

# COMMONWEALTH OF MASSACHUSETTS

Charles. D. Baker, Governor Ronald L. Walker, II, Secretary Executive Office of Labor and Workforce Development

## **Compiled by:**

Executive Office of Labor and Workforce Development's

Department of Labor Standards
Occupational Safety and Health
Statistics Program
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# 2015 Survey of Occupational Injuries and Illnesses Annual Report



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# **Executive summary**

Occupational injury and illness estimates are derived from the BLS annual Survey of Occupational Injuries and Illnesses (SOII). The SOII remains the largest occupational injury and illness surveillance system in the country, providing injury and illness counts and rates for a variety of employer, employee, and case characteristics based on a sample of approximately 230,000 establishments. Figures are calculated nationally and for 44 participating states and territories (including the District of Columbia), allowing for detailed analyses of the magnitude, patterns, and trends in occupational injuries illnesses.

The survey captures data from Occupational Safety and Health Administration (OSHA) logs of workplace injuries and illnesses maintained by employers. The estimates cover nearly all private sector industries, as well as local and state government (as of 2008 data). Small farms with fewer than 11 employees, federal government agencies, self-employed and household workers are outside of the scope of the SOII because they are not covered by the Occupational Safety and Health Act of 1970. Employers and employees, policymakers, safety standards writers, safety inspectors, health and safety consultants, and researchers are some of the most frequent users of this survey data.

# Data source for this report

The data source for this report is the Bureau of Labor Statistics, U.S. Department of Labor, Survey of Occupational Injuries and Illnesses (SOII), in cooperation with participating state agencies. Survey data for the SOII is derived from mandatory logs kept by private industry employers and participating public sector employers during the calendar year. All survey responses are confidential and are used for statistical purposes only. The SOII is a federal-state government partnership between the U.S. Department of Labor's Bureau of Labor Statistics (BLS) and the Massachusetts Department of Labor Standards (DLS).

# About the Department of Labor Standards

The mission of the Massachusetts Department of Labor Standards (DLS) is to promote and protect workers' safety and health, wages and working conditions, and to support employers and workers in the utilization of apprenticeship as a workforce development tool. In collaboration with public and private entities, DLS protects workers by means of education and training, workplace safety and health consultation and assessment, occupational injury and illness data collection and analysis, and consistent and responsible administration and enforcement of its statutes and regulations. DLS carries out its objectives in a manner that supports employers and strengthens the Commonwealth's communities and economy.

The Occupational Safety and Health Statistics Program within DLS administers the SOII for all private sector and public sector industries, trades, and occupations. The program collects approximately 5,800 surveys in Massachusetts annually from a randomly selected sample of establishments within the private and public sectors. Employers record cases that result in days away from work due to injury or illness. SOII contains multiple case characteristics that capture information about the nature of the industry, the injury, and the demographics of the injured employee. The program uses this data to produce an annual occupational injury and illness report, which summarizes overall and industry-specific data on occupational safety.

Reports from prior years can be found on the DLS website at mass.gov/lwd/labor-standards/ occupational-safety-and-health-statistics-program/. The mission of the Occupational Safety and Health Statistics Program is to support continued improvement of workplace environments by compiling and presenting data to employers, employees, researchers, industry professionals, and policy-makers, so that these data can be used to devise strategies to reduce occupational injuries and illnesses. DLS administers eight programs (including the Occupational Safety and Health Statistics Program) that interact with the public on a range of occupational health and safety issues.

# Work-related nonfatal injuries and illnesses in 2015

**Total Number of Cases and Incidence Rates:** In 2015, there were an estimated total of 79,800 work-related injuries or illnesses across the private and public sector workforce. This resulted in a total recordable incidence rate of 3.0 cases per 100 Full-Time Equivalences (FTEs).

