

INJURIES

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TO MASSACHUSETTS RESIDENTS • 2004

**Massachusetts Department of Public Health
Injury Surveillance Program**

April 2007

INJURIES TO MASSACHUSETTS RESIDENTS • 2004

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April 2007

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Executive Summary

Injuries are a major public health problem in Massachusetts and around the world. Injuries, in fact, claim more lives worldwide than any disease group. It is estimated that about one fourth of the U.S. population will sustain a nonfatal injury requiring medical attention each year.¹ These nonfatal injuries not only cause temporary pain and inconvenience, they may also be associated with life-long disability. Due to the extent of this health problem the economic impact is enormous. Nationwide, the financial cost of injuries is estimated at more than \$224 billion per year.² In Massachusetts, in 2004, total acute care hospital charges for nonfatal injury-related hospital stays and emergency department visits exceeded \$1.8 billion.

Injuries are the leading cause of death for Massachusetts residents, ages 1 to 44 years, and the fourth leading cause of death for all ages combined. On an average day in 2004, there were 7 injury deaths and over 2,300 nonfatal injuries (includes inpatient, observation, and emergency department visits) among Massachusetts residents treated at acute care hospitals. In 2004, injury deaths ranked second only to cancer deaths in total years of potential life lost (YPLL). On average, an injury death results in 35.4 years of potential life lost per person.

This report describes the overall magnitude of the injury problem in Massachusetts, the causes of these injuries and the groups with the highest rates of injury. This information will assist in the development, implementation, and evaluation of effective interventions. Important findings are summarized below:

Injury Deaths, 2004

- 2,615 injury fatalities occurred among MA residents during 2004; an age-adjusted rate of 38.6 per 100,000 residents.

¹ Christoffel, T., Gallagher. S. *Injury Prevention and Public Health*. Maryland: Aspen Publishers, 1999.

² National Center for Injury Prevention and Control. *Injury Fact Book 2001-2002*. Atlanta, GA: Centers for Disease Control and Prevention.

- Males had a rate of injury death twice that of females (age-adjusted rates were 55.5 and 26.9 per 100,000 respectively).
- Black, non-Hispanic and White, non-Hispanic residents had the highest injury death rates (age-adjusted rates were 41.6 and 39.1 per 100,000 respectively).
- The leading causes of injury death were poisoning, motor vehicle traffic, suffocation, fall, and firearm. But rates for the leading causes of injury death varied considerably by age group:
 - Younger age groups (15-19 and 20-24) had higher rates for motor vehicle traffic-related injuries and firearm injuries.
 - Poisoning death rates peaked among persons ages 35-44.
 - Among persons ages 65 and older, fall-related injury death rates more than doubled by each successive age group (8.6, 25.1, and 65.4 per 100,000 for ages 65-74, 75-84, and 85+ respectively).
- White, non-Hispanic residents had the highest age-adjusted death rates for unintentional injury and suicide (20.3 and 7.1 per 100,000, respectively).
- Black, non-Hispanic residents had the highest age-adjusted homicide rate (15.7 per 100,000).

Nonfatal Injuries, 2004

Injury-related Hospital Stays

- Among MA residents there were 64,788 hospital stays in 2004 (55,355 injury-related inpatient hospital discharges and 9,433 observation bed stays).
- Males had a higher rate of injury-related hospital stays than females.
- The leading causes of injury-related hospital stays were fall, poisoning, and motor vehicle traffic. Rates for the leading causes varied by age group:
 - Motor vehicle traffic-related injury rates were highest among persons ages 15-19 and 20-24.
 - Fall-related injury rates began increasing at ages 35-44 and continued to rise throughout the life span. Persons ages 65 and over had the highest rates.

- Charges for injury-related acute care inpatient hospital discharges totaled \$1.1 billion.
 - Unintentional falls accounted for the highest charges among injury-related acute care inpatient hospital discharges (\$501 million).

towards reducing the number of preventable injuries to our residents.

Injury-related Emergency Department Visits

- In 2004, there were 710,189 injury-related emergency department (ED) visits among MA residents.
- Males had a higher rate of injury-related ED visits than females.
- The leading causes of injury-related ED visits were fall, struck-by or against an object, motor vehicle traffic, and overexertion.
 - Fall-related injury rates were highest among persons ages 75 and older and children ages 0-14 years.
 - Injury rates for struck-by/or against an object were highest among youth ages 15-19.
 - Motor vehicle traffic-related injury rates were highest among youth and young adults ages 15-19 and 20-24.
- Acute care hospital charges for injury-related ED visits totaled \$616 million.

Conclusion

Massachusetts has a long history of injury surveillance and prevention activities. The success of these activities is evident in the Commonwealth's injury rates, which are among the lowest in the nation. However, the data presented here highlight the fact that the burden of injury is still substantial among Massachusetts residents and indicate the need for continued work in the area of injury prevention and control.

Most injuries are preventable. Injuries generally follow a predictable sequence of events, and interventions aimed at reducing or eliminating injuries can occur at multiple points in this sequence. Strategies aimed at reducing injuries are often referred to as the "3E's" of prevention: Education, Enactment and enforcement of laws, and Environmental modification and engineering. Using these widely accepted strategies and building on the Commonwealth's foundation in the field of injury prevention, we will continue to work

Methods and Limitations

General Methodology

For this report, death certificate data from the Massachusetts Registry of Vital Records and Statistics, and statewide inpatient hospital discharge, observation bed stay, and emergency department data from the Massachusetts Division of Health Care Finance and Policy were used for analysis. The report is based on calendar year 2004 data.

Injuries are classified according to specific codes in the International Classification of Diseases (ICD) manual. These codes provide information on the “cause” of the injury, such as fall or motor vehicle crash, and the “intent” of the injury such as assault, self-inflicted, or unintentional. For this report, we selected all injury codes (according to ICD-10) from the primary cause of death field to define injury deaths. For nonfatal injuries we selected all injury codes (according to ICD-9) from the primary and associated diagnostic fields to determine whether a case was “injury-related”. Injury deaths are always coded using the primary cause of death field, while nonfatal injuries can be captured in any of the diagnostic fields. It is not possible to determine whether primary treatment is for the coded injury or another reason coinciding with the injury. Nonfatal injuries in this report, therefore, reflect the injury “burden” or injury-related cases rather than an exact count of injuries.

Throughout the report we compare fatal to nonfatal injuries, and where considered useful we provide injury counts and rates by specific data source (i.e., death, hospital discharge, observation bed stay, or ED visit). For certain tables, hospital discharges and observation bed stays are combined as “hospital stays” for ease of interpretation.

Limitations

This report has several limitations. Lag time between data collected and availability of final data for analysis is a problem with most datasets. Death data are available for analysis approximately 12-14 months after the end of a calendar year due to extensive quality control

measures, deaths that are reported late, and out-of-state deaths. Nonfatal databases are provided by fiscal year (October 1 – September 30). These databases are available more quickly than death data; about ten months after the end of the fiscal year. However, the first quarter of the fiscal year (October – December) completes the previous calendar year, so, for example, FY2005 data (available in July of 2006) contained the first quarter of calendar year 2004. For this report, the most current data available for analysis was for 2004.

This report includes nonfatal injury data from Massachusetts acute care hospitals only; it does not include cases requiring treatment at long-term care facilities, Veterans Administration, psychiatric or rehabilitation hospitals, nor does it capture injuries treated at health care centers or physician’s offices. Massachusetts residents that are treated at out-of-state hospitals are not captured in the datasets used for this report.

For this report, data on race and ethnicity is presented for injury deaths only. While it is important to include race and ethnicity information to examine disparities, race and ethnicity are not mutually exclusive categories in hospital and emergency department databases. This makes it difficult to provide accurate rates for nonfatal injuries by race and ethnicity. As of January 1, 2007 hospital and emergency department databases will capture both Hispanic ethnicity and race categories. The Department currently has an initiative in place to improve race and ethnicity data captured at the hospital level. These developments should result in more accurate analyses on race and ethnicity.

Documentation

The data generated for this report are dependent on multiple factors, including the diagnosis and documentation of injuries and their causes, in the medical record or in the death certificate. Many injury-related cases have either no cause code assigned or an “unspecified” code. Such limited data can result in the development of less effective prevention strategies.

Additional methodology and technical notes can be found in the appendix.

Introduction

Injuries are a major public health problem in the U.S. and Massachusetts. In 2004, injury—including homicides, suicides, unintentional injuries, and injuries of undetermined intent—were the leading cause of death for MA residents between the ages of 1 and 44 years and the fourth leading cause of death among all residents (Table 1). Injuries rank as one of the 10 leading causes of death in Massachusetts for all age groups with the exception of infants less than 1 year and persons ages 85 and older.

A measure of overall impact of mortality on the population is the total years of potential life lost (YPLL). Since injuries disproportionately affect the young, the YPLL for injury deaths is far greater than many diseases that are prevalent among older persons. In 2004, injury

ranked second only to cancer deaths in total years of potential life lost. Injury deaths accounted for a total of 71,894 years of potential life lost among MA residents, or an average of 35.4 years per MA resident who died of an injury.

Injury rates in Massachusetts compare favorably with the rest of the nation. In 2004, the age-adjusted rate for injury deaths in the U.S. was 56.2/100,000 compared with 38.6/100,000 in Massachusetts. Age-adjusted homicide, suicide, and unintentional/undetermined injury death rates were lower in MA compared with the U.S. – homicide: 2.8/100,000 vs. 5.9/100,000, suicide: 6.4/100,000 vs. 10.9/100,000, and unintentional/undetermined injury deaths: 28.6/100,000 vs. 39.4/100,000 – in MA and U.S. respectively.³ These differences were statistically significant.

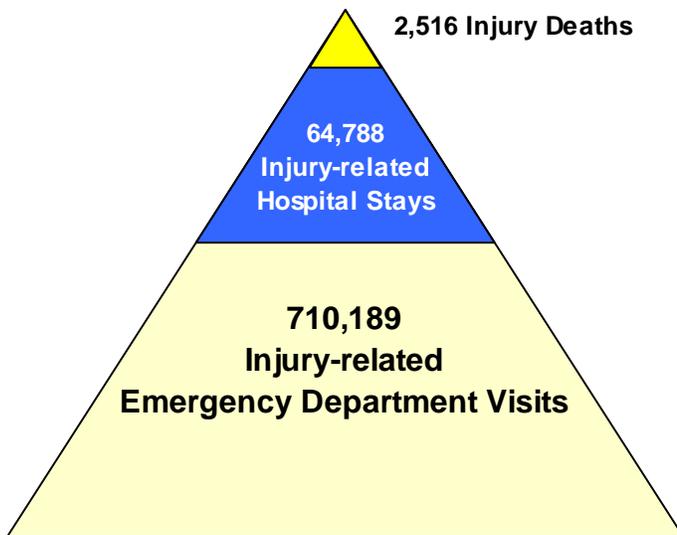
Table 1. Ten Leading Causes of Death, Massachusetts Residents, 2004*

Rank	Age Groups								
	<1 year	1-14 years	15-24 years	25-44 years	45-64 years	65-74 years	75-84 years	85+ years	All Ages
1	Short gestation	Unintentional injuries	Unintentional injuries	Cancer	Cancer	Cancer	Cancer	Heart disease	Heart disease
2	Congenital malformations	Cancer	Homicide	Injuries of undetermined intent	Heart disease	Heart disease	Heart disease	Cancer	Cancer
3	Pregnancy Complications	Congenital malformations	Injuries of undetermined intent	Heart disease	Unintentional injuries	Chronic Lower Resp. Disease	Stroke	Stroke	Stroke
4	SIDS	Homicide	Suicide	Unintentional injuries	Chronic Lower Resp. Disease	Stroke	Chronic Lower Resp. Disease	Influenza & pneumonia	All Injuries Combined
5	Complications of placenta	Heart disease	Cancer	Suicide	Chronic Liver Disease	Diabetes	Influenza & pneumonia	Alzheimer's Disease	Chronic Lower Resp. Disease
6	Intrauterine hypoxia	Ill defined conditions	Ill defined conditions	HIV /AIDS	Diabetes	Septicemia	Alzheimer's Disease	Chronic Lower Resp. Disease	Influenza & pneumonia
7	Circulatory System	Septicemia	Heart disease	Ill defined conditions	Stroke	Nephritis	Diabetes	Nephritis	Alzheimer's Disease
8	Necrotizing enterocolitis	Suicide	Congenital malformations	Homicide	Injuries of undetermined intent	Influenza & pneumonia	Nephritis	Diabetes	Diabetes
9	Respiratory distress	Injuries of undetermined intent	Stroke	Chronic Liver Disease	Septicemia	Chronic Liver Disease	Septicemia	Septicemia	Nephritis
10	Atelectasis	In situ neoplasms	Influenza & pneumonia	Stroke	Suicide	Unintentional injuries	Unintentional injuries	Ill defined conditions	Septicemia

*This table is based on data from the report *Massachusetts Deaths, 2004*. The overall injury ranking is based on all injury intents combined.

Nonfatal injuries impact the lives and productivity of a large number of individuals, and place significant demands upon the health care system. Figure 1 demonstrates that injury deaths while the most extreme outcome, represent the smallest share of the overall burden of injuries among Massachusetts residents.

Figure 1. Fatal and Nonfatal Injuries to Massachusetts Residents, 2004



Many injuries lead to lifelong disabilities. The collective physical, emotional, and economic cost of these events on our society is enormous. In 2004, the total charges for injury-related hospital stays and emergency department visits exceeded \$1.8 billion. These costs do not include nonfatal injuries that are treated at a health care center, a physician's office, or rehabilitation facilities.

Injuries are not "accidents". Nearly all injuries are preventable, and most follow a very predictable sequence of events. In 2004, to address the problem of injury deaths and nonfatal injuries, the Massachusetts Department of Public Health (MDPH) Injury Prevention and Control Program (IPCP), in collaboration with the Injury Surveillance Program (ISP), prepared *Maximizing our Efforts: The Massachusetts State Injury Prevention Plan*. The purpose of the plan is to document the problem of injury in Massachusetts and to identify steps to be taken to more effectively use existing resources, strengthen infrastructure,

coordinate efforts, and prioritize injury prevention interventions. While injuries are prevalent across all demographic variables, differences in rates among causes and intents exist. By identifying the risk factors for and circumstances of these differences we can strive to develop appropriate and accessible strategies to prevent injuries.

Historically, the most successful public health injury prevention programs combine three types of intervention strategies. These are categorized as the 3E's:

- **Engineering/technological interventions:** Changes in the design of products or of the physical environment.
- **Education/behavior change:** Efforts to alter specific injury-related behaviors in the population at large or in targeted groups.
- **Enforcement/legislative interventions:** Passage and enforcement of new laws and regulations, or the increased enforcement of existing ones.

Injury prevention experience suggests that "passive" countermeasures are generally the most effective since these require little or no individual action on the part of those being protected. "Active" countermeasures are less reliable because they are more subject to human error. Child-resistant medicine caps are an example of a passive countermeasure, while action required to put on a bicycle helmet is an active countermeasure.

This report provides information on injuries to Massachusetts residents for the year 2004. It describes the magnitude of the problem, enumerates injuries by their causes and intents, quantifies some of the economic costs, and characterizes high-risk populations. It is intended to further the goals and objectives detailed in the Massachusetts injury prevention plan, and to assist policy makers, researchers, injury prevention advocates, and the general public in creating a safer Massachusetts by reducing the number, severity, and resulting disabilities and deaths from injury.

³Centers for Disease Control and Prevention. Web-based Injury Statistics Query and Reporting System (WISQARS) [Online]. (2007). Available from: URL: www.cdc.gov/ncipc/wisqars. [January, 2007]. Age-adjusted rates for the U.S. are based on WISQARS data.

SECTION I.

Injury Overview

In 2004, there were a total of 2,615 injury deaths to Massachusetts residents and over 770,000 nonfatal injuries treated at Massachusetts acute care hospitals.

Table 2 provides a summary of the overall burden of injuries to Massachusetts residents for the year 2004. An overall count of injuries, the crude rate, and the age-adjusted rate, is provided for each data source.

While the crude rate represents the actual or

“true” rate of injury for a given population, the age-adjusted rate is useful for comparisons. Age-adjusting minimizes the effect of age distribution differences among different populations, allowing us to compare “apples” to “apples.”

Injury causes are not the same across the lifespan, so it is equally important that we look closely at specific age groups. Throughout the report age-specific rates (i.e., the number of injury cases per 100,000 persons for a given age group) are presented to show such differences.

Table 2. Injury Characteristics, MA Residents, 2004

		Deaths	Nonfatal Hospital Discharges	Nonfatal Observation Bed Stays	Nonfatal Emergency Department Visits	TOTAL
Injury Totals	Number	2,615	55,355	9,433	710,189	777,592
	Crude rate	40.8	862.7	147.0	11,068.2	12,118.6
	Age-adjusted rate	38.6	800.7	144.0	11,187.7	12,171.0
Female	Number	891	29,790	4,339	317,416	352,436
	Crude rate	26.9	900.0	131.1	9,589.1	10,647.1
	Age-adjusted rate	23.0	739.9	123.2	9,680.6	10,566.6
Male	Number	1,724	25,563	5,093	392,729	425,109
	Crude rate	55.5	822.9	164.0	12,642.8	13,685.2
	Age-adjusted rate	55.2	838.8	163.4	12,656.8	13,714.3
<1 year	Number	8	334	136	4,616	5,094
	Age-specific rate	10.0	416.4	169.6	5,755.5	6,351.5
1-14 years	Number	55	2,374	1,037	132,100	135,566
	Age-specific rate	4.9	210.0	91.7	11,684.0	11,990.5
15-24 years	Number	373	4,747	1,527	146,373	153,020
	Age-specific rate	43.8	557.5	179.3	17,191.5	17,972.2
25-44 years	Number	818	9,966	2,494	231,408	244,686
	Age-specific rate	42.8	521.6	130.5	12,110.5	12,805.3
45-64 years	Number	642	11,488	2,327	128,464	142,921
	Age-specific rate	40.4	722.9	146.4	8,084.0	8,993.7
65-74 years	Number	137	5,755	614	25,647	32,153
	Age-specific rate	34.6	1,453.0	155.0	6,475.1	8,117.7
75-84 years	Number	283	11,141	765	26,461	38,650
	Age-specific rate	87.9	3,458.5	237.5	8,214.3	11,998.1
85+ years	Number	299	9,550	532	15,129	25,510
	Age-specific rate	219.7	7,015.6	390.8	11,114.0	18,740.1

Detailed tables by sex and age group are provided by data source in Section III.

*Rates are per 100,000 residents. Rates are not calculated on counts less than five. Rates based on counts less than 20 may be unstable and should be interpreted with caution.

Rates provided in this report are crude or age-specific unless otherwise noted.

Developing effective prevention activities depends on understanding the overall injury burden, as well as, specific risks by key demographic variables such as sex, age groups, and race and ethnicity.

In 2004:

- The overall age-adjusted injury death rate among MA residents was 38.6 per 100,000 residents.
- Males were at higher risk of dying as a result of an injury than females with age-adjusted rates of 55.2/100,000 and 22.9/100,000 respectively.
- Males had a higher age-adjusted *rate* of nonfatal injury-related discharges from acute care hospitals, but females had a higher *number* of nonfatal injury-related discharges from acute care hospitals.
- Persons ages 85 years and older had the highest combined injury rate (fatal and nonfatal combined) followed by persons ages 15-24 years old (18,740.1 and 17,972.2/100,000 respectively).
- Children ages 1-14 years had the lowest injury death rate (4.9/100,000), and older adults

ages 75-84 and 85 and older had the highest injury death rates (87.9/100,000 and 219.7/100,000 respectively).

- Adults ages 65 years and older had the highest rates of injury-related hospital stays; 1,608.0, 3,696.0, and 7,406.4/100,000 for age groups 65-74, 75-84, and 85 and older respectively).
- Persons ages 15-24 years had the highest injury-related ED visit rate (17,191.5/100,000), followed by persons ages 25-44 years old (12,110.5/100,000).

Injuries are classified according to specific codes in the International Classification of Diseases (ICD) manual. These codes provide information on the “cause” or the mechanism of the injury, such as fall, motor vehicle crash, poisoning, etc., and the “intent” of the injury – assault, self-inflicted, unintentional, other and legal, and undetermined intent.

Intent of Injury

Table 3 provides overall counts and rates by intent of injury. Six intent categories presented in this report, as well as cases where an injury occurred but cause and intent were not assigned.

Unintentional injuries refer to those for which there was no intent to injure or harm oneself or another person. Unintentional injuries

Table 3. Number and Rate of Injuries by Intent, MA Residents, 2004

Intent of Injury	Injury Deaths		Nonfatal Hospital Stays		Nonfatal ED Visits		Total Injuries	
	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*
Unintentional	1,352	21.1	51,280	799.2	663,025	10,333.1	715,657	11,153.4
Suicide and Self-Inflicted	429	6.7	4,301	67.0	6,798	105.9	11,528	179.7
Homicide and Assault	175	2.7	2,109	32.9	23,876	372.1	26,160	407.7
Undetermined Intent	602	9.4	910	14.2	3,414	53.2	4,926	76.8
Other/Legal	2	--	36	0.6	534	8.3	572	8.9
Adverse effects	55	0.9	2,501	39.0	2,809	43.8	5,365	83.6
No cause/intent code assigned	0	--	3,651	56.9	9,733	151.7	13,384	208.6
TOTAL	2,615	40.8	64,788	1,009.7	710,189	11,068.2	777,592	12,118.6

Detailed tables for intent by sex and age group are provided in Section III.

**Represents crude rates per 100,000 residents. Rates based on counts < 20 may be unstable and should be interpreted with caution. Rates are not calculated on counts < five.*

account for the vast majority of fatal and nonfatal injuries. In 2004, 92% of all injuries among Massachusetts residents were unintentional. While unintentional intent is sometimes referred to as “accidental”, the preferred term “unintentional injury” is used throughout this report.

While suicide refers to completed suicides, nonfatal self-inflicted injuries include suicide attempts, as well as other self-injurious behavior like cutting or burning oneself. There is no way to distinguish between those that are actual suicide attempts and those that are not, so the broader term “self-inflicted injury” is used to describe these cases.

