



# Massachusetts Survey of Occupational Injuries & Illnesses Report 2016



## Compiled by:

Executive Office of Labor and Workforce Development  
Department of Labor Standards, Occupational Safety and Health Statistics Program  
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### **Total Number of Recordable Incidents and Incidence rates:**

In 2016, there were approximately 77,800 work-related injuries and illnesses across the private and public sector workforce. This resulted in a Total Recordable Incidence Rate of 2.9 cases per 100 Full-Time Employees (FTEs).

### **Private sector workforce**

Of the Total Recordable Cases (TRC), 64,300 nonfatal work-related injuries and illnesses were reported within the Massachusetts' Private Sector workforce. This TRC translates into an incidence rate of 2.6 cases per 100 equivalent FTEs. In the private sector, there were 31,100 cases with Days Away From Work (DAFW), 6,500 cases that resulted in Days with Job Transfer or Restrictions (DJTR), and 26,700 Other Recordable Cases (ORCs).

### **Public sector workforce**

In 2016, the data for Massachusetts' combined public sector industry, including both the state and the local government employees was unpublishable.

Employees working for the State, however, accounted for 4,500 total recordable injuries and illnesses in 2016, for which the corresponding incidence rate was 4.7 incidents per 100 FTEs.

### **Over-the-year changes:**

Although most of the data remained relatively unchanged from the 2015 results, there were some statistically significant<sup>1</sup> changes that should be highlighted:

#### **Statistically significant changes in the total recordable incidence rates:**

- The incidence rate decreased for the *Mining, Quarrying, and Oil and Gas Extraction* (a sub-industry of the *Natural Resources and Mining* industry) from 4.5 incidents per 100 FTEs (in 2015) to 2.6 in 2016.
- There was an increase in the incidence rate among the Arts, Entertainment, and Recreation employees. In fact, in 2015 the Incidence rate was 2.7 incidents per 100 FTEs, whereas in 2016 the rate was 4.1.
- Lastly, the incidence rate for Healthcare and Social Assistance in the State and Local government sector was 5.4 per 100 FTEs in 2015, whereas the rate increased to 11.7 in 2016.



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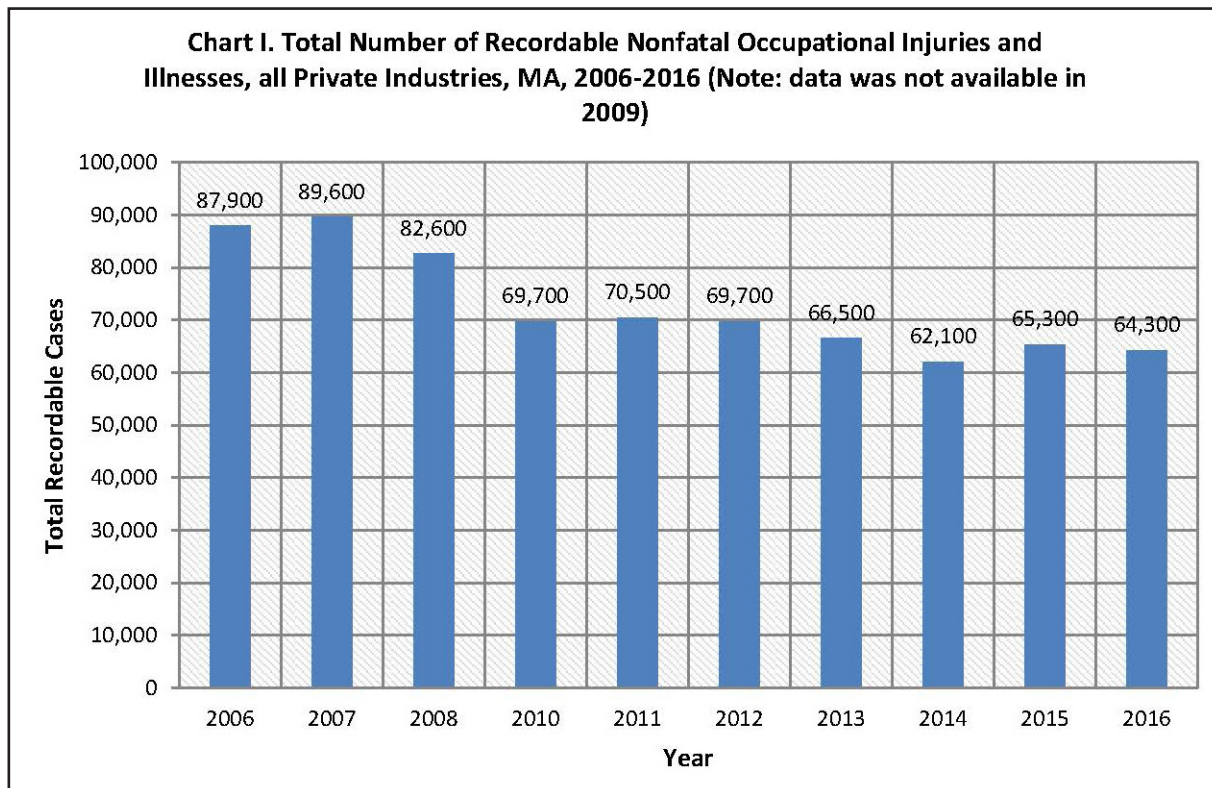
<sup>1</sup> Statistical significance was measured using a traditional statistical significance test at the 95% confidence interval.



