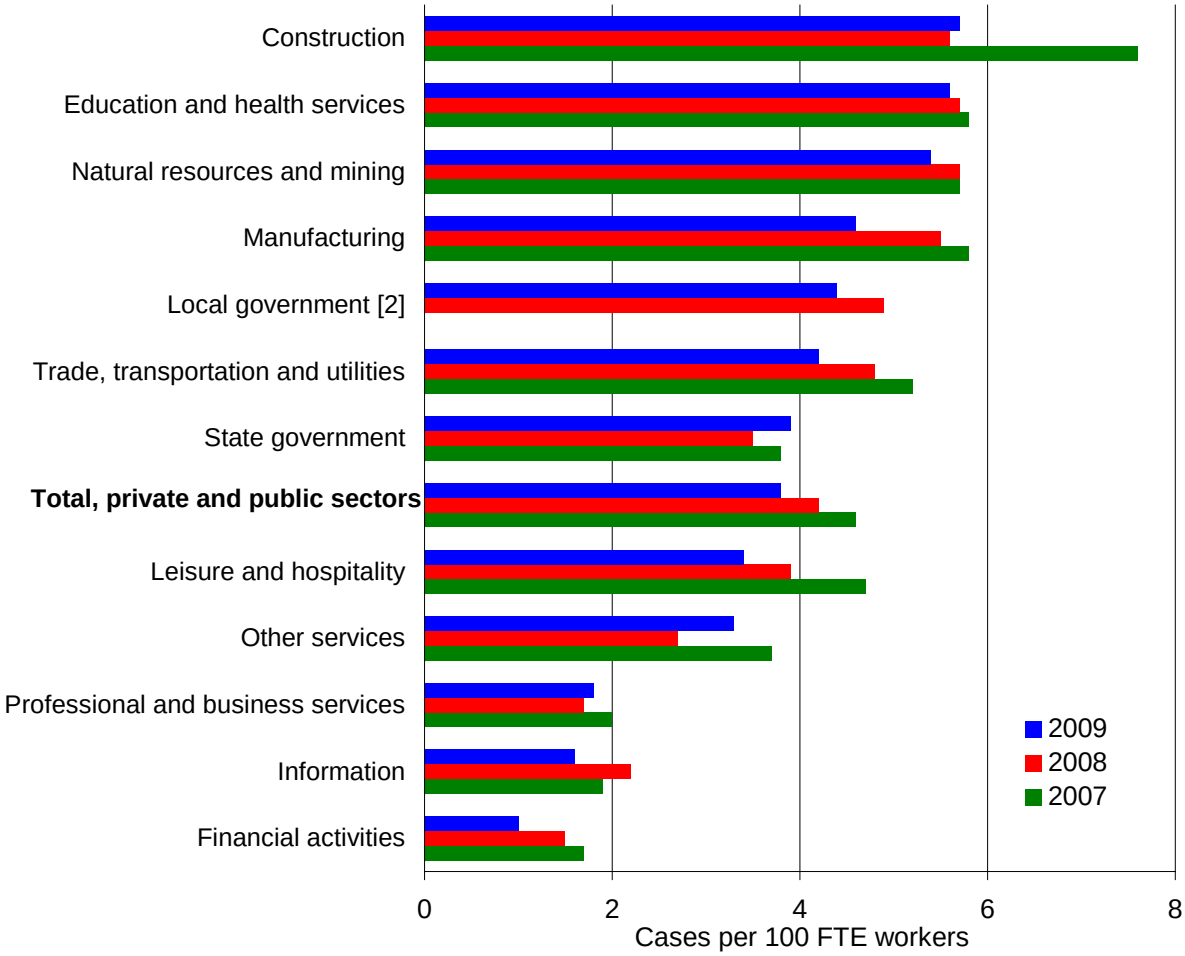
Figure 3.1 shows Minnesota's injury and illness rates for the case types by industry supersector and for all industries combined. The supersectors are ranked by their total case rate.

- Construction had the highest total case rate, closely followed by education and health services (privately owned) and natural resources and mining.
- Construction had the highest rate for DAFW cases.
- Manufacturing and other services were the only supersectors with a higher job transfer or restriction case rate than their DAFW case rate.

Figure 3.2 compares the 2009 rates for each supersector with its respective 2008 and 2007 rates. The 2009 total case rates were lower than the 2008 rates for eight supersectors and higher in 2009 for four supersectors. The 2009 rates were below the 2007 rates for all supersectors except state government.

- Five supersectors had rate decreases for both the 2007-2008 and 2008-2009 periods.

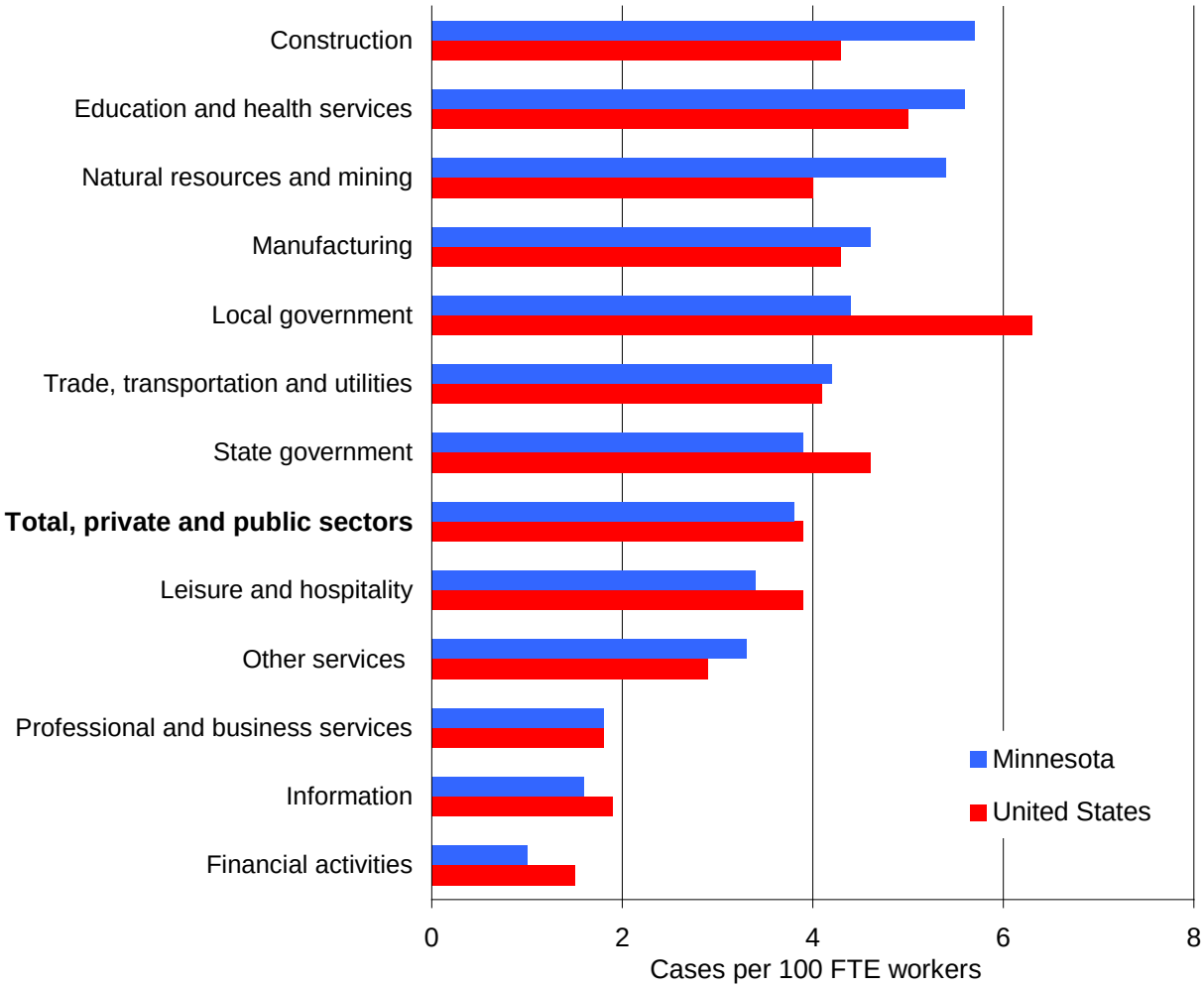
Figure 3.2 Rate of total nonfatal occupational injuries and illnesses per 100 FTE workers by industry supersector[1], Minnesota, 2007, 2008 and 2009



1. Except for state and local government, all supersectors include only privately owned establishments.
2. The 2007 estimate for local government was suppressed because of reporting errors.

Figure 3.3 compares Minnesota's 2009 total case incidence rates with the U.S. rate for each supersector. Compared to the U.S. rates, five Minnesota supersectors were lower, one supersector had the same rate and six supersectors had higher rates. Each of the four highest-rate Minnesota supersectors had higher rates than their U.S. rates. This was the same overall result as in 2008.

Figure 3.3 Rate of total nonfatal occupational injuries and illnesses per 100 FTE workers by industry supersector[1], Minnesota and United States, 2009

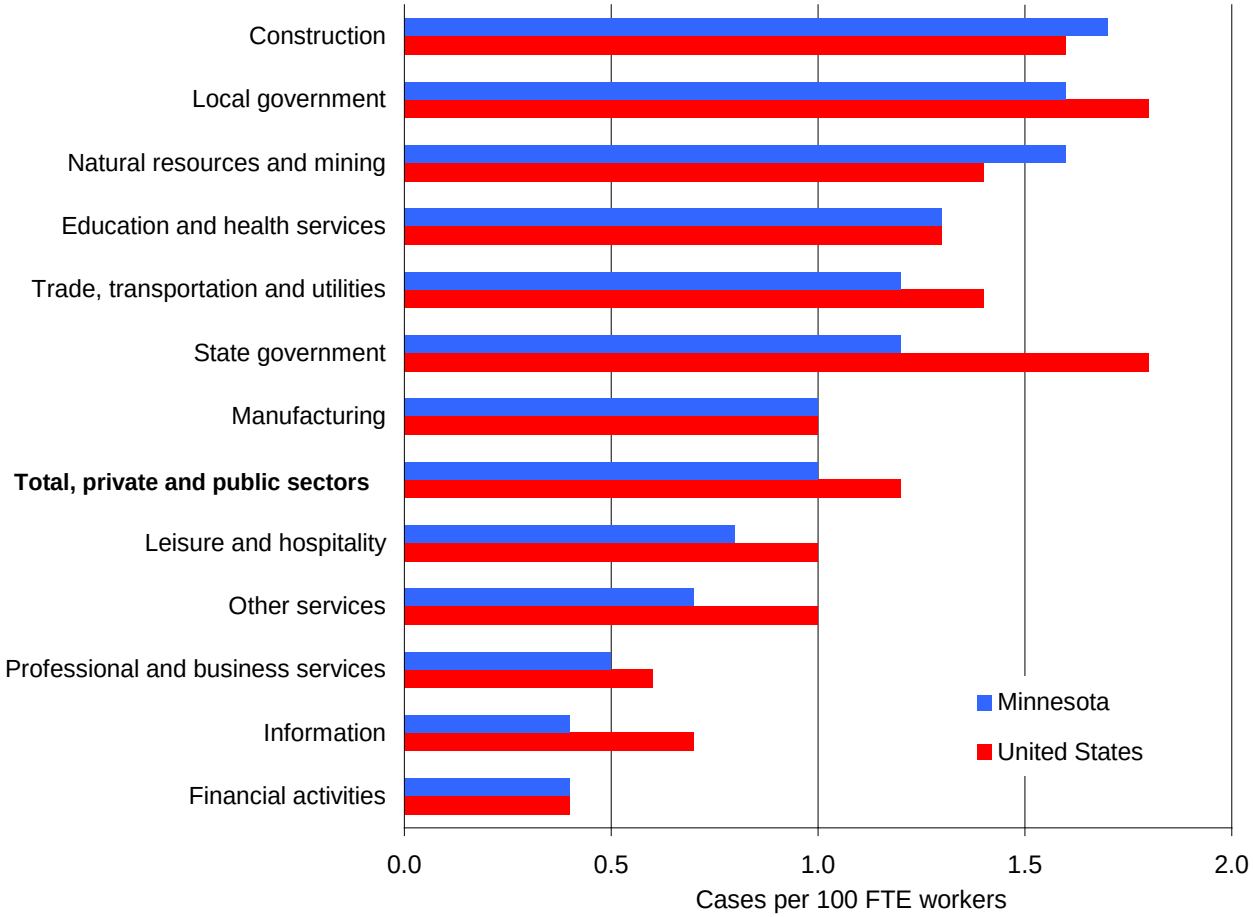


1. Except for state and local government, all supersectors include only privately owned establishments.

Figure 3.4 compares Minnesota's 2009 DAFW case incidence rates with the U.S. rate for each industry supersector. Minnesota had lower DAFW incidence rates than the corresponding U.S. rates for seven supersectors, had the same rate as the United States for three supersectors and had higher rates for two supersectors.

The greatest difference between a Minnesota rate and the corresponding U.S. rate was 0.6 cases per 100 FTE workers, in state government, where Minnesota had the lower rate.

Figure 3.4 Rate of cases with days away from work per 100 FTE workers by industry supersector[1], Minnesota and United States, 2009

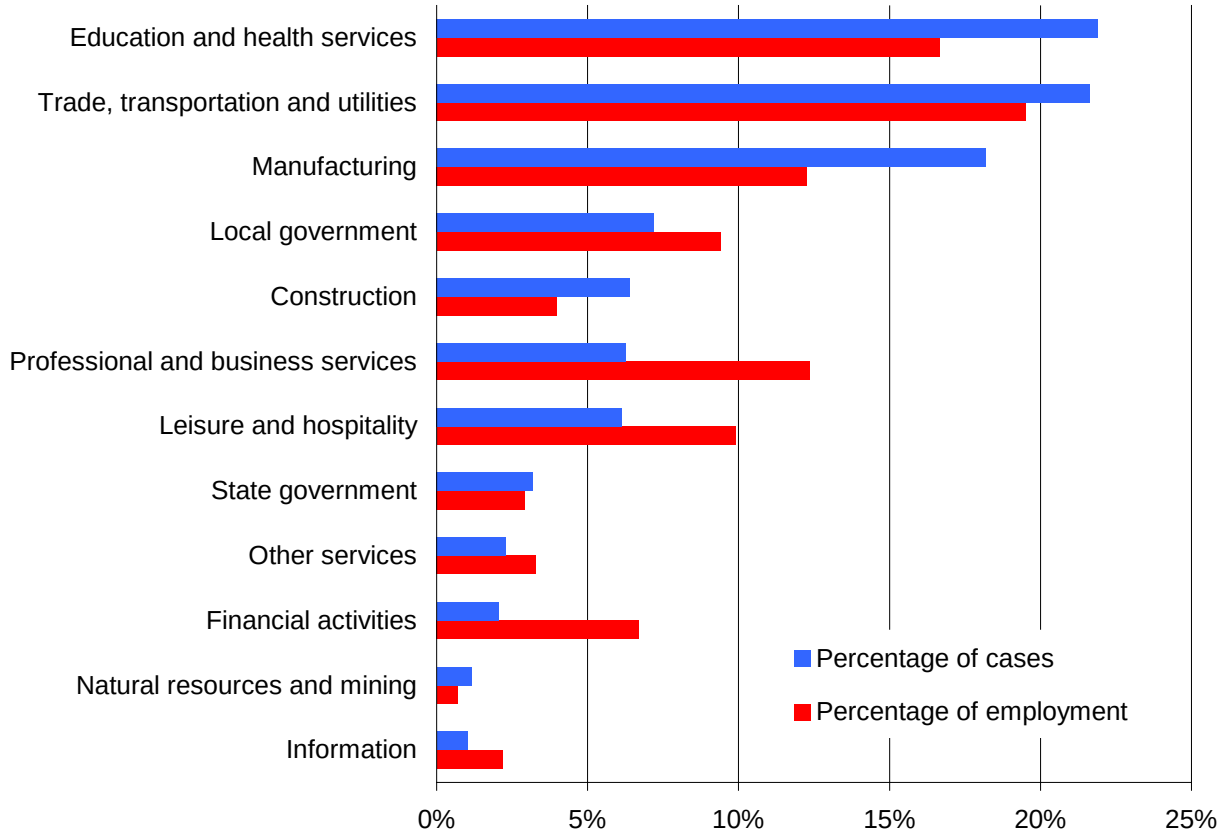


1. Except for state and local government, all supersectors include only privately owned establishments.

Figure 3.5 compares the percentage of workers employed in each supersector with its percentage of total cases reported.