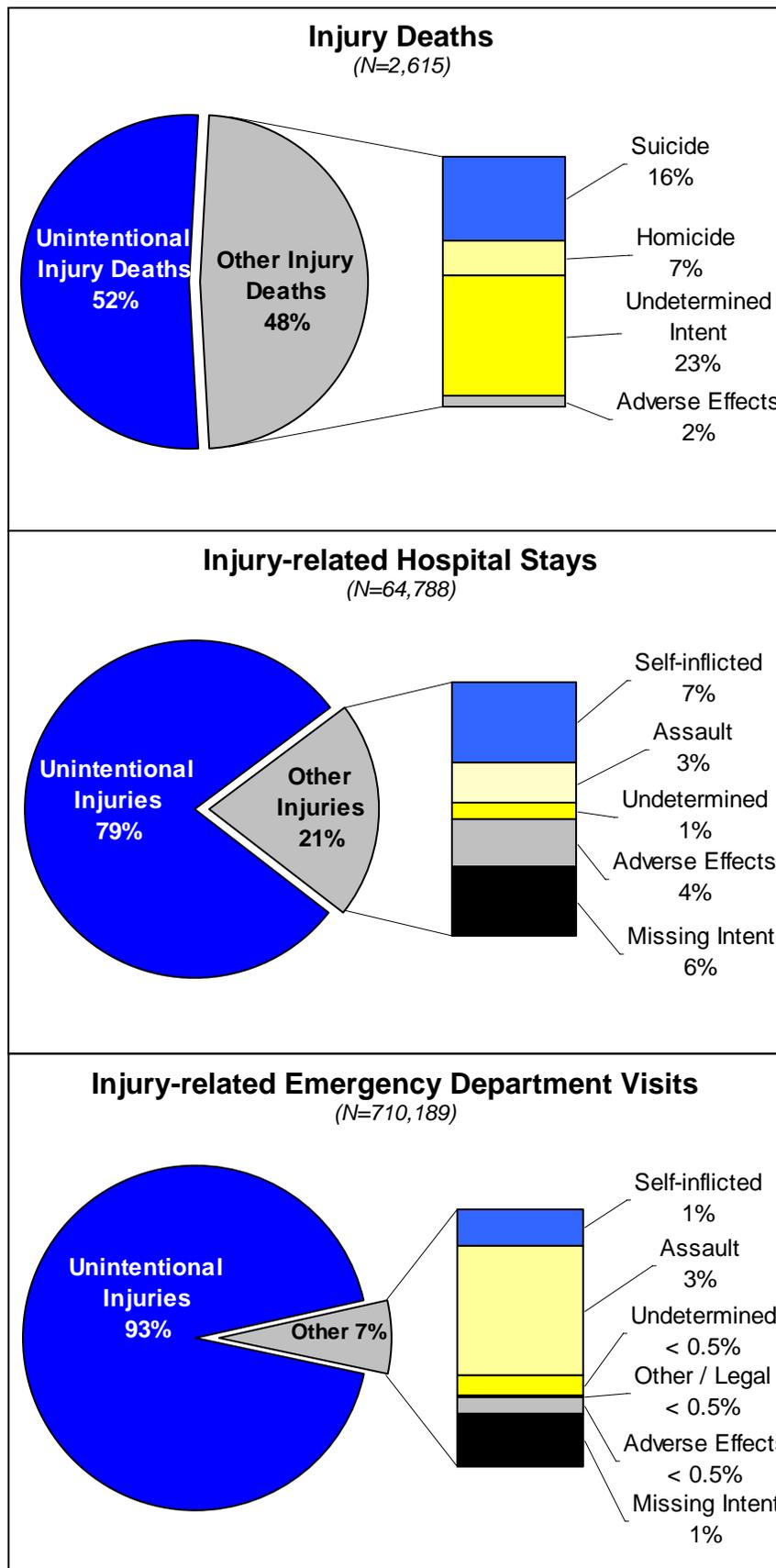
In this report homicide is defined as any death purposefully inflicted by one person against one or more other persons (with the exception of those that are legally inflicted by law enforcement personnel). Assault-related injuries are purposefully inflicted by one person against one or more other persons but do not result in death.

Undetermined intent includes injuries for which information does not provide enough detail to make a determination of intent.

Legal/Other intent includes injuries sustained from operations related to war, and legal interventions such as police actions.

Adverse effects from drugs and medical procedures also fall within the scope of injury and are presented in totals and all overview tables.

Figure 2. Fatal and Nonfatal Injury-related Cases by Intent, MA Residents, 2004



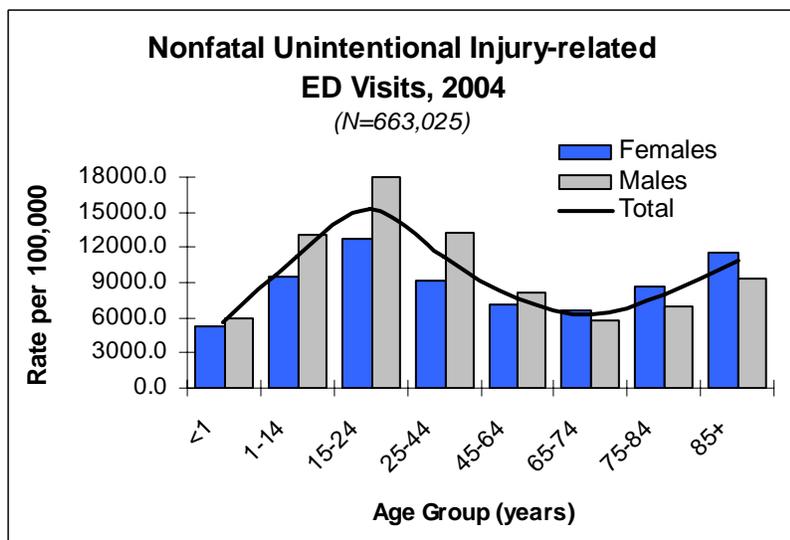
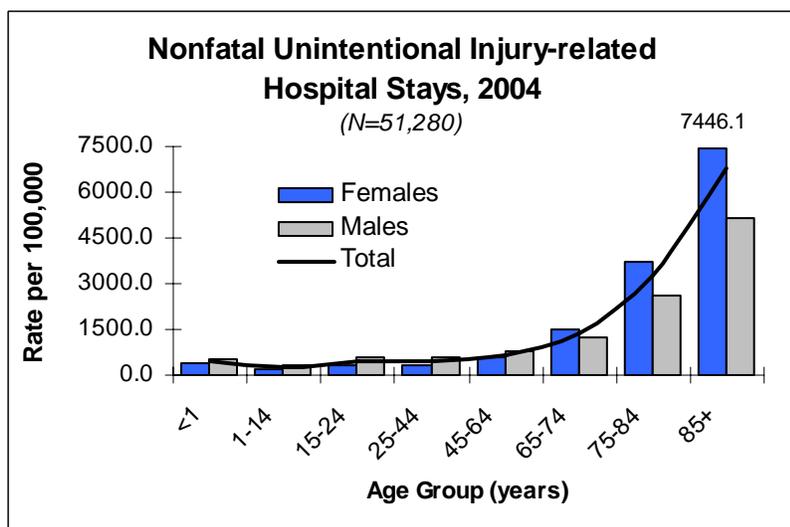
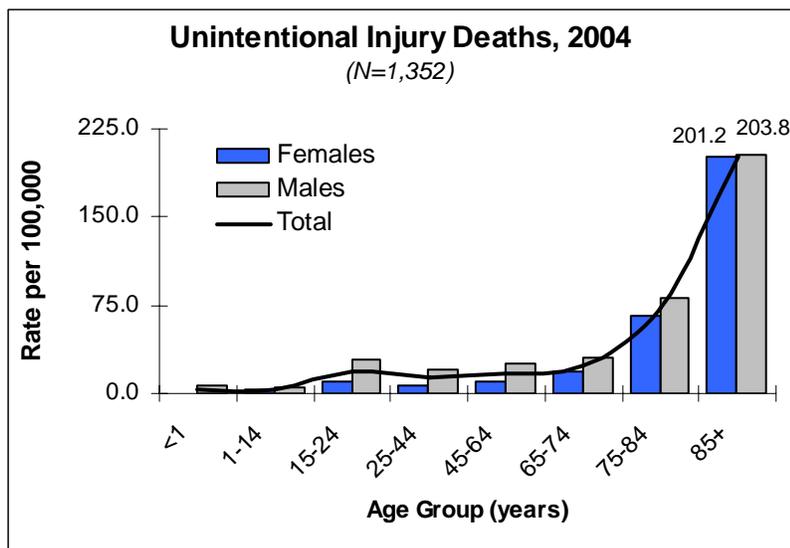
Among injury deaths, 52% were unintentional, those of undetermined intent accounted for 23%, suicide accounted for 16%, homicide 7%, and adverse effects 2%.

Among nonfatal injury-related hospital stays, 79% were unintentional, self-inflicted injuries accounted for 7%, assaults for 3%, and adverse effects 4%.

Among nonfatal injury-related emergency department visits, unintentional injuries accounted for 93% of total injuries, only 1% of injuries resulted from self-inflicted injury, while assault-related injuries accounted for 3% of the total.

Injury-related Cases by Intent, Sex, and Age Group

Figure 3. Fatal and Nonfatal Unintentional Injury



The overall unintentional injury death rate in 2004 was 21.1 per 100,000 residents.

- Unintentional injury death rates were lowest among infants less than 1 year, and children ages 1-14 years (3.7 and 3.6/100,000 respectively), and highest among older adults ages 75-84 years and 85 years and older (72.3 and 202.0/100,000 respectively).
- Males had higher rates across the life span than females, although the difference between males and females lessened for those ages 75 and older.
- White, non-Hispanic residents had the highest age-adjusted rates of unintentional injury deaths (20.3/100,000), followed by Black, non-Hispanic residents (12.9/100,000).

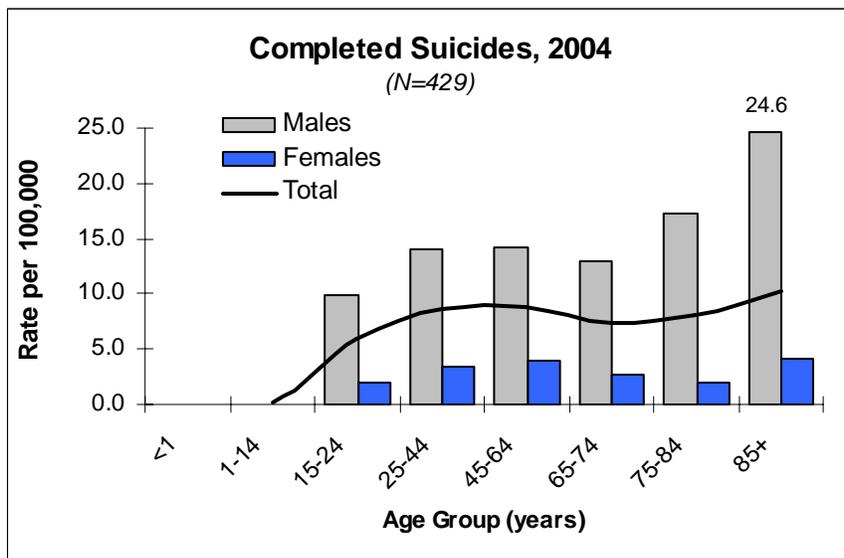
The overall rate of unintentional injury-related hospital stays in 2004 was 799.2 per 100,000.

- Children ages 1-14 years had the lowest rates of unintentional injury-related hospital stays (262.3/100,000); while older adults ages 65-74, 75-84, and 85 years and older had the highest rates (1,379.5, 3,276.6, and 6,760.0/100,000 respectively).
- Males had higher rates among age groups 45-64 years and under, while females had higher rates for all age groups over age 65.

The overall rate of unintentional injury-related ED visits in 2004 was 10,331.1 per 100,000.

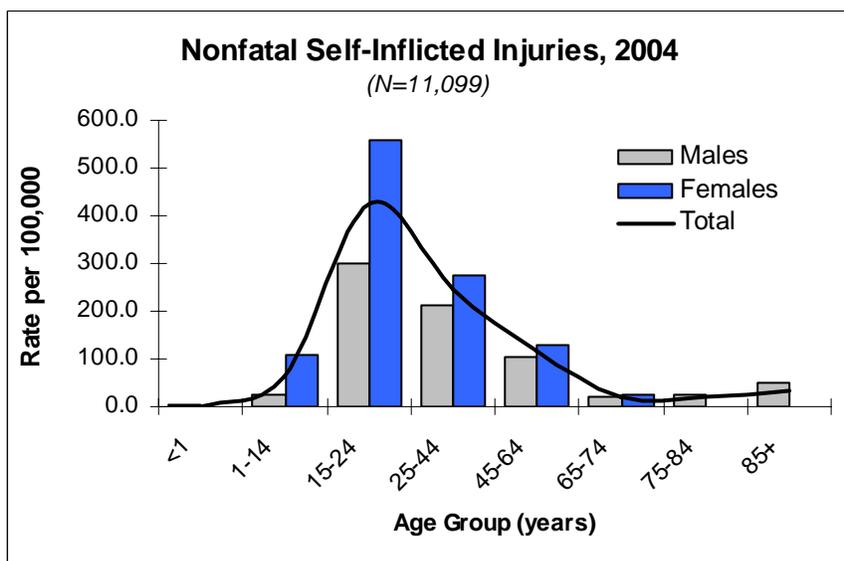
- Persons ages 1-44 years had the highest rates of unintentional injury-related ED visits with persons ages 15-24 years having the highest rate (15,351.0/100,000). Infants under the age of 1 year had the lowest rate of injury-related ED visits (5,628.3/100,000).
- Age groups with the highest injury-related ED visit rates were among those between the ages of 1 and 44 years which differs from the pattern seen in deaths and hospital stays.

Figure 4. Suicide and Nonfatal Self-Inflicted Injury



The overall rate of suicide in 2004 was 6.7 per 100,000 residents.

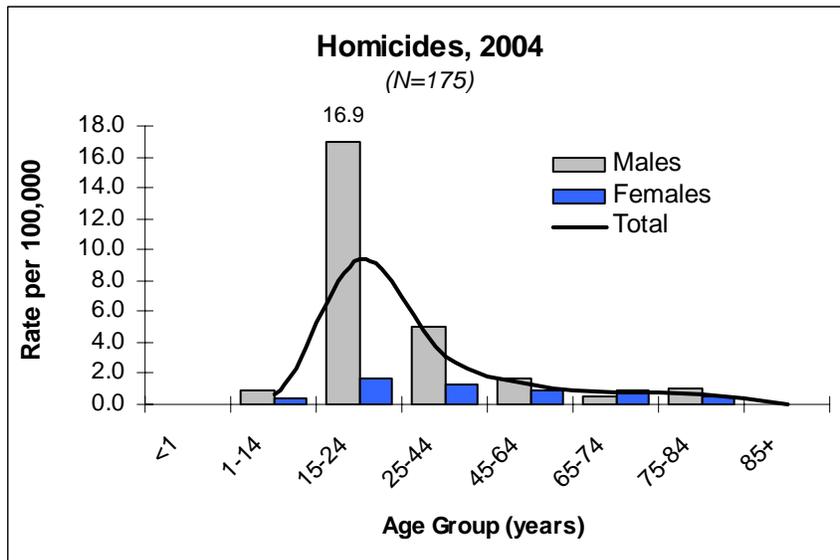
- The overall rate of completed suicide was highest among persons ages 85 years and older (10.3/100,000).
- Males had considerably higher rates of completed suicides than females for all age groups.
- The highest suicide rates among males were for persons ages 75-84 and 85 and older (17.3 and 24.6/100,000 respectively). Among females the highest suicide rates were for persons ages 25-44 and 45-64 (3.4 and 3.9/100,000 respectively).
- White, non-Hispanic residents had higher age-adjusted rates of suicide (7.1/100,000) than Black, non-Hispanic and Hispanic residents (2.9 and 2.3/100,000 respectively).



The overall rate of nonfatal self-inflicted injuries in 2004 was 173.0 per 100,000 residents.

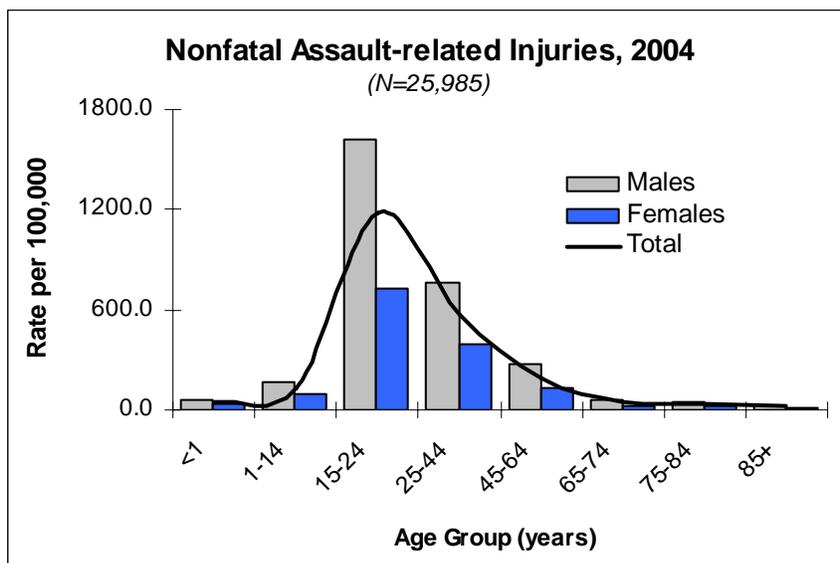
- Nonfatal self-inflicted injury rates were highest among persons 15-24 (426.6/100,000).
- Females had higher rates of nonfatal self-inflicted injuries than males for all age groups except for persons ages 85 and older.
- For both females and males, the highest rate of nonfatal self-inflicted injury was for persons ages 15-24 (557.2 and 299.3/100,000 respectively).

Figure 5. Homicide and Nonfatal Assault-related Injuries



The overall rate of homicide in 2004 was 2.7 per 100,000 residents.

- The homicide rate was highest among persons ages 15-24 (9.4/100,000).
- Among males, the overall homicide rate was 4.6 per 100,000 and for females the overall rate was 1.0 per 100,000.
- Males ages 15-24 had the highest rate of homicide (16.9/100,000). The highest homicide rate among females was also among persons ages 15-24 (1.7/100,000).
- Black, non-Hispanic residents had higher age-adjusted rates of homicide (15.7/100,000), than Hispanic (6.9/100,000) and White, non-Hispanic residents (1.1/100,000).



The overall rate of nonfatal assault-related injury in 2004 was 405.0 per 100,000 residents.

- Among nonfatal assault-related injuries the highest rates among males (1,616.5/100,000) and females (724.3/100,000) were to persons ages 15-24.

Cause of Injury

For most cause categories as shown in table 4, the mechanism of injury is apparent (e.g., firearm, machinery, drowning, and fire and burn injuries) but a few categories warrant

further clarification. Poisonings, for example, can include medicines and household cleaning agents, which often effect young children, as well as, poisoning by gas and vapors, and drug overdoses by legal or illicit drugs.

Table 4. Number and Rate of Injury-related Cases by Cause, MA Residents, 2004

Cause of Injury	Injury Deaths		Nonfatal Hospital Stays		Nonfatal ED Visits		Total Injuries	
	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*
Cut or pierce	63	1.0	1,911	29.8	75,284	1,173.3	77,258	1,204.1
Drowning or submersion	75	1.2	58	0.9	170	2.6	303	4.7
Fall	291	4.5	28,376	442.2	170,923	2,663.8	199,590	3,110.6
Fire/Burn:	40	0.6	600	9.4	10,539	164.2	11,179	174.2
Fire/flame	33	0.5	265	4.1	1,784	27.8	2,082	32.4
Burns, hot object/substance	7	0.1	335	5.2	8,755	136.4	9,097	141.8
Firearm	205	3.2	346	5.4	409	6.4	960	15.0
Hanging, strangulation, or suffocation	299	4.7	423	6.6	629	9.8	1,351	21.1
Machinery	6	0.1	294	4.6	4,600	71.7	4,900	76.4
Natural/Environmental:	19	0.3	1,173	18.3	26,604	414.6	27,796	433.2
Dog bites	0	--	173	2.7	6,370	99.3	6,543	102.0
Other bites & stings	0	--	616	9.6	17,477	272.4	18,093	282.0
All other (e.g., extreme cold)	19	0.3	384	6.0	2,757	43.0	3,160	49.2
Overexertion	0	--	1,364	21.3	85,373	1,330.5	86,737	1,351.8
Poisoning	734	11.4	6,935	108.1	12,851	200.3	20,520	319.8
Struck by/against	20	0.3	2,358	36.7	113,300	1,765.8	115,678	1,802.8
Transport Injuries:	549	8.6	6,863	107.0	103,526	1,613.4	110,938	1,728.9
Motor vehicle traffic-related	508	7.9	5,613	87.5	90,059	1,403.6	96,180	1,498.9
Injury to occupant	101	1.6	3,797	59.2	78,331	1,220.8	82,229	1,281.5
Injury to motorcyclist	70	1.1	662	10.3	2,581	40.2	3,313	51.6
Injury to pedal cyclist	4	--	170	2.6	1,170	18.2	1,344	20.9
Injury to pedestrian	89	1.4	751	11.7	3,690	57.5	4,530	70.6
Injury to other	0	--	35	0.5	318	5.0	353	5.5
Injury to unspecified	244	3.8	186	2.9	3,942	61.4	4,372	68.1
Pedal cyclist, non-traffic	2	--	507	7.9	8,292	129.2	8,801	137.2
Pedestrian, non-traffic	5	0.1	56	0.9	456	7.1	517	8.1
Other transport	34	0.5	687	10.7	4,719	73.5	5,440	84.8
Other specified & classifiable:	20	0.3	2,716	42.3	38,784	604.4	41,520	647.1
Human bites	0	--	83	1.3	1,562	24.3	1,645	25.6
Non-powder gun (bb, pellet)	0	--	26	0.4	448	7.0	474	7.4
Other specified & classifiable	20	0.3	2,607	40.6	36,774	573.1	39,401	614.1
Other specified, not classifiable	23	0.4	1,327	20.7	11,980	186.7	13,330	207.7
Unspecified	216	3.4	3,880	60.5	42,664	664.9	46,760	728.7
Adverse effects	55	0.9	2,501	39.0	2,809	43.8	5,365	83.6
No valid cause code provided	0	--	3,663	57.1	9,744	151.9	13,407	208.9
TOTAL	2615	40.8	64,788	1,009.7	710,189	11,068.2	777,592	12,118.6

Natural and environmental injuries include such categories as animal and insect bites, electrical-related injuries, and weather related causes such as excessive heat or cold, storms, and floods.

The category of struck by or against an object can include injury by falling object or objects, against an object or a person such as in sports, struck by a thrown object, and struck by a blunt object including fists.

Suffocation/strangulation/hanging includes: suffocation due to lack of air in closed place, by plastic bag, hanging, strangulation, and inhalation and ingestion of food or other object causing obstruction of respiratory tract (i.e., choking).

Additional definitions for selected causes can be found in the appendix.

Cause of Injury by Data Source

Injury causes vary by data source.