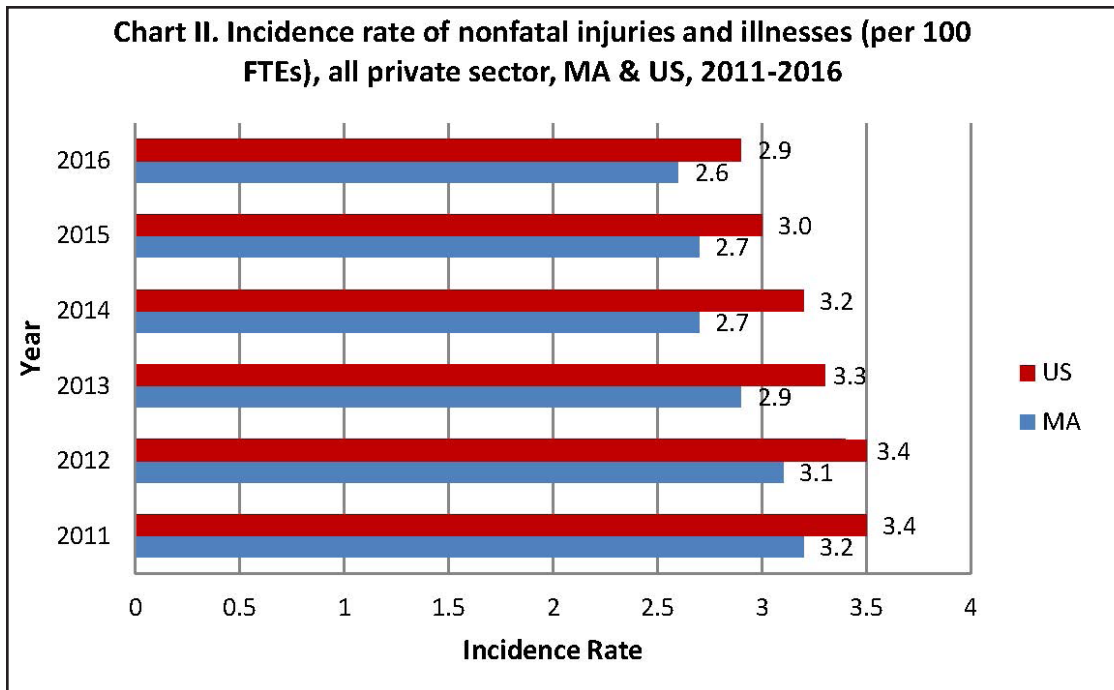
### Statistically significant changes in the total number of injuries and illnesses:

- Agriculture, Forestry, Fishing, and Hunting had 100 cases in 2015 and an increase to an estimated 200 cases in 2016.
- Transportation and Warehousing had an increase from 3,000 cases in 2015, to 3,900 in 2016.
- Arts, Entertainment, and Recreation employees had 700 cases in 2015 and 1,300 in 2016.
- State government employees had 3,400 cases in 2015 and 4,500 cases in 2016.
- The Service-providing sector within state government had 3,300 cases in 2015 and 4,400 cases in 2016.
- Lastly, State government's Education and Health Services sector had 1,300 cases in 2015 compared to 2,000 cases in 2016.