- The three industry supersectors with the largest percentages of cases accounted for 62 percent of the injury and illness cases and for 48 percent of employment.
- Education and health services moved from the third-highest percentage of cases in 2008 to the highest percentage in 2009. Education and health services accounted for 17 percent of employment and 22 percent of the cases.
- Trade, transportation and utilities, with 20 percent of Minnesota's employment, accounted for 22 percent of the cases. In 2006 through 2008, this supersector accounted for 23 percent of the cases.
- Manufacturing had 18 percent of the cases and was the fourth-largest employment supersector, with 12 percent of employment. This was the first year that manufacturing accounted for less than 20 percent of the cases.

Figure 3.5 Percentage of total cases and employment by industry supersector[1], 2009



1. Except for state and local government, all supersectors include only privately owned establishments.

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.

- Six of the 11 subsectors were among the top 10 last year, including the subsectors with the five highest rates.
- Four of the subsectors are in the health care sector, including all three nursing and residential care subsectors.
- The rate for local government nursing and residential care increased by 40 percent, from 10.3 cases per 100 FTE workers in 2008, the third-highest rate.

The industry subsectors with the highest DAFW *case incidence rates* in Minnesota are shown in Figure 3.7. Five of the 10 subsectors were on this list in 2008, including the top three subsectors.

- The average DAFW rate for the 10 highest rate subsectors in 2009 was 3.7 cases per 100 FTE workers, higher than the 2008 average of 3.5, indicating some specific industries are continuing to have serious safety concerns. The five highest subsectors are all in state and local government.
- Three of the subsectors are involved in health care and three are in the transportation and warehousing sector.

Figure 3.8 shows the industry subsectors with the highest *number* of DAFW cases. Only one industry was listed in both figures 3.7 and 3.8, showing the industries with the highest DAFW rates are different from the industries with the highest number of cases.

- These 10 industries accounted for 9,000 DAFW cases, 43 percent of the state's total.
- The industries represent a wide variety of Minnesota workplaces. These 10 subsectors come from eight different industry sectors, including only one from manufacturing.

Figure 3.6 Industry subsectors[1] with the highest total case rates, Minnesota, 2009

Industry subsector[2]	Cases per 100 FTE workers
Nursing and residential care (local gov.)	14.4
Nursing and residential care (state gov.)	13.7
Wood product manufacturing	10.0
Couriers and messengers	9.8
Beverage and tobacco product mfg.	9.6
Primary metal manufacturing	9.5
Nursing and residential care	9.3
Crop production	8.7
Air transportation	8.6
Heavy and civil engineering construction (state gov.)	8.2
Hospitals	8.2

1. Industry subsectors use the first three NAICS digits.
2. Industries are private-sector unless otherwise noted.

Figure 3.7 Industry subsectors[1] with the highest rates of days-away-from-work cases, Minnesota, 2009

Industry subsector[2]	DAFW cases per 100 FTE
Nursing and residential care (state gov.)	7.5
Nursing and residential care (local gov.)	5.7
Transit and ground passenger transportation (local gov.)	3.9
Heavy and civil engineering construction (local gov.)	3.4
Heavy and civil engineering construction (state gov.)	3.4
Air transportation	3.0
Couriers and messengers	2.8
Primary metal manufacturing	2.6
Wood product manufacturing	2.5
Nursing and residential care	2.5

1. Industry subsectors use the first three NAICS digits.
2. Industries are private-sector unless otherwise noted.

Figure 3.8 Industry subsectors with the highest number of days-away-from-work cases, Minnesota, 2009

Industry subsector[2]	DAFW cases[3]
Nursing and residential care	1,600
Hospitals	1,580
Educational services (local gov.)	1,020
Administrative and support services	970
Specialty trade contractors	850
Food services and drinking places	640
Merchant wholesalers, durable goods	630
Food manufacturing	590
General merchandise stores	580
Merchant wholesalers, nondurable goods	540

1. Industry subsectors use the first three NAICS digits.
2. Industries are private-sector unless otherwise noted.
3. Numbers of cases are rounded to nearest 10.

Days away from work

For cases with one or more days away from work, the SOII provides statistics on the number of days away from work. As shown in Figure 2.1, only 27 percent of the recordable cases in 2009 were DAFW cases. Days away from work are counted by calendar days, not scheduled work days. The number of days away from work for OSHA recordkeeping and the SOII do not include the day of the event causing the injury or the onset of illness.

Figure 3.9 shows the distribution of DAFW cases by the number of days away from work.

- Twenty-eight percent of the DAFW cases had only one or two days away from work.

As shown in Figure 3.10, the percentage of DAFW cases with one or two days away from work has decreased since 2006, while the percentage of cases with more than 30 days away from work increased in 2007 and 2008, but decreased in 2009.

Figure 3.11 shows the median number of days away from work by industry supersector. The weighting system used by BLS to compute the SOII estimates sometimes results in large year-to-year variations for supersectors with relatively few DAFW cases.

- The median for all industries was six days. The median varied widely among the industries and by year within industry.
- Natural resources and mining and construction had the highest median days away in 2009, at 13 and 12 days, respectively.
- Leisure and hospitality, which had the highest median days away in 2008, dropped to below the statewide median in 2009.

Figure 3.9 Distribution of days-away-from-work cases by number of days away from work, Minnesota, 2009

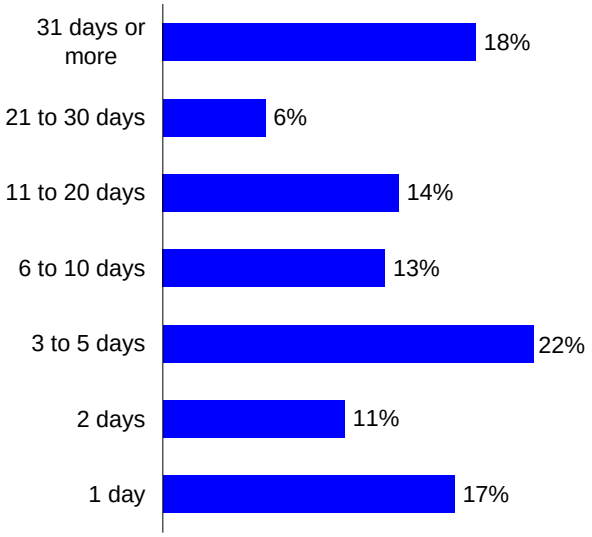


Figure 3.10 Percentage trends of days away from work, Minnesota, 2003 to 2009

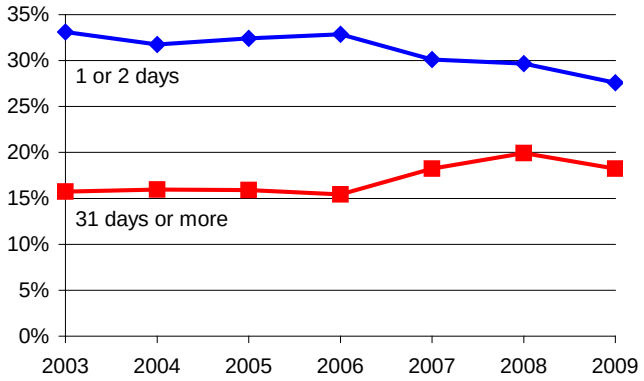


Figure 3.11 Median days away from work by industry supersector[1], DAFW cases, Minnesota, 2007, 2008 and 2009

Industry supersector	2007	2008	2009
Natural resources and mining	6	9	13
Construction	7	11	12
Trade, transportation, and utilities	7	7	10
Manufacturing	6	6	6
Total, private and public	5	6	6
Leisure and hospitality	6	12	5
State government	5	8	5
Education and health services	4	5	5
Professional and business services	5	4	5
Financial activities	--	3	5
Local government	--	4	4
Other services	--	--	4
Information	5	7	3

'--' indicates the value did not meet BLS publication requirements.

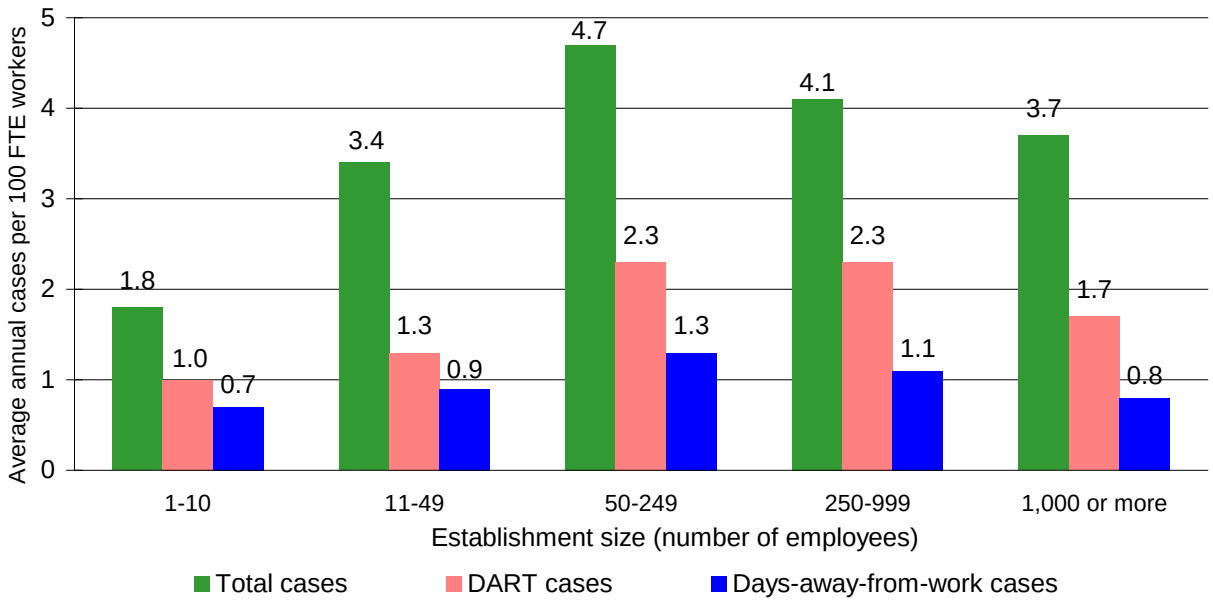
1. Except for state and local government, all supersectors include only privately owned establishments.

Incidence by size

The incidence of reported workplace injuries and illnesses varies by establishment size. Figure 3.12 shows case incidence by case type and establishment size, and presents the total case rates by establishment size and industry. This pattern has been consistent for many years.

- Incidence rates were lowest for the smallest establishments (one to 10 employees).
- Mid-sized establishments (50 to 249 employees) had the highest rates for all three case types.
- The total case incidence rates decreased from 2008 to 2009 for all size groups except the smallest size group. DART rates decreased for only two groups, establishments with 11 to 49 employees and those with 1,000 or more employees.
- The difference between the highest and lowest rates by establishment size has been steadily decreasing. In 2002, the difference in the rates between mid-sized and the smallest establishments was 4.9; in 2009 this was reduced to 2.9.

Figure 3.12 Injury and illness case incidence rates by establishment size, private sector, Minnesota, 2009



Industry supersector[1]	Total recordable cases per 100 FTE workers by establishment size (number of employees)[2]					
	All Sizes	1-10	11-49	50-249	250-999	1,000+
Natural resources and mining	5.4	--	3.7	10.4	4.8	--
Construction	5.7	--	7.5	5.7	2.2	--
Manufacturing	4.6	--	5.1	5.5	4.6	3.0
Trade, transportation, and utilities	4.2	1.7	3.6	5.2	5.0	6.3
Information	1.6	--	--	2.6	1.7	0.8
Financial activities	1.0	--	0.7	1.2	0.6	0.7
Professional and business services	1.8	--	2.3	2.0	1.6	1.2
Education and health services	5.6	1.0	2.8	6.9	6.0	6.4
Leisure and hospitality	3.4	--	2.0	5.2	6.9	5.6
Other services	3.3	--	5.0	3.6	3.5	--
State government	3.9	--	4.5	3.8	3.5	3.7
Local government	4.4	--	4.5	4.3	5.0	3.3

1. Except for state and local government, all supersectors include only privately owned establishments.
2. 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, and the characteristics and causes of their injuries and illnesses. Employers participating in the survey provide descriptions for each DAFW case.[9] DLI Research and Statistics survey staff members code the descriptions into the appropriate categories.

To control for variation due to the sampling and estimation processes, statistics for the worker demographic characteristics and for the job characteristics use the annual average of the 2007, 2008 and 2009 survey results. Results for the injury and illness characteristics are much more stable, so the 2009 results are presented. The 2009 results for all the characteristics are available online at www.dli.mn.gov/RS/StatWSH.asp.

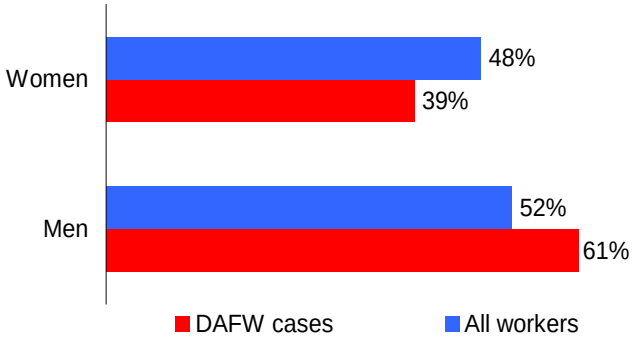
Worker demographic characteristics

Gender

- The percentage of women among DAFW cases increased slightly from an annual average of 37 percent from 2004 through 2006 to 39 percent during 2007 through 2009 (Figure 4.1). Women comprised 48 percent of Minnesota's employment during each of the years from 2007 through 2009.

- The private-ownership DAFW case incidence rates per 10,000 FTE workers[10] were 116 cases for men and 98 cases for women. The incidence rates are closer than the case counts due to differences in the hours worked by men and women. In 2009, men had 38 percent more cases but their incidence rate was only 13 percent higher.

Figure 4.1 Gender of all workers and workers with days-away-from-work cases, Minnesota, 2007-2009



[9] For employers with a significant number of DAFW cases (more than 15), a sampling scheme is used to select a reduced number of cases. See Appendix B for a variable list.

[10] Rates for DAFW cases are expressed as cases per 10,000 FTE workers in order to differentiate between values that would be very similar when expressed as cases per 100 FTE workers.

Age

- The age distribution of DAFW cases has changed significantly during the past few decades, 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 41.2 years in 2008, and is projected to reach 42.3 years in 2018.[11]
- With the declining DAFW case rate, this means that although there are fewer seriously injured workers, they now tend to be older than those a decade ago.[12]
- The age distribution of workers with DAFW cases (Figure 4.2) is very similar to the age distribution of employed workers.[13]
- The percentage of workers with DAFW cases who were younger than age 35 decreased from 38 percent in 1999 to 32 percent in 2009, while the percentage of injured workers who were age 45 and older increased from 30 percent to 47 percent (Figure 4.3).
- The estimated incidence rate (per 10,000 FTE workers) of DAFW cases during the 2007-2009 period was highest for workers 65 and older, at 133 cases (Figure 4.4). The lowest DAFW rate was for workers 25 to 34 years old (92 cases). The three-year average was used because of variations in the annual rates.
- Except for the youngest workers, the median days away from work increased with age (Figure 4.5, next page). The median for workers between 35 and 44 years old was double the median for workers between 20 and 24 years old, and the median for workers age 65 years and older was more than double that of the 35 to 44 year olds.