- Among injury deaths, poisonings, including overdoses (29%) were the leading cause in 2004, followed by motor vehicle traffic injuries (19%). Suffocation/hanging and fall-related injuries each accounted for 11% of the overall total, and firearms accounted for 8%.
- Among nonfatal injury-related hospital stays, the leading cause was fall-related injuries (43%) followed by poisoning (11%) and motor vehicle traffic (9%) injuries.
- Fall-related injuries (24%) were also the leading cause among nonfatal injury-related emergency department visits, followed by struck by or against an object (16%) and motor vehicle traffic (13%) injuries.

Figure 6. Fatal and Nonfatal Injuries by Cause

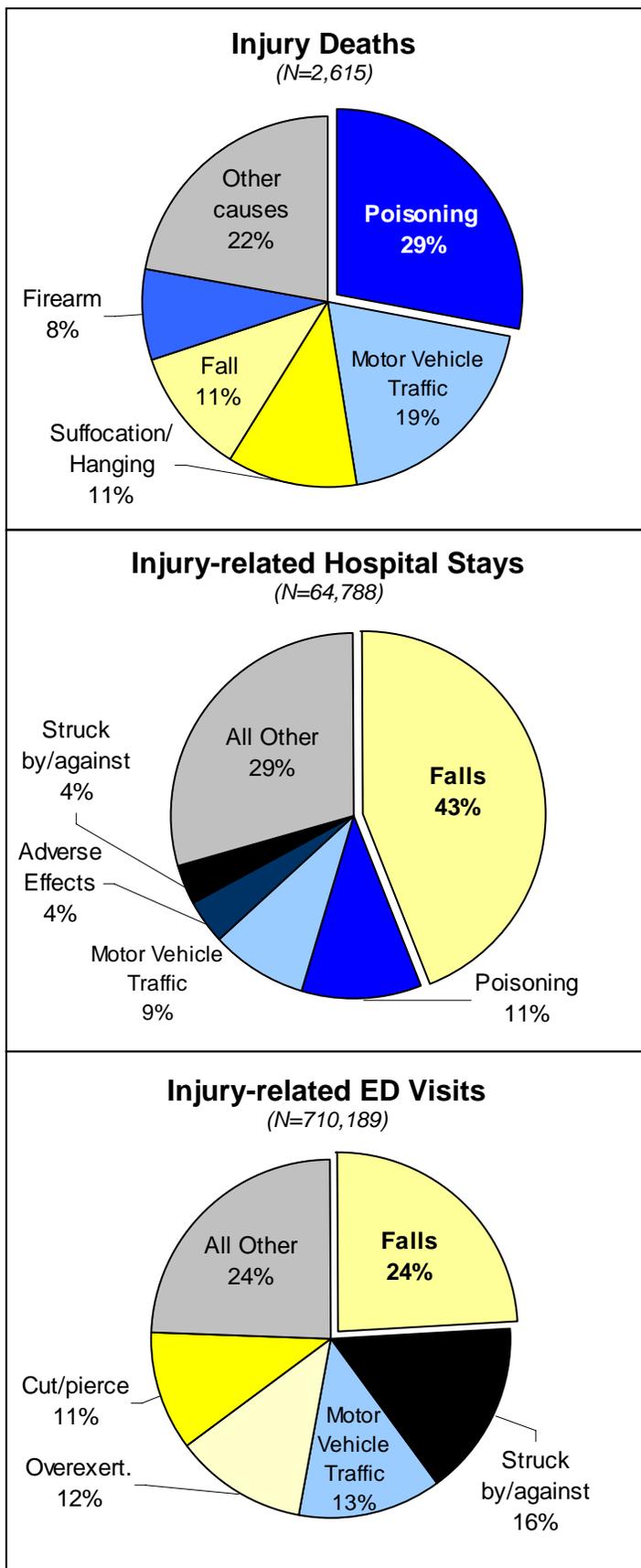
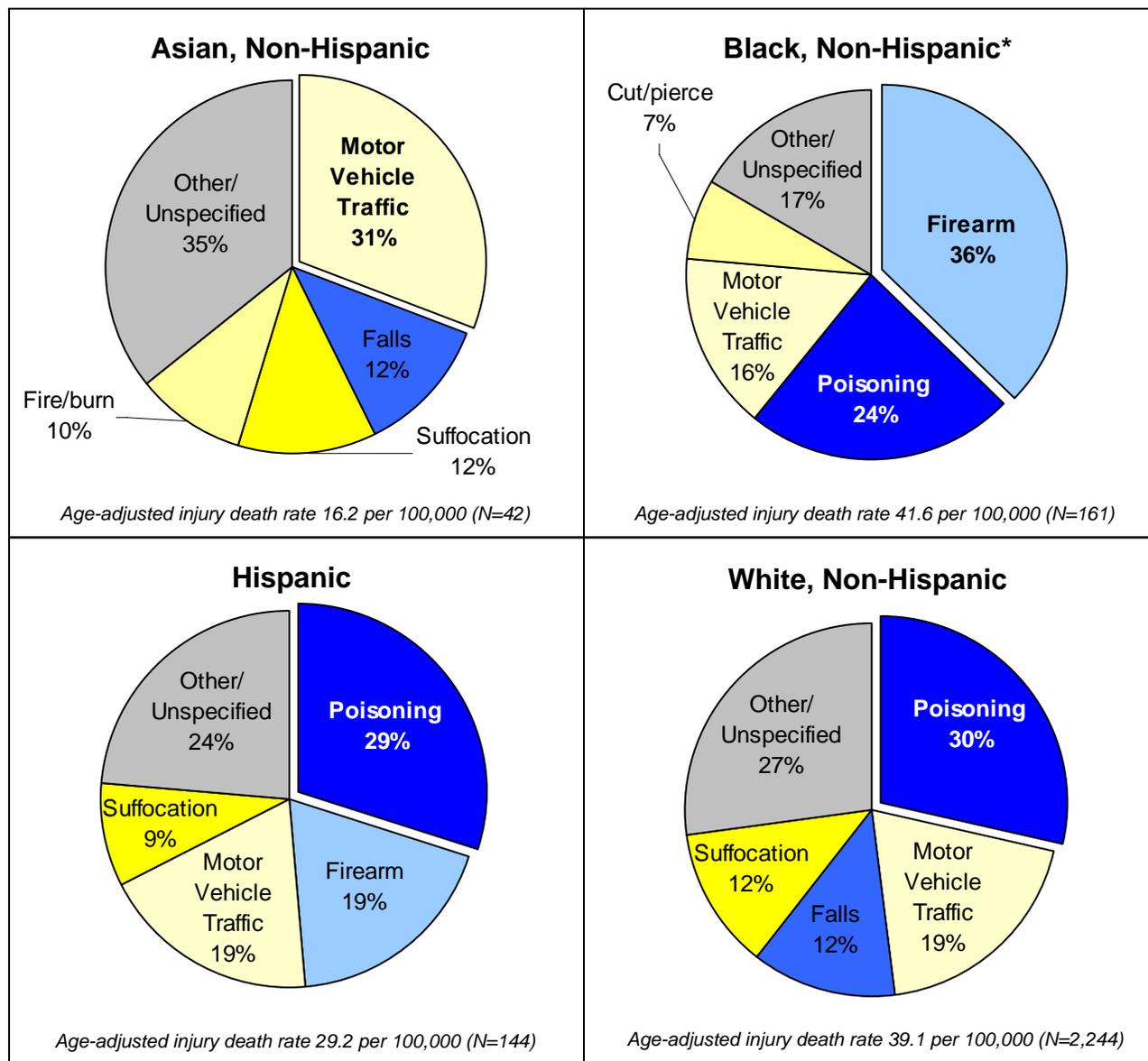


Figure 7. Leading Causes of Injury Death by Race, MA Residents, 2004



Injury death rates and causes differ by race and ethnicity. In 2004, Asian, non-Hispanic residents had the lowest age-adjusted injury death rate (16.2/100,000). Black, non-Hispanics and White, non-Hispanics had the highest age-adjusted injury death rates (41.6 and 39.1/100,000 respectively).

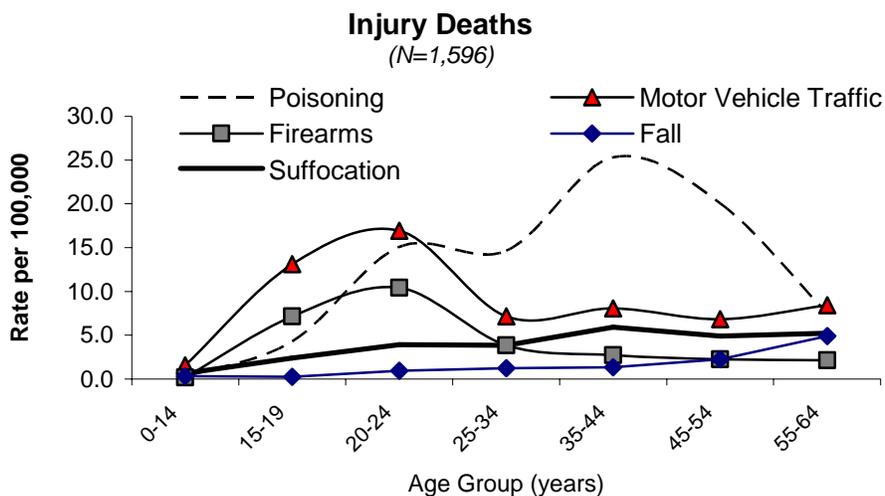
- Poisoning was the leading cause of injury death for Hispanic and White, non-Hispanic residents. But poisoning rates were highest among White, non-Hispanic and Black, non-Hispanic residents (12.1 and 10.3/100,000 respectively). Hispanic residents had a poisoning death rate of 8.6/100,000.

- Among Asian, non-Hispanic residents the leading cause of injury death was motor vehicle traffic-related injuries.
- The leading cause of injury death among Black, non-Hispanic residents was by firearm. Black, non-Hispanic residents had higher firearm injury death rates (13.3/100,000) than Hispanic and White, non-Hispanic residents (4.7 and 2.1/100,000 respectively).

* Includes persons of Cape Verdean ancestry (N=12).

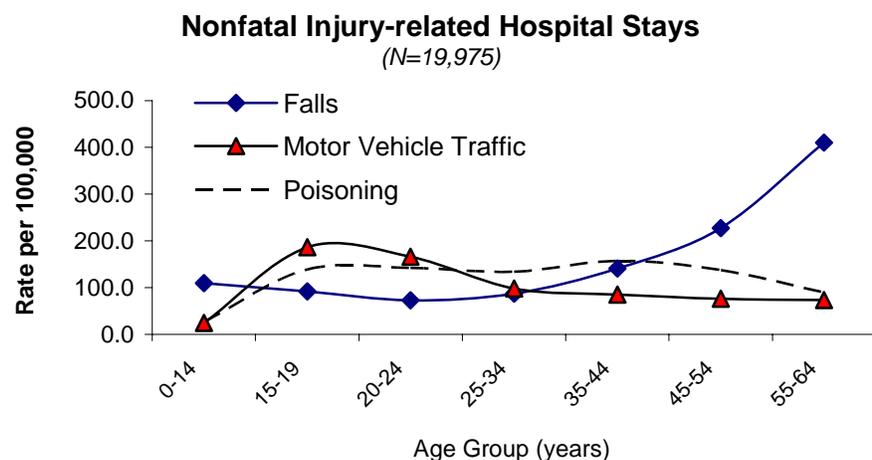
Cause of Injury-related Cases by Age Group – Ages 0-64 Years

Figure 8. Leading Causes of Injury by Age Group, MA Residents, 2004



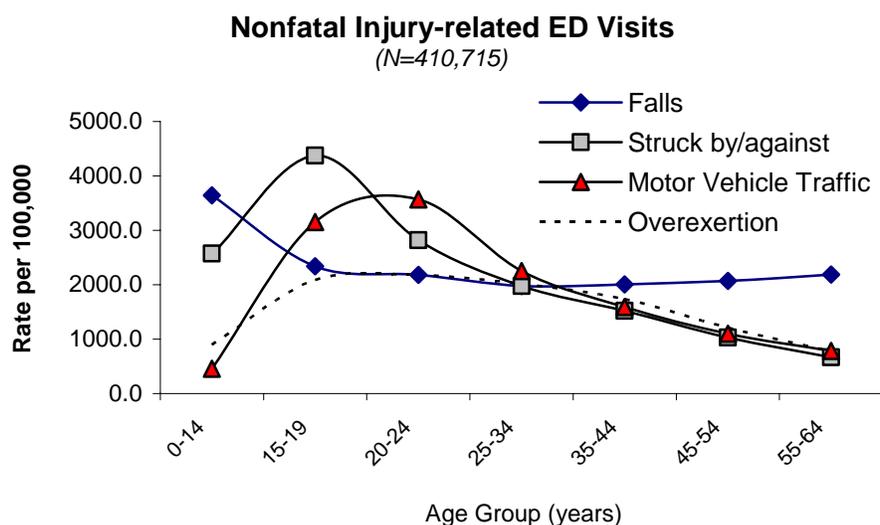
The leading causes of injury death for all ages combined were poisoning, motor vehicle traffic, fall, suffocation, and firearm (Table 4). But rates for the leading causes of injury death varied considerably by age group.

- Younger age groups (15-19 and 20-24) had higher rates for motor vehicle traffic-related injuries and firearm injuries.
- Poisoning death rates peaked among persons ages 35-44 with a rate of 25.3/100,000.



Among hospital stays, leading injury-related causes were motor vehicle traffic, fall, and poisoning.

- Motor vehicle traffic-related injury rates were highest among persons ages 15-19 and 20-24.
- Fall-related injury rates began increasing at ages 35-44 and continued to rise throughout the life span. Persons ages 55-64 had a fall-related injury rate of 410.2/100,000.

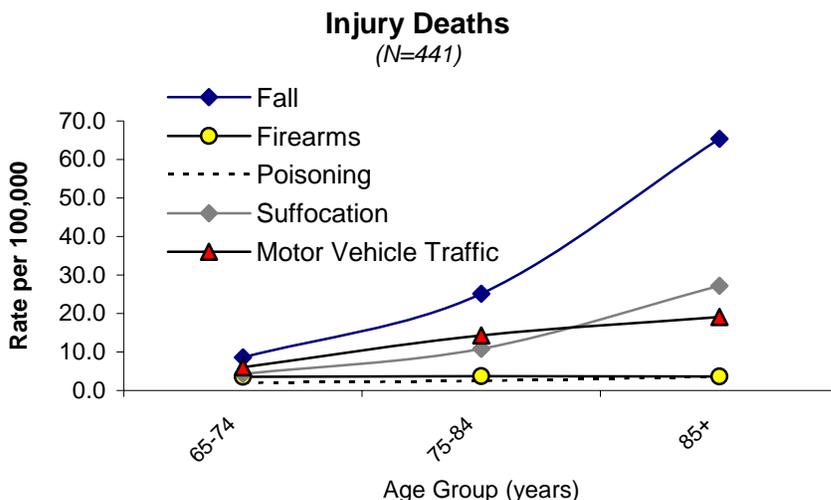


Among ED visits, leading injury-related causes were motor vehicle traffic, fall, struck-by or against, and overexertion.

- Fall-related injury rates were highest among children ages 0-14 years.
- Injury rates for struck-by and/or against an object were high among children and young adults, but highest among youth ages 15-19 (4,376.1/100,000). Motor vehicle traffic-related injury rates were highest among persons ages 15-19 and 20-24.

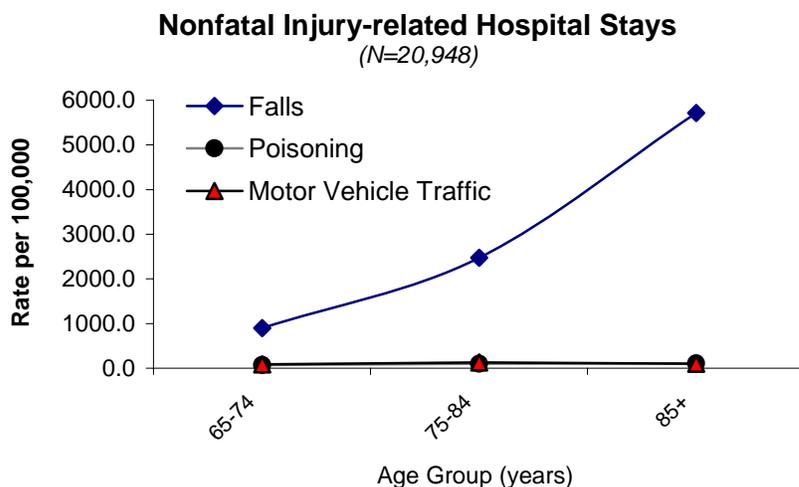
Cause of Injury-related Cases by Age Group – Ages 65 and Older

Figure 9. Leading Causes by Age Group, MA Residents, 2004



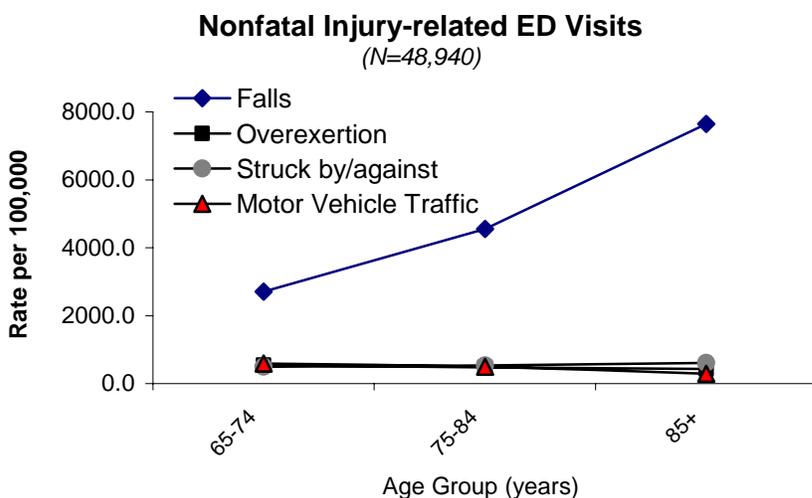
The overall rate of injury death among persons ages 65 and older was 84.2 per 100,000.

- Fall-related injury death rates increase substantially over the life span. Among persons ages 65 and older, rates more than doubled by each successive age group (8.6, 25.1, and 65.4/100,000 for ages 65-74, 75-84, and 85+ respectively).
- Motor vehicle traffic-related and suffocation death rates also increased, though not as markedly, by each successive age group.



Among hospital stays and emergency department visits, the pattern among fall-related injury rates was similar to that of deaths, with rates doubling or nearly doubling by each successive age group.

- The rate of fall-related hospital stays among persons ages 65 and over was: 900.3, 2,474.8 and 5,718.3/100,000 for age groups 65-74, 75-84, and 85+, respectively.
- The rate of fall-related ED visits among persons ages 65 and over was: 2,711.8, 4,556.8, and 7,643.0/100,000 for age groups 65-74, 75-84, and 85+, respectively.



Rates among other causes were relatively low and similar among all three age groups.

Table 5. Leading Causes of Injury by Age Group: Ages 0 – 14 Years, MA Residents, 2004

Age	Injury Deaths			Injury-related Hospital Stays			Injury-related ED Visits		
	Cause	Number	Rate	Cause	Number	Rate	Cause	Number	Rate
< 1 year	Suffocation	2	--	Fall	178	221.9	Fall	2,347	2,926.4
	Fall	1	--	Suffocation	23	28.7	Struck by	476	593.5
	Other-classifiable	1	--	Poisoning	20	24.9	Fire / burn	205	255.6
	--	--	--	Struck by	11	13.7	Overexertion	194	241.9
	Other/unknown	4	--	Other/unknown	238	296.8	Other/unknown	1,394	1,738.1
	TOTAL	8	10.0	TOTAL	470	586.0	TOTAL	4,616	5,755.5

Age	Injury Deaths			Injury-related Hospital Stays			Injury-related ED Visits		
	Cause	Number	Rate	Cause	Number	Rate	Cause	Number	Rate
1-4 years	Drowning	4	--	Fall	388	123.0	Fall	15,596	4,943.9
	Suffocation	3	--	Poisoning	128	40.6	Struck by	6,449	2,044.3
	MV Traffic	3	--	Natural/environ.	68	21.6	Overexertion	2,215	702.1
	Fall	2	--	Struck by	44	13.9	Cut / pierce	2,118	671.4
	Other/unknown	5	1.6	Other/unknown	385	122.0	Other/unknown	12,637	4,005.9
	TOTAL	17	5.4	TOTAL	1,013	321.1	TOTAL	39,015	12,367.7

Age	Injury Deaths			Injury-related Hospital Stays			Injury-related ED Visits		
	Cause	Number	Rate	Cause	Number	Rate	Cause	Number	Rate
5-9 years	MV Traffic	8	2.1	Fall	411	105.6	Fall	12,480	3,205.3
	Fire / Burn	2	--	MV Traffic	107	27.5	Struck by	8,167	2,097.5
	Cut / Pierce	2	--	Struck by	62	15.9	Cut / pierce	2,910	747.4
	Fall	1	--	Natural/environ.	64	16.4	Overexertion	2,085	535.5
	Other/unknown	1	--	Other/unknown	342	87.8	Other/unknown	11,627	2,986.2
	TOTAL	14	3.6	TOTAL	986	253.2	TOTAL	37,269	9,571.8

Age	Injury Deaths			Injury-related Hospital Stays			Injury-related ED Visits		
	Cause	Number	Rate	Cause	Number	Rate	Cause	Number	Rate
10-14 years	MV Traffic	8	1.9	Fall	352	82.7	Struck by	16,091	3,779.1
	Poisoning	3	--	Struck by	179	42.0	Fall	13,689	3,215.0
	Suffocation	3	--	MV Traffic	144	33.8	Overexertion	6,342	1,489.5
	Firearm	2	--	Poisoning	142	33.3	Cut / pierce	4,448	1,044.7
	Other/unknown	8	1.9	Other/unknown	595	139.7	Other/unknown	15,246	3,580.7
	TOTAL	24	5.6	TOTAL	1,412	331.6	TOTAL	55,816	13,108.9

In 2004:

- Among children less than 14 years old, those under the age of 1 year had the highest injury death rate (10/100,000) and the highest rate of injury-related hospital stays (586.0/100,000).
- Motor vehicle traffic-related deaths were the leading cause of injury death among children ages 5-9 years and 10-14 years.
- Fall injuries were among the leading causes of injury death, hospital stays, and ED visits among all age groups examined, with the exception of children ages 10-14 years, for which fall injuries were among the leading causes of hospital stays and ED visits, but not among the leading causes of injury death.
- Children less than 14 years old have among the lowest rates for injury death and hospital stays compared to other age groups presented.