#### **Private Sector Workforce**

Of the total count of recordable incidents, 65,300 nonfatal work-related injuries and illnesses were reported throughout the industries that comprise the Massachusetts private sector workforce. The total number of recordable cases (TRC) translated into an incidence rate of 2.7 cases per 100 equivalent full-time workers (FTEs). In the private sector, there were 29,000 cases with days away from work, 6,800 cases that resulted in job transfer and/or restriction, and 29,500 other recordable cases. More information regarding specific case types can be found on pages 9 and 10 of this report.

#### Public Sector Workforce – state and local government

Employees of Massachusetts' state and local government accounted for a total of 14,500 recordable work-related injuries and illnesses in 2015. This translated into an incidence rate of 5.1 incidents per 100 FTEs. State government employees accounted for an estimated total of 3,400 recordable cases and an incidence rate of 3.4 TRC per 100 FTEs.

#### Over-the-year changes:

#### **Incidence rate changes:**

- The TRC rate increased for the *mining, quarrying, and oil and gas extraction* (a sub-industry of the *natural resources and mining* industry) from 3.4 incidents per 100 FTEs in 2014 to 4.5 in 2015.
- There was a decrease in the *management of companies and enterprises* (within the *professional and business services* industry) sub-industry's TRC rate from an estimated 1.4 incidents per 100 FTEs in 2014 to 0.7 in 2015.
- State government's *construction* industry had a decrease in the TRC rate from 7.6 incidents per 100 FTEs in 2014 to 4.7 in 2015.
- The *natural resources and mining* industry had a decrease in the Cases with Job Transfer or Restriction rate from 1.0 Incidents per 100 FTEs in 2014 to 0.4 cases in 2015.

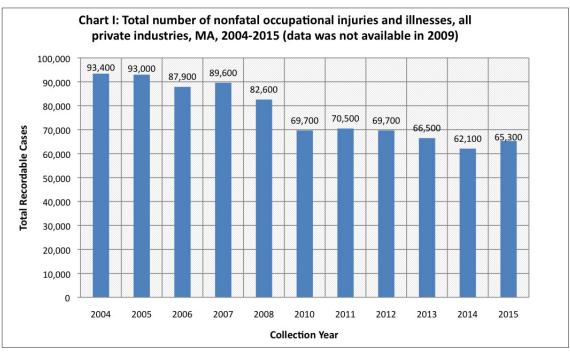
<sup>&</sup>lt;sup>1</sup> Statistical significance was measured using a traditional statistical significance test at the 95% confidence interval.

- Private sector manufacturing's Days Away From Work (DAFW) rate increased from 1.1 incidents per 100 FTEs in 2014 to 1.4 in 2015.
- Education and health services' Days of Job Transfer or Restriction (DJTR) rate increased from 0.4 cases per 100 FTEs in 2014 to 0.5 cases in 2015.

#### Numbers of nonfatal injury and illness changes:

- The total number of DJTR cases, including private and public sector establishments increased from an estimated 7,100 cases in 2014 to 8,500 cases in 2015.
- The total number of DAFW cases in the manufacturing industry increased from 2,800 cases in 2014 to 3,500 cases in 2015.
- The agriculture, forestry, fishing, and hunting sub-industry, decreased from 200 cases in 2014 to 100 in 2015.
- The management of companies and enterprises within the professional and business services industry went from having an estimated 800 cases in 2014 to 400 in 2015.

Chart I shows time comparisons of the numbers of nonfatal injuries and illnesses from 2004-2015 for all Massachusetts private industries. Chart II compares the TRC incidence rate for all U.S. private sector and Massachusetts private sector data between 2011 and 2015.