Figure 4.2 **Age of workers with days-away-from-work cases, Minnesota, 2007-2009**

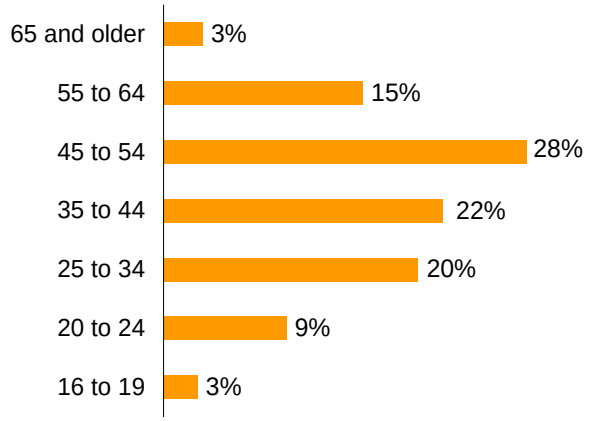


Figure 4.3 **Distribution of age of workers with days-away-from-work cases, Minnesota, 1999-2009**

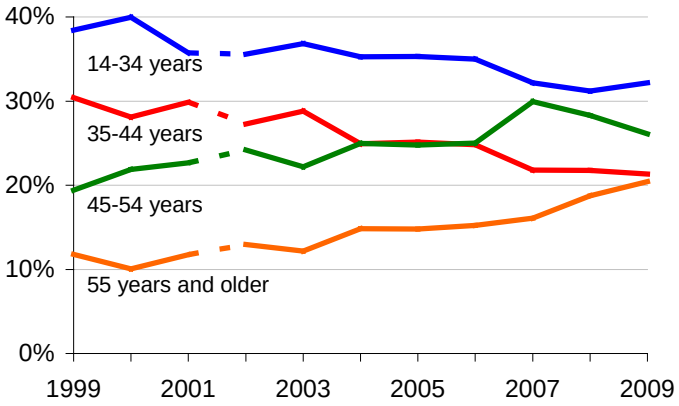
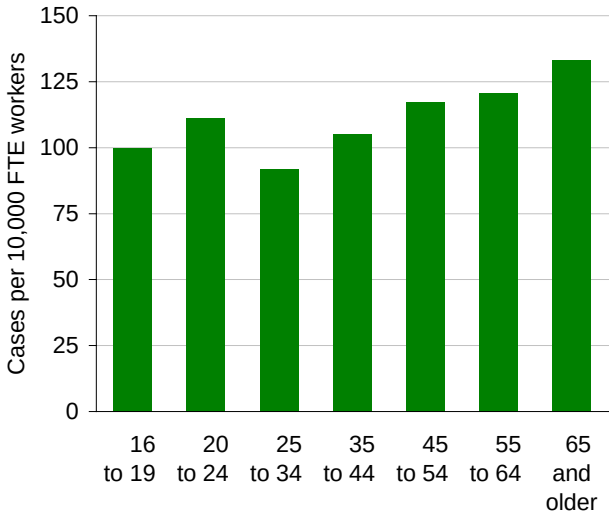
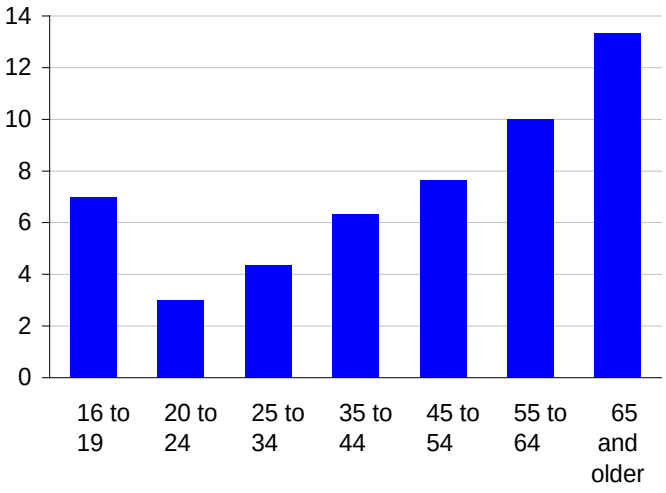


Figure 4.4 **Incidence of cases with days away from work by age group, Minnesota, 2007-2009**



[11] Employment Projection Program, Bureau of Labor Statistics, U.S Dept. of Labor.
[12] This trend has been analyzed using Minnesota workers' compensation data in "Changing worker demographics lead to changing injury characteristics," *COMPACT*, February 2005.
[13] Current Population Statistics, *Geographic Profile of Employment and Unemployment*, 2009. Bureau of Labor Statistics, www.bls.gov/gps .

Figure 4.5 Median days away from work by age group, private ownership, Minnesota, 2007-2009



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 the number of cases identifying nonHispanic white workers decreased by 34 percent from 2003 to 2009, the number of DAFW cases identifying nonwhite and Hispanic injured workers remained nearly constant, with an estimated 3,240 cases reported in 2003 and 3,280 cases reported in 2009.

- Nonwhite and Hispanic workers accounted for an annual average of 15 percent of the cases with a reported race or ethnicity in the 2007 to 2009 period (Figure 4.6), compared to less than 10 percent prior to 1997. The percentage of nonwhite and Hispanic workers among the DAFW cases has remained near 15 percent since 2003 (Figure 4.7). Minnesota's total nonwhite and Hispanic population was estimated at 16 percent of the total population for 2010.[14]

Figure 4.6 Race or ethnic origin of workers with days-away-from-work cases, Minnesota, 2007-2009

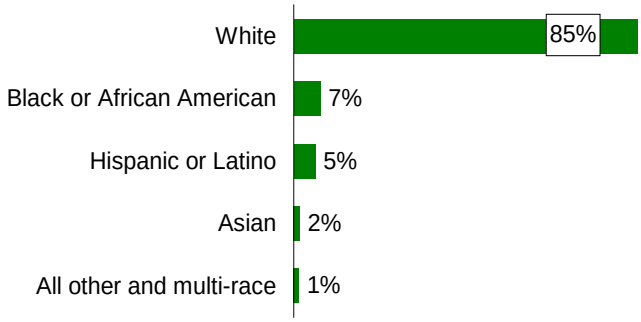
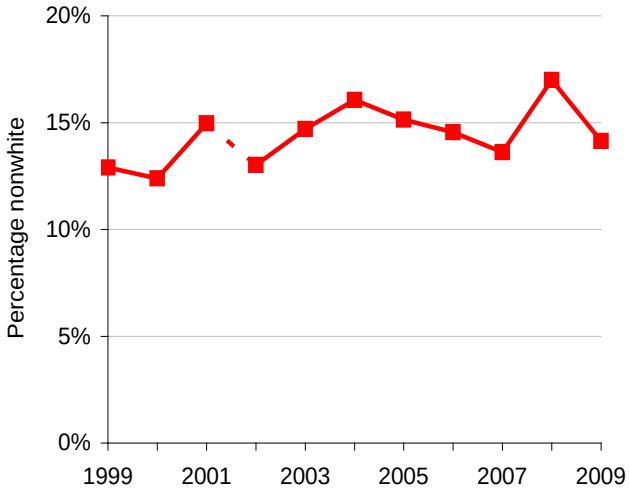


Figure 4.7 Percentage of nonwhite and Hispanic workers among days-away-from-work cases, Minnesota, 1999-2009



[14] *Minnesota population projections by race and Hispanic origin, 2005-2035*, Minnesota State Demographic Center, 2009.

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 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.

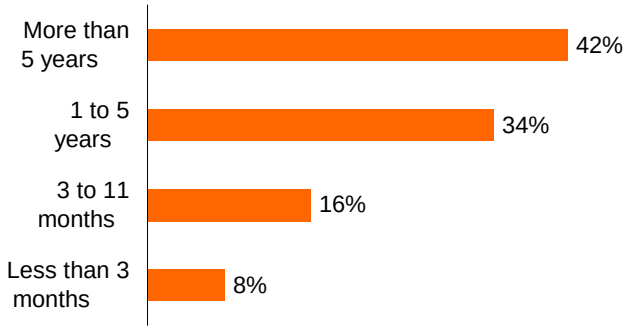
Young workers usually have shorter job tenure than older workers. The general increase in worker age during the past decade has been accompanied by an increase in average job tenure of injured workers.

- As shown in Figure 4.8, workers with less than one year of service with their employer accounted for an annual average of 24 percent of the DAFW cases during 2007 through 2009. This percentage was slightly below the 26 percent annual average reported from 2004 through 2006. This was accompanied by a corresponding increase in the percentage of workers with more than five years of job tenure.

- According to the *Current Population Survey* statistics for January 2010[15], the median job tenure for the United States increased from 4.1 years in 2008 to 4.4 years in 2010, reflecting large job losses among less-senior workers during the recent recession.

- The national proportion of wage-and-salary workers with a year or less of tenure with their current employer was 19 percent in 2009 (down from 23 percent in 2008), while 32 percent had from one to five years of job tenure and 49 percent had more than five years.

Figure 4.8 Length of service of workers with days-away-from-work cases, Minnesota, 2007-2009



[15] News release, Bureau of Labor Statistics, *Employee tenure in 2010*, Sept. 14, 2010. State-level job tenure statistics are not published.

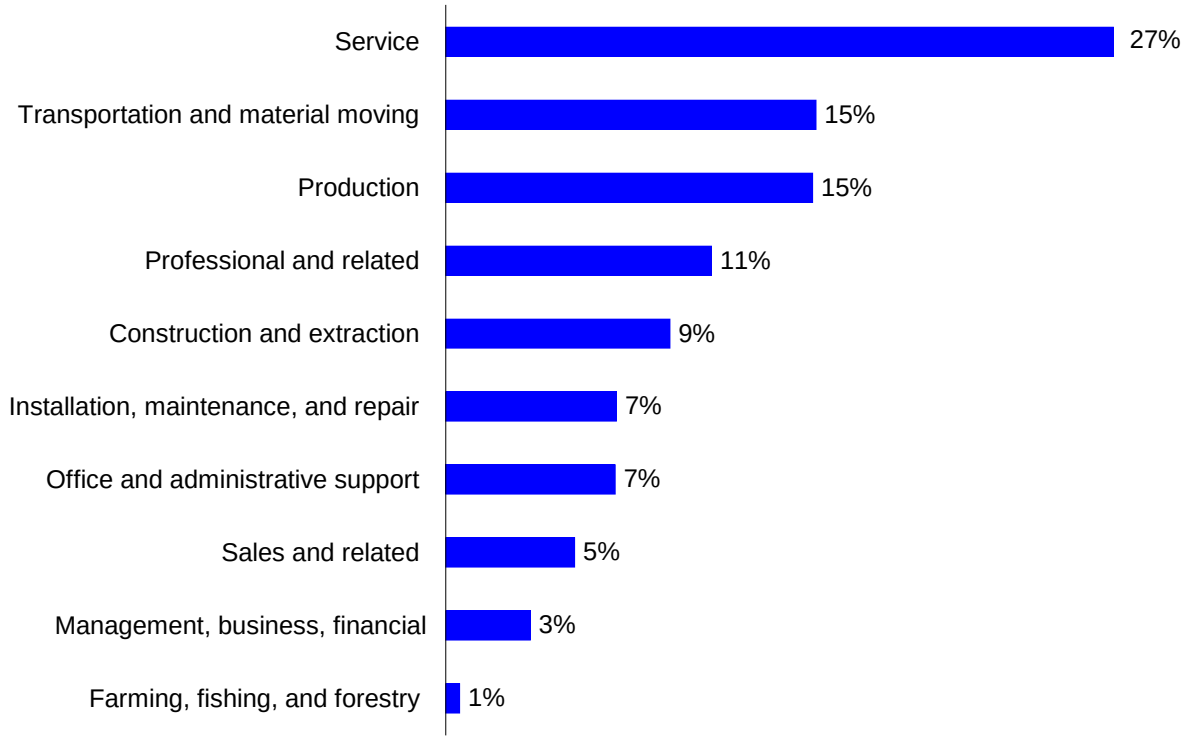
Occupation

Occupation describes 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.[16] Workers in the same or similar occupations often encounter similar work conditions, which affect their safety and health.

Occupation is examined by the distribution of cases by broad occupation category among all workers in Figure 4.9[17], by incidence rates among major occupation groups in privately owned establishments in Figure 4.10 and by the number of cases in detailed occupations in Figure 4.11. A few broad occupation categories are the same as major groups.

- Service occupations, which include nursing aides, law enforcement workers, cooks and building maintenance workers, accounted for an average of 27 percent of the DAFW cases from 2007 through 2009.
- Transportation and material moving occupations, which includes truck drivers and delivery people, airline workers and unskilled, nonconstruction manual laborers, had the second-highest percentage of cases.
- Production occupations, the third-largest occupation group among DAFW cases, include assemblers, food processing workers and woodworkers.
- The professional and related occupations group include engineers, attorneys, teachers and healthcare practitioners, and was the fourth most common occupation category among DAFW cases.

Figure 4.9 Occupation of workers with days-away-from-work cases, Minnesota, 2007-2009

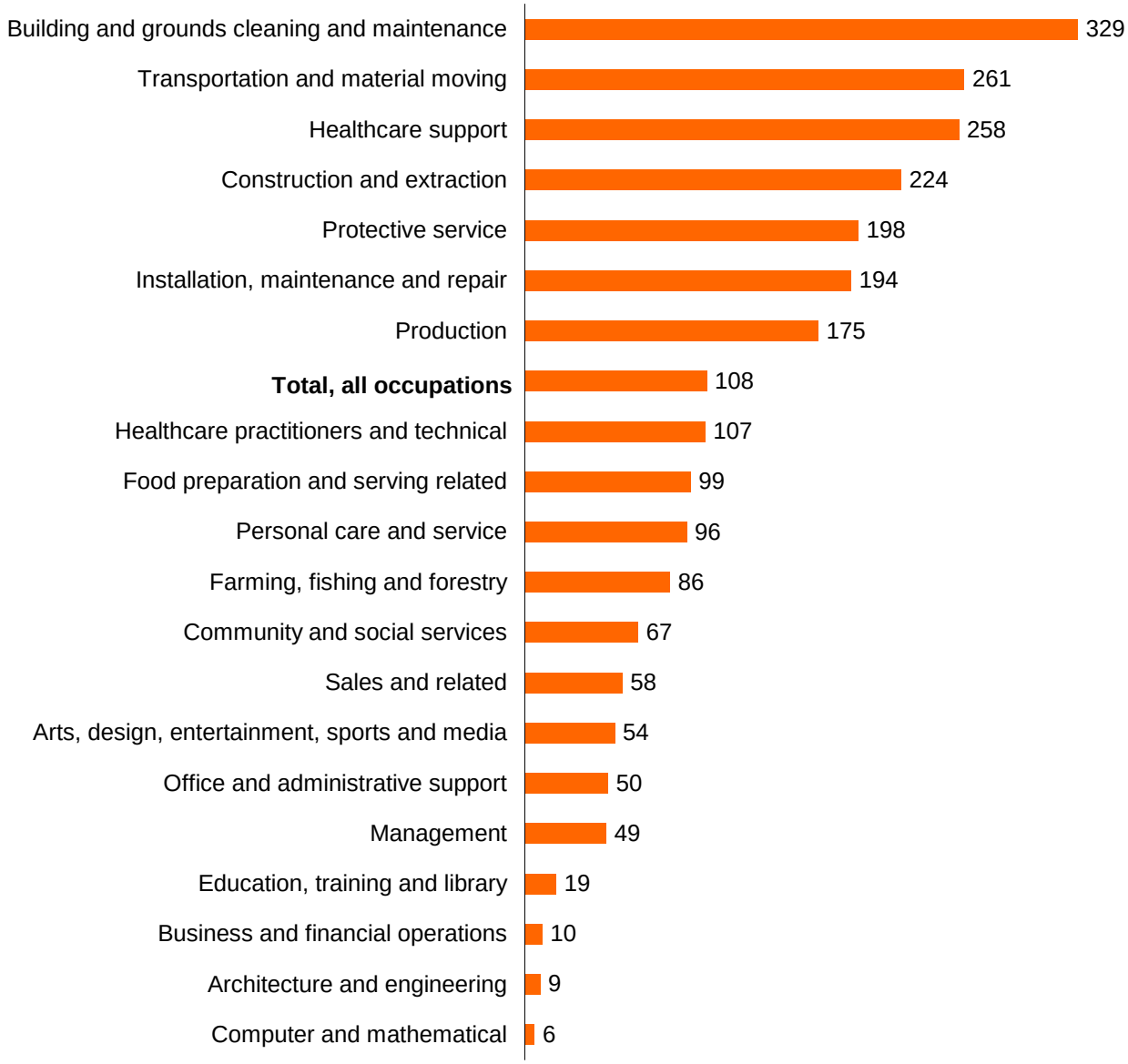


[16] The 2009 Minnesota occupational staffing matrix, showing occupations by industry, is available at www.positivelyminnesota.com/Data_Publications/Data/Wages,_Benefits,_Careers/Occupational_Staffing_Patterns.aspx.

[17] In previous *Workplace Safety Reports*, Figure 4.9 showed the case distribution only among privately owned establishments.

- The differences in occupations in major occupation groups for workers in privately owned establishments are revealed by the rate of DAFW cases per 10,000 FTE workers, shown in Figure 4.10. The distribution shows large differences between sets of occupations.
- The seven-highest-rate occupations of the 2007 through 2009 period were the highest-rate occupations in each of the three years, although their ranking within the top group varied.
- The incidence rates for the major occupation groups generally follow the degree to which the occupations require physical exertion and exposure to job hazards.