Table 6. Leading Causes of Injury by Age Group: Ages 15 – 24 Years, MA Residents, 2004

Age	Injury Deaths			Injury-related Hospital Stays			Injury-related ED Visits		
	Cause	Number	Rate	Cause	Number	Rate	Cause	Number	Rate
15-19 years	MV Traffic	55	13.1	MV Traffic	783	186.5	Struck by	18,373	4,376.1
	Firearm	30	7.1	Poisoning	582	138.6	MV Traffic	13,238	3,153.1
	Poisoning	18	4.3	Fall	386	91.9	Fall	9,827	2,340.6
	Suffocation	10	2.4	Struck by	360	85.7	Overexertion	8,766	2,087.9
	Other/unknown	25	6.0	Other/unknown	1,071	255.1	Other/unknown	23,036	5,486.8
	TOTAL	138	32.9	TOTAL	3,182	757.9	TOTAL	73,240	17,444.5

Age	Injury Deaths			Injury-related Hospital Stays			Injury-related ED Visits		
	Cause	Number	Rate	Cause	Number	Rate	Cause	Number	Rate
20-24 years	MV Traffic	73	16.9	MV Traffic	715	165.7	MV Traffic	15,389	3,565.7
	Poisoning	65	15.1	Poisoning	613	142.0	Struck by	12,175	2,821.0
	Firearm	45	10.4	Fall	313	72.5	Fall	9,413	2,181.1
	Suffocation	17	3.9	Cut/pierce	287	66.5	Overexertion	9,378	2,172.9
	Other/unknown	23	5.3	Other/unknown	1,164	269.7	Other/unknown	26,778	6,204.6
	TOTAL	223	51.7	TOTAL	3,092	716.4	TOTAL	73,133	16,945.4

In 2004:

- The leading cause of injury death among persons ages 15-19 and 20-24 years was motor vehicle traffic-related injuries (13.1 and 16.9/100,000 respectively).
- For persons ages 15-19 years, the overall injury death rate was 32.9/100,000, and the rate of injury-related hospital stays was 757.9/100,000.
 - Firearm was the second leading cause of injury death among persons ages 15-19 years (7.1/100,000), followed by poisoning (4.3/100,000).
- For persons ages 20-24 years, the overall injury death rate was 51.7/100,000, and the rate of injury-related hospital stays was 716.4/100,000.
 - Poisoning was the second leading cause of injury death among persons ages 20-24 years (15.1/100,000), followed by firearm (10.4/100,000).
- These two age groups had higher rates of injury-related ED visits compared to other age groups presented; 17,444.5/100,000 for persons ages 15-19, and 16,945.4/100,000 among persons ages 20-24.
 - Struck by or against injuries were the leading cause of ED visits among those ages 15-19 (4,376.1/100,000).
 - Motor vehicle traffic injuries were the leading cause of ED visits among those ages 20-24 (3,565.7/100,000).

Table 7. Leading Causes of Injury by Age Group: Ages 25 – 64 Years, MA Residents, 2004

Age	Injury Deaths			Injury-related Hospital Stays			Injury-related ED Visits		
	Cause	Number	Rate	Cause	Number	Rate	Cause	Number	Rate
25-44 years	Poisoning	390	20.4	Poisoning	2,803	146.7	Fall	38,078	1,992.8
	MV Traffic	148	7.7	Fall	2,220	116.2	MV Traffic	36,234	1,896.3
	Suffocation	95	5.0	MV Traffic	1,737	90.9	Overexertion	35,681	1,867.3
	Firearm	62	3.2	Cut/pierce	759	39.7	Struck by	33,040	1,729.1
	Other/unknown	123	6.4	Other/unknown	4,941	258.6	Other/unknown	88,375	4,625.0
	TOTAL	818	42.8	TOTAL	12,460	652.1	TOTAL	231,408	12,110.5

Age	Injury Deaths			Injury-related Hospital Stays			Injury-related ED Visits		
	Cause	Number	Rate	Cause	Number	Rate	Cause	Number	Rate
45-64 years	Poisoning	237	14.9	Fall	4,806	302.4	Fall	33,669	2,118.7
	MV Traffic	119	7.5	Poisoning	1,874	117.9	Overexertion	16,424	1,033.5
	Suffocation	80	5.0	MV Traffic	1,193	75.1	MV Traffic	15,392	968.6
	Fall	53	3.3	Struck by	413	26.0	Cut / pierce	15,333	964.9
	Other/unknown	153	9.6	Other/unknown	5,529	347.9	Other/unknown	47,646	2,998.3
	TOTAL	642	40.4	TOTAL	13,815	869.4	TOTAL	128,464	8,084.0

In 2004:

- The three leading causes of injury death were the same among persons ages 25-44 and 45-64 years old: poisoning, motor vehicle traffic, and suffocation/asphyxiation.
- The overall injury death rate was similar for both age groups; 42.8/100,000 for persons ages 20-44 and 40.4/100,000 for those ages 45-64.
- Among injury-related hospital stays persons ages 25-44 had lower rates (652.1/100,000) than those ages 45-64 (869.4/100,000), but among injury-related ED visits persons ages 25-44 had higher rates (12,110.5/100,000) than those ages 45-64 (8,084.0/100,000).
- Poisoning, fall, and motor vehicle traffic were among the top three causes for injury-related hospital stays among both age groups.

Table 8. Leading Causes of Injury by Age Group: Ages 65 Years and Older, MA Residents, 2004

Age	Injury Deaths			Injury-related Hospital Stays			Injury-related ED Visits		
	Cause	Number	Rate	Cause	Number	Rate	Cause	Number	Rate
65-74 years	Fall	34	8.6	Fall	3,566	900.3	Fall	10,741	2,711.8
	MV Traffic	24	6.1	MV Traffic	340	85.8	Cut / pierce	2,385	602.1
	Suffocation	17	4.3	Poisoning	279	70.4	MV Traffic	2,331	588.5
	Firearm	14	3.5	Overexertion	143	36.1	Overexertion	2,163	546.1
	Other/unknown	48	12.1	Other/unknown	2,041	515.3	Other/unknown	8,027	2,026.6
	TOTAL	137	34.6	TOTAL	6,369	1,608.0	TOTAL	25,647	6,475.1

Age	Injury Deaths			Injury-related Hospital Stays			Injury-related ED Visits		
	Cause	Number	Rate	Cause	Number	Rate	Cause	Number	Rate
75+ years	Fall	170	37.1	Fall	15,756	3,438.2	Fall	25,083	5,473.5
	MV Traffic	72	15.7	MV Traffic	546	119.1	Struck by	2,541	554.5
	Suffocation	72	15.7	Poisoning	461	100.6	Cut / pierce	2,146	468.3
	Other injuries	98	21.4	Overexertion	294	64.2	Overexertion	2,125	463.7
	Unknown	170	37.1	Other/unknown	4,931	1,076.0	Other/unknown	9,686	2,113.7
	TOTAL	582	127.0	TOTAL	21,988	4,798.2	TOTAL	41,581	9,073.7

In 2004:

- The three leading causes of injury death were the same among persons ages 65-74 and 75 and older: fall, motor vehicle traffic, and suffocation/asphyxiation.
- The three leading causes of injury-related hospital stays were also the same among persons ages 65-74 and 75 and older: fall, motor vehicle traffic, and poisoning.
- The overall rate of injury-related hospital stays and hospital stays due to falls, were much higher among persons ages 65-74 and 75 and older when compared to younger age groups.
- Persons ages 75 and older had the highest rates of injury deaths (127.0/100,000) and injury-related hospital stays (4,798.2/100,000) among all age groups presented.
- Among persons ages 75 and older there were 15,756 fall-related hospital stays; 4.4 times as many than those among persons ages 65-74 (N=3,566).

Table 9. Number and Rate of Injury-related Cases by Intent and Selected Causes, MA Residents, 2004

Intent and Cause	Injury Deaths	Nonfatal Hospital Stays	Nonfatal ED Visits	Totals ¹		
	Number	Number	Number	Total Injury Count	Rate	Case Fatality Ratio (%)
Unintentional	1,352	51,280	663,025	715,657	11,153.4	0.2
Drowning or near drowning/submersion	42	56	165	263	4.1	16.0
Fall	272	28,331	170,803	199,406	3,107.7	0.1
Firearm	4	64	166	234	3.6	1.7
Fire/burn total	33	557	10,421	11,011	171.6	0.3
Fire/flame	33	227	1,711	1,971	30.7	1.7
Burns, hot object/substance	0	330	8,710	9,040	140.9	0.0
Hanging, strangulation, or suffocation	109	384	521	1,014	15.8	10.7
Poisoning	99	2,798	6,474	9,371	146.0	1.1
Transport Injuries:	549	6,851	103,499	110,899	1,728.3	0.5
Motor vehicle traffic-related	508	5,601	90,032	96,141	1,498.3	0.5
Injury to occupant***	345	3,983	82,273	86,601	1,349.7	0.4
Injury to motorcyclist	70	662	2,581	3,313	51.6	2.1
Injury to pedal cyclist	4	170	1,170	1,344	20.9	0.3
Injury to pedestrian	89	751	3,690	4,530	70.6	2.0
Pedestrian, non-traffic	5	56	456	517	8.1	1.0
Pedal cyclist, non-traffic	2	507	8,292	8,801	137.2	0.0
Other transport	34	687	4,719	5,440	84.8	0.6
Other and unspecified injuries	244	12,239	370,976	383,459	5,976.1	0.1
Suicide/Self-inflicted	429	4,301	6,798	11,528	179.7	3.7
Firearm	94	4	3	101	1.6	93.1
Hanging, strangulation, or suffocation	180	34	64	278	4.3	64.7
Poisoning	95	3,449	3,663	7,207	112.3	1.3
Other and unspecified injuries	60	814	3,068	3,942	61.4	1.5
Homicide/Assault	175	2,109	23,876	26,160	407.7	0.7
Cut or pierce	39	510	1,632	2,181	34.0	1.8
Firearm	105	249	175	529	8.2	19.8
Other and unspecified injuries	31	1,350	22,069	23,450	365.5	0.1
Injuries of Undetermined Intent	602	910	3,414	4,926	76.8	12.2
Drowning or near drowning/submersion	23	1	1	25	0.4	92.0
Fall	6	15	55	76	1.2	7.9
Poisoning	540	687	2,668	3,895	60.7	13.9
Other and unspecified injuries	33	207	690	930	14.5	3.5
All other intents/causes	57	2,537	3,343	5,937	92.5	1.0
No valid intent code provided	0	3,651	9,733	13,384	208.6	n/a
TOTAL	2,615	64,788	710,189	777,592	12,118.6	0.3

¹The total injury count includes the number of fatal and nonfatal injuries among MA residents in 2004. The rate is based on those numbers. The case fatality ratio (number of fatal injury cases among the total number of injury cases) is based only on Massachusetts residents who died in Massachusetts and those treated within a MA acute care hospital for an injury in 2004. MA residents who died out of state were not included in this ratio. **Occupant includes drivers/passengers and unspecified persons injured in motor vehicles **except** motorcycles.

Case fatality ratios (i.e., the percentage of fatal injury cases among total injury cases) vary by cause and intent of injury. Firearms,

for example are particularly lethal weapons, but the case fatality ratio differs considerably by intent. For self-inflicted injuries, firearms

are almost always lethal; 93% result in death, among assault-related firearm injuries 20% are fatal and among unintentional injuries only 2% of firearm injuries results in a fatality. Self-inflicted suffocation/hanging injuries have a case fatality ratio of 64.7%, while 10.7% of unintentional suffocation/hanging injuries are fatal.

Injury Charges by Cause and Intent

Charges are presented in this report to provide an economic measurement associated with injuries overall and for specific intents and causes.

All three databases used in this report include charges associated with each visit. Charges that are issued by the treating hospital may or may not be the amount that is ultimately paid to the hospital for services rendered (i.e., these are estimated costs based on charges, not payment). Additionally, this method of economic measurement does not take into account costs associated with long-term or rehabilitative care, nor other costs associated with injury and disability such as lost wages.

In 2004, charges for all acute care hospital treated injuries exceeded \$1.8 billion: these included hospital discharges (\$1.1 billion), observation bed stays (\$66.5 million), and emergency department visits (\$616 million).

The overall mean charge for an injury-related emergency department visit in 2004 was \$867 per visit. Among observation bed stays the mean charge was \$7,064; and among hospital discharges the mean charge was \$20,294 per injury visit.

Charges by intent and cause for inpatient hospital discharges are presented in table 10, as they account for the largest overall percent of charges. Findings include:

- Unintentional falls had the highest charges overall among inpatient hospital discharges (\$500 million). Charges for unintentional motor vehicle traffic-related occupant injuries

were the second highest (\$110 million).

- Among unintentional injuries, the highest mean charges were fire-related injuries (\$50,072) and motor vehicle injuries to pedestrians (\$48,597) and to other persons (\$53,510).
- Other specified and classifiable injuries had the highest mean charges among inpatient hospital discharges for self-inflicted injuries (\$69,036), followed by firearms (\$48,187).
- Total charges for self-inflicted injuries were highest for poisonings (\$32.8 million), though the mean charge for such injuries was among the lowest (\$9,911).
- Among assault-related injuries, causes with the highest mean charges were firearms (\$39,041). Other causes resulted in a higher mean charge but overall numbers for these causes were very small (N=<5).
- Struck by or against an object injuries had the highest total charges among assault-related injuries (\$10 million).
- Inpatient hospital discharges by intent: \$943 million for unintentional injuries, \$75.9 million for injuries having no cause or intent provided, \$68.7 million for injuries related to adverse effects, \$46 million for self-inflicted injuries, and \$39 million for assault-related injuries.

Table 10. Charges for Injury-related Inpatient Hospital Discharges, MA Residents, 2004

Intent and Cause	Number	Mean Charge	Total Charges
UNINTENTIONAL			
Fall	27,108	\$18,500	\$501,498,600
Motor Vehicle Traffic			
Occupant	3255	\$33,852	\$110,189,292
Motorcyclist	604	\$41,293	\$24,941,127
Pedal cyclist	144	\$30,901	\$4,449,770
Pedestrian	683	\$48,597	\$33,191,659
Other person	31	\$53,510	\$1,658,801
Unspecified Person	147	\$20,516	\$3,015,883
Poisoning	2185	\$12,408	\$27,111,014
Struck by/against	1252	\$15,468	\$19,366,382
Overexertion	1047	\$13,250	\$13,873,027
Natural / environmental			
Dog bite	149	\$11,704	\$1,743,953
Other bite or sting	486	\$6,634	\$3,224,080
All other	363	\$15,501	\$5,626,872
Cut / pierce	673	\$13,957	\$9,393,011
Other transport	579	\$25,968	\$15,035,688
Fire / burn			
Fire/flame	206	\$50,072	\$10,314,872
Hot object / substance burn	306	\$26,230	\$8,026,366
Pedal cyclist, other	394	\$14,329	\$5,645,649
Suffocation / hanging	447	\$29,450	\$13,164,026
Machinery	259	\$23,152	\$5,996,422
Pedestrian, other	55	\$34,426	\$1,893,427
Firearms	51	\$27,403	\$1,397,543
Near drowning / submersion	43	\$24,555	\$1,055,874
Other specified & classifiable			
Human bite	33	\$14,905	\$491,877
Non-powder gun	12	\$6,794	\$81,524
Other	2209	\$22,563	\$49,840,574
Other specified, not classifiable	798	\$19,428	\$15,503,625
Unspecified	3174	\$17,496	\$55,532,984
SELF-INFLICTED			
Poisoning	3312	\$9,911	\$32,824,601
Cut / pierce	590	\$11,518	\$6,795,759
Suffocation / hanging	43	\$27,626	\$1,187,924
Fire / burn			
Fire/flame	32	\$30,570	\$978,240
Hot object / substance burn	2	\$6,171	\$12,342
Fall	27	\$33,013	\$891,364
Firearm	14	\$48,187	\$674,616
Motor Vehicle Traffic	7	\$35,253	\$246,769
Other natural / environmental	2	\$14,422	\$28,843
Drowning / submersion	2	\$24,882	\$49,764
Other specified & classifiable	5	\$69,036	\$345,179
Other specified, not classifiable	100	\$18,679	\$1,867,918
Unspecified	27	\$11,399	\$307,775

Table 10. Charges for Injury-related Inpatient Hospital Discharges, MA Residents, 2004 (continued)

Intent and Cause	Number	Mean Charge	Total Charges
ASSAULT	Number	Mean Charge	Total Charges
Struck by / against	603	\$16,638	\$10,032,506
Cut / pierce	423	\$22,750	\$9,623,145
Firearm	224	\$39,041	\$8,745,252
Suffocation / hanging	4	\$77,429	\$309,714
Fall	4	\$24,904	\$99,615
Motor Vehicle Traffic	3	\$29,530	\$88,590
Fire / burn			
Fire/flame	3	\$54,456	\$163,369
Hot object / substance burn	1	\$175,711	\$175,711
Poisoning	1	\$55,369	\$55,369
Other specified & classifiable			
Human bite	41	\$7,565	\$310,146
Non-powder gun	5	\$8,920	\$44,602
Other	107	\$16,958	\$1,814,471
Other specified, not classifiable	165	\$21,901	\$3,613,678
Unspecified	160	\$24,650	\$3,943,979
UNDETERMINED			
Poisoning	598	\$12,078	\$7,222,825
Firearm	24	\$37,726	\$905,421
Fall	14	\$24,640	\$344,961
Cut / pierce	13	\$15,241	\$198,130
Fire / burn			
Fire/flame	6	\$14,341	\$86,048
Hot object / substance burn	2	\$6,440	\$12,880
Near drowning / submersion	1	\$123,802	\$123,802
Motor Vehicle Traffic	1	\$7,374	\$7,374
Natural / environmental	1	\$3,308	\$3,308
Suffocation / hanging	1	\$1,275	\$1,275
Non-powder gun	1	\$10,665	\$10,665
Other specified, not classifiable	115	\$16,597	\$1,908,676
Unspecified	25	\$19,194	\$479,839
OTHER /LEGAL			
Struck by / against	7	\$23,074	\$161,517
Firearm	5	\$29,372	\$146,862
Poisoning	1	\$3,653	\$3,653
Other specified, not classifiable	20	\$21,748	\$434,957
Unspecified	1	\$15,630	\$15,630
TOTALS BY INTENT OF INJURY			
UNINTENTIONAL	46,693	\$20,201	\$943,263,922
SELF-INFLICTED	4,163	\$11,100	\$46,211,094
ASSAULT	1,744	\$22,374	\$39,020,147
UNDETERMINED	802	\$14,096	\$11,305,204
OTHER /LEGAL	34	\$22,430	\$762,619
ADVERSE EFFECTS	2,538	\$27,102	\$68,784,209
CAUSE / INTENT NOT PROVIDED	2,395	\$31,707	\$75,939,446
<i>Injuries with no charges listed</i>	36	n/a	n/a
TOTAL	58,369	\$20,294	\$1,185,286,641

SECTION II.

Regional and Community Level Data, MA Residents, 2004

Location for regional and community level data is based on the patient's city or town of residence according to zip code.

COUNTY DATA:

For county data, both the "true" or crude rate and the age-adjusted rate, for comparison purposes, are provided for overall fatal and nonfatal injuries combined. Counts are also provided for total injury deaths and nonfatal injuries and for selected causes.

CITY/TOWN DATA:

Crude rates are provided by city and town for overall fatal and nonfatal injuries combined. The crude rate represents the "true" rate for a given city or town, but may not be best for comparing one community to another. Age-adjusted rates, which take into effect distortions in age distribution differences between communities, may be better suited for such comparisons. At the time of this report, age group population estimates for 2004 were not available for cities and towns making it impossible to age-adjust rates. The crude rate can provide a good baseline for a given community to compare against itself in future years.

Counts are also provided for total injury deaths and nonfatal injuries and for selected causes. For many communities the selected intents and causes provided, account for nearly all or all of their injury deaths for 2004. Total injury deaths are provided as death data are public record. Databases that capture nonfatal injuries are not public record and therefore counts less than seven are suppressed for patient confidentiality.

COMMUNITY HEALTH NETWORK AREA (CHNA) DATA:

A Community Health Network Area (CHNA) is a coalition of members from public, non-profit, and private sectors working to improve public health within their community. The 351 individual cities and towns in Massachusetts are grouped into 27 regions (CHNAs). These coalitions mobilize around key health issues that impact their community, promote prevention efforts, enhance access to care, and provide opportunities for more collaboration among agencies. A listing of cities and towns within each CHNA is provided on pages 43-44.

Crude rates are provided by CHNA for overall fatal and nonfatal injuries combined, and counts are provided for total injury deaths and nonfatal injuries, and for selected causes.

Table 11. Fatal and Nonfatal Number and Rate of Selected Injury Causes by County, MA Residents, 2004

	Total Injury Deaths and Nonfatal Injury-related Cases				Unintentional Motor Vehicle Traffic ³		Unintentional Falls Among Persons 65 Years and Older		Unintentional and Undetermined Poisonings ⁴		Homicide/Assault		Suicide/Self-inflicted		
	Injury Deaths	Nonfatal Injuries	Total	Crude Rate ¹	Age-adjusted Rate ²	Injury Deaths	Nonfatal Injuries	Injury Deaths	Nonfatal Injuries	Injury Deaths	Nonfatal Injuries	Injury Deaths	Nonfatal Injuries	Injury Deaths	Nonfatal Injuries
Massachusetts	2,615	774,977	777,592	12,118.6	12,171.0	508	95,633	200	55,139	639	12,627	175	25,985	429	11,099
Barnstable	129	31,548	31,677	13,851.9	14,650.8	21	3,247	13	3,327	26	437	3	859	28	405
Berkshire	81	22,546	22,627	17,078.8	17,645.4	27	1,830	5	1,748	12	287	0	564	13	312
Bristol	283	81,763	82,046	14,967.1	15,080.4	63	10,057	20	4,904	92	1,004	12	2,669	39	1,277
Dukes	8	3,377	3,385	21,603.2	22,093.2	3	197	0	245	0	27	0	54	4	28
Essex	304	90,075	90,379	12,230.2	12,378.1	58	10,298	32	6,731	83	1,350	14	2,651	53	1,259
Franklin	30	9,077	9,107	12,607.5	12,901.8	10	717	1	554	4	135	2	176	5	91
Hampden	212	61,879	62,091	13,444.1	13,496.0	49	10,515	12	4,013	44	1,610	23	2,688	29	927
Hampshire	64	15,146	15,210	9,883.4	10,054.2	7	1,613	2	1,188	14	249	2	351	17	301
Middlesex	458	145,444	145,902	9,961.7	10,045.8	66	16,210	39	12,077	123	1,973	21	3,725	75	1,856
Nantucket	2	2,068	2,070	20,446.5	21,165.7	0	86	1	105	0	14	1	42	0	14
Norfolk	212	69,545	69,757	10,672.4	10,870.3	39	7,174	19	6,311	55	1,023	3	1,853	38	934
Plymouth	217	66,235	66,452	13,543.5	13,760.9	61	9,753	19	3,845	30	827	19	1,899	39	820
Suffolk	309	81,051	81,360	12,215.8	12,157.0	32	13,922	16	4,425	99	2,204	62	5,830	34	1,167
Worcester	306	95,224	95,530	12,255.5	12,294.0	72	10,014	21	5,666	57	1,487	13	2,624	55	1,709

¹ Rates are per 100,000 residents.