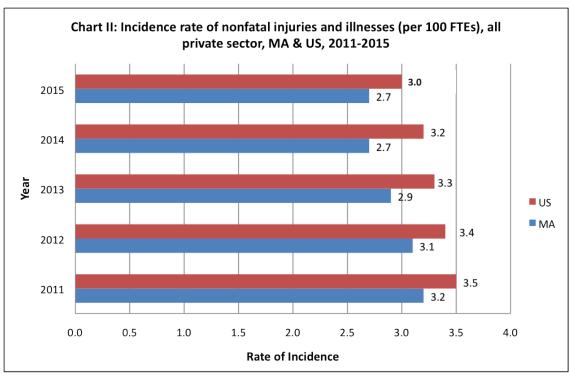
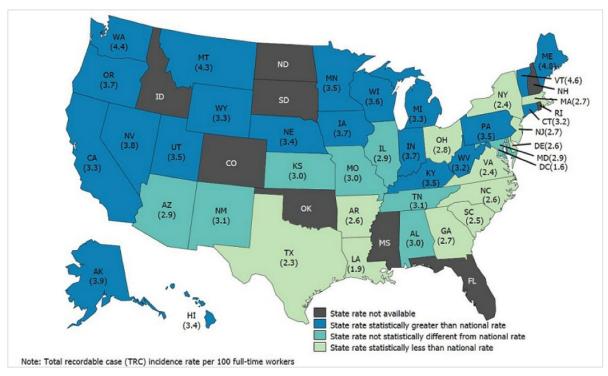


Chart III: Nonfatal occupational injury and illness incidence rates, all states, private industry, 2015 (Source: BLS Summary News Release)



**Injuries:** There were an estimated 62,600 injury-only cases that occurred in the private sector in 2015. This translates to an incidence rate of 2.6 cases per 100 FTEs. Employees of the public sector had an estimated 13,200 injury-only cases and an incidence rate of 4.6 per 100 FTEs. State government had an estimated total of 2,700 injury-only cases, which converts into a 2.7 incidence rate.

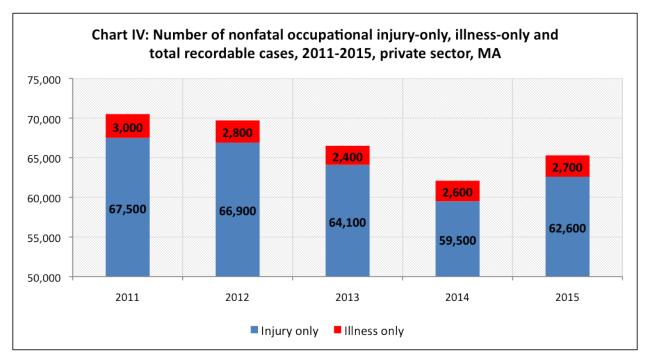


Chart IV shows a comparison of the total number of injury-only to illness-only cases to illustrate the total number of recordable incidents in the private sector over a five-year period.

**Illnesses:** In 2015, private industry workplaces in Massachusetts incurred an estimated total of 2,700 cases of nonfatal occupational illnesses. This resulted in an incidence rate of 11.3 cases per 10,000 FTEs within all private industries. State and local government accounted for an estimated 1,400 occupational illnesses in 2015. This translates to a 48.2 incident rate per 10,000 FTEs. State government accounted for 600 of those illnesses.

Table 1 illustrates the total number of recordable occupational illnesses, and their respective incidence rate by the specific illness subcategories: skin diseases or disorders, respiratory conditions, poisonings, hearing loss, and all other illnesses:

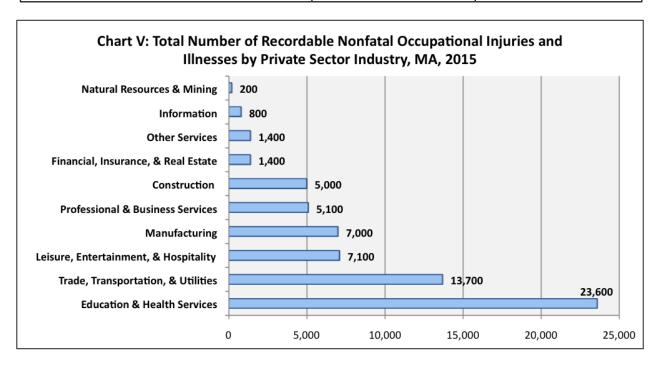
Table 1: Incidence rate and number of illness-only cases, private sector, 2014, Massachusetts					
Type of illness Incidence rate (per 10,000 FTE) Number of illnesses					
Skin diseases or disorders	1.5	400			
Respiratory conditions	1.0	200			
Poisonings	0.1	*			
Hearing loss	1.6	400			
All other illnesses	7.1	1,700			