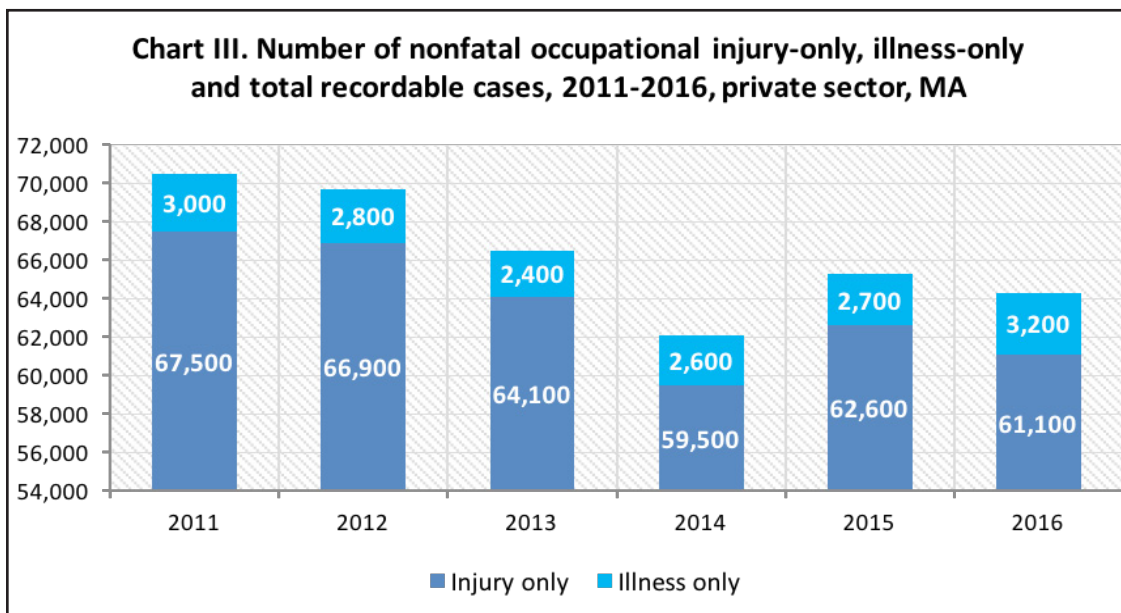
**Chart I** shows the total number of nonfatal Injuries and Illnesses from 2006-2016 for employees working in the Private Sector of Massachusetts. The data shows a downward trend over time in the total number of nonfatal injuries and illnesses.



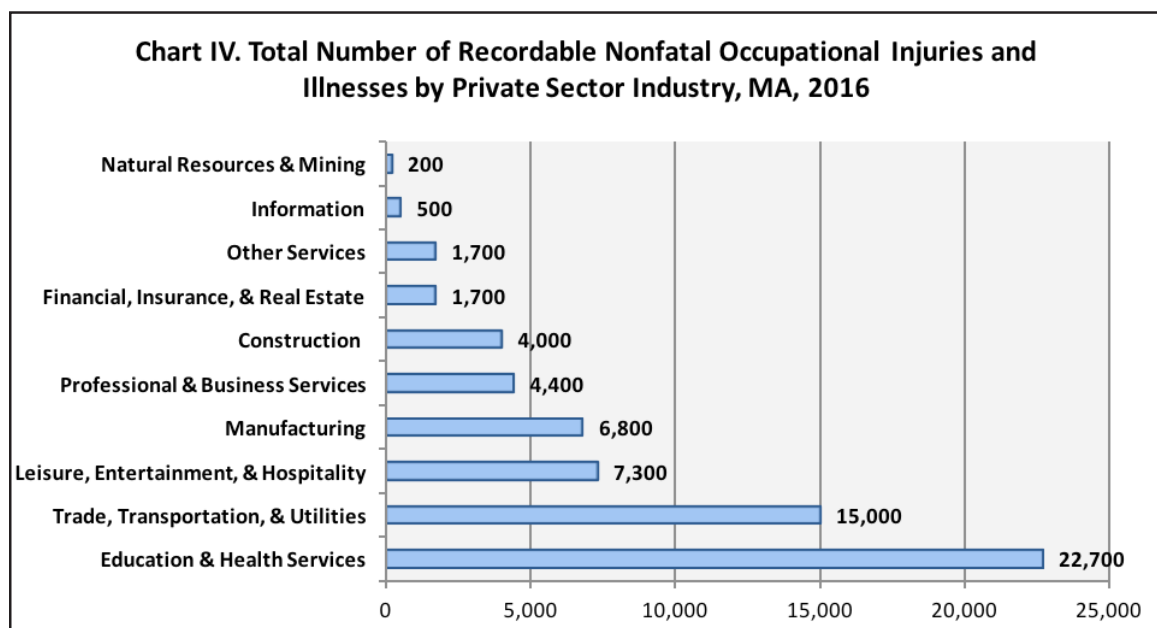
**Chart II** compares the Incidence rates between the U.S. and Massachusetts Private Sector workforce from 2011 to 2016.