Figure 4.10 Average annual incidence rates of days-away-from-work cases by major occupation group, per 10,000 FTE workers, private sector, Minnesota, 2007-2009

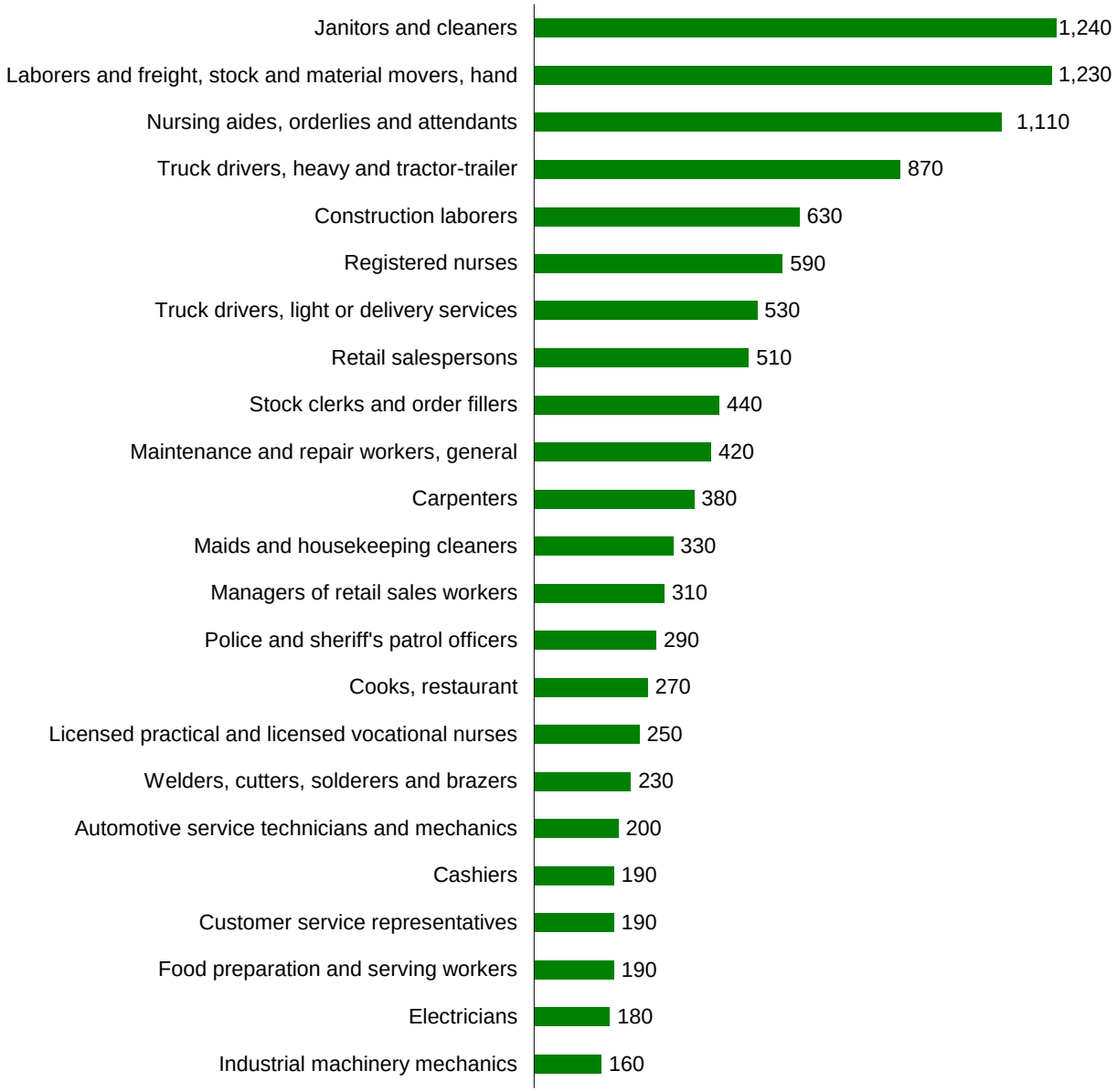


- The detailed occupations with an estimated annual average of 160 or more DAFW cases across all ownership types during the 2007 through 2009 period are shown in Figure 4.11. The four specific occupations with at least 800 DAFW cases accounted for 19 percent of the average number of DAFW cases.

- The three healthcare-related occupations on the list — nursing aides, orderlies and attendants, registered nurses and licensed practical and licensed vocational nurses — accounted for an annual average of nearly 2,000 cases.

- Retail salespersons and their managers accounted for an annual average of more than 800 cases.

Figure 4.11 Specific occupations with the highest number of cases, Minnesota, 2007-2009



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.[19] Additional measures of injury and illness events are the time of day, time on the job and day of the week the injury occurred or illness began.

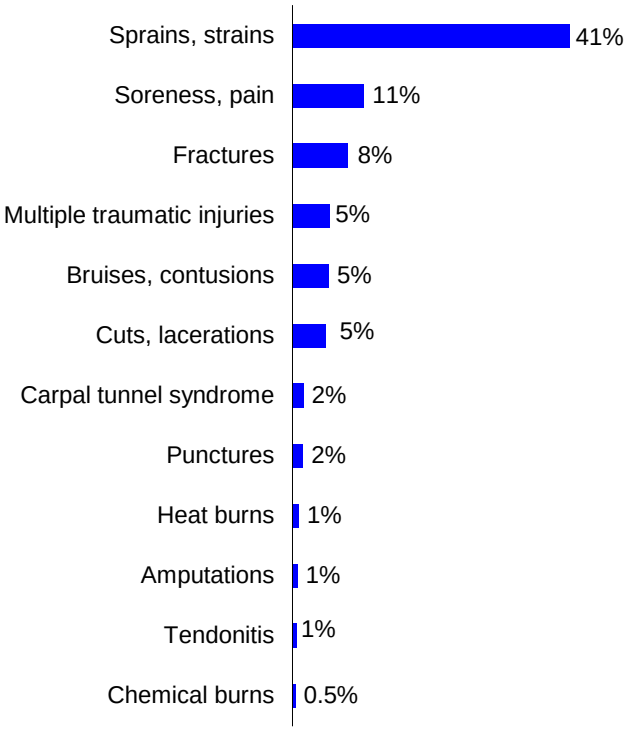
As an example of how these characteristics combine to describe injuries and illnesses, consider a health care worker who sprains her back while helping a patient get out of bed. The nature of the injury is a sprain or strain; the part of the body affected is her back; the event is overexertion while lifting; and the injury 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 and strains of muscles, tendons and joints accounted for 41 percent of the DAFW cases, similar to its percentage in recent years. The number of sprain and strain cases has dropped by 36 percent since 2003, from an estimated 13,370 cases to 8,500 cases in 2009.
- Sprains and strains occurred primarily to the back (45 percent), knees (11 percent) and shoulders (10 percent).
- Sprains and strains occurred most often from overexertion (54 percent) and falls (14 percent). Lifting health care patients accounted for 13 percent of the sprains and strains.
- Many of the cases initially reported as soreness and pain may have sprains and strains. Additionally, nearly one-third of the multiple traumatic injuries involve sprains and strains.

Figure 4.12 **Nature of injury, Minnesota, 2009**



[19] The injury characteristics are codes according to the BLS's *Occupational injury and illness classification system manual*, www.bls.gov/iif/oshoiics.htm.

Part of body

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

- Although the back is injured more often than other body parts among cases with days away from work, the percentage has decreased from about 30 percent of the cases during most of the 1990s to 26 percent in 2009.
- The estimated number of cases with back injuries has decreased substantially in recent years, from 7,750 cases in 2003 to 5,400 cases in 2009, a 30 percent decline.
- Workers with back injuries were generally younger than workers with illnesses or injuries to other body parts. Among workers with back injuries in 2009, 51 percent were between 25 and 44 years old and 38 percent were 45 years and older. Among workers with injuries and illness other than back injuries, 40 percent were between 25 and 44 years old and 49 percent were 45 years and older.
- As shown in Figure 4.14, for workers 16 to 44 years old, the percentages of DAFW cases with back injuries were above the overall percentage (25 percent) and, for workers age 45 and older, the percentages were below the overall percentage.
- The most common injuries to multiple body parts were sprains and strains and multiple traumatic injuries. Multiple-body-part injuries occurred most often as a result of falls and overexertion.
- Although multiple-body-part injuries accounted for only 12 percent of the DAFW cases, they accounted for 33 percent of the injuries to workers age 65 and older.

Figure 4.13 Part of body injured, Minnesota, 2009

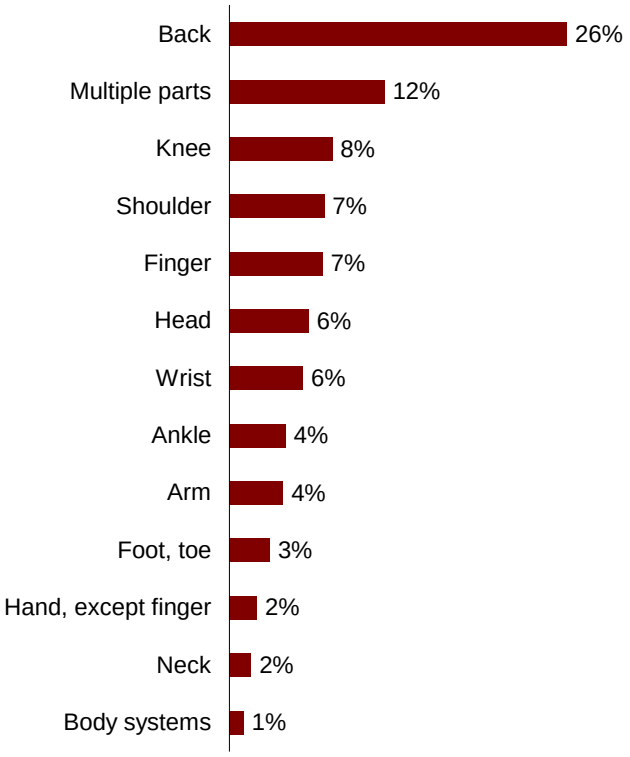
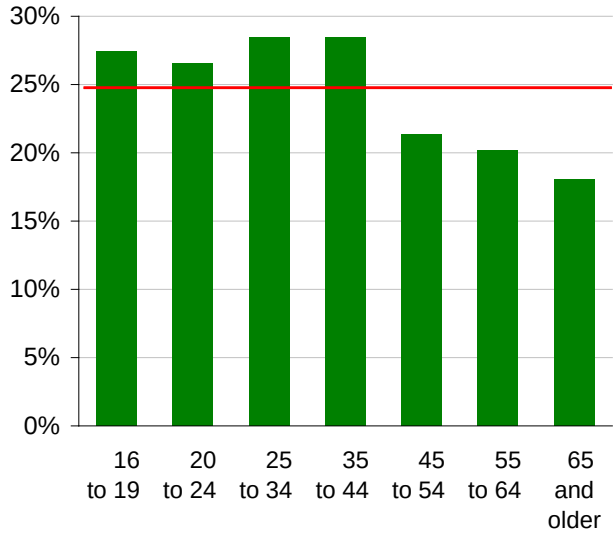


Figure 4.14 Percentage of cases with back injuries within each age group, Minnesota, 2007-2009

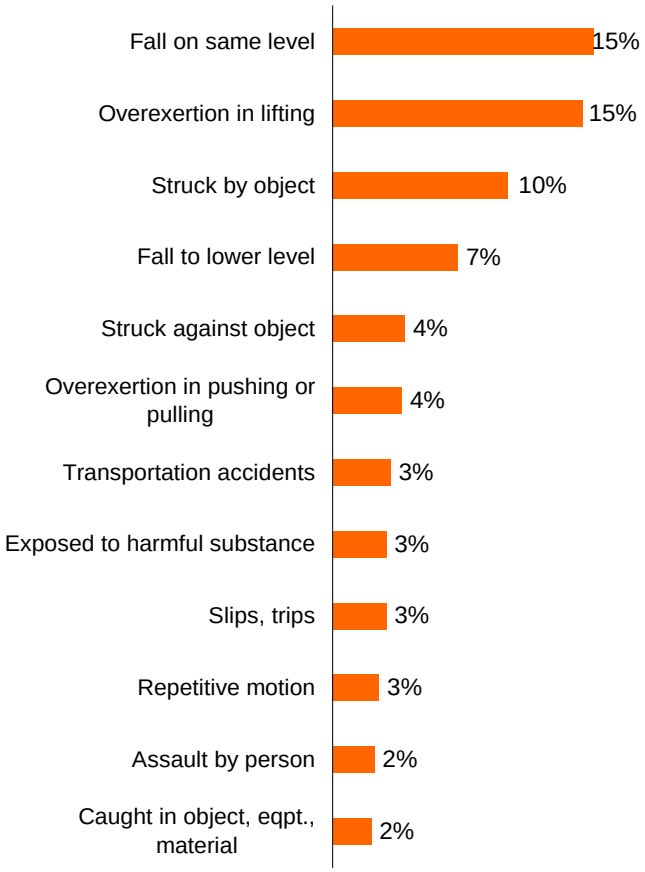


Event or exposure

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

- The six most common events were also in the same order and with nearly the same percentages in 2008. The three most common event types accounted for 41 percent of all the DAFW cases in 2009, an increase from 35 percent in 2007.
- Sixty percent of the falls on the same level occurred to women.
- Falls on the same level most often resulted in sprains and strains and fractures, and the most common body parts injured were multiple parts and the knees.
- Injuries due to overexertion in lifting usually resulted in back strains or back pain.
- Containers and health care patients were the most frequently reported objects being lifted.

Figure 4.15 Event or exposure, Minnesota, 2009

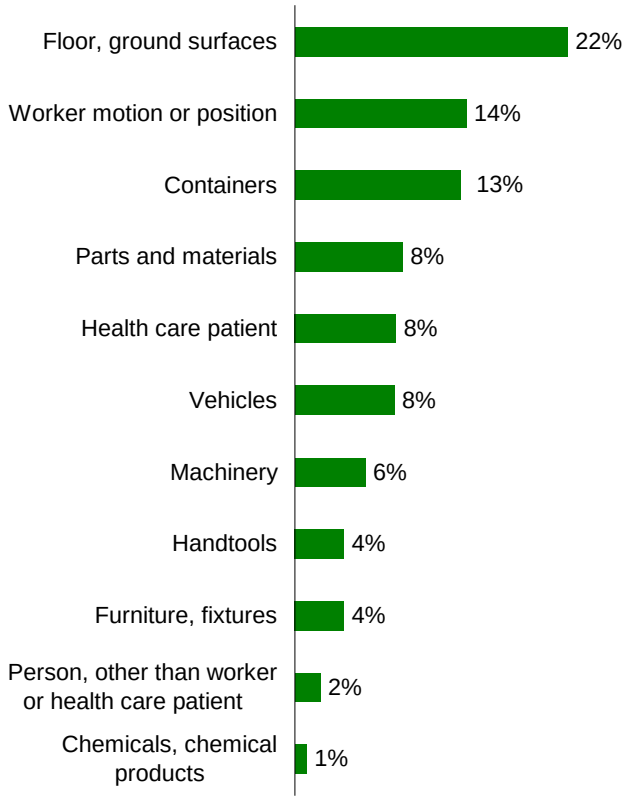


Source of injury or illness

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

- The four most common injury sources remained unchanged from 2007 and 2008, although the order of the categories changed.
- The three most common sources of injury accounted for 48 percent of all DAFW cases.
- Floors, walkways and ground surfaces was the most common source-of-injury category for five of the past six years, except for 2007. This source category is often coded for injuries due to falls on the same level and falls to a lower level.

Figure 4.16 Source of injury or illness, Minnesota, 2009



Musculoskeletal disorders

BLS uses the reported injury characteristics to produce an estimate of the number of cases with musculoskeletal disorders (MSDs) among the DAFW cases. Although employers do not directly identify MSDs on the OSHA log, information about the injured body part and the event or exposure is combined to produce this estimate. BLS defines MSDs 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 MSD issues (see Appendix A), differences between pre- and post-2002 statistics may be the result of a combination of changes in job safety and the effects of the recordkeeping changes.

- Figure 4.17 shows the estimated number of MSD and non-MSD cases from 1999 to 2009. The number of DAFW cases with MSDs in Minnesota has decreased 43 percent since 2002, reaching a low of 7,620 cases in 2009. During this period, non-MSD cases decreased by 34 percent.

- MSD cases accounted for 36 percent of the DAFW cases in 2009, the same as in both 2006 and 2007 and below the 38 percent reported for 2008.

- The three industries with the highest numbers of MSD cases, manufacturing, retail and all-owner health care and social assistance, accounted for 55 percent of the MSD cases.

- The three industries with the highest percentages of MSD cases among the DAFW cases were finance and insurance (74 percent), professional, scientific and technical services (53 percent), and local government health care and social assistance (52 percent).

- Among privately owned establishments, the MSD incidence rate decreased from 56 cases per 10,000 FTE workers in 2004 to 37 cases in 2009, a 34 percent drop.

- MSD injuries had a median of seven days away from work, compared to a median of six days for all DAFW cases.

Figure 4.18 shows some demographic characteristics of workers with MSD injuries.

- Both the percentage of MSD cases among all DAFW cases and the incidence of MSD cases increased with age until peaking in the 45- to 54-years age group.

- MSD injuries were least common among workers with less than three months of job tenure.

- Among occupations, MSD cases accounted for 42 percent of the cases among office and administrative support workers, 40 percent among construction workers, and 39 percent among service workers. In contrast, only 21 percent of the DAFW case injuries to construction and extraction workers were due to MSDs.