<sup>\*</sup>Indicates data is unavailable or unpublishable.

# **Industry information**

Table 2 compares the 2015 total recordable rate (TRC) incidence rates by major industry sector between Massachusetts and the United States.

Table 2: Incidence rate of nonfatal occupational injuries and illnesses per 100 FTEs, by major industry sector, Massachusetts and United States, 2015					
Industry Massachusetts United States					
All Private Industry	2.7	3.0			
Goods-producing	3.3	3.7			
Natural Resources and Mining	3.2	3.7			
Construction	4.1	3.5			
Manufacturing	2.9	3.8			
Service-providing	2.6	2.9			
Trade, Transportation, and Utilities	3.1	3.6			
Information	1.0	1.3			
Finance, Insurance, and Real Estate	0.7	1.1			
Professional and Business Services	1.1	1.4			
<b>Educational and Health Services</b>	4.4	4.0			
Leisure, Entertainment, and Hospitality	3.5	3.5			
Other Services (except public administration) 1.6 2.3					



# Injury and illness case types

Work-related injuries and illnesses are recorded as three individual case types by employers:

- 1. Cases with days away from work, commonly identified in this report as DAFW.
- 2. Cases with job transfer or restricted duty, commonly identified as DJTR.
- 3. Other Recordable Cases, commonly identified as ORC.

In order for a case to be considered recordable by an employer, there are two criteria about the incident that have to be met. First, the injury or illness has to be determined to be work-related or caused by the work environment. Second, the incident needs to involve loss of consciousness, require days away from work, job transfer or restricted duty, medical treatment beyond first aid (i.e. stitches, prescribed medication from a doctor, surgery, etc.), involve a significant work-related injury or illness diagnosed by a physical or licensed healthcare professional or meet other recordkeeping criteria as specified under the Occupational Safety and Health Administration's regulation 29 CFR 1904. If both of these criteria are met, the incident is recordable.

DAFW cases are considered the most serious type of case due to the fact that the employee was not healthy enough to attend work (usually recommended by a medical professional) due to the severity of their injury or illness.

DJTR cases are deemed as such when a work-related injury or illness prohibits an employee from performing one or more of the main functions of that employee's job duties.

Cases that require more than first aid treatment or meet other recordkeeping criteria, but where there is no lost work time or job transfer or restriction are considered Other Recordable Cases (ORC).

In 2015, there were a total of 43,400 cases with DAFW and/or DJTR (also known as days away, restricted, or transferred (DART) cases) in all private sector industries and including state and local government. There were 34,900 cases with DAFW only and 8,500 cases with DJTR only. There were also 36,400 other recordable cases (ORC) that were not classified as either DAFW or DJTR cases, but were recordable under OSHA recordkeeping requirements.

One change involved the total (including private and public sector) number of DJTR cases was the number of cases increased from an estimated 7,100 cases in 2014 to 8,500 cases in 2015.

The table below provides the breakdown of total numbers of recordable case types by major industry sector and state government for 2015. The total count of DART cases can be calculated by adding the cases with DAFW and DJTR.