² Rates are age-adjusted to the 2000 US standard Population.

³ Poisonings can include prescription medicines, household cleaners, toxic effects of legal or illegal drugs, etc.

Table 12. Fatal and Nonfatal Number and Rate of Selected Injury Causes by City/Town, MA Residents, 2004

COMMUNITY	Total Injury Deaths and Nonfatal Injury-related Cases			Crude Rate ¹	Unintentional Motor Vehicle Traffic ²		Unintentional Falls Among Persons 65 Years and Older		Unintentional and Undetermined Poisonings ³		Homicide/Assault		Suicide/Self-inflicted	
	Deaths	Nonfatal	Total		Deaths	Nonfatal	Deaths	Nonfatal	Deaths	Nonfatal	Deaths	Nonfatal	Deaths	Nonfatal
Abington	10	1,786	1,796	11,042.8	3	254	1	105	1	20	0	36	3	<7
Action	2	1,503	1,505	7,284.6	0	118	0	123	0	20	0	24	1	24
Acushnet	5	1,181	1,186	11,207.7	2	167	0	80	1	24	0	24	2	9
Adams	6	1,409	1,415	16,631.4	2	117	0	121	2	22	0	44	1	16
Agawam	8	2,886	2,894	10,113.2	1	368	1	325	1	58	0	56	2	24
Alford	0	88	88	22,480.9	0	7	0	7	0	<7	0	<7	0	<7
Amesbury	6	2,015	2,021	12,075.0	1	163	1	129	1	26	0	38	2	39
Amherst	6	1,463	1,469	4,289.4	1	201	0	137	0	22	1	35	0	30
Andover	7	2,114	2,121	6,599.0	0	174	1	275	0	21	1	14	3	26
Aquinnah	0	57	57	15,807.8	0	<7	0	<7	0	<7	0	0	0	0
Arlington	11	3,175	3,186	7,668.6	1	263	5	401	1	39	0	64	3	41
Ashburnham	2	818	820	13,895.9	1	107	0	37	0	11	0	13	0	8
Ashby	1	306	307	10,492.1	1	31	0	19	0	<7	0	7	0	<7
Ashfield	1	152	153	8,406.6	1	13	0	11	0	<7	0	<7	0	0
Ashland	5	1,497	1,502	9,672.8	0	170	3	81	0	26	0	27	1	10
Athol	7	1,988	1,995	17,092.0	3	58	0	45	1	12	0	15	1	20
Attleboro	23	5,794	5,817	13,370.6	5	542	3	388	2	60	1	158	5	123
Auburn	7	1,594	1,601	9,773.5	3	148	1	171	1	24	0	35	1	21
Avon	0	528	528	12,041.0	0	77	0	34	0	<7	0	15	0	7
Ayer	3	1,108	1,111	15,404.9	1	99	0	73	1	16	0	26	0	19
Barnstable	29	8,093	8,122	16,734.3	3	880	2	626	9	123	0	296	6	112
Barre	2	552	554	10,341.6	1	63	0	26	0	11	0	9	0	21
Becket	0	187	187	10,533.0	0	22	0	<7	0	<7	0	<7	0	<7
Bedford	9	1,347	1,356	10,831.5	2	109	3	136	1	20	0	20	0	8
Belchertown	7	1,448	1,455	10,508.5	0	160	1	81	0	27	0	25	4	19
Bellingham	3	1,592	1,595	10,119.3	2	132	0	62	1	16	0	26	0	20
Belmont	11	1,785	1,796	7,608.9	1	153	2	223	0	11	1	26	2	17
Berkley	1	791	792	12,470.5	0	91	0	17	1	8	0	26	0	<7
Berlin	1	271	272	10,160.6	0	37	0	25	0	0	0	<7	1	<7
Bernardston	2	303	305	13,769.8	2	24	0	14	0	<7	0	<7	0	<7
Beverly	14	5,067	5,081	12,650.0	3	430	1	475	5	63	0	105	1	55
Billerica	6	3,886	3,892	9,741.9	0	401	0	207	3	47	1	105	1	28
Blackstone	5	644	649	7,167.3	1	62	1	15	1	<7	0	13	0	14
Blandford	0	202	202	15,981.0	0	29	0	<7	0	<7	0	7	0	0
Bolton	1	389	390	8,885.9	0	25	0	22	1	<7	0	7	0	<7
Boston	248	70,320	70,568	12,398.5	25	12,283	14	3,509	76	1,924	58	5,263	26	1,001

¹ Rates are per 100,000 residents.

² Poisonings can include prescription medicines, household cleaners, toxic effects of legal or illegal drugs, etc.

Table 12. Fatal and Nonfatal Number and Rate of Selected Injury Causes by City/Town, MA Residents, 2004 (continued)

COMMUNITY	Total Injury Deaths and Nonfatal Injury-related Cases			Crude Rate ¹	Unintentional Motor Vehicle Traffic ²		Unintentional Falls Among Persons 65 Years and Older		Unintentional and Undetermined Poisonings ³		Homicide/Assault		Suicide/Self-inflicted	
	Deaths	Nonfatal	Total		Deaths	Nonfatal	Deaths	Nonfatal	Deaths	Nonfatal	Deaths	Nonfatal	Deaths	Nonfatal
Bourne	9	2,927	2,936	15,044.1	4	303	224	2	1	23	1	56	1	29
Boxborough	0	378	378	7,494.1	0	38	10	0	0	<7	0	<7	0	0
Boxford	0	684	684	8,320.2	0	37	44	0	0	<7	0	9	0	<7
Boylston	0	336	336	8,036.4	0	36	21	0	0	<7	0	7	0	0
Braintree	13	3,653	3,666	10,822.8	3	349	456	0	2	59	0	117	3	36
Brewster	3	927	930	8,969.9	0	78	136	0	0	23	0	22	2	19
Bridgewater	8	2,380	2,388	9,283.5	2	283	91	0	3	47	1	80	2	43
Brimfield	2	454	456	12,666.7	0	37	21	0	1	14	0	7	1	11
Brockton	52	18,205	18,257	19,216.1	12	4,396	733	2	11	255	9	769	8	219
Brookfield	5	443	448	14,447.0	0	56	27	0	0	13	0	11	4	7
Brookline	15	3,590	3,605	6,415.5	1	275	445	3	2	64	0	83	4	45
Buckland	1	30	31	1,560.9	1	<7	<7	0	0	0	0	0	0	0
Burlington	5	2,014	2,019	8,694.0	1	166	203	0	0	22	0	25	1	19
Cambridge	26	7,444	7,470	7,412.8	3	884	571	1	8	124	0	283	4	109
Canton	5	2,418	2,423	11,267.1	0	263	275	0	2	21	0	58	0	35
Carlisle	1	334	335	6,935.8	1	27	24	0	0	<7	0	<7	0	<7
Carver	3	1,894	1,897	16,507.1	1	247	103	0	0	21	0	54	1	34
Charlton	1	163	164	11,729.2	0	19	9	0	0	<7	0	<7	0	0
Charlton	5	1,392	1,397	11,362.3	2	132	33	0	2	19	0	20	0	16
Chatham	4	639	643	9,373.2	0	61	125	2	0	12	0	16	0	8
Chelmsford	16	2,668	2,684	7,948.1	3	250	308	0	3	27	0	38	3	48
Chelsea	25	3,412	3,437	10,344.0	4	576	271	1	8	79	2	268	3	64
Cheshire	0	486	486	14,485.8	0	40	21	0	0	<7	0	<7	0	10
Chester	2	234	236	17,797.9	1	32	14	0	0	7	0	<7	0	0
Chesterfield	0	124	124	9,825.7	0	15	<7	0	0	0	0	<7	0	<7
Chicopee	27	6,827	6,854	12,498.6	4	993	528	1	6	187	1	242	3	131
Chilmark	0	180	180	19,298.7	0	9	17	0	0	<7	0	<7	0	1
Clarksburg	0	407	407	24,395.9	0	33	28	0	0	<7	0	13	0	7
Clinton	9	2,359	2,368	17,048.2	3	243	154	0	2	37	1	57	2	52
Cohasset	1	617	618	8,496.0	0	50	84	0	0	7	0	14	0	<7
Colrain	1	207	208	11,182.8	0	10	11	0	0	<7	1	<7	0	<7
Concord	2	1,461	1,463	8,647.1	0	84	218	1	0	10	0	23	1	19
Conway	0	141	141	7,464.3	0	15	12	0	0	<7	0	0	0	<7
Cummington	0	93	93	9,356.1	0	7	<7	0	0	<7	0	<7	0	<7
Dalton	3	933	936	13,895.5	1	73	97	0	0	11	0	12	1	<7
Danvers	9	2,962	2,971	11,578.8	2	237	373	1	2	43	0	44	1	24

¹ Rates are per 100,000 residents.

² Poisonings can include prescription medicines, household cleaners, toxic effects of legal or illegal drugs, etc.

Table 12. Fatal and Nonfatal Number and Rate of Selected Injury Causes by City/Town, MA Residents, 2004 (continued)

COMMUNITY	Total Injury Deaths and Nonfatal Injury-related Cases			Crude Rate ¹	Unintentional Motor Vehicle Traffic ²		Unintentional Falls Among Persons 65 Years and Older		Unintentional and Undetermined Poisonings ³		Homicide/Assault		Suicide/Self-inflicted	
	Deaths	Nonfatal	Total		Deaths	Nonfatal	Deaths	Nonfatal	Deaths	Nonfatal	Deaths	Nonfatal	Deaths	Nonfatal
Dartmouth	6	3,171	3,177	10,144.6	1	416	0	262	1	31	0	68	1	47
Dedham	7	2,633	2,640	11,367.1	2	242	1	309	2	25	0	73	1	30
Deerfield	1	576	577	12,025.8	0	35	1	49	0	<7	0	8	0	<7
Dennis	12	2,372	2,384	14,786.3	0	260	1	286	2	34	0	79	4	25
Dighton	1	962	963	14,529.3	1	97	0	69	0	7	0	25	0	11
Douglas	5	851	856	11,028.1	1	72	0	21	0	11	0	19	1	11
Dover	3	541	544	9,616.4	1	42	0	40	0	0	0	<7	0	<7
Dracut	12	3,161	3,173	11,063.1	1	400	1	168	2	31	0	65	5	38
Dudley	2	1,599	1,601	14,858.5	1	81	0	35	0	9	0	22	0	13
Dunstable	0	221	221	7,126.7	0	<7	0	10	0	<7	0	<7	0	<7
Duxbury	9	1,491	1,500	10,210.3	2	122	1	149	0	16	0	24	3	17
East Bridgewater	6	1,617	1,623	11,853.6	1	201	0	74	1	32	1	32	1	20
East Brookfield	3	228	231	10,891.1	2	21	1	14	0	<7	0	<7	0	<7
East Longmeadow	6	1,081	1,087	7,339.1	1	130	2	217	0	26	0	20	1	13
Eastham	2	472	474	8,431.2	0	40	1	73	1	<7	0	14	0	10
Easthampton	4	1,996	2,000	12,428.6	0	213	0	133	2	33	0	56	2	45
Easton	4	2,072	2,076	9,002.2	1	274	0	126	0	20	0	38	2	24
Edgartown	3	964	967	24,543.1	2	53	0	73	0	7	0	20	0	<7
Egremont	3	107	110	8,156.5	2	<7	0	<7	0	0	0	0	1	<7
Erving	1	205	206	13,464.1	0	12	0	7	0	<7	0	<7	1	<7
Essex	3	357	360	10,730.3	1	19	0	21	0	<7	0	<7	0	<7
Everett	23	5,920	5,943	15,978.0	1	864	0	359	9	99	0	202	4	82
Fairhaven	8	1,924	1,932	11,827.4	2	249	0	224	2	20	0	38	0	25
Fall River	67	20,909	20,976	22,670.4	11	2,430	1	1,230	31	277	2	836	6	355
Falmouth	20	5,708	5,728	16,943.7	5	533	2	656	2	68	0	117	3	64
Fitchburg	17	5,314	5,331	13,357.6	4	735	1	375	2	96	1	223	3	132
Florida	1	187	188	28,509.8	1	15	0	14	0	3	0	<7	0	<7
Foxborough	5	1,745	1,750	10,700.7	0	179	0	105	1	23	1	30	3	40
Framingham	14	8,520	8,534	13,009.5	1	1,062	1	709	4	95	1	227	1	163
Franklin	5	2,728	2,733	9,052.1	1	214	0	140	2	27	0	48	2	45
Freetown	3	1,150	1,153	12,852.5	1	145	0	31	0	<7	0	15	1	13
Gardner	11	3,415	3,426	16,340.0	2	305	0	228	4	32	0	130	2	89
Georgetown	3	819	822	10,325.3	1	69	0	32	0	10	0	16	1	8
Gill	0	241	241	17,277.3	0	20	0	16	0	<7	0	7	0	<7
Gloucester	22	4,265	4,287	13,911.2	6	331	2	328	7	64	1	123	2	40
Goshen	1	70	71	7,411.3	1	<7	0	<7	0	0	0	<7	0	0

¹ Rates are per 100,000 residents.

² Poisonings can include prescription medicines, household cleaners, toxic effects of legal or illegal drugs, etc.

Table 12. Fatal and Nonfatal Number and Rate of Selected Injury Causes by City/Town, MA Residents, 2004 (continued)

COMMUNITY	Total Injury Deaths and Nonfatal Injury-related Cases			Crude Rate ¹	Unintentional Motor Vehicle Traffic ²		Unintentional Falls Among Persons 65 Years and Older		Unintentional and Undetermined Poisonings ³		Homicide/Assault		Suicide/Self-inflicted	
	Deaths	Nonfatal	Total		Deaths	Nonfatal	Deaths	Nonfatal	Deaths	Nonfatal	Deaths	Nonfatal	Deaths	Nonfatal
Gosnold	0	<7	<7	5,747.1	0	<7	0	0	0	0	0	0	0	<7
Grafton	3	1,485	1,488	9,130.5	1	143	0	74	0	24	0	30	2	27
Granby	2	533	535	8,439.8	0	72	0	34	0	8	0	10	1	8
Granville	2	182	184	11,304.6	0	20	0	8	1	<7	0	<7	1	<7
Great Barrington	5	1,328	1,333	17,925.7	2	104	1	107	0	14	0	34	0	28
Greenfield	9	2,819	2,828	15,774.6	1	261	0	225	3	57	0	76	2	31
Groton	0	1,109	1,109	10,695.3	0	85	0	64	0	19	0	17	0	16
Groveland	2	721	723	11,171.2	0	68	0	49	0	<7	0	13	1	15
Hadley	3	500	503	10,349.8	0	44	0	74	2	7	0	8	0	<7
Halifax	5	895	900	11,566.6	3	117	0	58	0	15	0	13	1	9
Hamilton	1	681	682	8,094.0	1	46	0	38	0	<7	0	7	0	<7
Hampden	2	404	406	7,637.3	2	62	0	42	0	<7	0	<7	0	<7
Hancock	0	77	77	7,648.2	0	7	0	<7	0	<7	0	<7	0	<7
Hanover	6	1,203	1,209	8,727.4	1	109	0	71	1	13	1	24	2	15
Hanson	8	1,116	1,124	11,355.8	5	124	0	49	1	16	1	26	1	21
Hardwick	6	348	354	13,283.3	0	35	0	15	0	<7	0	<7	1	<7
Harvard	1	436	437	7,184.0	0	35	0	26	1	<7	0	7	0	<7
Harwich	9	1,420	1,429	11,156.2	0	142	0	201	3	21	1	26	4	29
Hatfield	1	350	351	10,601.0	0	33	0	18	0	<7	0	8	0	<7
Haverhill	24	8,886	8,910	14,731.7	6	1,028	3	595	6	107	1	348	5	161
Hawley	2	43	45	13,080.9	2	<7	0	<7	0	<7	0	0	0	0
Heath	1	54	55	6,815.4	0	7	0	<7	0	<7	0	<7	0	<7
Hingham	7	1,709	1,716	8,095.1	1	136	1	209	0	17	2	30	2	16
Hinsdale	1	337	338	18,534.2	1	41	0	9	0	<7	0	<7	0	<7
Holbrook	4	1,393	1,397	12,897.0	1	163	0	84	1	14	0	43	1	18
Holden	6	1,310	1,316	7,930.1	0	130	0	83	0	13	0	25	4	23
Holland	0	294	294	11,831.0	0	34	0	11	0	<7	0	10	0	<7
Holliston	2	1,314	1,316	9,454.7	0	124	0	79	1	11	0	12	0	13
Holyoke	16	6,690	6,706	16,740.7	0	1,309	2	435	3	120	2	273	2	124
Hopedale	3	681	684	10,993.2	1	62	1	61	1	<7	0	16	0	12
Hopkinton	6	1,206	1,212	8,638.0	3	90	1	70	2	9	0	15	0	15
Hubbardston	3	468	471	11,022.7	1	54	0	11	0	<7	0	12	0	<7
Hudson	7	2,188	2,195	11,721.7	0	232	1	138	2	29	0	42	2	29
Hull	5	1,288	1,293	11,422.3	0	156	1	71	1	26	1	50	0	14
Huntington	3	343	346	15,748.7	0	29	0	15	2	<7	0	9	1	<7
Ipswich	2	1,302	1,304	9,750.3	1	92	0	110	0	24	0	18	1	14

¹ Rates are per 100,000 residents.

² Poisonings can include prescription medicines, household cleaners, toxic effects of legal or illegal drugs, etc.

Table 12. Fatal and Nonfatal Number and Rate of Selected Injury Causes by City/Town, MA Residents, 2004 (continued)

COMMUNITY	Total Injury Deaths and Nonfatal Injury-related Cases			Crude Rate ¹	Unintentional Motor Vehicle Traffic ²		Unintentional Falls Among Persons 65 Years and Older		Unintentional and Undetermined Poisonings ³		Homicide/Assault		Suicide/Self-inflicted	
	Deaths	Nonfatal	Total		Deaths	Nonfatal	Deaths	Nonfatal	Deaths	Nonfatal	Deaths	Nonfatal	Deaths	Nonfatal
Kingston	5	1,535	1,540	12,474.7	2	146	0	167	1	12	0	47	1	28
Lakeville	4	1,046	1,050	9,968.7	3	132	0	55	0	<7	0	13	1	11
Lancaster	1	960	961	14,302.7	0	97	0	59	0	19	0	17	0	16
Lanesborough	1	341	342	11,537.2	0	29	1	15	0	<7	0	<7	0	<7
Lawrence	21	9,637	9,658	13,440.4	4	1,452	0	439	8	162	3	531	1	197
Lee	6	758	764	12,975.5	0	40	1	89	0	9	0	12	1	<7
Leicester	6	1,045	1,051	9,638.7	4	137	0	57	2	22	0	18	0	18
Lenox	3	702	705	13,657.5	0	26	0	134	2	11	0	9	0	18
Leominster	19	5,428	5,447	12,996.6	2	697	2	401	8	87	0	151	2	108
Leverett	0	112	112	6,349.2	0	8	0	7	0	<7	0	<7	0	<7
Lexington	13	1,890	1,903	6,256.0	1	111	3	260	1	19	0	22	1	15
Leyden	0	115	115	14,262.4	0	11	0	9	0	<7	0	<7	0	<7
Lincoln	2	446	448	5,600.0	0	24	1	45	1	<7	0	<7	0	<7
Littleton	3	712	715	8,335.3	0	66	0	60	0	7	0	15	1	16
Longmeadow	1	946	947	6,058.5	0	91	0	161	0	33	0	22	1	12
Lowell	42	14,300	14,342	13,836.3	4	2,382	1	750	14	166	7	540	6	217
Ludlow	4	2,038	2,042	9,309.7	2	272	0	154	0	50	0	91	2	26
Lunenburg	1	968	969	9,709.4	0	95	0	59	1	14	0	20	0	17
Lynn	56	13,691	13,747	15,362.4	6	2,435	5	628	20	248	5	588	11	257
Lynnfield	3	1,137	1,140	9,793.8	1	104	1	97	1	13	0	20	0	9
Malden	32	7,054	7,086	12,804.5	5	1,084	1	448	16	156	2	266	2	95
Manchester	2	407	409	7,616.4	0	24	1	39	0	7	0	7	0	<7
Mansfield	6	2,219	2,225	9,674.8	0	210	0	99	5	21	0	37	0	34
Marblehead	4	1,568	1,572	7,716.9	2	114	0	173	0	25	0	22	0	<7
Marion	2	650	652	12,278.7	1	45	0	61	0	<7	0	13	0	<7
Marlborough	17	4,856	4,873	12,926.1	2	518	2	377	4	59	2	112	3	73
Marshfield	9	2,582	2,591	10,440.4	2	263	1	153	1	41	0	64	1	38
Mashpee	4	1,829	1,833	12,817.3	1	210	0	152	1	25	0	45	1	17
Mattapoisett	2	630	632	9,772.7	0	90	0	52	1	<7	0	<7	0	7
Maynard	4	991	995	9,639.6	0	96	0	78	1	9	0	29	1	11
Medfield	5	1,133	1,138	9,179.6	1	100	0	65	1	<7	0	19	0	14
Medford	19	6,515	6,534	12,056.0	2	759	0	679	8	110	3	214	1	53
Medway	4	1,284	1,288	9,995.3	1	104	0	63	1	16	0	15	1	14
Melrose	7	2,956	2,963	11,167.2	1	266	0	320	2	43	0	58	3	33
Mendon	3	537	540	9,373.4	1	40	0	29	1	<7	0	16	0	8
Merrimac	3	772	775	12,260.7	2	58	0	49	0	19	0	11	1	20

¹ Rates are per 100,000 residents.

² Poisonings can include prescription medicines, household cleaners, toxic effects of legal or illegal drugs, etc.