Figure 4.17 Number of MSD and non-MSD DAFW cases, Minnesota, 1999-2009

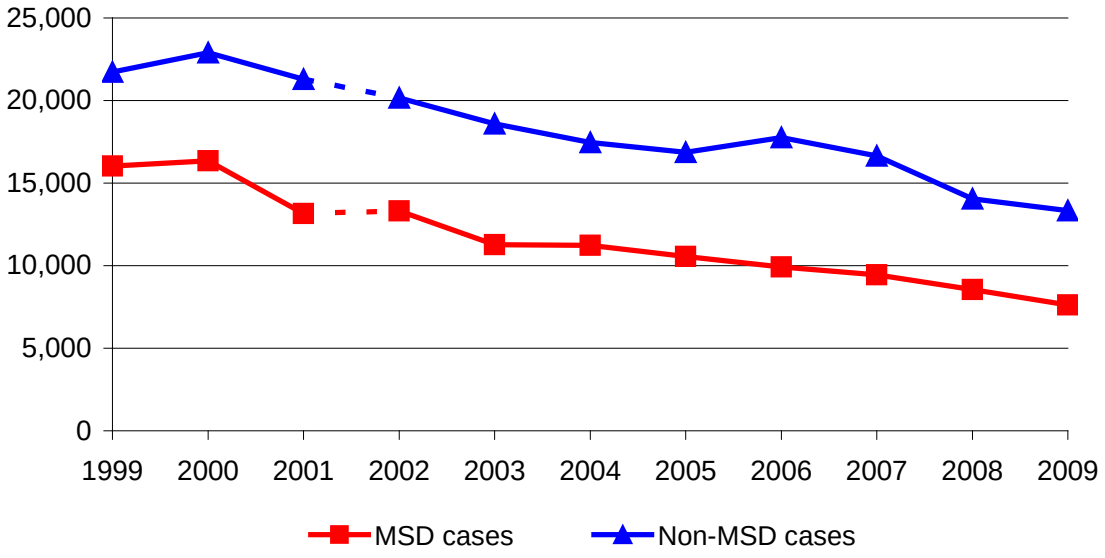


Figure 4.18 Distribution and incidence of MSD cases by worker characteristics, Minnesota, 2009

Characteristic	Number of MSD cases	Percentage of MSD among cases in category	Incidence rate per 10,000 FTE workers
Total	7,620	36%	37
Gender			
Male	4,210	35%	38
Female	3,400	39%	37
Age			
16 to 19 years	130	35%	29
20 to 24 years	640	35%	35
25 to 34 years	1,670	37%	34
35 to 44 years	1,700	38%	38
45 to 54 years	2,210	40%	43
55 to 64 years	1,140	34%	37
65 years and older	130	13%	24
Length of service with employer			
Less than 3 months	270	24%	
3 months to 11 months	1,010	36%	
1 year to 5 years	3,100	41%	
More than 5 years	3,240	35%	
Occupation			
Management, business, financial	180	25%	
Professional and related	920	35%	
Service	2,560	39%	
Sales and related	440	38%	
Office and administrative support	580	42%	
Farming, fishing and forestry	40	33%	
Construction and extraction	370	21%	
Installation, maintenance, repair	500	39%	
Production	1,020	40%	
Transportation and material moving	1,020	38%	

5
Fatal occupational injuries

In 2009, 61 Minnesota workers were fatally injured on the job. This is a decrease from the 65 fatalities in 2008. Nationwide, 4,551 workers were fatally injured during 2009, a 13 percent decrease from the 5,214 fatalities in 2008.

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

The CFOI covers all fatal work injuries, 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. 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 but is killed in an accident in Nebraska would be counted as a Nebraska CFOI fatality.

By contrast, 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 2009, there were 30 workers' compensation fatality claims, down from 44 fatalities in 2008.[19]

MNOSHA investigates all employee deaths that are under its jurisdiction and result from an accident or illness caused by or related to a workplace hazard. Not included are fatalities caused by traffic accidents (investigated by the Minnesota Department of Public Safety), airplane crashes (National Transportation Safety Board), mining accidents (Mine Safety and Health Administration), federal workers (federal OSHA), railroad workers (Federal Railroad Administration), farm accidents and accidents to the self-employed (investigation agency depends on type of accident).

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

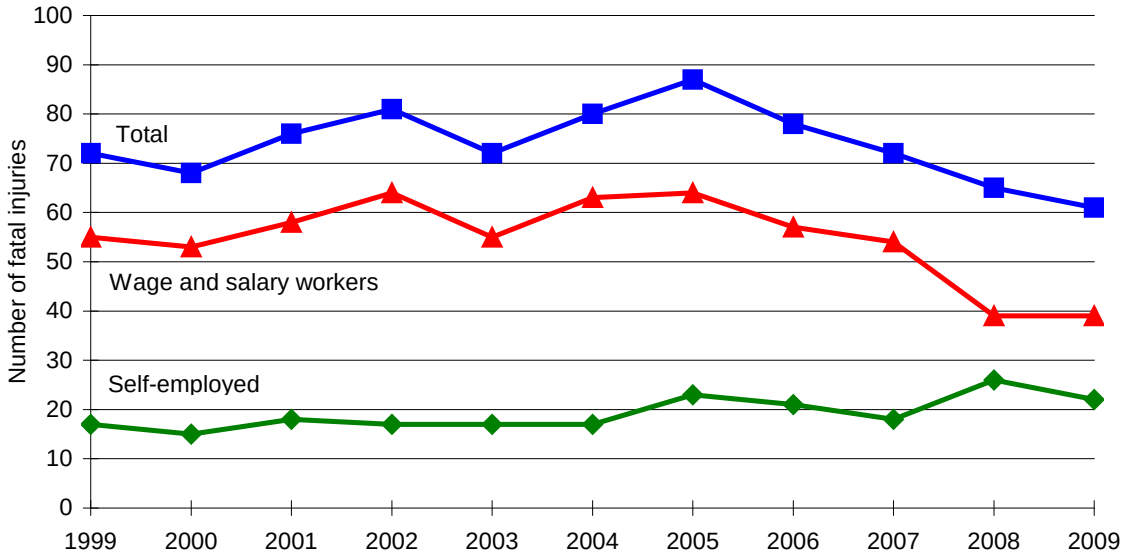
In 2009, MNOSHA investigated 18 fatality events, an increase from 12 fatality events in 2008 but below the 23 events investigated in 2007. In 2010, MNOSHA investigated 19 fatality events. The five-year average, from 2006 to 2010, was 19 fatality event investigations a year. There were three construction fatality investigations each year in 2010, 2009 and 2008, compared to nine investigations in 2007.

[19] The number of fatality claims receiving workers' compensation benefits will change as claims are resolved.

Number of fatal injuries

- Minnesota had from 61 to 87 fatal work injuries a year from 1999 through 2009 (Figure 5.1), with the lowest number in 2009. The number of fatalities in 2009 was 30 percent below the recent high count in 2005.
- For wage-and-salary workers, the annual fatality toll ranged from 39 to 64, with the lowest numbers in 2008 and 2009.
- For self-employed workers, the annual fatality figure ranged between 15 and 26 fatalities, with the highest number in 2008.
- The fatality toll for 2005 through 2009 was 363 workers, with a five-year average of 73 fatalities a year. This consisted of 51 wage-and-salary workers and 22 self-employed workers.
- Fatal injuries for the self-employed were 36 percent of the 2009 total, far higher than the estimated 12 percent self-employed share of total state employment in 2008.[20]

Figure 5.1 Fatal work injuries, Minnesota, 1999-2009[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
1999	55	17	72
2005	64	23	87
2006	57	21	78
2007	54	18	72
2008	39	26	65
2009	39	22	61
Avg. 2005-2009	50.6	22.0	72.6

[20] Based on Nonemployer Statistics Program, U.S. Census Bureau, and the Quarterly Census of Employment and Wages, Minnesota Dept. of Employment and Economic Development.

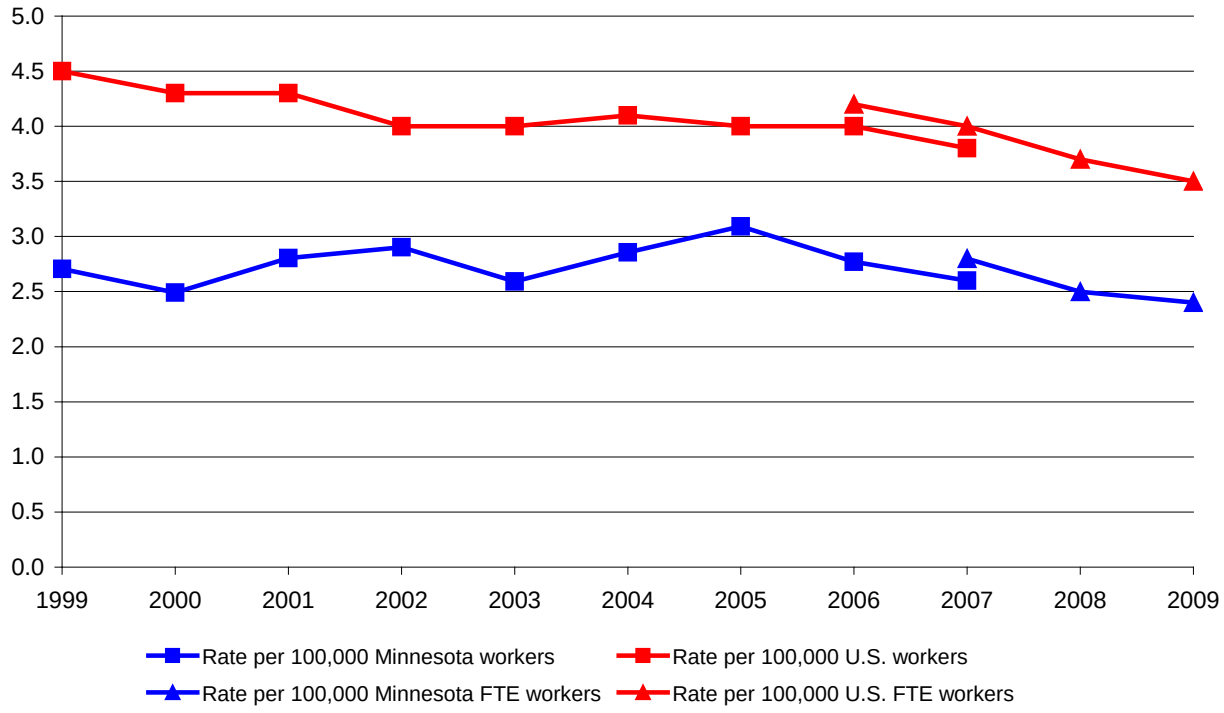
Rate of fatal injuries

Prior to the 2006 results, national and state fatality rates were calculated only as the rate per 100,000 workers. BLS began calculating the rates based on 100,000 full-time equivalent (FTE) workers for the national rate for 2006 and for the states beginning in 2007. The FTE-based rate is considered a more accurate measure of workplace exposure to hazards.

The fatality rates of Minnesota and the U.S. are not directly comparable because of differences in the proportions and types of industries in the state and the nation as a whole.

- Figure 5.2 shows the Minnesota and United States fatality rates per 100,000 FTE workers since 2007. The 2009 fatality rate for Minnesota was 2.4 deaths per 100,000 FTE workers, below the rates for the two previous years.
- For the entire United States, the fatality rate for 2009 was 3.5 deaths per 100,000 FTE workers, below the 3.7 rate for 2008. The rate was 2.8 for wage and salary workers and 12.7 for self-employed workers.

Figure 5.2 Fatal work injuries per 100,000 FTE workers,[1] Minnesota and U.S., 1999-2009



Fatality rates per 100,000 FTE workers

	Minnesota	U.S.
2007	2.8	4.0
2008	2.5	3.7
2009	2.4	3.5

1. Excludes workers younger than age 16 or in the military.

Fatalities by metropolitan area

The CFOI program produces fatality counts for metropolitan areas, including those that cross state boundaries. The number of fatalities within metropolitan areas is strongly influenced by the types of industries and occupations in each area. This is one reason why the Duluth metropolitan area, with 46 percent higher population than the St. Cloud metropolitan area, had 61 percent more fatalities.

Because there are relatively low numbers of fatalities in some of the metropolitan areas, Figure 5.3 shows the combined fatalities by metropolitan area for 2003 through 2009.

Figure 5.3 Number of fatal work injuries for metropolitan areas, 2003-2009

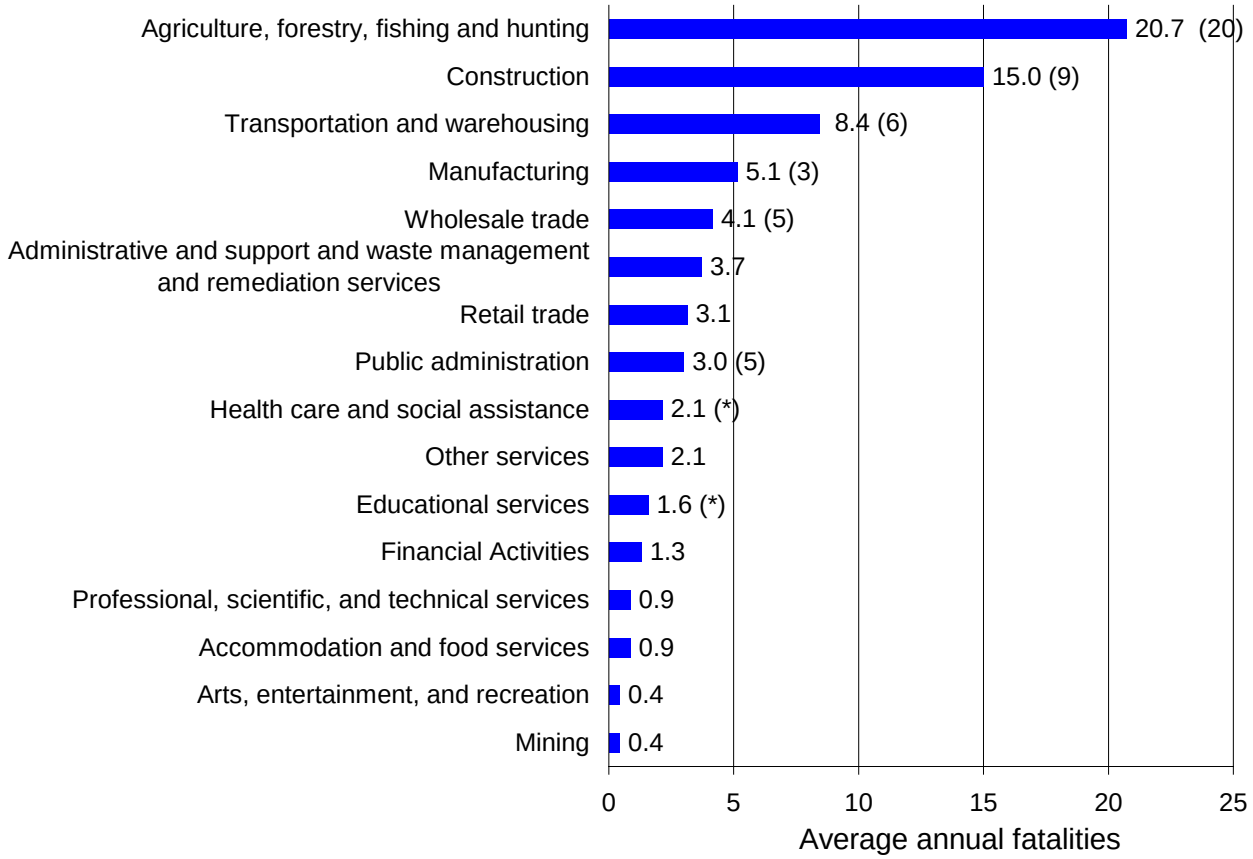
Metropolitan area	Counties	Fatalities
Duluth, MN-WI	MN — Carlton, St. Louis; WI — Douglas	37
Fargo, ND-MN	ND — Cass; MN — Clay	21
Grand Forks, ND-MN	ND — Grand Forks; MN — Polk	20
La Crosse, WI-MN	WI — La Crosse; MN — Houston	23
Minneapolis-St. Paul-Bloomington, MN-WI	MN — Anoka, Carver, Chisago, Dakota, Hennepin, Isanti, Ramsey, Scott, Sherburne, Washington, Wright; WI — Pierce, St. Croix	188
Rochester, MN	MN — Dodge, Olmsted, Wabasha	28
St. Cloud, MN	MN — Benton, Stearns	23

Fatalities by industry sector

Figure 5.4 shows the average number of Minnesota's fatal work injuries by industry sector for 2003 through 2009. The number of fatal work injuries for 2009 are shown in the parentheses next to some industries.