Table 3: Total Number of cases by major private industry and case type, private sector and state government, Massachusetts, 2015						
Industry	<b>DAFW Cases</b>	DJTR Cases	Other Recordable Cases			
<b>Education and Health Services</b>	9,500	2,600	11,600			
Trade, Transportation, and Utilities	7,200	1,800	4,700			
Manufacturing	3,500	1,100	2,300			
Leisure, Entertainment, and Hospitality	2,600	300	4,300			
<b>Professional and Business Services</b>	2,200	300	2,600			
Construction	2,100	400	2,500			
State Government	1,300	*	2,000			
Finance, Insurance, and Real Estate	800	100	500			
Other Services	700	100	500			
Information	300	100	300			
Natural Resources and Mining	100	*	100			

<sup>\*</sup>Indicates data is unavailable or unpublishable

# **Incidence rates**

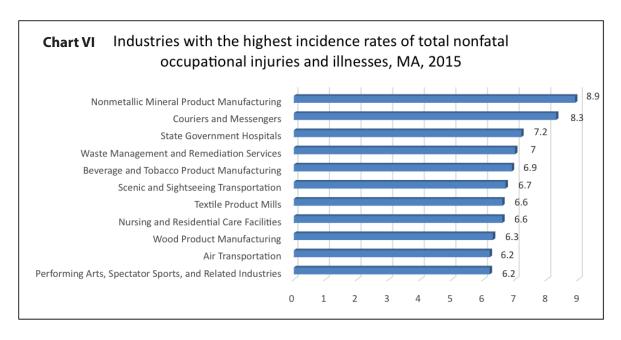
Table 4 shows the breakdown of Total Recordable Case (TRC) incidence rates and Days Away, Restricted, or Transferred (DART) rates for private industries, in addition to state government. The DART rate includes cases involving either Days Away From Work (DAFW), or Job Transfer or Restricted work duties (DJTR), or both.

Table 4: Total recordable incidence rate per 100 FTEs, by major industry and case type, private sector, Massachusetts, 2015							
Industry ORC DAFW DJTR DART Rate (DAFW+DJTR) (ORC+DAR							
<b>Education and Health Services</b>	2.2	1.7	0.5	2.2	4.4		
Construction	2.0	1.7	0.3	2.1	4.1		
Leisure, Entertainment, and Hospitality	2.1	1.2	0.1	1.4	3.5		
State Government	2.0	1.3	*	1.4	3.4		
Natural Resources and Mining	1.3	1.5	0.4	1.9	3.2		
Trade, Transportation, and Utilities	1.1	1.6	0.4	2.1	3.1		
Manufacturing	1.0	1.4	0.5	1.9	2.9		
Other Services	0.6	0.9	0.1	1.0	1.6		
Professional and Business Services	0.5	0.5	0.1	0.5	1.1		
Information	0.4	0.4	0.2	0.6	1.0		
Finance, Insurance, and Real Estate	0.2	0.4	*	0.4	0.7		

<sup>\*</sup>Indicates data is unavailable or unpublishable

Note: Due to rounding, components may not add up to totals.

In addition to the major industries above, chart VI shows selected sub-industries with the highest TRC incident rates in Massachusetts. Nonmetallic Mineral Product Manufacturing continues to be an industry with a high incidence rate. Courier and Messenger establishments had the second highest rate; while State government hospitals had the third highest incidence rate with 7.2 incidents per 100 FTEs.



# Case and demographic findings

The following section details the cases in which the injured or ill employee endured at least one full lost workday due to their incident. In 2015 there were an estimated total of 34,930 cases with days away from work in the Massachusetts workforce. This is approximately 43.8% of the 79,800 total nonfatal occupational injury and illness cases that were reported. Some basic information is asked about the employee, such as job title, age, or date of birth, date of hire, or length of service, race, or ethnic background, work shift start time, and time of injury or illness. It is with this data that we compile and publish specific demographic information about the characteristics of the employee. In addition to demographic information, specific case information that describes the nature, event, source, secondary source (if applicable), and part of body affected, is also collected.