**Chart III** shows a comparison of the total number of injury-only to illness-only cases in the Massachusetts Private Sector over a five-year period.



**Chart IV** displays the TRCs of both Injuries and Illnesses within the Private Sector in Massachusetts.



**Table 1** below illustrates the total number of recordable occupational illnesses within the private sector, and their respective incidence rates based on the type of illness sustained. The breakdown of illness type by category is the following: 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, 2016, Massachusetts		
Type of Illness	Incidence rate (per 10,000 FTE)	Number of Illnesses
Skin diseases or disorders	3.6	900
Respiratory conditions	1.4	300
Poisonings	*	*
Hearing loss	1.1	300
All other illnesses	7.0	1,700

\*Data was unpublishable



**Table 2** below compares the 2016 TRC incidence rates by major industry sector between Massachusetts and the United States.

<b>Table 2. Incidence Rate of Nonfatal Occupational Injuries and Illnesses per 100 FTEs, by Major Industry Sector and state government, MA and US, 2016</b>		
<b>Industry</b>	<b>Massachusetts</b>	<b>US</b>
<b>Goods-producing</b>	2.9	3.5
Natural Resources and Mining	3.7	4.2
Construction	3.0	3.2
Manufacturing	2.8	3.6
<b>Service-providing</b>	2.6	2.8
Trade, Transportation, and Utilities	3.3	3.4
Information	0.7	1.3
Finance, Insurance, and Real Estate	0.9	1.1
Professional and Business Services	0.9	1.4
Educational and Health Services	4.3	3.9
Leisure, Entertainment, and Hospitality	3.3	3.4
Other Services (except public administration)	2.1	2.3
<b>State Government</b>	4.7	3.7
<b>All Private Industry</b>	2.6	2.9

## 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 ORCs.

In 2016, there were a total of 41,800 cases with DAFW and/or DJTR (also known as DART cases) within the Private, State, and Local government sectors. There were 35,300 cases with DAFW and 6,500 cases with DJTR only. There were also 36,000 ORC that were classified as neither DAFW nor DJTR cases, but were recordable under OSHA recordkeeping requirements.

**Table 3** below provides the breakdown of the DAFW cases, DJTR cases, and ORCS by major industry sector and the state government in 2016. The total count for DART cases can be calculated by adding the cases with DAFW and DJTR.

<b>Table 3: Total Number of cases by major private industry and case type, Private Sector and state government, MA, 2016</b>			
<b>Industry</b>	<b>DAFW Cases</b>	<b>DJTR Cases</b>	<b>Other Recordable Cases</b>
<b>Education and Health Services</b>	10,400	2,000	10,200
<b>Trade, Transportation, and Utilities</b>	8,500	1,900	4,600
<b>Manufacturing</b>	3,000	1,300	2,500
<b>Leisure, Entertainment, and Hospitality</b>	2,700	400	4,100
<b>Professional and Business Services</b>	2,100	200	2,200
<b>Construction</b>	2,200	400	1,500
<b>State Government</b>	2,300	100	2,200
<b>Finance, Insurance, and Real Estate</b>	900	100	700
<b>Other Services</b>	900	*	700
<b>Information</b>	400	*	100
<b>Natural Resources and Mining</b>	100	*	100

