

# Emergency department visits for work-related injuries among 18- to 24-year-olds

Massachusetts  
2009 - 2013

**Table 1. Summary of All ED Visits**

N = Number of Visit

% = Percent of Visits

		All Visits			
		N	%	Visits per 10,000 FTEs	95% CI
<b>Total</b>		<b>36,696</b>	<b>100</b>	<b>276.6</b>	<b>274-279</b>
<b>Age</b>	<b>18</b>	2,553	7.0	302.2	291-314
	<b>19</b>	4,142	11.3	375.7	364-387
	<b>20</b>	5,013	13.7	298.9	291-307
	<b>21</b>	5,465	14.9	313.4	305-322
	<b>22</b>	6,232	17.0	294.8	288-302
	<b>23</b>	6,590	18.0	249.3	243-255
	<b>24</b>	6,701	18.3	213.3	208-218
<b>Gender<sup>+</sup></b>	<b>Male</b>	23,636	64.4	378.5	374-383
	<b>Female</b>	13,060	35.6	186.0	183-189
<b>Race &amp; Ethnicity<sup>+</sup></b>	<b>White only, non-Hispanic</b>	27,595	75.2	275.3	272-278
	<b>Hispanic</b>	4,931	13.4	287.3	279-295
	<b>Black only, non-Hispanic</b>	2,246	6.1	301.2	289-314
	<b>Asian only, non-Hispanic</b>	503	1.4	85.2	78-93
	<b>Multi-racial</b>	287	0.8	75.4	67-84
<b>Year of Hospital Visit</b>	<b>2009</b>	7,795	21.2	278.1	272-284
	<b>2010</b>	7,724	21.0	313.3	306-320
	<b>2011</b>	7,545	20.6	292.5	286-299
	<b>2012</b>	7,127	19.4	260.1	254-266
	<b>2013</b>	6,505	17.7	242.7	237-249

(continued on next page)

Source: Emergency Discharge Data, for 1 Jan 2009 through 31 Dec 2013, Massachusetts Center for Health Information and Analysis.

Counts not shown and rates not calculated for cells with less than 11 cases based on the CHIA rules pertaining to confidentiality.

Numbers may not add to total due to missing information. Percentages may not add to 100 due to rounding error.

An ED visit for an injury is defined as any case having an ICD-9-CM Nature of Injury Code of 800-999 in the primary diagnosis field.

Attribution of work-relatedness is based on designation of Workers' Compensation Insurance as expected payer.

Injuries per 10,000 FTE calculated as number of injury / FTE\*10,000; FTEs=total hours per year / 2000.

Total hours worked for Massachusetts residents obtained from Current Population Survey, Bureau of Labor Statistics, Jan 2009 through Dec 2013.

<sup>+</sup>Difference is significant based on 95% confidence intervals; however, the standard error of the denominator was not taken into account when calculating confidence intervals.

# Emergency department visits for work-related injuries among 18- to 24-year-olds

Massachusetts  
2009 - 2013

**Table 1. Summary of All ED Visits**

(continued from previous page)

		All Visits			
		N	%	Visits per 10,000 FTEs	95% CI
Nature of Injury	Open wounds	14,660	39.9	110.5	109-112
	Sprains	6,982	19.0	52.6	51-54
	Superficial/Contusions	6,555	17.9	49.4	48-51
	Burns	2,032	5.5	15.3	15-16
	Fractures	1,462	4.0	11.0	11-12
	Internal organ	560	1.5	4.2	4-5
	Crushing	475	1.3	3.6	3-4
	Dislocations	261	0.7	2.0	1.7-2.2
	Amputations	160	0.4	1.2	1.0-1.4
	Other <sup>a</sup>	1,288	3.5	9.7	9-10
	Unspecified & Missing	2,261	6.2	17.0	16-18
External Cause of Injury	Cut/pierce	11,081	30.2	83.5	82-85
	Struck by/against	6,190	16.9	46.7	46-48
	Overexertion	4,295	11.7	32.4	31-33
	Falls	3,471	9.5	26.2	25-27
	Fire/burn	2,004	5.5	15.1	14-16
	Machinery	1,169	3.2	8.8	8-9
	Motor vehicle	876	2.4	6.6	6-7
	Natural/environmental	851	2.3	6.4	6-7
	Poisoning	154	0.4	1.2	1.0-1.3
	Other transportation	116	0.3	0.9	0.7-1.0
	Other <sup>b</sup>	4,180	11.4	31.5	31-33
	Unspecified & Missing	2,309	6.3	17.4	17-18

(a) Other includes blood vessel injuries, nerve injuries, and system wide and late effect injuries.