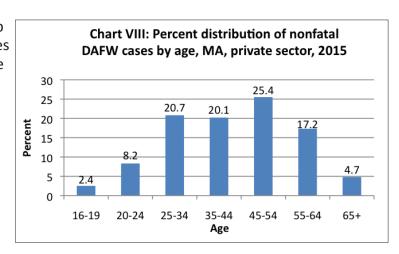
**Gender:** Of the 34,930 total cases with days away from work occurring in the Massachusetts workforce, 19,550 cases or approximately 56% involved a male employee. 14,510 or 41.5% involved a female worker. That leaves approximately 870 (2.5%) cases in which the gender was undetermined or unpublishable. The Massachusetts private sector workforce accounted for 29,020 DAFW cases, or 83% of the total. The state and local government accounted for approximately 5,910 DAFW cases or 17% of the total.

Table 5 shows the distribution of occupational injuries and illnesses by gender in selected major occupational fields in 2015.

Table 5: Number of injuries and illnesses by major occupation and gender, private industry, Massachusetts, 2015						
Category Men Women						
Management, business, and financial	530	470				
Computer, engineering, and science	130	40				
Education, legal, community service, arts, and media	300	970				
Healthcare practitioners	450	2,470				
Service	2,990	4,970				
Sales and related	580	660				
Office and administration support	1,150	960				
Farming, fishing, and forestry	20	20				
Construction and extraction	1,700	40				
Installation, maintenance, and repair	2,580	80				
Production	2,440	570				
Transportation and material moving	3,980	820				

<sup>\*</sup>Indicates data is unavailable or unpublishable

Age: Workers in the 45 to 54 age group accounted for 7,370 of the 29,020 cases with days away from work in 2015. The 25 to 34 year old age group accounted for 6,000 cases. These two age groups together amounted to approximately 46.1% of the total number of DAFW cases in 2015. The 35 to 44 age group experienced an estimated total of 5,840 DAFW cases while the 55 to 64 age group experienced 4,990 cases. Additionally, the 20-24 age group sustained 2,380 cases; the 65 and



over group sustained 1,350 cases; and lastly the 16-19 age group sustained an estimated 700 cases resulting in DAFW. Chart VIII embedded in this section displays the percent distribution of the individual age groups.

**Race:** Reporting of race or ethnic background is an optional field on the Survey of Occupational Injuries and Illnesses. Of the 29,020 cases with days away from work, 10,090 cases did not report race or ethnic background. White-only workers accounted for 13,140 of the total number of reported DAFW cases, Hispanic or Latino-only workers accounted for 3,200 cases, Black-only workers accounted for 2,140 cases, Asian-only workers accounted for 340 cases, and lastly American Indian or Alaskan Native-only workers accounted for 110 cases.

The following table summarizes the number of injuries and illnesses to White, Black, and Hispanic or Latino workers by selected occupational category in 2015.

Table 6: Number of injuries and illnesses to White, Black, and Hispanic or Latino workers, private industry, Massachusetts 2015					
Category	White	Black	Hispanic or Latino		
Management, business, and financial	650	50	40		
Computer, engineering, and science	100	-	-		
Education, legal, community service, arts, and media	620	180	120		
Healthcare practitioners and technical	1,950	170	20		
Service	2,440	1,200	1,260		
Sales and related	430	40	50		
Office and administrative support	590	70	180		
Farming, fishing, and forestry	-	-	20		
Construction and extraction	1,280	20	60		
Installation, maintenance, and repair	1,640	70	180		
Production	1,370	160	680		
Transportation and material moving	2,060	190	560		

<sup>-</sup> Denotes that data is unavailable or unpublishable.

**Nature of Injury:** Table 7 summarizes the total number of DAFW cases and the percent distribution of those cases by the nature of incident.