\*Data was unpublishable

## Incidence rates

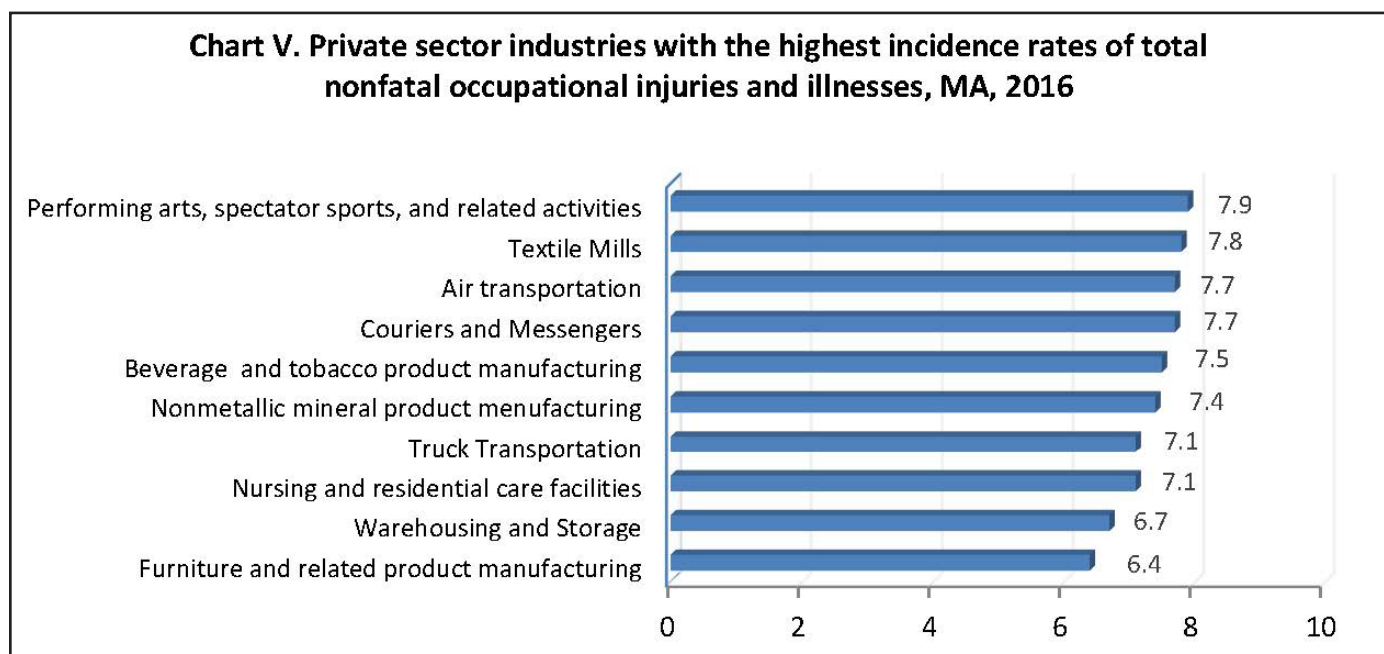
**Table 4** below shows the breakdown of incidence rates for the ORC, DAFW, DJTR, DART, and TRC by each industry including the state government.

Industry	ORC Rate	DAFW Rate	DJTR Rate	DART Rate (DAFW+DJTR)	TRC Rate (ORC+DART)
State Government	2.3	2.3	0.1	2.4	4.7
Education and Health Services	1.9	1.9	0.4	2.3	4.3
Natural Resources and Mining	1.0	1.9	0.8	2.7	3.7
Trade, Transportation, and Utilities	1.0	1.9	0.4	2.3	3.3
Leisure, Entertainment, and Hospitality	1.9	1.2	0.2	1.5	3.3
Construction	1.1	1.6	0.3	1.9	3.0
Manufacturing	1.0	1.2	0.5	1.8	2.8
Other Services	0.9	1.1	*	1.2	2.1
Finance, Insurance, and Real Estate	0.4	0.5	*	0.5	0.9
Professional and Business Services	0.4	0.4	*	0.5	0.9
Information	0.2	0.5	*	0.5	0.7

\*Data was unpublishable

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

**Chart V** shows selected sub-industries with the highest TRC incidence rates in Massachusetts. Hospitals and Nursing care and residential facilities continue to be industries with high incidence rates.





## Case and Demographic Findings

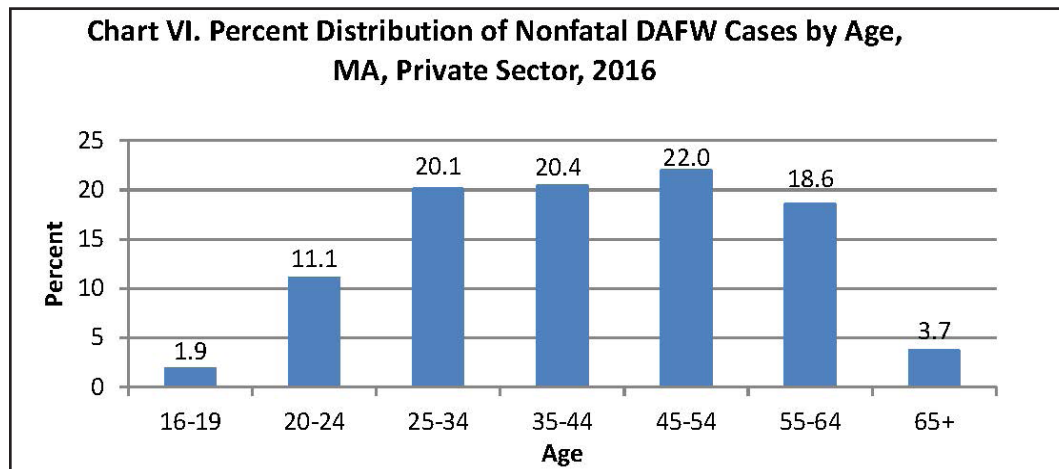
The following section details the cases in which the injured or ill employee endured at least one full lost workday due to their incident. In 2016, there were an estimated total of 35,270 cases with days away from work in the Massachusetts workforce. This is approximately 45.4% of the 77,800 total nonfatal 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 35,270 total cases with days away from work occurring in the Massachusetts workforce, 19,740 cases or approximately 56% involved a male employee. 15,050 or 42.7% involved a female worker. The Massachusetts Private Sector workforce accounted for 31,140 DAFW cases, or 88.1% of the total. There was no data reported for the State and Local government sector. However, the State alone had 2,300 DAFW cases.