Table 12. Fatal and Nonfatal Number and Rate of Selected Injury Causes by City/Town, MA Residents, 2004 (continued)

COMMUNITY	Total Injury Deaths and Nonfatal Injury-related Cases			Crude Rate ¹	Unintentional Motor Vehicle Traffic ²		Unintentional Falls Among Persons 65 Years and Older		Unintentional and Undetermined Poisonings ³		Homicide/Assault		Suicide/Self-inflicted	
	Deaths	Nonfatal	Total		Deaths	Nonfatal	Deaths	Nonfatal	Deaths	Nonfatal	Deaths	Nonfatal	Deaths	Nonfatal
Methuen	18	5,529	5,547	12,369.3	3	675	4	387	5	80	0	137	3	58
Middleborough	12	3,082	3,094	14,648.9	2	378	1	147	1	29	0	76	4	41
Middlefield	0	36	36	6,593.4	0	<7	0	<7	0	<7	0	<7	0	0
Middleton	3	720	723	7,938.9	1	60	0	33	0	11	0	32	1	14
Milford	9	3,446	3,455	12,604.9	0	387	2	252	2	56	0	57	2	35
Milbury	6	1,349	1,355	10,130.1	2	131	0	96	2	24	0	35	1	19
Millis	1	800	801	10,016.3	0	67	0	46	1	8	0	7	0	11
Millville	2	315	317	10,797.0	1	21	1	11	0	0	0	<7	0	<7
Milton	6	2,885	2,891	11,181.6	1	318	1	350	1	32	1	97	0	10
Monroe	0	24	24	24,489.8	0	<7	0	<7	0	0	0	0	0	0
Monson	11	945	956	11,008.8	3	84	0	59	2	14	0	15	1	13
Montague	5	1,105	1,110	13,141.1	1	101	0	64	1	22	1	25	1	13
Monterey	0	112	112	11,740.0	0	9	0	<7	0	<7	0	<7	0	<7
Montgomery	0	114	114	15,453.8	0	12	0	8	0	<7	0	<7	0	<7
Mount Washington	0	13	13	9,812.0	0	<7	0	<7	0	0	0	0	0	0
Nahant	1	301	302	8,342.5	0	35	0	37	0	<7	0	8	1	<7
Nantucket	2	2,068	2,070	20,446.5	0	86	1	105	0	14	1	42	0	14
Natick	11	3,484	3,495	10,883.4	1	258	1	360	1	38	1	63	2	23
Needham	11	2,697	2,708	9,330.9	1	155	2	387	2	20	0	21	3	28
New Ashford	0	30	30	12,285.7	0	<7	0	<7	0	0	0	0	0	0
New Bedford	70	16,213	16,283	17,326.2	9	2,460	7	852	32	263	6	701	8	264
New Braintree	0	118	118	11,069.4	0	11	0	<7	0	0	0	<7	0	<7
New Marlborough	0	233	233	15,376.5	0	16	0	13	0	<7	0	<7	0	<7
New Salem	0	131	131	13,259.1	0	<7	0	<7	0	<7	0	<7	0	<7
Newbury	1	673	674	9,788.0	0	49	0	46	0	<7	0	10	0	10
Newburyport	10	2,029	2,039	11,616.9	1	124	2	247	3	30	0	29	3	29
Newton	19	6,494	6,513	7,771.4	5	496	1	881	4	64	0	106	2	53
Norfolk	2	937	939	8,949.7	0	69	0	42	0	12	0	23	0	<7
North Adams	5	2,813	2,818	19,890.4	1	229	1	192	1	44	0	92	1	46
North Andover	12	2,112	2,124	7,591.4	2	174	3	241	3	34	0	47	3	27
North Attleboro	12	2,988	3,000	10,647.4	3	276	2	158	0	20	1	60	4	52
North Brookfield	1	500	501	10,405.0	1	52	0	30	0	11	0	7	0	13
North Reading	1	964	965	6,902.7	0	102	0	69	0	20	0	10	0	16
Northampton	17	3,185	3,202	11,068.1	1	284	0	306	4	69	1	88	3	103
Northborough	5	1,222	1,227	8,568.4	0	97	0	92	0	16	0	15	1	31
Northbridge	8	1,697	1,705	12,282.1	5	136	0	107	0	20	0	30	0	31

¹ Rates are per 100,000 residents.

² Poisonings can include prescription medicines, household cleaners, toxic effects of legal or illegal drugs, etc.

Table 12. Fatal and Nonfatal Number and Rate of Selected Injury Causes by City/Town, MA Residents, 2004 (continued)

COMMUNITY	Total Injury Deaths and Nonfatal Injury-related Cases			Crude Rate ¹	Unintentional Motor Vehicle Traffic ²		Unintentional Falls Among Persons 65 Years and Older		Unintentional and Undetermined Poisonings ³		Homicide/Assault		Suicide/Self-inflicted	
	Deaths	Nonfatal	Total		Deaths	Nonfatal	Deaths	Nonfatal	Deaths	Nonfatal	Deaths	Nonfatal	Deaths	Nonfatal
Northfield	2	344	346	10,904.5	1	26	0	17	0	<7	0	<7	0	<7
Norton	10	2,131	2,141	11,176.1	3	215	0	114	2	21	0	47	4	31
Norwell	4	830	834	8,026.9	1	74	2	82	0	12	0	9	0	12
Norwood	6	4,039	4,045	14,169.1	3	484	0	383	1	52	0	99	1	69
Oak Bluffs	1	636	637	16,640.5	1	35	0	52	0	<7	0	10	0	<7
Oakham	0	196	196	10,431.1	0	20	0	<7	0	11	0	<7	0	<7
Orange	1	1,176	1,177	15,564.2	0	38	0	19	0	8	0	11	1	11
Orleans	7	557	564	8,711.8	0	56	2	101	0	12	0	9	3	16
Otis	0	194	194	14,027.5	0	13	0	13	0	<7	0	<7	0	<7
Oxford	6	1,774	1,780	12,959.6	2	143	1	56	1	11	0	22	1	22
Palmer	6	2,250	2,256	17,485.7	3	254	0	155	0	46	0	68	1	18
Paxton	1	350	351	7,729.6	0	36	0	26	0	<7	0	9	1	8
Peabody	25	6,853	6,878	13,655.0	3	794	1	641	9	107	0	150	4	66
Pelham	1	104	105	7,360.8	0	14	0	10	0	<7	0	<7	0	<7
Pembroke	4	1,935	1,939	10,945.5	0	197	0	81	1	26	0	40	2	11
Pepperell	5	1,124	1,129	9,874.1	0	110	0	65	3	20	0	29	1	17
Peru	0	138	138	16,737.5	0	17	0	<7	0	<7	0	<7	0	<7
Petersham	1	148	149	11,788.0	0	<7	0	7	0	0	0	<7	0	<7
Phillipston	0	304	304	17,586.5	0	9	0	7	0	<7	0	<7	0	<7
Pittsfield	30	9,454	9,484	21,415.8	8	809	1	661	7	122	0	275	7	139
Plainfield	0	62	62	10,264.9	0	<7	0	<7	0	<7	0	0	0	0
Plainville	1	926	927	11,695.7	0	90	1	44	0	9	0	25	0	13
Plymouth	22	8,536	8,558	15,672.8	6	936	5	569	0	82	1	222	5	107
Plympton	0	370	370	13,430.1	0	54	0	14	0	9	0	12	0	<7
Princeton	1	307	308	8,802.5	1	30	0	12	0	<7	0	7	0	<7
Provincetown	1	236	237	6,869.6	1	18	0	28	0	8	0	13	0	<7
Quincy	48	10,632	10,680	11,878.7	4	1,116	3	1,052	22	276	0	503	7	141
Randolph	11	3,702	3,713	12,075.6	1	757	4	243	1	55	1	143	1	37
Raynham	4	1,682	1,686	12,653.9	1	225	1	115	1	27	0	49	0	18
Reading	8	1,931	1,939	8,299.8	0	155	0	203	5	35	0	31	0	16
Rehoboth	8	832	840	7,542.4	5	86	0	43	0	7	0	16	1	10
Revere	24	5,785	5,809	12,582.0	2	890	0	476	12	163	2	253	3	77
Richmond	2	171	173	10,613.5	1	20	0	12	0	<7	0	<7	0	0
Rochester	1	570	571	10,976.5	1	54	0	21	0	9	0	8	0	<7
Rockland	6	2,376	2,382	13,336.3	2	289	2	153	2	28	0	79	0	27
Rockport	3	856	859	11,005.8	0	41	2	115	0	12	0	13	0	9

¹ Rates are per 100,000 residents.

² Poisonings can include prescription medicines, household cleaners, toxic effects of legal or illegal drugs, etc.

Table 12. Fatal and Nonfatal Number and Rate of Selected Injury Causes by City/Town, MA Residents, 2004 (continued)

COMMUNITY	Total Injury Deaths and Nonfatal Injury-related Cases			Crude Rate ¹	Unintentional Motor Vehicle Traffic ²		Unintentional Falls Among Persons 65 Years and Older		Unintentional and Undetermined Poisonings ³		Homicide/Assault		Suicide/Self-inflicted	
	Deaths	Nonfatal	Total		Deaths	Nonfatal	Deaths	Nonfatal	Deaths	Nonfatal	Deaths	Nonfatal	Deaths	Nonfatal
Rowe	0	42	42	12,034.4	0	<7	0	<7	0	<7	0	0	0	0
Rowley	1	629	630	11,014.0	1	43	0	41	0	7	0	0	0	<7
Royalston	0	200	200	14,754.8	0	7	0	9	0	0	0	0	0	0
Russell	1	256	257	15,002.9	1	32	0	14	0	<7	0	0	0	<7
Rutland	1	661	662	9,137.3	0	63	0	25	1	7	0	0	0	16
Salem	20	5,587	5,607	13,378.0	3	684	1	405	9	102	1	139	2	74
Salisbury	3	1,207	1,210	14,830.2	3	120	0	59	0	9	0	35	0	10
Sandisfield	0	72	72	8,748.5	0	10	0	<7	0	<7	0	<7	0	0
Sandwich	7	1,954	1,961	9,416.1	3	235	0	163	2	25	0	45	0	25
Saugus	15	3,772	3,787	14,150.7	2	395	2	297	2	64	2	79	3	42
Savoy	1	98	99	13,750.0	0	<7	0	<7	0	<7	0	<7	0	<7
Scituate	6	1,538	1,544	8,485.8	2	165	0	137	0	19	0	41	0	28
Seekonk	8	500	508	3,699.9	3	53	0	39	2	<7	0	13	1	12
Sharon	6	1,604	1,610	9,281.1	3	157	0	130	0	17	0	18	1	14
Sheffield	6	484	490	14,583.3	3	42	0	18	0	<7	0	11	1	<7
Shelburne	0	400	400	19,408.1	0	35	0	44	0	<7	0	<7	0	<7
Sherborn	2	445	447	10,567.4	0	30	0	18	0	<7	0	20	1	7
Shirley	4	685	689	9,064.6	0	64	0	28	2	10	0	42	1	30
Shrewsbury	8	2,876	2,884	8,697.0	2	276	1	220	1	37	1	42	3	30
Shutesbury	0	124	124	6,717.2	0	15	0	<7	0	0	0	0	0	<7
Somerset	14	2,381	2,395	12,813.0	6	248	1	267	2	24	0	46	1	20
Somerville	20	8,609	8,629	11,410.9	7	1,089	2	528	1	130	1	353	4	130
South Hadley	7	1,635	1,642	9,557.1	0	206	1	197	2	28	0	26	2	33
Southampton	1	588	589	10,204.4	0	69	0	25	0	<7	0	8	1	<7
Southborough	0	700	700	7,330.6	0	43	0	50	0	<7	0	<7	0	7
Southbridge	11	3,362	3,373	19,481.3	0	340	2	160	2	78	0	99	3	81
Southwick	4	1,187	1,191	12,632.6	2	117	1	83	0	19	0	28	1	11
Spencer	3	1,355	1,358	11,303.5	1	154	0	63	0	31	0	28	1	29
Springfield	78	24,457	24,535	16,131.8	18	5,368	2	986	20	790	17	1,536	9	432
Sterling	3	868	871	11,250.3	0	78	1	66	1	9	0	7	0	9
Stockbridge	2	208	210	9,333.3	1	13	0	18	0	<7	0	<7	0	<7
Stoneham	3	2,426	2,429	11,151.9	0	222	0	289	0	37	0	52	1	25
Stoughton	11	3,429	3,440	12,787.2	2	482	1	245	5	43	0	74	0	34
Stow	2	477	479	7,828.1	1	41	1	22	0	<7	0	<7	0	7
Sturbridge	4	1,076	1,080	12,425.2	0	110	1	66	1	11	0	16	2	18
Sudbury	2	1,484	1,486	8,657.7	0	97	1	110	1	18	0	13	0	12

¹ Rates are per 100,000 residents.

² Poisonings can include prescription medicines, household cleaners, toxic effects of legal or illegal drugs, etc.

Table 12. Fatal and Nonfatal Number and Rate of Selected Injury Causes by City/Town, MA Residents, 2004 (continued)

COMMUNITY	Total Injury Deaths and Nonfatal Injury-related Cases			Crude Rate ¹	Unintentional Motor Vehicle Traffic ²		Unintentional Falls Among Persons 65 Years and Older		Unintentional and Undetermined Poisonings ³		Homicide/Assault		Suicide/Self-inflicted	
	Deaths	Nonfatal	Total		Deaths	Nonfatal	Deaths	Nonfatal	Deaths	Nonfatal	Deaths	Nonfatal	Deaths	Nonfatal
Sunderland	1	288	289	7,597.3	1	29	0	17	0	<7	0	7	0	<7
Sutton	1	693	694	7,817.1	0	49	0	17	0	13	0	<7	0	14
Swampscott	3	1,334	1,337	9,263.5	0	132	1	169	1	23	0	29	1	18
Swansea	4	1,930	1,934	11,852.7	2	242	0	133	1	15	0	52	0	19
Taunton	21	10,894	10,915	19,268.1	6	1,408	3	542	7	128	2	378	2	180
Templeton	3	923	926	12,646.8	2	75	0	53	0	10	0	14	1	17
Tewksbury	8	2,600	2,608	8,953.0	4	312	0	227	1	33	0	53	1	34
Tisbury	3	1,245	1,248	32,407.2	0	76	0	75	0	11	0	21	3	12
Tolland	0	48	48	10,902.9	0	<7	0	<7	0	<7	0	<7	0	0
Topsfield	2	585	587	9,425.2	1	39	0	55	0	9	0	<7	0	<7
Townsend	2	1,002	1,004	10,765.6	1	108	0	33	0	9	0	21	0	15
Truro	2	147	149	6,834.9	1	19	0	12	0	<7	0	<7	1	<7
Tyngsborough	2	899	901	7,912.5	0	111	0	42	0	7	0	14	1	16
Tyringham	0	26	26	7,323.9	0	0	0	<7	0	0	0	0	0	0
Upton	1	618	619	9,885.0	1	61	0	43	0	<7	0	8	0	12
Uxbridge	4	1,412	1,416	11,565.8	1	142	1	90	0	16	0	19	0	13
Wakefield	9	2,664	2,673	10,882.7	1	240	1	255	1	46	0	50	3	27
Wales	2	217	219	12,180.2	1	23	0	14	1	7	0	<7	0	<7
Walpole	5	2,624	2,629	11,675.1	3	217	0	212	0	31	0	45	2	77
Waltham	19	4,278	4,297	7,254.5	1	520	3	385	6	82	0	106	5	80
Ware	9	1,935	1,944	19,397.3	4	179	0	104	2	31	0	55	2	36
Wareham	13	4,343	4,356	20,523.9	5	476	0	260	3	29	2	84	0	39
Warren	2	767	769	15,444.9	1	87	0	34	1	13	0	20	0	9
Warwick	0	73	73	9,602.1	0	<7	0	<7	0	<7	0	<7	0	0
Washington	0	59	59	10,872.9	0	7	0	<7	0	<7	0	<7	0	0
Watertown	7	2,483	2,490	7,637.3	2	285	0	302	4	24	0	68	1	26
Wayland	3	1,099	1,102	8,436.0	0	52	0	144	1	<7	0	12	0	7
Webster	8	4,027	4,035	23,904.0	1	124	0	105	1	22	0	25	1	30
Wellesley	7	1,983	1,990	7,505.2	0	108	2	202	0	28	0	14	3	10
Wellfleet	4	240	244	8,588.5	1	25	0	35	1	<7	0	13	0	<7
Wendell	0	124	124	12,062.3	0	<7	0	<7	0	<7	0	<7	0	0
Wenham	1	368	369	8,286.5	0	17	0	33	1	<7	0	<7	0	<7
West Boylston	3	729	732	9,611.3	1	33	0	64	0	7	0	22	0	19
West Bridgewater	2	810	812	11,864.4	1	93	1	95	0	<7	0	13	0	12
West Brookfield	3	550	553	14,186.8	2	48	0	45	0	<7	0	9	1	9
West Newbury	4	435	439	10,216.4	1	35	0	31	0	7	0	11	2	<7

¹ Rates are per 100,000 residents.

² Poisonings can include prescription medicines, household cleaners, toxic effects of legal or illegal drugs, etc.

Table 12. Fatal and Nonfatal Number and Rate of Selected Injury Causes by City/Town, MA Residents, 2004 (continued)

COMMUNITY	Total Injury Deaths and Nonfatal Injury-related Cases			Crude Rate ¹	Unintentional Motor Vehicle Traffic ²		Unintentional Falls Among Persons 65 Years and Older		Unintentional and Undetermined Poisonings ³		Homicide/Assault		Suicide/Self-inflicted	
	Deaths	Nonfatal	Total		Deaths	Nonfatal	Deaths	Nonfatal	Deaths	Nonfatal	Deaths	Nonfatal	Deaths	Nonfatal
West Springfield	17	3,289	3,306	11,786.9	4	488	2	228	2	76	2	127	2	47
West Stockbridge	1	159	160	11,044.1	0	16	0	7	0	<7	0	<7	0	<7
West Tisbury	1	290	291	10,898.9	0	20	0	23	0	<7	0	<7	1	<7
Westborough	6	1,625	1,631	8,704.7	0	130	1	166	1	32	0	42	2	43
Westfield	17	5,722	5,739	14,150.4	4	609	1	394	5	116	1	136	2	38
Westford	3	1,587	1,590	7,404.0	1	112	1	104	0	8	0	16	1	22
Westhampton	0	197	197	12,627.6	0	21	0	13	0	<7	0	<7	0	<7
Westminster	2	752	754	10,325.9	1	70	0	36	0	<7	0	13	0	7
Weston	2	902	904	7,796.5	1	60	0	123	0	7	0	<7	1	<7
Westport	8	2,039	2,047	13,886.4	1	223	2	115	2	20	0	42	1	24
Westwood	3	1,435	1,438	10,256.8	1	101	1	170	1	21	0	16	0	33
Weymouth	21	6,788	6,809	12,562.3	6	769	0	515	6	124	0	206	5	117
Whately	1	86	87	5,485.5	0	7	0	8	0	0	0	<7	0	0
Whitman	6	1,818	1,824	12,709.9	2	216	1	85	1	33	0	34	1	36
Wilbraham	6	1,156	1,162	8,336.9	2	146	0	151	2	21	0	24	0	11
Williamsburg	1	343	344	14,081.0	0	39	0	22	0	<7	0	7	1	<7
Williamstown	4	843	847	10,239.4	3	54	0	136	0	<7	0	10	0	10
Wilmington	6	1,518	1,524	7,066.0	3	132	0	106	2	37	0	34	1	17
Winchendon	3	1,663	1,666	16,598.6	1	175	0	53	0	19	0	37	1	29
Winchester	0	1,804	1,804	8,522.7	0	133	0	203	0	19	0	33	0	11
Windsor	1	92	93	10,889.9	1	<7	0	<7	0	0	0	0	0	0
Winthrop	12	1,534	1,546	8,854.0	1	173	1	169	3	38	0	46	2	25
Woburn	19	4,220	4,239	11,319.7	3	519	1	369	7	77	2	114	2	58
Worcester	66	22,782	22,848	12,984.3	12	3,170	4	1,472	15	512	10	1,097	10	483
Worthington	1	141	142	10,923.1	0	15	0	7	0	<7	0	<7	0	0
Wrentham	3	1,209	1,212	10,932.7	1	94	0	128	0	14	0	16	0	20
Yarmouth	16	4,027	4,043	16,190.1	2	387	1	509	4	51	1	105	3	41

¹ Rates are per 100,000 residents.

² Poisonings can include prescription medicines, household cleaners, toxic effects of legal or illegal drugs, etc.