- The highest number of fatal injuries was in agriculture, forestry, fishing and hunting, with an annual average of nearly 21 fatalities. This sector also had the highest number of fatalities in 2009 (20 fatalities), although this was a decrease from the 25 fatalities recorded in 2008. Agricultural crop production accounted for 66 percent of the fatalities in this sector, animal production accounted for 28 percent and forestry and logging accounted for 4 percent. Contact with objects and equipment and transportation accidents were the most common events resulting in these fatalities.
- Construction has the second-highest annual average number of fatalities. The nine fatalities reported in 2009 was the lowest ever reported for construction in the CFOI program. The most common events causing construction fatalities were transportation incidents, contact with objects and equipment, and falls.
- Transportation and warehousing, the third-highest fatality industry sector, had six fatalities in 2009, compared with eight in 2008 and 12 fatalities in 2007. The most-common event causing these fatalities was highway transportation accidents.
- Manufacturing had an average of five fatalities a year from 2003 through 2009, and reported three fatalities in 2009. The most common events leading to manufacturing fatalities were contact with objects and equipment and transportation accidents.

Figure 5.4 Average annual number of fatal work injuries by industry sector, Minnesota, 2003-2009 (2009 fatalities shown in parentheses)



* Education and health services combined had four fatalities in 2009.

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 2009 and for the 2003 through 2009 period.

- The distribution of events in 2009 was fairly typical compared to the distribution in the seven-year period. The largest difference was the small number of fatalities due to vehicle collisions in 2009, compared to an annual average of seven fatalities.
- The most common event causing fatal injuries in 2009 and for the entire period was transportation accidents, accounting for 38 percent of all fatal work injuries in 2009. These consisted of highway accidents (motor vehicles traveling on roads), nonhighway accidents (motor vehicles on farm and industrial premises) and workers being struck by vehicles.
- The second most frequent cause of fatalities was contact with objects and equipment. These cases included workers being struck by an object, caught in or compressed by equipment or objects, such as running machinery, and being crushed by collapsing materials.

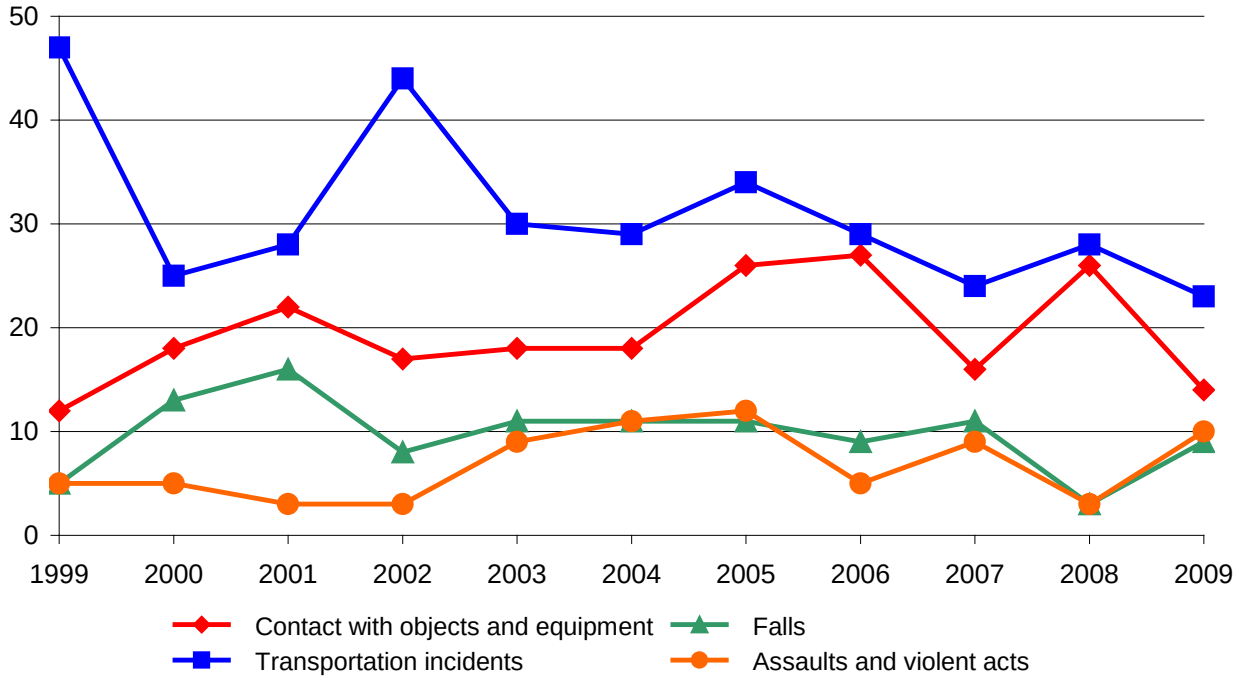
Figure 5.5 Event or exposure causing fatal work injury, Minnesota, 2009 and 2003-2009

Event or exposure	2009		2003-2009	
	Number of fatalities	Percentage of fatalities	Number of fatalities	Percentage of fatalities
Total	**61**	**100.0%**	**515**	**100.0%**
Transportation accidents	**23**	**37.7%**	**197**	**38.3%**
Highway accident	8	13.1%	100	19.4%
Collision between vehicles, mobile equipment	--	--	49	9.5%
Noncollision accident	6	9.8%	39	7.6%
Nonhighway accident, except rail, air, water	7	11.5%	47	9.1%
Noncollision accident	5	8.2%	36	7.0%
Pedestrian, nonpassenger struck by vehicle, mobile equipment	4	6.6%	25	4.9%
Contact with objects and equipment	**14**	**23.0%**	**145**	**28.2%**
Struck by object	5	8.2%	74	14.4%
Struck by falling object	--	--	58	11.3%
Caught in or compressed by equipment or objects	4	6.6%	39	7.6%
Caught in running equipment or machinery	3	4.9%	23	4.5%
Caught in or crushed in collapsing materials	5	8.2%	32	6.2%
Falls	**9**	**14.8%**	**65**	**12.6%**
Fall to lower level	9	14.8%	57	11.1%
Assaults and violent acts	**10**	**16.4%**	**59**	**11.5%**
Assaults and violent acts by person(s)	--	--	30	5.8%
Exposure to harmful substances or environments	**4**	**6.6%**	**31**	**6.0%**
Contact with electric current	--	--	12	2.3%
Fires and explosions	--	--	**17**	**3.3%**

"--" means the number of fatalities did not meet CFOI publication thresholds.

- There were 10 fatalities due to assaults and violent acts in 2009, an increase from three fatalities in 2008.
- Figure 5.6 shows the trend in the numbers of fatalities among the major event categories. The relative order of the events has remained consistent, with assaults occasionally matching the number of falls.
- The number of fatalities due to transportation incidents has been generally decreasing since 2002, with decreases in five of the past seven years.

Figure 5.6 Number of fatal occupational injury events, Minnesota, 1999-2009



Characteristics of fatally injured workers

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

The characteristics with distributions displayed in bar charts are based on fatality cases from 2003 through 2009. Using this multi-year data provides a more stable indicator of the characteristics displayed. Because of the low annual number of fatalities, some characteristics with few cases may show large year-to-year changes that are not indicative of long-term trends. For categories with larger numbers of cases, the percentages have remained fairly stable during this time period. The 2009 results do not show important differences from these multi-year results.

Gender

- Men accounted for 97 percent of fatally injured workers in 2009. This was the same percentage as in 2008 and was the highest percentage of fatalities to men since the CFOI program began in 1992.

Age

- Fatally injured workers had a wide age distribution, with the greatest numbers among workers 35 to 54 years of age.
- The age of fatally injured workers has been gradually increasing, matching the aging of the entire workforce. The percentage of fatalities to workers 45 years and older increased from 47 percent during the 1992 to 1996 period, to 51 percent during the 1998 to 2002 period, and to 56 percent during the 2003 to 2009 period.

Figure 5.7 Gender of fatally injured workers, Minnesota, 1999-2009

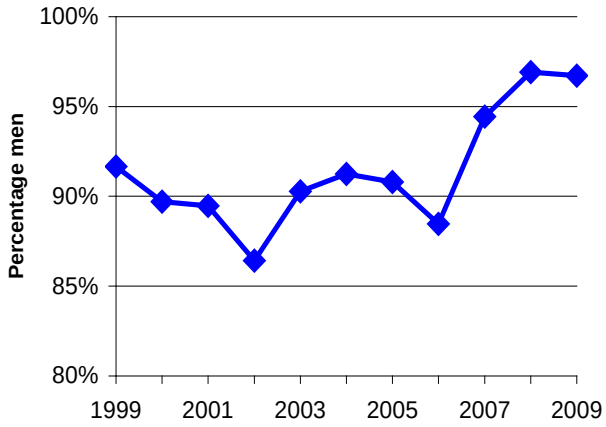
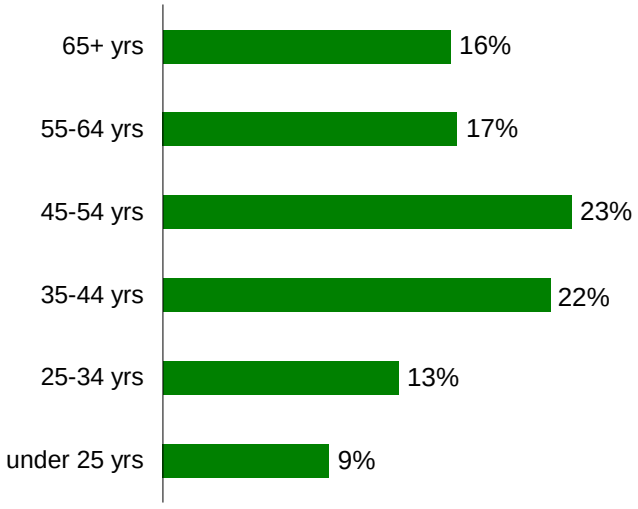


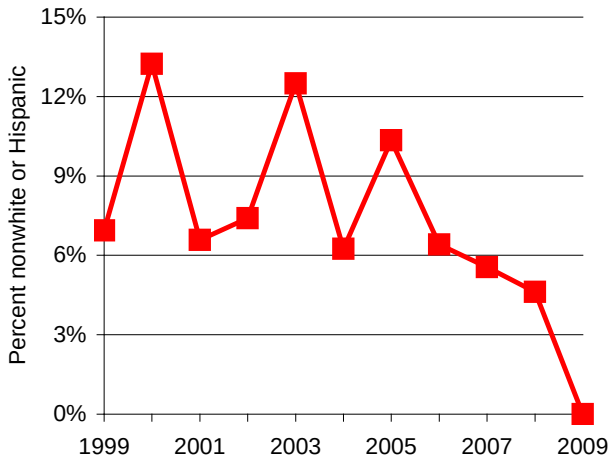
Figure 5.8 Age of fatally injured workers, Minnesota, 2003-2009



Race

- Non-Hispanic white workers accounted for all of the fatalities in 2009 and for approximately 84 percent of the population (all age groups).[21]
- Since 1999, the percentage of fatalities to nonwhite and Hispanic workers has ranged from 0 percent to 13 percent, with considerable annual variation.

Figure 5.9 Race of fatally injured workers, Minnesota, 1999-2009



Occupation

- Fatally injured workers were concentrated in the occupation groups of farmers and ranchers and motor-vehicle operators.
- Farmers, ranchers and agriculture-related occupations together accounted for 25 percent of the fatalities from 2003 through 2009.
- The most common specific occupation among the motor-vehicle operators was heavy and tractor-trailer truck drivers, with 66 fatalities from 2003 through 2009.

Figure 5.10 Occupation of fatally injured workers, Minnesota, 2003-2009

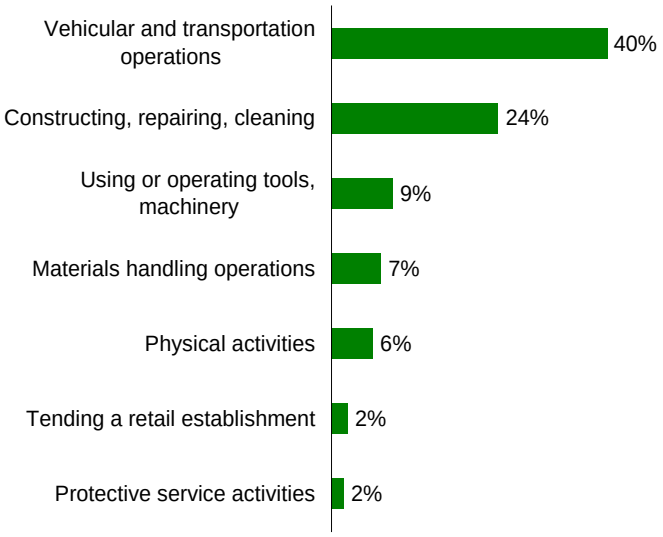
[21] *Minnesota population projections by race and Hispanic origin, 2005-2035*, Minnesota State Demographic Center, 2009.

Worker activity

Worker activity categories indicate each fatally injured worker's activity at the time of the event.

- Forty percent of the fatalities from 2003 through 2009 occurred while the workers were operating vehicles.
- Vehicular and transportation operations accounted for 75 percent of the fatalities in transportation and warehousing.
- In agriculture, forestry, fishing and hunting, vehicular and transportation operations accounted for 37 percent of the fatalities, while constructing, repairing and cleaning accounted for 26 percent.
- Constructing, repairing and cleaning was the most-common worker activity among the fatalities in construction, with 49 percent of the fatalities.

Figure 5.11 Activity of fatally injured workers, Minnesota, 2003-2009

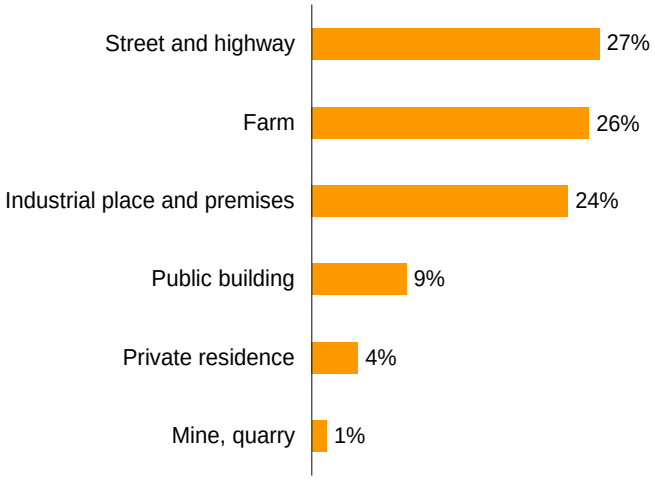


Location

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

- Streets and highways were the most common fatality location, consistent with the high percentage of transportation-related fatalities.
- Consistent with the high proportion of fatalities in agriculture, farms were the second most common event location for all fatalities, and the location for 80 percent of the fatalities in agriculture, forestry, fishing and hunting.

Figure 5.12 Fatal incident location, Minnesota, 2003-2009



6

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

The Department of Labor and Industry (DLI) provides 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 different focus. 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 email at osha.compliance@state.mn.us and on the Web at www.dli.mn.gov/MnOsha.asp.

For further information about consultation services and programs, contact WSC by phone at (651) 284-5060 or 1-800-657-3776, by email at osha.consultation@state.mn.us or on the Web at www.dli.mn.gov/Wsc.asp.

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 — any condition or practice that presents a substantial probability that death or serious physical harm could occur immediately or before the danger can be eliminated through normal enforcement procedures;
- fatal accidents and catastrophes — accidents causing death or the hospitalization of three or more employees;
- employee complaints — not concerning imminent danger;
- referrals — from safety, health and government professionals;
- programmed inspections — targeting 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 on the basis of 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, years begin Oct. 1 of the preceding year) 1999 through 2010. More statistics describing MNOSHA activity are available from the MNOSHA annual report, at www.dli.mn.gov/OSHA/PDF/annualreport10.pdf.

- During the most recent five-year period, FFY 2006 through FFY 2010, an average of 2,600 inspections were conducted annually, covering an average of 132,600 workers (Figure 6.1). MNOSHA Compliance conducted 2,691 inspections in FFY 2010, resulting in the identification of 5,535 violations of OSHA standards.

- During FFY 2010, 71 percent of inspections resulted in at least one violation cited. Among inspections with violations, 2.9 violations were cited, on average.

- Among private-sector employers, serious, willful and repeat violations accounted for 76 percent of the safety violations and for 67 percent of the health violations cited in FFY 2010. The average penalty for these violations was $791.

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

- Manufacturing accounted for 44 percent of the inspections and for 61 percent of the violations, both increasing from FFY 2009. Planned programmed inspections accounted for 89 percent of the manufacturing compliance visits.

- Construction accounted for 32 percent of the inspections, down from 39 percent in FFY 2009, and for 18 percent of the violations, down from 30 percent in FFY 2009. Ninety-six percent of the construction compliance visits were for planned, programmed inspections.