**Table 5** below 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, 2016		
Category	Men	Women
Management, business, and financial	290	950
Computer, engineering, and science	200	60
Education, legal, community service, arts, and media	320	1,110
Healthcare practitioners and technical	390	2,340
Service	3,240	5,730
Sales and related	530	670
Office and administration support	1,490	1,510
Farming, fishing, and forestry	40	20
Construction and extraction	1,930	20
Installation, maintenance, and repair	2,530	80
Production	2,270	600
Transportation and material moving	4,130	620

**Age:** Workers in the 45 to 54 age group accounted for 7,560 of the 35,270 cases with days away from work in 2016. The 25 to 34 year old age group accounted for 6,740 cases. These two age groups together amounted to approximately 40.5% of the total number of DAFW cases in 2016. The 35 to 44 age group experienced an estimated total of 6,640 DAFW cases while the 55 to 64 age group experienced 6,640 cases. Additionally, the 20-24 age group sustained 3,630 cases; the 65 and over group sustained 1,200 cases; and lastly the 16-19 age group sustained an estimated 600 cases resulting in DAFW. Chart VII embedded in this section displays the percent distribution of the individual age groups.



**Race:** Reporting for race or ethnic background is an optional field on the Survey of Occupational Injuries and Illnesses. Of the 35,270 cases with days away from work, 14,440 cases did not report race or ethnic background. White-only workers accounted for 14,960 of the total number of DAFW cases, Hispanic-only workers accounted for 2,930 cases, Black-only workers accounted for 2,380 cases, Asian-only workers accounted for 400 cases, American Indian or Alaskan Native-only workers accounted for 100 cases, lastly, there were 40 cases that identified as multi-race.



**Table 6** below summarizes the number of injuries and illnesses to White, Black, and Hispanic or Latino workers by selected occupational category in 2016.

<b>Table 6. Number of Injuries and Illnesses to White, Black, and Hispanic or Latino Workers, Private Industry, Massachusetts 2016</b>			
<b>Category</b>	<b>White</b>	<b>Black</b>	<b>Hispanic or Latino</b>
Management, business, and financial	470	100	*
Computer, engineering, and science	120	*	*
Education, legal, community service, arts, and media	580	150	40
Healthcare practitioners and technical	1,550	140	20
Service	3,280	1,180	1,230
Sales and related	410	20	30
Office and administrative support	1,400	320	250
Farming, fishing, and forestry	20	*	20
Construction and extraction	1,340	80	120
Installation, maintenance, and repair	1,700	*	110
Production	1,180	110	500
Transportation and material moving	2,020	240	540