(b) Other includes drowning, suffocation, firearm, other specified, and not elsewhere specified.

Nature of Injury and Body Region groupings are based on Barell Injury Matrix, Barell et al., *Inj Prev*, 2002 Jun;8(2):91-96.

External Cause of Injury groupings are based on 'ICD-9 Framework for Presenting Injury Mortality Data,' MMWR Recommendations and Reports, August 29, 1997, Volume 46/NORR-14.

# Emergency department visits for work-related injuries among 18- to 24-year-olds

Massachusetts  
2009 - 2013

**Table 2. Nature of Injury by Gender and Race & Ethnicity**

N = Number of Visits  
% = Percent of Visits

		Gender				Race & Ethnicity							
		Males		Females		White non-Hispanic		Hispanic		Black non-Hispanic		Other, non-Hispanic	
		N	%	N	%	N	%	N	%	N	%	N	%
<b>Total</b>		<b>23,636</b>	<b>100</b>	<b>13,060</b>	<b>100</b>	<b>27,595</b>	<b>100</b>	<b>4,931</b>	<b>100</b>	<b>2,246</b>	<b>100</b>	<b>824</b>	<b>100</b>
<b>Nature of Injury</b>	<b>Open wounds</b>	10,569	44.7	4,091	31.3	11,159	40.4	2,003	40.6	726	32.3	332	40.3
	<b>Sprains</b>	3,901	16.5	3,081	23.6	5,157	18.7	957	19.4	555	24.7	130	15.8
	<b>Superficial/contusions</b>	3,804	16.1	2,751	21.1	4,888	17.7	821	16.6	484	21.5	155	18.8
	<b>Burns</b>	1,091	4.6	941	7.2	1,471	5.3	328	6.7	116	5.2	48	5.8
	<b>Fractures</b>	1,074	4.5	388	3.0	1,103	4.0	219	4.4	62	2.8	31	3.8
	<b>Crushing</b>	368	1.6	107	0.8	346	1.3	71	1.4	32	1.4	14	1.7
	<b>Internal organ</b>	306	1.3	254	1.9	471	1.7	47	1.0	24	1.1	11	1.3
	<b>Dislocations</b>	191	0.8	70	0.5	194	0.7	27	0.5	21	0.9	11	1.3
	<b>Amputations</b>	139	0.6	21	0.2	97	0.4	38	0.8	12	0.5	b	
	<b>Other<sup>a</sup></b>	972	4.1	316	2.4	1,032	3.7	123	2.5	48	2.1	31	3.8
<b>Unspecified &amp; Missing</b>		1,221	5.2	1,040	8.0	1,677	6.1	297	6.0	166	7.4	b	

Source: Emergency Discharge Data, for 1 Jan 2009 through 31 Dec 2013, Massachusetts Center for Health Information and Analysis.

(a) Other includes blood vessel injuries, nerve injuries, and system wide and late effect injuries.

(b) Counts not shown for cells with less than 11 cases based on the CHIA rules pertaining to confidentiality. Numbers may not add to total due to missing information.

An ED visit for an injury is defined as any case having an ICD-9-CM Nature of Injury Code of 800-999 in the primary diagnosis field.

Attribution of work-relatedness is based on designation of Workers' Compensation Insurance as expected payer.

Nature of Injury and Body Region groupings are based on Barell Injury Matrix, Barell et al., *Inj Prev*, 2002 Jun;8(2):91-96.