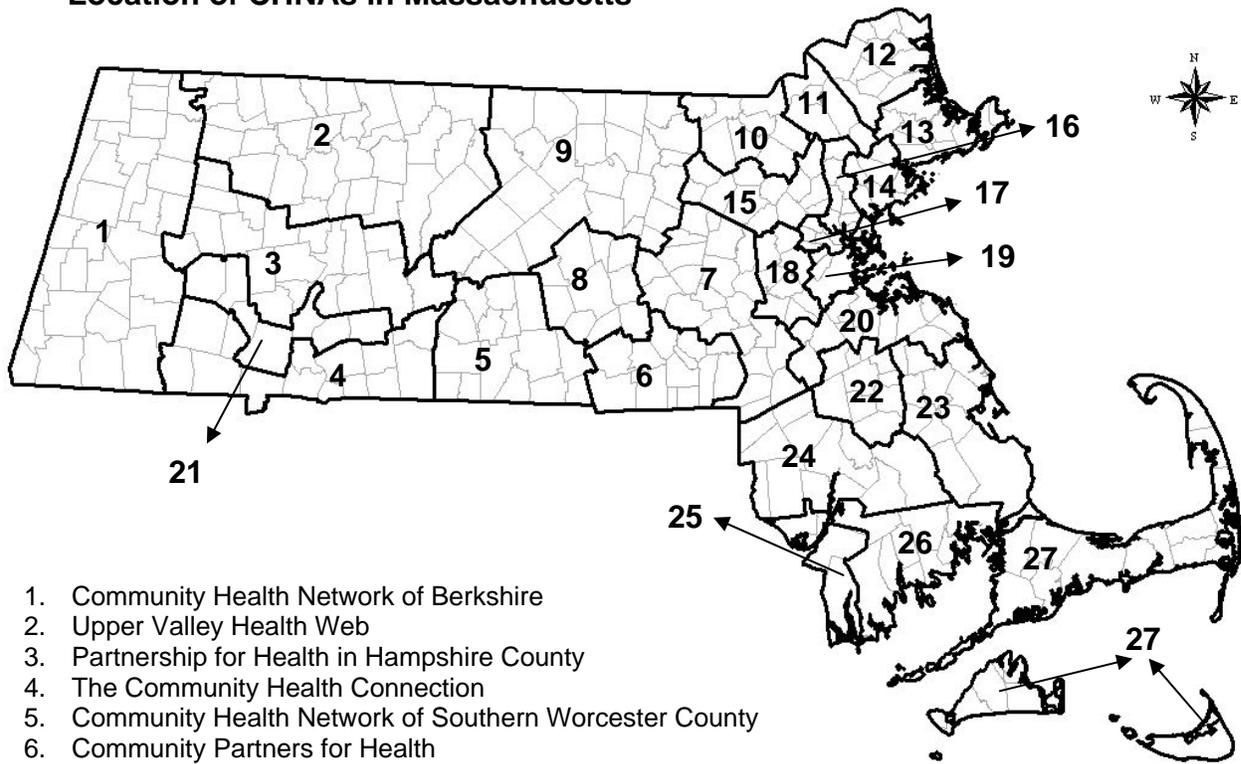
Table 13. Fatal and Nonfatal Number and Rate of Selected Injury Causes by Community Health Network, MA Residents, 2004

	Total Injury Deaths and Nonfatal Injury-related Cases			Unintentional Motor Vehicle Traffic ²		Unintentional Falls Among Persons 65 Years and Older		Unintentional and Undetermined Poisonings ³		Homicide/Assault		Suicide/Self-Inflicted		
	Injury Deaths	Nonfatal Injuries	Total	Crude Rate ¹	Injury Deaths	Nonfatal Injuries	Injury Deaths	Nonfatal Injuries	Injury Deaths	Nonfatal Injuries	Injury Deaths	Nonfatal Injuries	Injury Deaths	Nonfatal Injuries
Massachusetts	2,615	774,977	777,592	12,118.6	508	95,633	200	55,139	639	12,627	175	25,985	429	11,099
Community Health Network of Berkshire (1)	81	22,546	22,627	17,078.8	27	1,830	5	1,748	12	287	0	564	13	312
Upper Valley Health Web (2)	38	11,717	11,755	13,319.4	13	792	1	622	5	149	2	199	6	116
Partnership for Health in Hampshire County (3)	61	14,803	14,864	9,798.5	7	1,584	2	1,173	12	248	2	342	16	297
The Community Health Connection (4)	142	39,289	39,431	13,355.3	37	7,194	8	2,434	28	1,103	19	1,918	19	589
Community Health Network of Southern Worcester County (5)	57	18,038	18,095	15,269.8	14	1,442	5	714	10	252	0	304	14	269
Community Partners for Health (6)	53	16,498	16,551	10,393.0	16	1,481	6	910	9	194	0	274	6	233
Community Health Network of Greater Metro West (7)	108	40,482	40,590	10,684.7	13	3,856	13	3,136	21	458	5	785	19	626
Community Wellness Coalition (8)	106	33,856	33,962	11,357.8	25	4,240	5	2,284	21	669	11	1,320	22	648
Fitchburg/Gardner Community Health Network (9)	102	32,548	32,650	12,573.1	22	3,547	4	1,975	27	469	2	873	15	629
Greater Lowell Community Health Network (10)	89	29,322	29,411	10,846.8	13	3,974	3	1,816	23	323	8	832	18	406
Greater Lawrence Community Health Network (11)	61	20,112	20,173	10,849.8	10	2,535	8	1,375	16	308	4	761	11	322
Greater Haverhill Community Health Network (12)	57	18,870	18,927	12,719.1	16	1,794	6	1,322	10	226	1	527	15	308
Community Health Network North (13)	50	13,888	13,938	11,615.6	13	1,039	6	1,214	13	186	1	284	4	131
North Shore Community Health Network (14)	136	37,205	37,341	13,136.6	19	4,930	12	2,820	44	630	8	1,079	23	498
Greater Woburn/Concord/Littleton Community Health (15)	62	17,627	17,689	8,408.3	11	1,527	9	1,757	12	240	2	323	8	198
North Suburban Health Alliance (16)	102	30,430	30,532	11,882.5	10	3,692	2	2,622	41	546	5	883	14	347
Greater Cambridge/Somerville Community Health (17)	49	16,052	16,101	5,873.2	11	1,790	9	1,454	6	204	2	511	10	214
West Suburban Health Network (18)	71	20,963	21,034	8,311.4	12	1,724	10	2,497	15	247	0	343	15	245
Alliance for Community Health (19)	350	92,084	92,434	12,798.8	36	15,081	20	5,441	109	2,392	62	6,196	42	1,320
Blue Hills Community Health Alliance (20)	139	41,703	41,842	11,297.5	25	4,794	12	3,987	36	717	5	1,385	20	534
Four (For) Communities (21)	69	21,968	22,037	13,695.1	11	3,256	4	1,548	16	483	4	757	10	324
Greater Brockton Community Health Network (22)	103	34,038	34,141	14,401.7	25	6,439	6	1,672	23	474	11	1,134	18	419
South Shore Community Partners in Prevention (23)	77	23,933	24,010	12,784.1	24	2,604	9	1,567	7	279	3	605	17	310
Greater Attleboro-Taunton Health & Education Response (24)	110	32,921	33,031	13,039.8	32	3,713	10	1,786	21	339	4	898	22	529
Partners for a Healthier Community (25)	93	27,259	27,352	19,224.6	20	3,143	4	1,745	36	336	2	976	8	418
Greater New Bedford Health & Human Services Coalition (26)	110	29,832	29,942	15,017.0	22	4,102	7	1,843	40	390	8	957	12	410
Cape Cod & Islands Community Health Network (27)	139	36,993	37,132	14,591.6	24	3,530	14	3,677	26	478	4	955	32	447

¹ Rates are per 100,000 residents.

² Poisonings can include prescription medicines, household cleaners, toxic effects of legal or illegal drugs, etc.

Location of CHNAs in Massachusetts



1. Community Health Network of Berkshire
2. Upper Valley Health Web
3. Partnership for Health in Hampshire County
4. The Community Health Connection
5. Community Health Network of Southern Worcester County
6. Community Partners for Health
7. Community Health Network of Greater Metro West
8. Common Pathways
9. Community Health Network of Central Massachusetts
10. Greater Lowell Community Health Network
11. Greater Lawrence Community Health Network
12. Greater Haverhill Community Health Network
13. Greater Beverly/Gloucester Community Health Network
14. North Shore Community Health Network
15. Northwest Suburban Health Alliance
16. North Suburban Health Alliance
17. Greater Cambridge/Somerville Community Health Network
18. West Suburban Health Network
19. Alliance for Community Health
20. Blue Hills Community Health Alliance
21. Community Health Network of Chicopee-Holyoke-Ludlow-Westfield
22. Greater Brockton Community Health Network
23. South Shore Community Health Network
24. Greater Attleboro-Taunton Health Education
25. Partners for Healthier Communities
26. Greater New Bedford Community Health Network
27. Cape Cod and Islands Community Health Network

City/town listings are provided by CHNA region on pages 43-44.

CHNA 1

ADAMS
ALFORD
BECKET
CHESHIRE
CLARKSBURG
DALTON
EGREMONT
FLORIDA
GREAT BARRINGTON
HANCOCK
HINSDALE
LANESBOROUGH
LEE
LENOX
MONTEREY
MOUNT WASHINGTON
NEW ASHFORD
NEW MARLBOROUGH
NORTH ADAMS
OTIS
PERU
PITTSFIELD
RICHMOND
SANDISFIELD
SAVOY
SHEFFIELD
STOCKBRIDGE
TYRINGHAM
WASHINGTON
WEST STOCKBRIDGE
WILLIAMSTOWN
WINDSOR

CHNA 2

ASHFIELD
ATHOL
BERNARDSTON
BUCKLAND
CHARLEMONT
COLRAIN
CONWAY
DEERFIELD
ERVING
GILL
GREENFIELD
HAWLEY
HEATH
LEVERETT
LEYDEN
MONROE
MONTAGUE
NEW SALEM
NORTHFIELD
ORANGE
PETERSHAM
PHILLIPSTON
ROWE
ROYALSTON
SHELBURNE

CHNA 2 (CONT.)

SHUTESBURY
SUNDERLAND
WARWICK
WENDELL
WHATELY

CHNA 3

AMHERST
BELCHERTOWN
CHESTERFIELD
CUMMINGTON
EASTHAMPTON
GOSHEN
GRANBY
HADLEY
HATFIELD
MIDDLEFIELD
NORTHHAMPTON
PELHAM
PLAINFIELD
SOUTH HADLEY
SOUTHAMPTON
WARE
WESTHAMPTON
WILLIAMSBURG
WORTHINGTON

CHNA 4

AGAWAM
BLANDFORD
EAST LONGMEADOW
GRANVILLE
HAMPDEN
LONGMEADOW
MONSON
PALMER
RUSSELL
SOUTHWICK
SPRINGFIELD
TOLLAND
WEST SPRINGFIELD
WILBRAHAM

CHNA 5

BRIMFIELD
BROOKFIELD
CHARLTON
DUDLEY
EAST BROOKFIELD
HOLLAND
NORTH BROOKFIELD
OXFORD
SOUTHBRIDGE
SPENCER
STURBRIDGE
WALES
WARREN
WEBSTER
WEST BROOKFIELD

CHNA 6

BELLINGHAM
BLACKSTONE
DOUGLAS
FRANKLIN
HOPEDALE
MEDWAY
MENDON
MILFORD
MILLVILLE
NORTHBRIDGE
SUTTON
UPTON
UXBRIDGE

CHNA 7

ASHLAND
FOXBOROUGH
FRAMINGHAM
HOLLISTON
HOPKINTON
HUDSON
MARLBOROUGH
MAYNARD
MEDFIELD
MILLIS
NATICK
NORFOLK
NORTHBOROUGH
PLAINVILLE
SHERBORN
SOUTHBOROUGH
STOW
SUDBURY
WALPOLE
WAYLAND
WESTBOROUGH
WRENTHAM

CHNA 8

AUBURN
BOYLSTON
GRAFTON
HOLDEN
LEICESTER
MILLBURY
PAXTON
SHREWSBURY
WEST BOYLSTON
WORCESTER

CHNA 9

ASHBURNHAM
ASHBY
AYER
BARRE
BERLIN
BOLTON

CHNA 9 (CONT.)

CLINTON
FITCHBURG
GARDNER
GROTON
HARDWICK
HARVARD
HUNNARDSTON
LANCASTER
LEOMINSTER
LUNENBURG
NEW BRAintree
OAKHAM
PEPPERELL
PRINCETON
RUTLAND
SHIRLEY
STERLING
TEMPLETON
TOWNSEND
WESTMINSTER
WINCHENDON

CHNA 10

BILLERICA
CHELMSFORD
DRACUT
DUNSTABLE
LOWELL
TEWKSBURY
TYNGSBOROUGH
WESTFORD

CHNA 11

ANDOVER
LAWRENCE
METHUEN
MIDDLETON
NORTH ANDOVER

CHNA 12

AMESBURY
BOXFORD
GEORGETOWN
GROVELAND
HAVERHILL
MERRIMAX
NEWBURY
NEWBURYPORT
ROWLEY
SALISBURY
WEST NEWBURY

CHNA 13
BEVERLY
ESSEX
GLOUCESTER
HAMILTON
IPSWICH
MANCHESTER
ROCKPORT
TOPSFIELD
WENHAM

CHNA 14
DANVERS
LYNN
LYNNFIELD
MARBLEHEAD
NAHANT
PEABODY
SALEM
SAUGUS
SWAMPSCOTT

CHNA 15
ACTON
BEDFORD
BOXBOROUGH
BURLINGTON
CARLISLE
CONCORD
LEXINGTON
LINCOLN
LITTLETON
WILMINGTON
WINCHESTER
WOBURN

CHNA 16
EVERETT
MALDEN
MEDFORD
MELROSE
NORTH READING
READING
STONEHAM
WAKEFIELD

CHNA 17
ARLINGTON
BELMONT
CAMBRIDGE
SOMERVILLE
WATERTOWN

CHNA 18
DEDHAM
DOVER
NEEDHAM
NEWTON
WALTHAM
WELLESLEY
WESTON
WESTWOOD

CHNA 19
BOSTON
BROOKLINE
CHELSEA
REVERE
WINTHROP

CHNA 20
BRAintree
CANTON
COHASSET
HINGHAM
HULL
MILTON
NORWELL
NORWOOD
QUINCY
RANDOLPH
SCITUATE
SHARON
WEYMOUTH

CHNA 21
CHESTER
CHICOPEE
HOLYOKE
HUNTINGTON
LUDLOW
MONTGOMERY
WESTFIELD

CHNA 22
ABINGTON
AVON
BRIDGEWATER
BROCKTON
EAST BRIDGEWATER
EASTON
HOLBROOK
STOUGHTON
WEST BRIDGEWATER
WHITMAN

CHNA 23
CARVER
DUXBURY
HALIFAX
HANOVER
HANSON
KINGSTON
MARSHFIELD
PEMBROKE
PLYMOUTH
PLYMPTON
ROCKLAND

CHNA 24
ATTLEBORO
BERKLEY
DIGHTON
LAKEVILLE
MANSFIELD
MIDDLEBOROUGH
NORTH
ATTLEBOROUGH
NORTON
RAYNHAM
REHOBOTH
SEEKONK
TAUNTON

CHNA 25
FALL RIVER
SOMERSET
SWANSEA
WESTPORT

CHNA 26
ACUSHNET
DARTMOUTH
FAIRHAVEN
FREETOWN
MARION
MATTAPOISETT
NEW BEDFORD
ROCHESTER
WAREHAM

CHNA 27
AQUINNAH
BARNSTABLE
BOURNE
BREWSTER
CHATHAM
CHILMARK
DENNIS
EASTHAM
EDGARTOWN
FALMOUTH
GOSNOLD
HARWICH
MASHPEE
MANTUCKET
OAK BLUFFS
ORLEANS
PROVINCETOWN
SANDWICH
TISBURY
TRURO
WELLFLEET
WEST TISBURY
WARMOUTH

SECTION III.

Statewide Reference Tables by Sex and Age Groups

Table 14. Total Number and Rate of Injury Deaths and Nonfatal Injury-related Cases by Sex and Age Group, MA Residents, 2004

	Injury Deaths		Nonfatal Hospital Stays		Nonfatal ED Visits		Total Injuries	
	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*
Males	1,724	55.5	30,656	986.9	392,729	12,642.8	425,109	13,685.2
<1 year	8	19.5	274	667.2	2,499	6,084.7	2,781	6,771.4
1-14 years	34	5.9	2,095	361.8	77,899	13,451.3	80,028	13,818.9
15-24 years	301	69.8	4,056	940.4	86,894	20,146.3	91,251	21,156.5
25-44 years	603	64.0	7,683	816.0	135,005	14,338.2	143,291	15,218.2
45-64 years	459	59.8	7,676	1,000.7	66,529	8,673.5	74,664	9,734.0
65-74 years	85	47.6	2,624	1,468.7	10,812	6,051.6	13,521	7,567.8
75-84 years	136	107.2	3,869	3,050.2	9,160	7,221.5	13,165	10,379.0
85+ years	98	240.7	2,379	5,842.5	3,931	9,654.0	6,408	15,737.1
Females	891	26.9	34,129	1,031.0	317,416	9,589.1	352,436	10,647.1
<1 year	0	0.0	196	500.9	2,117	5,409.9	2,313	5,910.8
1-14 years	21	3.8	1,316	238.6	54,196	9,827.2	55,533	10,069.6
15-24 years	72	17.1	2,218	528.0	59,472	14,156.3	61,762	14,701.4
25-44 years	215	22.2	4,777	492.9	96,389	9,944.8	101,381	10,459.9
45-64 years	183	22.3	6,138	746.6	61,922	7,532.4	68,243	8,301.3
65-74 years	52	23.9	3,745	1,722.5	14,832	6,821.8	18,629	8,568.2
75-84 years	147	75.3	8,036	4,114.9	17,300	8,858.6	25,483	13,048.7
85+ years	201	210.7	7,703	8,073.9	11,188	11,726.7	19,092	20,011.3
Total**	2,615	40.8	64,788	1,009.7	710,189	11,068.2	777,592	12,118.6
<1 year	8	10.0	470	586.0	4,616	5,755.5	5,094	6,351.5
1-14 years	55	4.9	3,411	301.7	132,100	11,684.0	135,566	11,990.5
15-24 years	373	43.8	6,274	736.9	146,373	17,191.5	153,020	17,972.2
25-44 years	818	42.8	12,460	652.1	231,408	12,110.5	244,686	12,805.3
45-64 years	642	40.4	13,815	869.4	128,464	8,084.0	142,921	8,993.7
65-74 years	137	34.6	6,369	1,608.0	25,647	6,475.1	32,153	8,117.7
75-84 years	283	87.9	11,906	3,696.0	26,461	8,214.3	38,650	11,998.1
85+ years	299	219.7	10,082	7,406.4	15,120	11,107.4	25,501	18,733.5

¹ Represents crude rates per 100,000 residents. Rates based on counts less than 20 may be unstable and should be interpreted with caution. Rates are not calculated on counts less than five. **Total includes 1 nonfatal hospital stay for which age was missing and 2 hospital stays for which sex was missing; and 44 nonfatal ED visits for which sex was missing.

Table 15. Total Number and Rate of Injury Deaths and Nonfatal Injuries by Intent, Sex and Age Groups, MA Residents, 2004

	Unintentional Injuries			Suicide and Self-Inflicted Injury			Homicide and Assaults			Injuries of Undetermined Intent						
	Injury Deaths		Nonfatal Injuries	Injury Deaths		Nonfatal Injuries	Injury Deaths		Nonfatal Injuries	Injury Deaths		Nonfatal Injuries				
	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*				
Males	788	25.4	388,663	12,511.9	342	11.0	4,332	139.5	143	4.6	17,347	558.4	426	13.7	2,516	81.0
<1 year	3	7.3	2,637	6,420.7	0	0.0	1	2.4	3	7.3	25	60.9	2	4.9	11	26.8
1-14 years	26	4.5	77,303	13,348.4	3	0.5	136	23.5	5	0.9	970	167.5	0	0.0	131	22.6
15-24 years	123	28.5	80,064	18,562.8	43	10.0	1,291	299.3	73	16.9	6,972	1,616.5	60	13.9	711	164.8
25-44 years	199	21.1	129,462	13,749.5	132	14.0	2,018	214.3	47	5.0	7,153	759.7	223	23.7	1,070	113.6
45-64 years	197	25.7	68,481	8,927.9	109	14.2	809	105.5	13	1.7	2,059	268.4	135	17.6	537	70.0
65-74 years	54	30.2	12,607	7,056.3	23	12.9	34	19.0	1	0.6	114	63.8	3	1.7	28	15.7
75-84 years	103	81.2	12,184	9,605.6	22	17.3	22	17.3	1	0.8	44	34.7	1	0.8	22	17.3
85+ years	83	203.8	5,925	14,550.9	10	24.6	21	51.6	0	0.0	10	24.6	2	4.9	6	14.7
Females	564	17.0	325,596	9,836.3	87	2.6	6,767	204.4	32	1.0	8,638	261.0	176	5.3	1,808	54.6
<1 year	0	0.0	2,231	5,701.2	0	0.0	0	0.0	0	0.0	16	40.9	0	0.0	6	15.3
1-14 years	15	2.7	53,279	9,660.9	0	0.0	588	106.6	2	0.4	548	99.4	3	0.5	155	28.1
15-24 years	42	10.0	54,633	13,004.5	8	1.9	2,341	557.2	7	1.7	3,043	724.3	13	3.1	521	124.0
25-44 years	64	6.6	91,768	9,468.1	33	3.4	2,654	273.8	13	1.3	3,853	397.5	102	10.5	719	74.2
45-64 years	82	10.0	63,749	7,754.7	32	3.9	1,072	130.4	7	0.9	1,063	129.3	54	6.6	327	39.8
65-74 years	39	17.9	17,739	8,158.9	6	2.8	54	24.8	2	0.9	57	26.2	1	0.5	34	15.6
75-84 years	130	66.6	24,141	12,361.6	4	2.0	36	18.4	1	0.5	42	21.5	2	1.0	31	15.9
85+ years	192	201.2	18,056	18,925.4	4	4.2	22	23.1	0	0.0	16	16.8	1	1.0	15	15.7
Total**	1352	21.1	714,305	11,168.5	429	6.7	11,099	173.0	175	2.7	25,985	405.0	602	9.4	4,324	67.4
<1 year	3	3.7	4,868	6,069.7	0	0.0	1	1.2	3	3.7	41	51.1	2	2.5	17	21.2
1-14 years	41	3.6	130,587	11,550.1	3	0.3	724	64.0	7	0.6	1,518	134.3	3	0.3	286	25.3
15-24 years	165	19.4	134,704	15,821.0	51	6.0	3,632	426.6	80	9.4	10,015	1,176.3	73	8.6	1,232	144.7
25-44 years	263	13.8	221,244	11,578.5	165	8.6	4,672	244.5	60	3.1	11,006	576.0	325	17.0	1,789	93.6
45-64 years	279	17.6	132,243	8,321.8	141	8.9	1,881	118.4	20	1.3	3,122	196.5	189	11.9	864	54.4
65-74 years	93	23.5	30,349	7,662.3	29	7.3	88	22.2	3	0.8	171	43.2	4	1.0	62	15.7
75-84 years	233	72.3	36,327	11,277.0	26	8.1	58	18.0	2	0.6	86	26.7	3	0.9	53	16.5
85+ years	275	202.0	23,982	17,617.6	14	10.3	43	31.6	0	0.0	26	19.1	3	2.2	21	15.4

¹ Represents crude rates per 100,000 residents. Rates based on counts less than 20 may be unstable and should be interpreted with caution. Rates are not calculated on counts less than five. **Total includes 1 unintentional nonfatal case for which age was missing and 45 cases for which sex was missing.