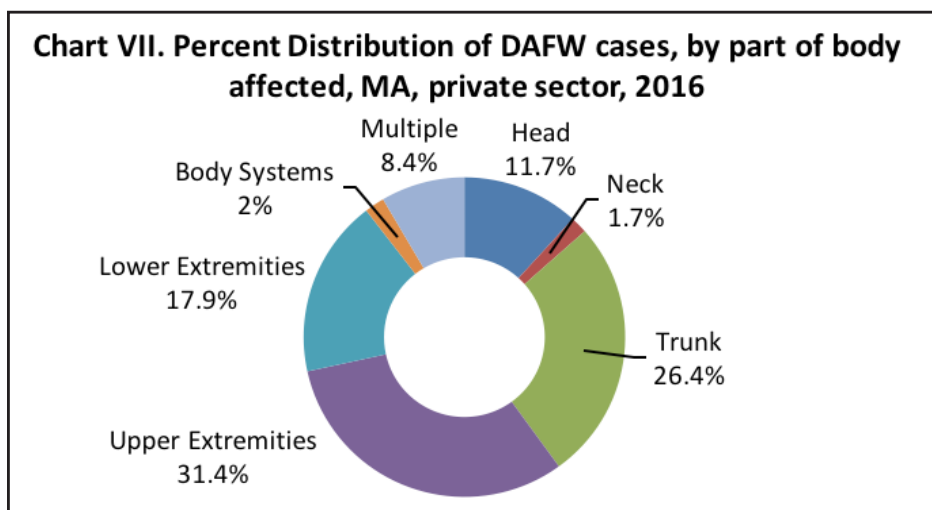
\*Data was unpublishable

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

<b>Table 7. Total number of cases and percent distribution of DAFW cases by nature, Massachusetts, Private Industry, 2016, [Total Cases = 35,270]</b>		
<b>Nature of Injury or Illness</b>	<b>Count</b>	<b>Percentage</b>
Sprains, Strains, Tears	13,000	41.7%
Soreness, Pain	4,510	14.5%
Cuts, Lacerations, Punctures	3,370	10.8%
Bruise, Contusions	3,050	9.8%
Fractures	1,710	5.5%
Heat (Thermal) Burns	480	1.5%
Multiple Traumatic Injuries	330	1.1%
Tendonitis	90	0.3%
Amputations	70	0.2%
Carpal Tunnel Syndrome	60	0.2%
Chemical Burns and Corrosions	50	0.2%

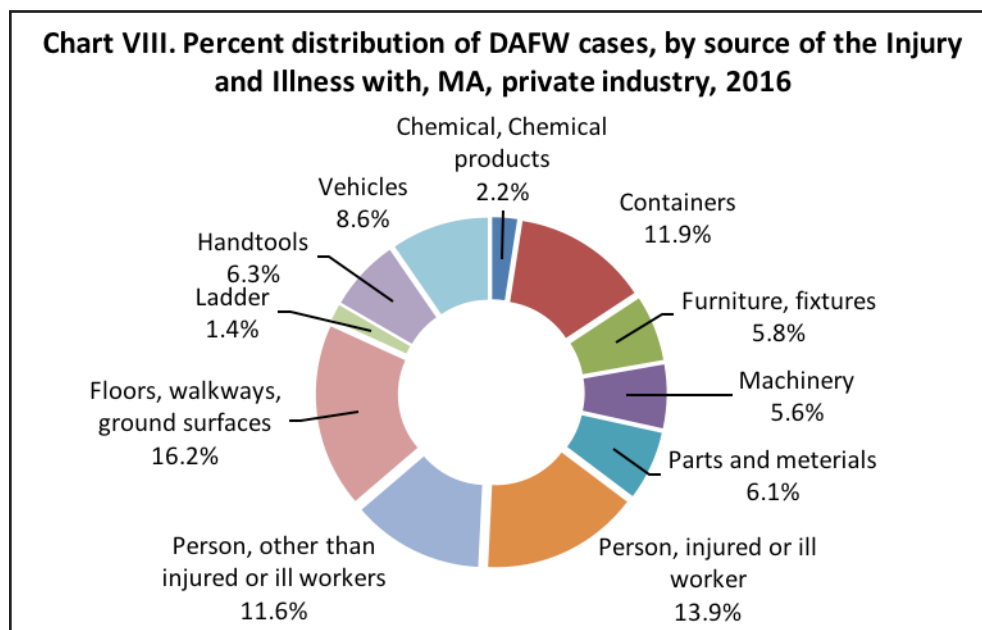
**Part of Body:** The trunk region is defined by the *Occupational Injury and Illness Classification System (OIICS)* manual as the “main part of the body, where the head and limbs are attached.” In 2016, the trunk accounted for 9,090 DAFW cases. The back alone accounted for 7,180 of the cases involving the trunk. The upper extremities, which include the shoulder, arms, hands, and fingers accounted for a large portion of the DAFW cases in 2016; in total there were an estimated 10,330 cases with DAFW. The lower extremities, which range from the upper leg to the toes, were identified as the part of body in 6,470 DAFW cases. The head, including the face, was the affected part of body in 4,200, the eyes accounted for 1,450 of those cases. The neck was the specified affected part of body in 530 cases. Multiple body parts (other than two or more included in the same body region as listed above) accounted for 3,450 cases. Lastly, body systems (i.e. circulatory, gastrointestinal system, respiratory system, etc.) accounted for 670 DAFW cases in 2016.