# Emergency department visits for work-related injuries among 18- to 24-year-olds

Massachusetts  
2009 - 2013

Table 3. Nature of Injury by Age

N = Number of Visits  
% = Percent of Visits

		Age													
		18		19		20		21		22		23		24	
		N	%	N	%	N	%	N	%	N	%	N	%	N	%
<b>Total</b>		<b>2,553</b>	<b>100</b>	<b>4,142</b>	<b>100</b>	<b>5,013</b>	<b>100</b>	<b>5,465</b>	<b>100</b>	<b>6,232</b>	<b>100</b>	<b>6,590</b>	<b>100</b>	<b>6,701</b>	<b>100</b>
<b>Nature of Injury</b>	<b>Open Wounds</b>	1,237	48.5	1,881	45.4	2,168	43.2	2,142	39.2	2,394	38.4	2,451	37.2	2,387	35.6
	<b>Sprains</b>	322	12.6	663	16.0	886	17.7	1,057	19.3	1,217	19.5	1,388	21.1	1,449	21.6
	<b>Superficial/ Contusions</b>	400	15.7	652	15.7	816	16.3	998	18.3	1,165	18.7	1,238	18.8	1,286	19.2
	<b>Burns</b>	210	8.2	316	7.6	310	6.2	298	5.5	333	5.3	278	4.2	287	4.3
	<b>Fractures</b>	85	3.3	145	3.5	199	4.0	203	3.7	248	4.0	278	4.2	304	4.5
	<b>Crushing</b>	24	0.9	55	1.3	71	1.4	71	1.3	92	1.5	80	1.2	82	1.2
	<b>Internal Organ</b>	51	2.0	60	1.4	82	1.6	75	1.4	93	1.5	102	1.5	97	1.4
	<b>Dislocations</b>	16	0.6	30	0.7	30	0.6	44	0.8	43	0.7	45	0.7	53	0.8
	<b>Amputations</b>	19	0.7	12	0.3	26	0.5	29	0.5	22	0.4	27	0.4	25	0.4
	<b>Other <sup>a</sup></b>	73	2.9	122	2.9	146	2.9	208	3.8	224	3.6	254	3.9	261	3.9
<b>Unspecified &amp; Missing</b>		116	4.5	206	5.0	279	5.6	340	6.2	401	6.4	449	6.8	470	7.0

Source: Emergency Discharge Data, for 1 Jan 2009 through 31 Dec 2013, Massachusetts Center for Health Information and Analysis.

(a) Other includes blood vessel injuries, nerve injuries, and system wide and late effect injuries.

Counts not shown for cells with less than 11 cases based on the CHIA rules pertaining to confidentiality. Numbers may not add to total due to missing information.

An ED visit for an injury is defined as any case having an ICD-9-CM Nature of Injury Code of 800-999 in the primary diagnosis field. Attribution of work-relatedness is based on designation of Workers' Compensation Insurance as expected payer.

Nature of Injury and Body Region groupings are based on Barell Injury Matrix, Barell et al., *Inj Prev*, 2002 Jun;8(2):91-96.

# Emergency department visits for work-related injuries among 18- to 24-year-olds

Massachusetts  
2009 - 2013

Table 4. Nature of Injury by Body Part

N = Number of Visits  
% = Percent of Visits

	Total	Visits	
		N	%
		<b>36,696</b>	<b>100</b>
	<b>Open Wounds</b>	<b>14,660</b>	<b>39.9</b>
	Extremities	13,390	91.3
	Head & neck	1,191	8.1
	<b>Sprains</b>	<b>6,982</b>	<b>19.0</b>
	Extremities	3,982	57.0
	Spine & Back	2,071	29.7
	Torso	752	10.8
	<b>Superficial/contusions</b>	<b>6,555</b>	<b>17.9</b>
	Extremities	4,235	64.6
	Head & neck	1,552	23.7
	Torso	657	10.0
	<b>Burns</b>	<b>2,032</b>	<b>5.5</b>
	Extremities	1,665	81.9
	Head & neck	287	14.1
	Torso	65	3.2
	<b>Fractures</b>	<b>1,462</b>	<b>4.0</b>
	Extremities	1,326	90.7
	Head & neck	87	6.0
	<b>Internal Organ</b>	<b>560</b>	<b>1.5</b>
	Head & neck*	552	98.6
	<b>Crushing</b>	<b>475</b>	<b>1.3</b>
	Extremities	473	99.6
	<b>Dislocations</b>	<b>261</b>	<b>0.7</b>
	Extremities	258	98.9
	<b>Amputations</b>	<b>160</b>	<b>0.4</b>
	Extremities	160	100
	<b>Other<sup>a</sup></b>	<b>1,288</b>	<b>3.5</b>
	<b>Unspecified &amp; Missing</b>	<b>2,261</b>	<b>6.2</b>
	Extremities	945	41.8
	Head & neck	1,026	45.4
	Torso	138	6.1

Source: Emergency Discharge Data, for 1 Jan 2009 through 31 Dec 2013, Massachusetts Center for Health Information and Analysis

(a) Other includes blood vessel injuries and nerve injuries, system wide and late effect injuries.

\* 540 of these injuries are concussions.