- MNOSHA Compliance initiated inspections for 15 fatalities during calendar-year 2010 and for 18 fatalities during 2009 (Figure 6.3).

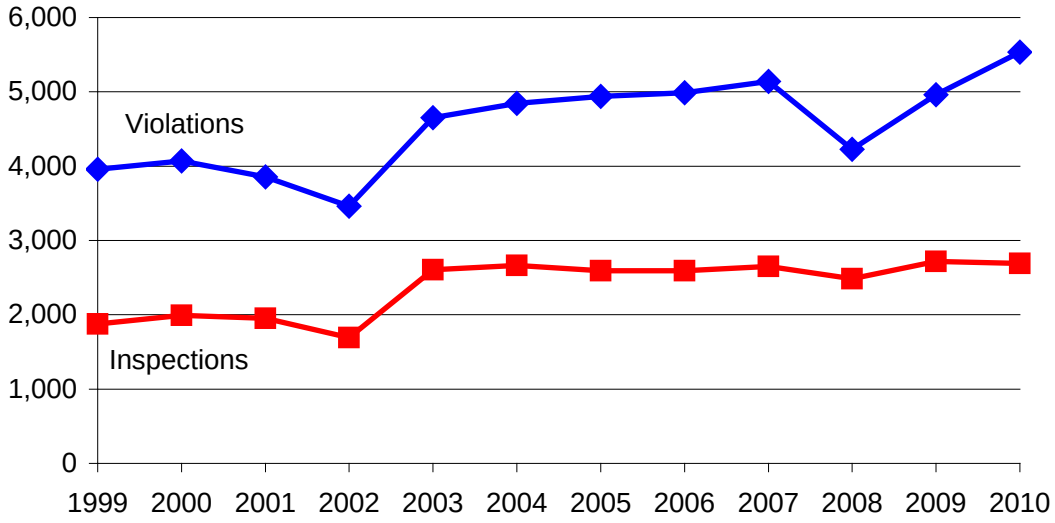
- From 2006 through 2010, 28 percent of the fatality investigations were in the construction industry. Falls and crushing incidents accounted for 48 percent of the fatalities investigated.

- Figure 6.4 shows MNOSHA Compliance initiated inspections for 30 serious-injury incidents during 2010 and for 174 incidents during the 2006 through 2010 period. During 2010, crushing injuries led to 37 percent of the serious-incident inspections. From 2006 through 2010, 44 percent of the serious injuries investigated involved workers injured by falls and crushing injuries. Additional details about the fatality and serious injury incident investigations are available at www.dli.mn.gov/OSHA/Information.asp.

- Construction safety is a major focus for both compliance inspections and outreach efforts. During FFY 2010, 34 percent of programmed inspections were conducted at construction worksites. MNOSHA provides compliance assistance for members of the construction industry responsible for worksite safety to stay current with MNOSHA standards. MNOSHA had five construction breakfast seminars, with 215 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, 235 employers have entered the 75/25 Program and 157 employers have completed the program by the end of FFY 2010. Of these, 97 employers successfully achieved the 25 percent claims reduction. Information is available at www.dli.mn.gov/OSHA/75-25Program.asp.

Figure 6.1 MNOSHA Compliance inspections and violations cited, federal-fiscal-years 1999-2010[1]

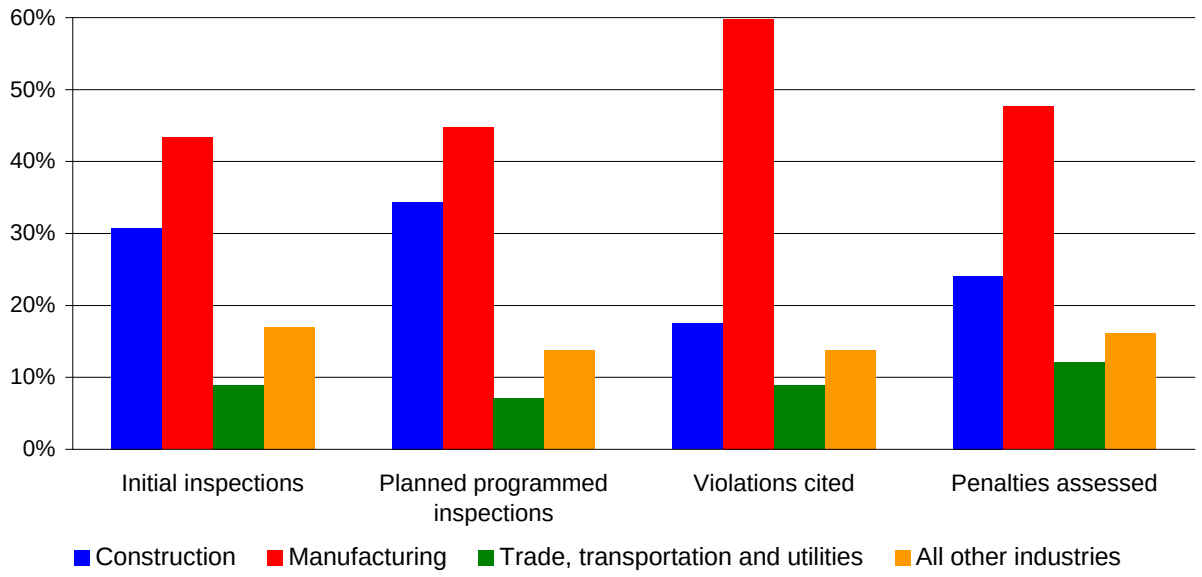


Federal fiscal-year [1]	Inspections conducted	Employees covered [2]	Inspections with violations	Violations	Penalties assessed ($ millions)[3]
1999	1,876	103,029	1,255	3,957	$3.15
2005	2,591	128,491	1,821	4,938	$4.07
2006	2,593	93,244	1,876	4,986	$3.75
2007	2,651	126,260	1,836	5,140	$3.85
2008	2,483	131,748	1,674	4,225	$3.20
2009	2,717	139,429	1,959	4,962	$3.37
2010	2,691	172,239	1,904	5,535	$3.87

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, which is not always all employees at a facility.
3. These are the initial penalty assessment amounts.

Source: Minnesota OSHA Operations System Exchange database.

Figure 6.2 MNOSHA Compliance inspections by industry, federal-fiscal-year 2010



Industry	NAICS code(s)	Initial inspections	Planned programmed inspections	Violations cited	Penalties assessed[1]
Natural resources and mining	11, 21	9	5	24	$ 55,000
Agriculture, forestry, fishing and hunting	11	9	5	24	$ 55,000
Construction	23	848	818	993	$ 962,600
Manufacturing	31-33	1,195	1,068	3,395	$ 1,902,750
Trade, transportation and utilities	42-49,22	246	169	508	$ 482,400
Wholesale trade	42	94	76	235	$ 243,600
Retail trade	44-45	57	27	96	$ 52,650
Transportation and warehousing	48-49	71	51	126	$ 149,425
Utilities	22	24	15	51	$ 36,725
Information	51	16	13	29	$ 23,400
Financial activities	52-53	14	2	13	$ 32,850
Professional and business services	54-56	47	27	70	$ 59,950
Education and health services	61-62	111	86	173	$ 126,325
Health care and social assistance	62	73	53	116	$ 93,375
Leisure and hospitality	71-72	31	9	48	$ 32,050
Other services	81	38	5	86	$ 64,375
State government	all	5	2	4	$ 3,650
Local government	all	197	178	336	$ 248,575

1. These are the initial penalty assessment amounts.
Source: Minnesota OSHA Operations System Exchange database.

Figure 6.3 Fatalities investigated by MNOSHA Compliance, 2006-2010

Fatality type	2006	2007	2008	2009	2010	Total
Asphyxiation/chemical exposure	1	3	1	3	2	**10**
Burn	1	4	0	0	0	**5**
Crushed by	9	5	6	5	5	**30**
Drowning	0	2	0	1	0	**3**
Electrocution	2	0	2	0	1	**5**
Explosion	0	1	0	1	0	**2**
Fall	4	4	2	6	4	**20**
Heat exposure	0	1	0	0	0	**1**
Natural causes	1	0	0	0	3	**4**
Struck by	7	5	1	2	0	**15**
Total	**25**	**25**	**12**	**18**	**15**	**95**
Percent in construction	32%	39%	25%	17%	17%	**28%**

Figure 6.4 Serious injuries investigated by MNOSHA Compliance, 2006-2010

Serious-injury type	2006	2007	2008	2009	2010	Total
Amputation	6	1	4	9	4	**24**
Asphyxiation/chemical exposure	0	1	6	1	3	**11**
Burn	3	1	1	3	0	**8**
Crushed by	2	6	8	3	11	**30**
Electrical shock	3	4	5	2	1	**15**
Environmental stress	0	0	0	0	0	**0**
Explosion	2	1	4	1	3	**11**
Fall	12	14	8	6	7	**47**
Struck by	7	9	7	4	1	**28**
Total	**35**	**37**	**43**	**29**	**30**	**174**
Percent in construction	37%	41%	33%	17%	23%	**31%**

Figure 6.5 shows the most commonly cited OSHA standards violations in 2010 for general industry and for construction.

- Violations associated with the A Workplace Accident and Injury Reduction (AWAIR) Act have been at or near the top of the lists for both general industry and construction for many years. This was the first year in at least a decade that AWAIR violations have not been among the top three cited standards in general industry and construction combined.

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

Under the AWAIR Act — 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 — also 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 6.5 Minnesota OSHA's most frequently cited standards, federal-fiscal-year 2010

Standard[1]	Description	Times cited
General industry		
MN Rules 5206.0700	Employee Right-To-Know training	595
29 CFR 1910.147	Control of hazardous energy (lockout/tagout procedures)	385
29 CFR 1910.305	Electrical wiring methods, components and equipment for general use	340
29 CFR 1910.212	Machine guarding — general requirements	330
MN Statutes 182.653 subd. 8	A Workplace Accident and Injury Reduction (AWAIR) program	187
29 CFR 1910.151	Emergency eyewash and shower	166
29 CFR 1910.134	Respiratory protection	157
29 CFR 1910.23	Guarding of floor and wall openings and holes	148
29 CFR 1910.178	Powered industrial trucks (forklifts)	129
29 CFR 1910.303	Electrical — general requirements	128
Construction		
29 CFR 1926.501	Fall protection	258
29 CFR 1926.651	Specific excavation requirements	162
29 CFR 1926.652	Excavations — protective system requirements	125
29 CFR 1926.405	Electrical wiring methods, components and equipment for general use	80
29 CFR 1926.451	Scaffolds — general requirements	65
29 CFR 1926.1053	Ladders	41
MN Statutes 182.653 subd. 8	A Workplace Accident and Injury Reduction (AWAIR) program	39
MN Rules 5207.1100	Fall protection on elevating work platform equipment	34
30 CFR 1926.1052	Stairways	27
29 CFR 1926.1101	Asbestos	25

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. It currently has two partnerships in the construction industry — Construction Health and Safety Excellence (CHASE) Minnesota and Minnesota Chapter of Associated Builders and Contractors (MN ABC). During FFY 2010, one new member was added to the CHASE Minnesota partnership and five new members were added to the MN ABC partnership.

The goal of these partnerships is to reduce the number of injuries, illnesses and fatalities affecting participants by 3 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. There are three levels of participation in the partnerships.

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 2010, WSC conducted 1,603 worksite safety and health visits, training and assistance visits and interventions.

WSC safety and health professionals conduct on-site consultations. During the consultation visits, the 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.

No citations are issued or penalties proposed as a result of WSC consultations. However, employers are obligated to correct any serious safety and health hazards found. Consultants identify hazards in about 95 percent of the visits. Information about an employer is not reported to MNOSHA Compliance unless the employer fails to correct the detected safety and health hazards within a specified period. This has happened only once in the past decade.

Figure 6.6 shows statistics for WSC visits to worksites for FFY 1999 through 2010.

- Since FFY 2005, the annual number of consultation visits has remained at or above 900 visits.
- During the past three years, an average of 19,200 employers and employees received training from WSC consultants.
- WSC visits in FFY 2010 identified safety and health hazards that could have cost employers approximately $3.5 million in MNOSHA Compliance penalties.

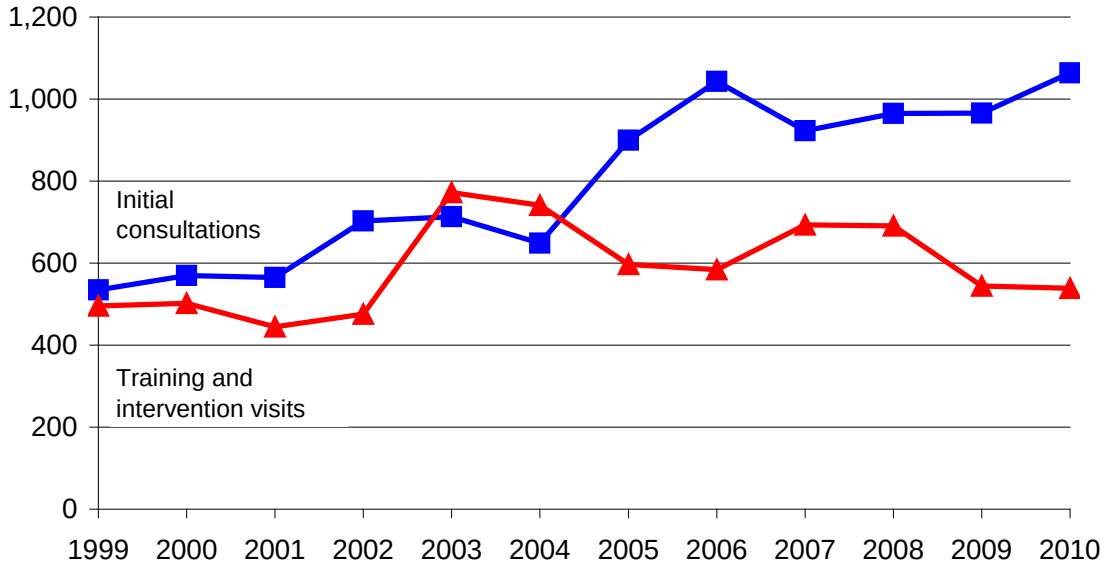
Figure 6.7 shows statistics for WSC services to worksites for some industries during FFY 2010.

- Construction sites accounted for 59 percent of initial consultation visits, followed by manufacturing with 15 percent.
- Training assistance and interventions were distributed among a wide range of industries. The selected industries shown in the figure accounted for 90 percent of the initial consultation visits but only 36 percent of the training assistance and intervention visits.

Loggers' Safety Education Program

The Loggers' Safety Education Program (LogSafe) provides logging industry safety training through four-hour seminars throughout the state. The goal of the program is to help reduce injuries and illnesses in the logging industry through on-site consultation services, outreach and training seminars. Since 2009, WSC has contracted out its spring and fall LogSafe seminar training programs.

Figure 6.6 Workplace Safety Consultation visit activity, federal-fiscal-years 1999-2010



Federal fiscal-year[1]	Initial consultation visits	Visits with identified hazards	Potential penalties avoided[2] ($ millions)	Training and intervention visits	People receiving training and interventions
1999	535	496	$1.98	365	9,650
2005	900	889	$3.83	597	18,421
2006	1,043	1,010	$4.37	584	15,180
2007	923	890	$3.49	693	20,506
2008	965	918	$3.33	691	23,394
2009	966	925	$3.72	544	17,670
2010	1,064	1,045	$3.52	539	16,597

1. Federal fiscal years are from Oct. 1 of the preceding year to Sept. 30 of the indicated year.
2. Potential penalty amounts expressed using average penalty values for 2009.

Source: Minnesota OSHA Operations System Exchange database.

Figure 6.7 Workplace Safety Consultation activity for selected industries, federal-fiscal-year 2010

Industry	NAICS code	Initial visits	Training assistance
Logging	113310	12	5
Construction	23	624	84
Manufacturing	31-33	156	55
Trade, transportation and utilities	42-49, 22	49	9
Nursing and residential care	623	37	12
Other services	81	8	1
State and local government	92	74	28

Source: Minnesota OSHA Operations System Exchange database.

Additionally, during FFY 2010, WSC conducted 187 logger safety visits and interventions, with 2,660 attendees at the training and intervention activities.

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 2010, WSC awarded $1.1 million to 261 employers that matched the grants with more than $2 million of their own funds.

Ergonomics assistance and safe-patient-handling

The main responsibilities of the WSC ergonomics program coordinator are to educate Minnesota employers and employees about the recognition and control of risk factors associated with MSDs.

With safe-patient-handling legislation enacted in Minnesota requiring all licensed health care facilities in Minnesota to implement a safe-patient-handling program, a big focus of the ergonomics program is safe patient handling. The legislation requires a written safe-patient-handling policy and the establishment of a plan to minimize manual lifting of patients in hospitals, nursing homes and outpatient surgical centers by Jan. 1, 2011. Clinics that move patients need to develop a written safe patient handling plan and have it fully implemented by Jan. 1, 2012.