**Chart VII** displays the days away from work cases separated by the part of body and their percent contribution.





**Chart VIII** below displays the most common sources of incidents that lead to cases with days away from work.

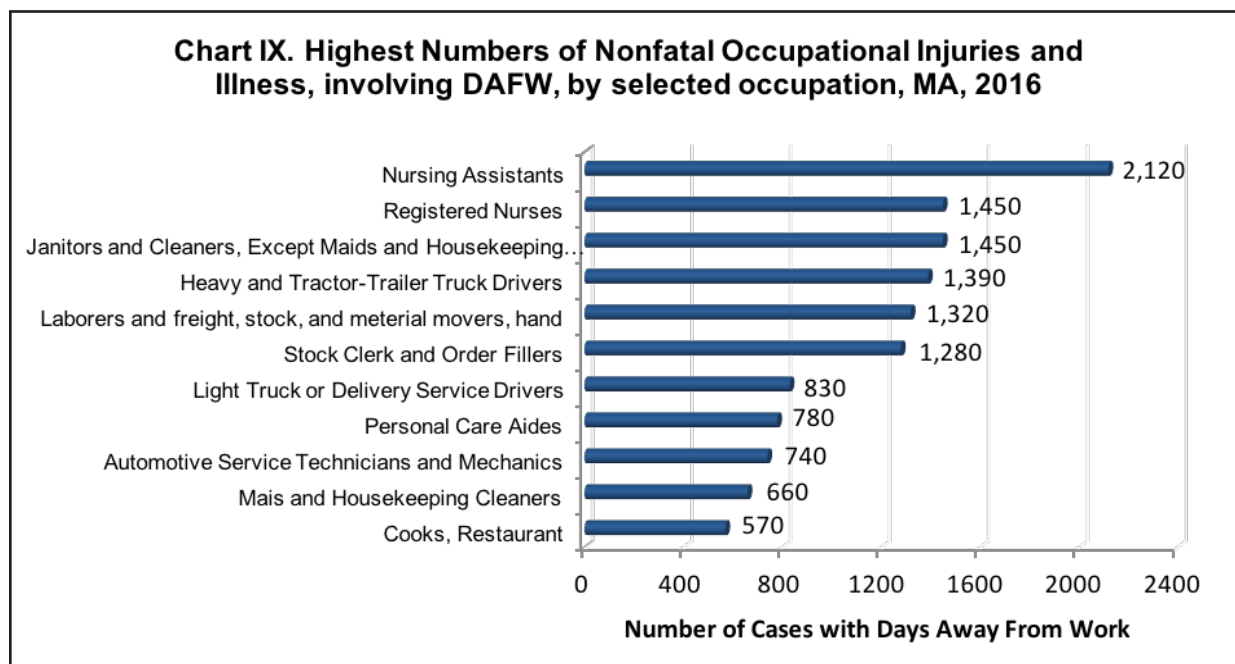


**Table 8** below shows a distribution of days away from work by the type of event. Three of the event categories accounted for approximately 84.2% of the cases with DAFW. The remaining four categories accounted for 15.4% of the total number of cases with DAFW.

Table 8. Number of Cases and Percent Distribution of DAFW Cases by Event, Massachusetts, Private industry, 2016, [Total Cases = 31,140]		
Event Category	Number	Percentage
Overexertion and Bodily Reaction	11,340	36.4%
Contact with Object, Equipment	7,630	24.5%
Falls, Slip, Trips	7,260	23.3%
Violence and Other Injuries by Person or Animal	1,790	5.7%
Exposure to Harmful Substances or Environment	1,680	5.4%
Transportation Incidents	1,350	4.3%
Fires and Explosions	*	*

\*Data was unpublishable

**Chart IX** provides selected occupations with the highest number of Days Away from Work cases.). Occupations within the healthcare industry continue to incur a high number of injuries and/or illnesses involving days away from work. Nursing Assistants had a total of 2,120 cases; whereas both Registered Nurses and Janitors and Cleaners (Except Maids and Housekeepers) had a total of 1,450 incidents requiring lost work time. Laborers and freight, stock, and material movers incurred 1,320 DAFW cases. The rest of the occupations with a high number of incidents are indicated in the chart below.



## 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.

DLS' Occupational Safety and Health Statistics Program administers the Survey of Occupational Injuries and Illnesses (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 invaluable 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/](https://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.



# 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](https://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/](https://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/](https://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](https://mass.gov/lwd/workers-compensation/safety/grant-program/safety-grant-program.html)





## Material Request Information

For more information about the **2016** report or past year's reports, please contact:

Massachusetts Department of Labor Standards,  
Occupational Safety and Health Statistics Program,  
19 Staniford Street, 2nd 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/](https://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](https://bls.gov/bls/safety.htm)



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