Counts not shown for cells with less than 11 cases based on CHIA rules pertaining to confidentiality. Numbers may not add to total due to missing information. Not all subcategories shown for each nature of injury category.

An ED visit for an injury is defined as any case having an ICD-9-CM Nature of Injury Code of 800-999 in the primary diagnosis field. Attribution of work-relatedness is based on designation of Workers' Compensation Insurance as expected payer.

Nature of Injury and Body Region groupings are based on Barell Injury Matrix, Barell et al., *Inj Prev*, 2002 Jun;8(2):91-96.

# Emergency department visits for work-related injuries among 18- to 24-year-olds

Massachusetts  
2009 - 2013

**Table 5. External Cause of Injury**

N = Number of Visits  
% = Percent of Visits

	Total	Visits	
		N	%
<b>External Cause of Injury</b>	<b>36,696</b>	<b>100</b>	
<b>Cut/pierce</b>	<b>11,081</b>	<b>30.2</b>	
<b>Struck by/against</b>	<b>6,190</b>	<b>16.9</b>	
<b>Overexertion</b>	<b>4,295</b>	<b>11.7</b>	
<b>Falls</b>	<b>3,471</b>	<b>9.5</b>	
Fall to same level	1,634	47.1	
Fall from stairs	316	9.1	
Fall from ladder	263	7.6	
Fall to lower level	231	6.7	
Fall into opening	29	0.8	
Fall from building	21	0.6	
Fall to same level w/person	10	0.3	
Other falls	967	27.9	
<b>Fire/burn</b>	<b>2,004</b>	<b>5.5</b>	
Burn	1,889	94.3	
Fire	115	5.7	
<b>Machinery</b>	<b>1,169</b>	<b>3.2</b>	
<b>Motor vehicle</b>	<b>876</b>	<b>2.4</b>	
Driver/passenger motor vehicle	720	82.2	
Pedestrian	72	8.2	
Unspecified Person	59	6.7	
<b>Natural/environmental</b>	<b>851</b>	<b>2.3</b>	
Sting, non-poisonous	611	71.8	
Sting, poisonous	142	16.7	
<b>Poisoning</b>	<b>154</b>	<b>0.4</b>	
<b>Other Transportation</b>	<b>116</b>	<b>0.3</b>	
Other transportation	86	74.1	
Pedestrian, non motor vehicle	18	15.5	
Pedal cyclist, non motor vehicle	12	10.3	
<b>Other <sup>a</sup></b>	<b>4,180</b>	<b>11.4</b>	
<b>Unspecified &amp; Missing</b>	<b>2,309</b>	<b>6.3</b>	

Source: Emergency Discharge Data, for 1 Jan 2009 through 31 Dec 2013, Massachusetts Center for Health Information and Analysis.

(a) Other includes drowning, suffocation, firearm, other specified, and not elsewhere specified

Counts not shown cells with less than 11 cases based on the CHIA rules pertaining to confidentiality. Numbers may not add to total due to missing information. Not all subcategories shown for each nature of injury category.

An ED visit for an injury is defined as any case having an ICD-9-CM Nature of Injury Code of 800-999 in the primary diagnosis field. Attribution of work-relatedness is based on designation of Workers' Compensation Insurance as expected payer.

External Cause of Injury groupings are based on 'ICD-9 Framework for Presenting Injury Mortality Data,' MMWR Recommendations and Reports, August 29, 1997, Volume 46/NORR-14.

# Emergency department visits for work-related injuries among 18- to 24-year-olds

Massachusetts  
2009 - 2013

**Table 6. Visits Distributed by Month**

N = Number of Visits

% = Percent of Visits

		Visits	
		N	%
Total		36,696	100
Month of Injury	January	2,639	7.2
	February	2,417	6.6
	March	2,649	7.2
	April	2,751	7.5
	May	3,152	8.6
	June	3,563	9.7
	July	4,011	10.9
	August	3,886	10.6
	September	3,143	8.6
	October	3,158	8.6
	November	2,754	7.5
	December	2,573	7.0

Source: Emergency Discharge Data, for 1 Jan 2009 through 31 Dec 2013, Massachusetts Center for Health Information and Analysis.

Counts not shown for cells with less than 11 cases based on the CHIA rules pertaining to confidentiality.

An ED visit for an injury is defined as any case having an ICD-9-CM Nature of Injury Code of 800-999 in the primary diagnosis field. Attribution of work-relatedness is based on designation of Workers' Compensation Insurance as expected payer.