Table 7: Total count and percent distribution of DAFW cases by nature, Massachusetts, Private Industry, 2015 [Total Cases = 29,020]						
Nature of Injury or Illness Count Percentage						
Sprains, Strains, Tears	11,770	40.6%				
Soreness, Pain	4,380	15.1%				
Cuts, Lacerations, Punctures	3,250	11.2%				
Bruise, Contusions	2,820	9.7%				
Fractures	1,870	6.4%				
Heat (Thermal) Burns	570	2.0%				
Multiple Traumatic Injuries	330	1.1%				
Amputations	130	0.4%				
Chemical Burns and Corrosions	120	0.4%				
Carpal Tunnel Syndrome	80	0.3%				
Tendonitis	70	0.2%				

**Part of Body:** The trunk region is defined by the *Occupational Injury and Illness Classification System* (OIICS) manual as the "main part of the body, where the head and limbs are attached." In 2015, the trunk accounted for 7,060 DAFW cases. The back alone accounted for 5,670 of the cases involving the trunk, or 80.3% of the total.

The upper extremities, which include the shoulder, arms, hands, and fingers accounted for a large portion of the DAFW cases in 2015; in total there were an estimated 10,120 cases with DAFW.

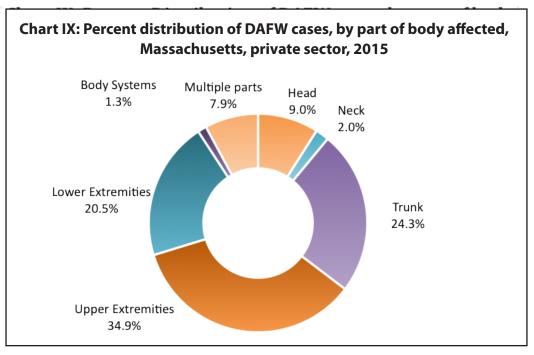
The lower extremities, which range from the upper leg to the toes, were identified as the part of body in 5.940 DAFW cases.

The head, including the face, was the affected part of body in 2,620, the eyes accounted for 570 of those cases. The neck was the specified as the affected part of the body in 590 cases.

Multiple body parts (other than two or more included in the same body region as listed above) accounted for 2,300 cases. Lastly, body systems (i.e. circulatory, gastrointestinal system, respiratory system, etc.) accounted for 370 DAFW cases in 2015.

**Source of injury or illness:** Chart X provides the overview of the percent distribution of the most common sources of incident named in the cases with days away from work.

**Event causing the injury or illness:** Table 8 shows that three of the event categories accounted for approximately 86% of the cases with DAFW. The remaining five categories accounted for 14% of the total number of cases with DAFW.



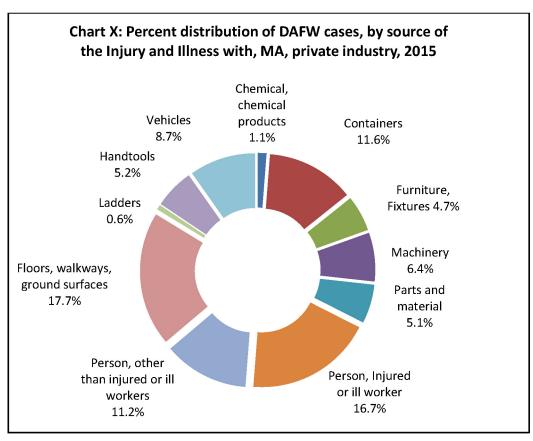
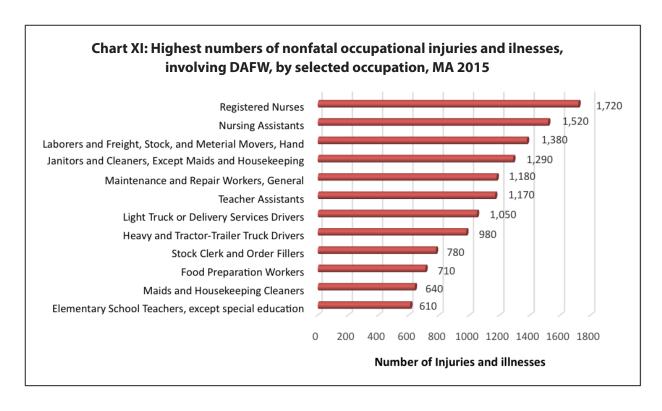