WSC is providing assistance to health care facilities through development of training and education presentations and materials, on-site ergonomics evaluations and posting resources online. From October 2009 through March 2011, 44 facilities received visits with an ergonomics focus, 33 of which were for safe-patient-handling. There were nine safe-patient-handling training seminars and five general ergonomics training sessions.

WSC provides financial support for the purchase of patient-lifting equipment through the Safety Grants Program. Between February 2010 and February 2011, 49 safety grants, totaling $290,000, were provided to health care facilities.

Through an alliance with the Care Providers of Minnesota, the ergonomics program coordinator conducted a demonstration on-site consultation visit. During this full-day visit, facility safety coordinators are able to observe the process of a visit, and have a chance to ask the consultant questions and see first-hand the benefits a consultation can bring to their establishment.

A sample safe-patient-handling program for nursing homes and a sample safe-patient-handling program for clinics have been written and are posted on DLI's website to provide examples for employers. The ergonomics program coordinator has also contributed to the MNOSHA compliance directive and citation-rating guide.

The safe-patient-handling legislation and resource materials are available at www.dli.mn.gov/WSC/SPHlegislation.asp.

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. The success of these employers in improving the safety climate in their workplaces is apparent in their OSHA recordable cases and their workers' compensation costs.

MNSHARP is limited to employers with fewer than 250 workers at the worksite. Participants receive a comprehensive safety and health consultation survey from WSC. If the facility demonstrates a strong commitment to workplace safety and is deemed able to meet all MNSHARP requirements within one year, a one-year action plan is established to correct all identified hazards and management system deficiencies, and the site is granted a deferral from MNOSHA scheduled compliance inspections.

During the year, one or more on-site visits are made to provide safety and health assistance and

to monitor progress in accomplishing action plan items. If the participant has completed their action plan and the necessary injury and illness reductions are accomplished, the worksite receives a MNSHARP certificate of recognition and is exempted from programmed MNOSHA Compliance inspections for up to two years upon initial certification, and up to three years upon subsequent re-certification.

Seven new participants were certified into MNSHARP during FFY 2010, bringing the total to 43 certified programs. The majority of the program participants are manufacturers.

In FFY 2008, 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. Four construction projects successfully achieved all MNSHARP requirements in FFY 2010.

The total case incidence rates of the general-industry MNSHARP employers during 2010 averaged 45 percent below the 2009 national rate for their industries; their DART rates averaged 42 percent below their national industry rates. For construction projects, the total case rates averaged 75 percent below the national rate and the DART rates averaged 100 percent lower. The reduced numbers of cases saved MNSHARP employers an estimated $491,000 in workers' compensation benefit payments.

For more information about MNSHARP, visit www.dli.mn.gov/WSC/MNSHARP.asp.

MNSTAR

The Minnesota Star (MNSTAR) program is a voluntary program patterned after the federal Voluntary Protection Program.[22] 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. An application cannot be accepted until the work-site requests and receives a full-service safety and health consultation visit. The consultant evaluates safety and health hazards, reviews mandated safety and health programs, and provides a partial assessment of overall safety and health management. Employers that demonstrate a high-level of safety and health management effectiveness can apply for MNSTAR status. After review of the application, an on-site and comprehensive assessment of the worksite's safety and health management system is completed. MNSTAR status is awarded 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 upon initial certification, and up to five years upon subsequent re-certification. Merit status is also available for employers that demonstrate a high level of safety and health management effectiveness, but have not fully met all eligibility requirements for MNSTAR.

During FFY 2010, there were 45 employers with full MNSTAR certification and seven employers in Merit status. This includes one company receiving initial certification for MNSTAR status and one company reaching Merit status.

During 2010, the total case incidence rates of the general-industry MNSTAR employers averaged 45 percent below the 2009 national rates for their industries; their DART rates averaged 58 percent below the national rates. For contractor employers, the total case and DART rates averaged 100 percent below the national rate. The reduced numbers of cases saved MNSTAR employers an estimated $1.5 million in workers' compensation benefit payments.

For more information about MNSTAR, visit www.dli.mn.gov/WSC/MnStar.asp.

[22] See www.osha.gov/dcsp/vpp.

Workplace safety and health seminars and outreach activities

Both the MNOSHA Compliance and WSC units provide training and outreach activities to help employers and employees improve the safety and health conditions at their worksites. Some of the training is directed to company safety directors to provide information for their own safety training programs.

Compliance staff members present information about MNOSHA standards and other workplace safety topics to employer organizations, safety professionals, unions and labor-management organizations. Many MNOSHA Compliance outreach services are presented at meetings, conferences and employer groups organized by the Midwest Center for Occupational Health and Safety, Minnesota Health and Housing Alliance, Associated General Contractors of Minnesota, American Society of Safety Engineers and the Minnesota Safety Council. During FFY 2009, Compliance staff members presented outreach presentations to 3,900 participants.

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. During FFY 2010, WSC conducted 540 worksite training, intervention and technical assistance visits, reaching more than 16,600 participants.

During FFY 2010, WSC training activities included these events:

- two full-day educational sessions about fall-protection in the roofing industry through an alliance with the Twin Cities Roofers Association, attended by 70 employers and employees;
- presentations about residential construction fall protection and Employee Right-to-Know regulations to nine contractor re-licensing classes at technical colleges, with 463 employers participating;
- three presentations about electrical hazards in construction for the Minnesota Electrical Association and another presentation to the Association of Building Contractors, attended by 100 employers and employees; and,
- 12 10-hour OSHA construction certification courses for various organizations, including courses for minority, women's and apprenticeship organizations.

MNOSHA performance

In its five-year strategic plans, MNOSHA sets strategic and performance goals to reduce injury and illness rates and fatality rates for the industries within its jurisdiction. The strategic plan includes a set of emphasis industries that are identified through a combination of factors, including the number of workers in the industry and the industry's DART rate. The current strategic plan is available at www.dli.mn.gov/OSHA/PDF/stratplan09-13.pdf.

Establishments in the emphasis industries receive considerable attention from MNOSHA. During FFY 2010, 64 percent of programmed compliance inspections and 99 percent of the consultation initial visits were in these emphasis industries.

The case count and rate estimates of days-away-from-work cases for the emphasis industries in the FFY 2009 through 2013 strategic plan are shown in Figure 6.8. The majority of emphasis industries are in the manufacturing sector. In 2009, the emphasis industries accounted for 18 percent of Minnesota's workplaces, for 28 percent of the workers and for 44 percent of the cases with one or more days away from work.

The lower percentage decrease in the number of DAFW cases for the emphasis industries compared to the remainder of the state's industries shows the need for increased MNOSHA attention to these industries.

Figure 6.8 Minnesota OSHA emphasis industries for the 2009-2013 strategic plan

Industry	NAICS code	Establish-ments 2009	Wage-and-salary employment 2009	DAFW Cases 2008	DAFW Cases 2009	DAFW Cases Pct. Change	DAFW Rate 2008	DAFW Rate 2009	DAFW Rate Pct. Change
Logging	1133	183	745	na	na	na	na	na	na
Utilities, except nuclear[1]	221	405	12,722	100	100	0%	0.8	0.8	0%
Construction	23	17,372	93,448	1,700	1,480	- 13%	1.7	1.7	0%
Food manufacturing[2]	311	779	43,058	640	590	- 8%	1.5	1.4	- 7%
Grain facilities[2,3]	31111, 31121, 42451	524	8,227	na	na	na	na	na	na
Animal slaughtering and processing[2]	3116	135	15,605	170	170	0%	1.1	1.0	- 9%
Beverage and tobacco product mfg.	312	57	2,179	na	50	na	na	2.1	na
Wood product manufacturing	321	376	11,236	290	250	- 14%	2.2	2.5	14%
Petroleum refineries	32411	4	1,406	na	na	na	na	na	na
Nonmetallic mineral product mfg.	327	376	8,262	170	50	- 71%	1.9	0.6	- 68%
Primary metal mfg.[4]	331	92	5,046	190	150	- 21%	2.8	2.6	- 7%
Foundries[4]	3315	55	3,369	na	na	na	na	na	na
Transportation equipment mfg.	336	239	9,872	230	130	- 43%	1.8	1.3	- 28%
Furniture and related product mfg.	337	630	8,724	160	na	na	1.5	na	na
Building material and garden equipment and supplies dealers	444	1,665	23,952	220	240	9%	1.0	1.1	10%
Warehousing and storage	493	215	5,793	210	90	- 57%	3.6	1.6	- 56%
Hospitals[5]	622	193	96,026	1,580	1,580	0%	2.3	2.2	- 4%
Nursing care facilities[6]	6231	427	46,910	na[7]	990	na	na[7]	3.1	na
State and local government	all	6,895	339,825	3,410	3,580	5%	1.4	1.5	7%
Emphasis industry total[8]		30,318	715,514	9,800	9,280	- 5%			
Non-emphasis industry total		134,076	1,819,405	12,790	11,680	- 9%			
State total (excludes federal gov.)		164,394	2,534,919	22,590	20,960	- 7%	1.1	1.0	- 9%
Emphasis percentage of state total		18%	28%	43%	44%				

1. Although nuclear energy establishments are excluded from the emphasis program, the establishments, employment and DAFW statistics include nuclear energy establishments.

2. The food processing subsector includes some establishments in the grain facilities emphasis industry group and all establishments in the animal slaughtering and processing industry. Statistics displayed for food manufacturing include all industries within the subsector.

3. Grain facilities includes animal food manufacturing (NAICS 31111), flour milling and malt manufacturing (NAICS 31121), and grain and field bean merchant wholesalers (NAICS 42451).

4. Foundries is an industry group in the primary metal manufacturing subsector. Statistics displayed for primary metal manufacturing include foundries.

5. Data shown for private-sector only; public-sector facilites are included in state and local government.

6. Data shown for private-sector only; public-sector facilites are included in state and local government. DAFW statistics are for NAICS code 623, nursing and residential care facilities. DAFW case statistics for NAICS 6231 are available for 2008 and later.

7. 2008 case counts and rates reported for nursing care facilities were abnormally low compared to earlier years.

8. 2008 DAFW case count total includes an estimated 900 cases for nursing care facilities.

Sources: *BLS quarterly census of employment and wages* and *Annual survey of occupational injuries and illnesses* .

Appendix A

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 (SOII) to provide nationwide and state-level information about work-related injuries and illnesses, including their number and incidence.[16] The survey includes all cases recorded by employers on their OSHA log. Employers with 11 or more employees are required to use the log to record workplace injuries and illnesses, conforming with definitions and recordkeeping guidelines set by the Occupational Safety and Health Administration.[17] Employers with 10 or fewer employees participating in the survey record their cases on the OSHA log for the survey year. The SOII data is collected from the OSHA log and from an additional set of questions regarding cases with at least one day off the job.

Work-related injuries and illnesses are new conditions that are caused by, or pre-existing conditions significantly aggravated by, events or exposures in the work environment.

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, or medical treatment (beyond first aid). It also includes significant work-related injuries or illnesses diagnosed by a physician or other licensed health care professional. These include any work-related case involving cancer, chronic irreversible disease, a fractured 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 C. Information about the recordkeeping guidelines is available at www.dli.mn.gov/OSHA/Recordkeeping.asp.

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 (DAFW) 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 involve days away from work, days of restricted work activity or both.

[16] 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.
[17] This is a count of the total number of employees in the firm, across all establishments.

1. *Lost-workday cases involving days away from work* are cases that result in DAFW or a combination of DAFW and days of restricted work activity.

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

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

For injuries in 2002 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, days of restricted work activity or job transfer, or both.

1. *Cases involving days away from work* require 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 cases that meet the recordability thresholds but 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 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 ensure that the identity of data providers and the nature of their data cannot be determined.

Median days away from work is the measure used to summarize the length of work absences 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).

Incidence rates for characteristics of DAFW cases are based on 10,000 full-time equivalent workers.

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.

Appendix B
Key concepts in OSHA recordkeeping

The data recorded by employers on the OSHA 300 Log of Work-Related Injuries and Illnesses (OSHA log) and the Form 301: Injury and Illness Incident Report (incident report) are the foundation for the data used in the Survey of Occupational Injuries and Illnesses (SOII). The survey includes all nonfatal cases recorded by participating employers on their OSHA 300 logs. Injuries and illnesses logged by employers conform to definitions and recordkeeping guidelines set by OSHA.

It is critical for the validity of the SOII that employers provide complete and accurate information, conforming to OSHA's recordkeeping requirements.

For each recordable case (see the definitions of recordable cases and work-related injuries and illnesses in Appendix A), employers enter the following information on the OSHA log:

- employee's name (unless the injury or illness qualifies as a "privacy case");
- employee's job title;
- the date of injury or onset of illness;
- the location where the event occurred;
- a description of the injury or illness and the object or substances that directly injured or made the person ill;
- classification of the seriousness of the case by its most-serious outcome (most-serious to least-serious are: fatality, days-away-from-work, job transfer or work restriction, and other recordable (see definitions in Appendix A));
- the number of days the injured or ill worker was away from work;
- the number of days the injured or ill worker was on job transfer or restriction; and
- classification of the case as an injury or an illness and, if it is an illness, indicating an illness category (skin diseases or disorders, respiratory conditions, poisoning, hearing loss or all other illnesses).

In addition to making a log entry, the employer must also complete an incident report or a Minnesota workers' compensation First Report of Injury form for each recordable case. The SOII uses these reports for the cases with days away from work to generate statistics about injured workers and the characteristics of their injuries and illnesses (see Chapter 4 of this report).

Information on the incident report (or a comparable form) includes:

- employee's name;
- employee's date of birth;
- employee's date hired;
- employee's gender;
- time employee began work;
- time of event;
- text description of the employee's activity just before the incident occurred;
- text description of how the injury occurred;
- text description of the injury or illness, including the part of the body affected and how it was affected; and,
- text description of the object or substance that directly harmed the employee.

The information used by the survey is copied by employers from the OSHA log and the incident report and transferred to the SOII reporting forms between January and July of the following year, with the majority of reports coming before April. For employers reporting early in the period, information about durations away from work or job restrictions for cases that occurred during the final months of the year may be less accurate. The recordkeeping requirements instruct employers to update the OSHA log information as more information becomes available.

Accurate OSHA recordkeeping is an employer responsibility that requires training and the availability of technical advice. Given the infrequency of workplace injuries and illnesses and the complexity of the forms, recordkeeping

errors are common. Many errors are uncovered and corrected during the editing process of the SOII data collection.

Employers also confuse the OSHA recordkeeping requirements and the Minnesota workers' compensation reporting requirements, and apply workers' compensation rules for determining work-relatedness and coverage to the OSHA log. For example, mental stress claims are not covered by the Minnesota workers' compensation system, but are recordable on the OSHA log.

Among the common OSHA log errors are:

- counting cases where only first aid (or no aid at all) was provided;
- classifying a case into more than one case type when both days away from work and job restriction occurred;
- classifying a case into the wrong case type when both days away from work and job restriction occurred;
- counting a case in more than one year when days away from work or job restriction occur in multiple years;
- counting only scheduled work days instead of calendar days; and
- including the day of the injury in the count of days away from work.

The Minnesota Department of Labor and Industry provides OSHA recordkeeping advice for employers through multiple channels. The Web page at www.dli.mn.gov/OSHA/Recordkeeping.asp includes:

- links to the OSHA log forms;
- text of the OSHA recordkeeping requirement;
- a series of Recordkeeping 101 and Recordkeeping 201 features from the quarterly MNOSHA newsletter, *Safety Lines*; and
- *Ten tips for improving your OSHA log.*

Employers may contact the MNOSHA Compliance or Workplace Safety Consultation units or the SOII staff in the Research and Statistics unit for recordkeeping assistance. MNOSHA compliance inspectors and WSC consultants also provide on-site log review and assistance during worksite visits.

The federal OSHA recordkeeping site also provides many resources for employers (www.osha.gov/recordkeeping). This includes the *OSHA recordkeeping handbook* and training presentation slides and scripts.

Appendix C

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, Workplace Safety Consultation consultants traveled throughout the state, conducting 53 training sessions about the new recordkeeping requirements.

Additional information about the recordkeeping requirements and the changes to the OSHA log for 2004 and later is available at www.dli.mn.gov/OSHA/Recordkeeping.asp.

The following are some of the major changes and how they may have affected the SOII estimated number of cases after the changes were implemented.

- 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 clarified 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 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 work days to calendar days. To the extent that employers previously only counted work days, **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 slightly 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 (MSDs) are recordable when general recording criteria are met. Previously, MSDs were recordable under the general criteria or when identified through a clinical diagnosis or diagnostic test. **This tends to reduce the number of MSD cases.**