Table 8: Number of cases and percent distribution <sup>2</sup> of DAFW cases by event, Massachusetts, private industry, 2015 [Total Cases = 29,020]					
Event Category Number Percent					
Overexertion and Bodily Reaction	10,000	34.5%			
Falls, Slips, Trips	7,890	27.2%			
Contact with Object, Equipment	7,040	24.3%			
Violence and Other Injuries by Person or Animal	1,620	5.6%			
Transportation Incidents	1,220	4.2%			
Exposure to Harmful Substances or Environments	1,180	4.1%			
Fires and Explosions 40 0.1%					

Note: Components may not add up to totals.

**Occupation:** Occupations within the healthcare industry continue to incur a high number of injuries and/or illnesses involving days away from work. Registered Nurses (RN) and Nursing Assistants had a total of 1,720 and 1,520 cases respectively, requiring lost work days. Laborers and freight, stock, and material movers incurred 1,380 injuries and illnesses. The rest of the occupations with a high number of incidents are indicated in Chart X.



# Occupational health and safety resources in Massachusetts

#### **On-Site Consultation Program**

This program, administered by DLS, offers a free consultation service designed to help employers recognize and control potential safety and health hazards at their worksites, improve their safety and health program, assist in training employees, and possibly qualify for a one-year exemption from routine OSHA inspections. This service targets smaller businesses (less than 250 employees per establishment or 500 employees nationwide) in high hazard industries; such as manufacturing, healthcare, and construction. It is a confidential service in which your firm's name, and any other information you provide and any unsafe or unhealthy working conditions found, will not be reported routinely to the OSHA inspection staff. Visit mass.gov/dols/consult for more information.

### **Workplace Safety and Health Program**

The Workplace Safety and Health Program within DLS, provides technical assistance and performs investigations of workplace health and safety hazards within public sector workplaces in Massachusetts. Visit mass.gov/lwd/labor-standards/massachusetts-workplace-safety-and-health-program/ for more information.

## Department of Public Health's Occupational Health Surveillance Program

The Occupational Health Surveillance Program within the Department of Public Health, generates reports, fact sheets, and safety alerts regarding fatal occupational injuries. For more materials on this subject, please contact the Massachusetts Department of Public Health, Occupational Health Surveillance Program, 250 Washington Street, 6<sup>th</sup> Floor Boston, MA 02108. To speak with a representative directly, please call 1-800-338-5223. Reports are available on the program's website: mass.gov/eohhs/gov/departments/dph/programs/admin/dmoa/ohsp/

#### **Department of Industrial Accidents Safety Grant Program**

The Department of Industrial Accidents (DIA), through the Office of Safety, annually awards hundreds of thousands of dollars in safety training grants to various organizations. In each fiscal year, thousands of persons receive workplace training through programs funded by these DIA grants. This highly successful program provides monies for workplace safety training aimed at workers throughout the Commonwealth. For more information explore the following link: mass.gov/lwd/workers-compensation/safety/grant-program/safety-grant-program.html

#### **Material Request Information**

For more information about the 2015 report or past years reports, please contact the Massachusetts Department of Labor Standards, Occupational Safety and Health Statistics Program, 19 Staniford Street, 2<sup>nd</sup> Floor Boston, MA 02114; or call 617-626-6945. Information can also be found on our website at: mass.gov/lwd/labor-standards/occupational-safety-and-health-statistics-program/ Detailed statistical information can also be obtained from the Bureau of Labor Statistics at: bls.gov/bls/safety.htm

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