Table 16. Total Number and Rate of Injury Deaths and Nonfatal Injuries by Sex and Age Groups for Selected Causes, MA Residents, 2004

	Poisoning						Fall						Cut/pierce						Overexertion						
	Injury Deaths			Nonfatal Injuries			Injury Deaths			Nonfatal Injuries			Injury Deaths			Nonfatal Injuries			Injury Deaths			Nonfatal Injuries			
	Number	Rate*	Rate*	Number	Rate*	Rate*	Number	Rate*	Rate*	Number	Rate*	Rate*	Number	Rate*	Rate*	Number	Rate*	Rate*	Number	Rate*	Rate*	Number	Rate*	Rate*	
Males	500	16.1	307.2	9,543	307.2	2909.3	150	4.8	2909.3	90,373	2909.3	51	1.6	50,353	1621.0	0	--	46,816	1507.1	0	--	46,816	1507.1	0	--
<1 year	0	--	172.9	71	172.9	3309.0	1	--	3309.0	1,359	3309.0	0	--	84	204.5	0	--	92	224.0	0	--	92	224.0	0	--
1-14 years	1	--	173.0	1,002	173.0	4280.1	2	--	4280.1	24,787	4280.1	2	--	5,998	1035.7	0	--	5,079	877.0	0	--	5,079	877.0	0	--
15-24 years	66	15.3	438.9	1,893	438.9	2548.7	3	--	2548.7	10,993	2548.7	9	2.1	11,951	2770.8	0	--	10,656	2470.6	0	--	10,656	2470.6	0	--
25-44 years	264	28.0	409.0	3,851	409.0	2184.0	19	2.0	2184.0	20,564	2184.0	18	1.9	20,026	2126.9	0	--	20,992	2229.5	0	--	20,992	2229.5	0	--
45-64 years	158	20.6	294.0	2,255	294.0	2185.4	37	4.8	2185.4	16,763	2185.4	15	2.0	9,759	1272.3	0	--	8,406	1095.9	0	--	8,406	1095.9	0	--
65-74 years	6	3.4	116.4	208	116.4	2766.1	23	12.9	2766.1	4,942	2766.1	4	--	1,457	815.5	0	--	911	509.9	0	--	911	509.9	0	--
75-84 years	4	--	160.8	204	160.8	5315.2	37	29.2	5315.2	6,742	5315.2	1	--	854	673.3	0	--	527	415.5	0	--	527	415.5	0	--
85+ years	1	--	144.9	59	144.9	10371.1	28	68.8	10371.1	4,223	10371.1	2	--	224	550.1	0	--	153	375.7	0	--	153	375.7	0	--
Females	234	7.1	309.4	10,243	309.4	3290.4	141	4.3	3290.4	108,917	3290.4	12	0.4	26,835	810.7	0	--	39,917	1205.9	0	--	39,917	1205.9	0	--
<1 year	0	--	194.2	76	194.2	2979.7	0	--	2979.7	1,166	2979.7	0	--	64	163.5	0	--	104	265.8	0	--	104	265.8	0	--
1-14 years	2	--	211.4	1,166	211.4	3286.9	1	--	3286.9	18,127	3286.9	1	--	3,609	654.4	0	--	5,606	1016.5	0	--	5,606	1016.5	0	--
15-24 years	17	4.0	609.8	2,562	609.8	2129.2	2	--	2129.2	8,945	2129.2	2	--	5,253	1250.4	0	--	7,615	1812.6	0	--	7,615	1812.6	0	--
25-44 years	126	13.0	375.1	3,636	375.1	2035.9	6	0.6	2035.9	19,733	2035.9	5	0.5	9,874	1018.7	0	--	15,042	1551.9	0	--	15,042	1551.9	0	--
45-64 years	79	9.6	247.1	2,031	247.1	2640.8	16	1.9	2640.8	21,709	2640.8	4	--	5,933	721.7	0	--	8,417	1023.9	0	--	8,417	1023.9	0	--
65-74 years	2	--	142.1	309	142.1	4307.3	11	5.1	4307.3	9,365	4307.3	0	--	987	454.0	0	--	1,394	641.2	0	--	1,394	641.2	0	--
75-84 years	4	--	153.1	299	153.1	8145.8	44	22.5	8145.8	15,908	8145.8	0	--	747	382.5	0	--	1,206	617.5	0	--	1,206	617.5	0	--
85+ years	4	--	171.9	164	171.9	14636.4	61	63.9	14636.4	13,964	14636.4	0	--	368	385.7	0	--	533	558.7	0	--	533	558.7	0	--
Total**	734	11.4	308.4	19,786	308.4	3106.0	291	4.5	3106.0	199,299	3106.0	63	1.0	77,195	1203.1	0	--	86,737	1351.8	0	--	86,737	1351.8	0	--
<1 year	0	--	183.3	147	183.3	3148.3	1	--	3148.3	2,525	3148.3	0	--	148	184.5	0	--	196	244.4	0	--	196	244.4	0	--
1-14 years	3	--	191.8	2,168	191.8	3795.8	3	--	3795.8	42,916	3795.8	3	--	9,607	849.7	0	--	10,685	945.1	0	--	10,685	945.1	0	--
15-24 years	83	9.7	523.2	4,455	523.2	2341.8	5	0.6	2341.8	19,939	2341.8	11	1.3	17,205	2020.7	0	--	18,271	2145.9	0	--	18,271	2145.9	0	--
25-44 years	390	20.4	391.8	7,487	391.8	2108.9	25	1.3	2108.9	40,298	2108.9	23	1.2	29,903	1564.9	0	--	36,036	1885.9	0	--	36,036	1885.9	0	--
45-64 years	237	14.9	269.7	4,286	269.7	2421.2	53	3.3	2421.2	38,475	2421.2	19	1.2	15,695	987.7	0	--	16,824	1058.7	0	--	16,824	1058.7	0	--
65-74 years	8	2.0	130.5	517	130.5	3612.1	34	8.6	3612.1	14,307	3612.1	4	--	2,444	617.0	0	--	2,306	582.2	0	--	2,306	582.2	0	--
75-84 years	8	2.5	156.1	503	156.1	7031.5	81	25.1	7031.5	22,651	7031.5	1	--	1,601	497.0	0	--	1,733	538.0	0	--	1,733	538.0	0	--
85+ years	5	3.7	163.8	223	163.8	13361.2	89	65.4	13361.2	18,188	13361.2	2	--	592	434.9	0	--	686	503.9	0	--	686	503.9	0	--

¹ Represents crude rates per 100,000 residents. Rates based on counts less than 20 may be unstable and should be interpreted with caution. Rates are not calculated on counts less than five. **Total includes 9 nonfatal fall cases; 7 nonfatal cut/pierce cases; and 4 nonfatal cases of overexertion for which sex was missing.

Table 16. Total Number and Rate of Injury Deaths and Nonfatal Injuries by Sex and Age Groups for Selected Causes, MA Residents, 2004 (continued)

	Natural/environmental						MV Occupant ¹						Pedestrian ²						Pedal Cyclist ²					
	Injury Deaths		Nonfatal Injuries		Injury Deaths		Nonfatal Injuries		Injury Deaths		Nonfatal Injuries		Injury Deaths		Nonfatal Injuries		Injury Deaths		Nonfatal Injuries		Injury Deaths		Nonfatal Injuries	
	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*
Males	6	0.2	13,912	447.9	292	9.4	42,198	1358.4	49	1.6	2,869	92.4	6	0.2	7,681	247.3								
<1 year	0	--	79	192.4	0	--	44	107.1	0	--	2	--	0	--	1	--								
1-14 years	0	--	3,316	572.6	7	1.2	2,128	367.5	3	--	515	88.9	1	--	3,508	605.7								
15-24 years	1	--	1,711	396.7	90	20.9	13,202	3060.9	7	1.6	606	140.5	0	--	1,651	382.8								
25-44 years	1	--	4,131	438.7	99	10.5	17,605	1869.7	11	1.2	954	101.3	3	--	1,570	166.7								
45-64 years	2	--	3,242	422.7	71	9.3	7,258	946.2	15	2.0	548	71.4	1	--	831	108.3								
65-74 years	1	--	776	434.3	7	3.9	1,055	590.5	6	3.4	124	69.4	1	--	80	44.8								
75-84 years	1	--	544	428.9	13	10.2	724	570.8	6	4.7	91	71.7	0	--	32	25.2								
85+ years	0	--	113	277.5	5	12.3	181	444.5	1	--	29	71.2	0	--	8	19.6								
Females	13	0.4	13,863	418.8	123	3.7	47,294	1428.8	45	1.4	2,084	63.0	0	--	2,457	74.2								
<1 year	0	--	71	181.4	0	--	37	94.6	0	--	0	0.0	0	--	0	--								
1-14 years	0	--	2,833	513.7	5	0.9	2,433	441.2	4	--	314	56.9	0	--	1,334	241.9								
15-24 years	1	--	1,751	416.8	29	6.9	15,408	3667.6	3	--	516	122.8	0	--	287	68.3								
25-44 years	1	--	3,784	390.4	27	2.8	18,433	1901.8	9	0.9	617	63.7	0	--	482	49.7								
45-64 years	2	--	3,526	428.9	25	3.0	8,208	998.5	8	1.0	412	50.1	0	--	297	36.1								
65-74 years	3	--	878	403.8	7	3.2	1,365	627.8	4	--	117	53.8	0	--	44	20.2								
75-84 years	3	--	779	398.9	22	11.3	1,109	567.9	5	2.6	83	42.5	0	--	12	6.1								
85+ years	3	--	241	252.6	8	8.4	301	315.5	12	12.6	25	26.2	0	--	1	--								
Total**	19	0.3	27,777	432.9	415	6.5	89,499	1394.8	94	1.5	4,953	77.2	6	0.1	10,139	158.0								
<1 year	0	--	150	187.0	0	--	81	101.0	0	--	2	2.5	0	--	1	--								
1-14 years	0	--	6,150	544.0	12	1.1	4,561	403.4	7	0.6	829	73.3	1	--	4,842	428.3								
15-24 years	2	--	3,462	406.6	119	14.0	28,613	3360.6	10	1.2	1,122	131.8	0	--	1,938	227.6								
25-44 years	2	--	7,916	414.3	126	6.6	36,040	1886.1	20	1.0	1,571	82.2	3	--	2,052	107.4								
45-64 years	4	--	6,768	425.9	96	6.0	15,468	973.4	23	1.4	960	60.4	1	--	1,129	71.0								
65-74 years	4	--	1,654	417.6	14	3.5	2,420	611.0	10	2.5	241	60.8	1	--	124	31.3								
75-84 years	4	--	1,323	410.7	35	10.9	1,833	569.0	11	3.4	174	54.0	0	--	44	13.7								
85+ years	3	--	354	260.1	13	9.6	482	354.1	13	9.6	54	39.7	0	--	9	6.6								

* Represents crude rates per 100,000 residents. Rates based on counts less than 20 may be unstable and should be interpreted with caution. Rates are not calculated on counts less than five**Total includes 2 nonfatal natural/environmental cases; 1 nonfatal pedal cyclist case; 7 nonfatal MV occupant cases for which sex was missing; and 1 nonfatal MV occupant case for which age was missing. ¹ Motor vehicle occupant includes drivers and passengers of motorcycles and other motor vehicles. Unspecified persons are assumed to be occupants in most cases and are also included in this category. ² This category includes persons injured in traffic and non-traffic incidents.

Table 16. Total Number and Rate of Injury Deaths and Nonfatal Injuries by Sex and Age Groups for Selected Causes, MA Residents, 2004 (continued)

	Struck by/against						Fire/Burn						Machinery						Hanging/Suffocation						
	Injury Deaths			Nonfatal Injuries			Injury Deaths			Nonfatal Injuries			Injury Deaths			Nonfatal Injuries			Injury Deaths			Nonfatal Injuries			
	Number	Rate*	Rate*	Number	Rate*	Rate*	Number	Rate*	Rate*	Number	Rate*	Rate*	Number	Rate*	Rate*	Number	Rate*	Rate*	Number	Rate*	Rate*	Number	Rate*	Rate*	
Males	12	0.4	2484.5	77,178	2484.5	188.9	5,868	0.7	5,868	188.9	0.2	4,231	136.2	210	6.8	560	18.0								
<1 year	0	--	689.1	283	689.1	294.6	121	--	121	294.6	--	0	--	2	--	42	102.3								
1-14 years	0	--	3609.1	20,901	3609.1	156.8	908	--	908	156.8	--	75	13.0	6	1.0	134	23.1								
15-24 years	4	--	5168.1	22,291	5168.1	268.7	1,159	--	1,159	268.7	--	708	164.1	20	4.6	47	10.9								
25-44 years	2	--	2439.5	22,970	2439.5	234.7	2,210	0.5	2,210	234.7	--	1,845	195.9	79	8.4	89	9.5								
45-64 years	5	0.7	1150.7	8,826	1150.7	151.9	1,165	0.8	1,165	151.9	--	1,268	165.3	61	8.0	83	10.8								
65-74 years	1	--	555.8	993	555.8	94.0	168	--	168	94.0	--	190	106.3	9	5.0	57	31.9								
75-84 years	0	--	534.5	678	534.5	82.0	104	--	104	82.0	--	129	101.7	18	14.2	78	61.5								
85+ years	0	--	579.6	236	579.6	81.0	33	--	33	81.0	--	16	39.3	15	36.8	30	73.7								
Females	8	0.2	1162.3	38,475	1162.3	159.2	5,269	0.5	5,269	159.2	--	663	20.0	89	2.7	492	14.9								
<1 year	0	--	521.3	204	521.3	224.9	88	--	88	224.9	--	2	--	0	--	44	112.4								
1-14 years	2	--	1829.8	10,091	1829.8	136.7	754	--	754	136.7	--	40	7.3	0	--	112	20.3								
15-24 years	1	--	2108.5	8,858	2108.5	264.7	1,112	--	1,112	264.7	--	151	35.9	7	1.7	21	5.0								
25-44 years	3	--	1111.1	10,769	1111.1	186.8	1,811	--	1,811	186.8	--	281	29.0	16	1.7	61	6.3								
45-64 years	0	--	681.7	5,604	681.7	129.2	1,062	0.7	1,062	129.2	--	152	18.5	19	2.3	80	9.7								
65-74 years	1	--	498.1	1,083	498.1	82.3	179	--	179	82.3	--	25	11.5	8	3.7	57	26.2								
75-84 years	1	--	603.7	1,179	603.7	90.6	177	--	177	90.6	--	11	5.6	17	8.7	67	34.3								
85+ years	0	--	720.1	687	720.1	90.1	86	--	86	90.1	--	1	--	22	23.1	50	52.4								
Total**	20	0.3	1802.5	115,658	1802.5	173.6	11,139	0.6	11,139	173.6	0.1	4,894	76.3	299	4.7	1,052	16.4								
<1 year	0	--	607.2	487	607.2	260.6	209	--	209	260.6	--	2	--	2	--	86	107.2								
1-14 years	2	--	2741.2	30,992	2741.2	147.1	1,663	--	1,663	147.1	--	115	10.2	6	0.5	246	21.8								
15-24 years	5	0.6	3658.7	31,151	3658.7	266.7	2,271	--	2,271	266.7	--	859	100.9	27	3.2	68	8.0								
25-44 years	5	0.3	1765.7	33,740	1765.7	210.4	4,021	0.4	4,021	210.4	--	2,126	111.3	95	5.0	150	7.9								
45-64 years	5	0.3	908.1	14,431	908.1	140.2	2,228	0.8	2,228	140.2	--	1,420	89.4	80	5.0	163	10.3								
65-74 years	2	--	524.1	2,076	524.1	87.6	347	--	347	87.6	--	215	54.3	17	4.3	114	28.8								
75-84 years	1	--	576.8	1,858	576.8	87.2	281	2.2	281	87.2	--	140	43.5	35	10.9	145	45.0								
85+ years	0	--	678.1	923	678.1	87.4	119	--	119	87.4	--	17	12.5	37	27.2	80	58.8								

¹ Represents crude rates per 100,000 residents. Rates based on counts less than 20 may be unstable and should be interpreted with caution. Rates are not calculated on counts less than five.
****Total includes 5 nonfatal struck by/against cases; and 2 nonfatal fire/burn cases for which sex was missing.**

Table 17. Total Number and Rate of Fatal and Nonfatal Unintentional Motor Vehicle Traffic-related¹ Injuries, MA Residents, 2000-2004

	2000		2001		2002		2003		2004	
	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*
Deaths										
<1 year	0	--	0	--	0	--	0	--	0	--
1-14 years	16	1.4	19	1.7	5	0.4	17	1.5	19	1.7
15-24 years	116	14.1	124	14.9	127	15.1	125	14.7	128	15.0
25-44 years	133	6.7	171	8.6	168	8.6	146	7.5	146	7.6
45-64 years	107	7.5	104	7.0	107	7.0	95	6.1	119	7.5
65-74 years	37	8.6	36	8.6	40	9.8	42	10.5	24	6.1
75-84 years	52	16.5	62	19.4	59	18.3	62	19.2	46	14.3
85+ years	12	10.3	19	15.7	16	12.7	19	14.4	26	19.1
Total	473	7.4	535	8.4	522	8.1	506	7.9	508	7.9
Nonfatal Hospital Stays										
<1 year	3	--	3	--	6	7.4	10	12.5	7	8.7
1-14 years	298	25.2	319	27.7	308	26.7	318	27.8	291	25.7
15-24 years	1,249	152.3	1,317	157.8	1,484	176.2	1,343	158.2	1,494	175.5
25-44 years	1,687	84.8	1,707	85.9	1,768	90.2	1,626	84.0	1,734	90.7
45-64 years	1,012	71.3	1,027	69.3	1,139	75.0	1,050	67.4	1,189	74.8
65-74 years	383	89.5	354	84.7	360	87.9	344	85.6	340	85.8
75-84 years	421	133.4	394	123.2	463	143.9	398	123.5	408	126.7
85+ years	122	104.5	128	105.5	158	125.7	158	120.0	137	100.6
Total**	5,175	81.5	5,249	82.1	5,686	88.7	5,247	81.7	5,601	87.3
Nonfatal ED Visits					Number	Rate*	Number	Rate*	Number	Rate*
<1 year					77	95.2	71	88.6	76	94.8
1-14 years					6,497	563.1	6,174	540.3	5,413	478.8
15-24 years					32,533	3,863.3	30,933	3,644.6	28,619	3,361.3
25-44 years					41,924	2,139.1	40,598	2,096.6	36,218	1,895.4
45-64 years					16,067	1,057.8	16,389	1,052.7	15,389	968.4
65-74 years					2,433	594.2	2,462	612.8	2,331	588.5
75-84 years					1,740	540.8	1,755	544.6	1,591	493.9
85+ years					416	331.0	345	262.1	395	290.2
Total**					101,687	1,585.7	98,727	1,537.7	90,032	1,403.1

*Rates are age-specific (i.e., number of cases per 100,000 persons per age group). Rates based on counts less than 20 may be unstable and should be interpreted with caution. Rates are not calculated on counts less than five. **Total includes cases for which age or sex was missing. ¹ Includes any injury or death involving a motor vehicle including motorcycles (includes drivers, passengers, unspecified or other persons, pedestrians, and pedal cyclists).

Table 18. Total Number and Rate of Fatal and Nonfatal Unintentional Fall-related Injuries, MA Residents, 2000-2004

	2000		2001		2002		2003		2004	
	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*
Deaths										
<1 year	0	--	1	--	1	--	0	--	1	--
1-14 years	1	--	2	--	3	--	2	--	3	--
15-24 years	3	--	2	--	5	0.6	4	--	3	--
25-44 years	12	0.6	17	0.9	14	0.7	19	1.0	15	0.8
45-64 years	30	2.1	35	2.4	37	2.4	35	2.2	50	3.1
65-74 years	28	6.5	34	8.1	28	6.8	19	4.7	33	8.3
75-84 years	60	19.0	77	24.1	65	20.2	72	22.3	80	24.8
85+ years	66	56.6	72	59.3	69	54.9	97	73.7	87	63.9
Total	200	3.2	240	3.8	222	3.5	248	3.9	272	4.2
Nonfatal Hospital Stays	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*
<1 year	135	173.1	153	189.0	156	192.9	155	193.4	177	220.7
1-14 years	1,232	104.3	1,266	110.1	1,263	109.5	1,242	108.7	1,150	101.7
15-24 years	649	79.1	744	89.2	729	86.6	724	85.3	686	80.6
25-44 years	2,381	119.7	2,394	120.4	2,226	113.6	2,410	124.5	2,202	115.2
45-64 years	3,813	268.6	4,078	275.0	4,061	267.4	4,759	305.7	4,796	301.8
65-74 years	3,409	796.8	3,521	842.3	3,414	833.8	3,565	887.3	3,564	899.8
75-84 years	7,457	2,362.5	7,436	2,325.3	7,625	2,369.8	8,017	2,487.9	7,972	2,474.7
85+ years	7,357	6,304.6	7,182	5,917.3	7,438	5,918.6	7,671	5,827.2	7,784	5,718.3
Total**	26,433	416.3	26,774	418.6	26,913	419.7	28,543	444.6	28,331	441.5
Nonfatal ED Visits					Number	Rate*	Number	Rate*	Number	Rate*
<1 year					2,225	2,750.9	2,332	2,910.1	2,347	2,926.4
1-14 years					45,177	3,915.3	44,853	3,925.4	41,753	3,693.0
15-24 years					20,590	2,445.1	21,261	2,505.0	19,209	2,256.1
25-44 years					40,420	2,062.4	43,382	2,240.4	38,020	1,989.7
45-64 years					30,846	2,030.7	35,795	2,299.2	33,655	2,117.8
65-74 years					10,440	2,549.8	11,521	2,867.6	10,738	2,711.0
75-84 years					14,463	4,494.9	15,094	4,684.1	14,677	4,556.2
85+ years					10,022	7,974.8	10,215	7,759.7	10,404	7,643.0
Total**					174,183	2,716.3	184,454	2,873.0	170,803	2,661.9

*Rates are age-specific (i.e., number of cases per 100,000 persons per age group). Rates based on counts less than 20 may be unstable and should be interpreted with caution. Rates are not calculated on counts less than five. **Total includes cases for which age or sex was missing.

Table 19. Total Number and Rate of Fatal and Nonfatal Unintentional and Undetermined Poisonings, MA Residents, 2000-2004

	2000		2001		2002		2003		2004	
Deaths	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*
<1 year	0	--	0	--	1	--	2	--	0	--
1-14 years	0	--	1	--	0	--	0	--	3	--
15-24 years	53	6.5	56	6.7	53	6.3	90	10.6	75	8.8
25-44 years	292	14.7	391	19.7	352	18.0	441	22.8	359	18.8
45-64 years	121	8.5	155	10.5	177	11.7	193	12.4	192	12.1
65-74 years	9	2.1	6	1.4	6	1.5	10	2.5	3	--
75-84 years	8	2.5	4	--	10	3.1	7	2.2	4	--
85+ years	2	--	7	5.8	3	--	6	4.6	3	--
Total	485	7.6	620	9.7	602	9.4	749	11.7	639	10.0
Nonfatal Hospital Stays	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*
<1 year	11	14.1	21	25.9	17	21.0	16	20.0	20	24.9
1-14 years	333	28.2	277	24.1	244	21.1	218	19.1	211	18.7
15-24 years	379	46.2	426	51.0	409	48.6	452	53.3	412	48.4
25-44 years	936	47.0	942	47.4	1,007	51.4	1,157	59.8	1,150	60.2
45-64 years	556	39.2	638	43.0	758	49.9	891	57.2	1,058	66.6
65-74 years	182	42.5	186	44.5	181	44.2	216	53.8	231	58.3
75-84 years	192	60.8	233	72.9	234	72.7	223	69.2	278	86.3
85+ years	91	78.0	82	67.6	101	80.4	112	85.1	125	91.8
Total**	2,680	42.2	2,805	43.9	2,951	46.0	3,285	51.2	3,485	54.3
Nonfatal ED Visits					Number	Rate*	Number	Rate*	Number	Rate*
<1 year	Data were not collected prior to 2002				88	108.8	123	153.5	127	158.4
1-14 years					1,738	150.6	1,719	150.4	1,631	144.3
15-24 years					1,921	228.1	1,933	227.8	1,938	227.6
25-44 years					3,256	166.1	3,537	182.7	3,172	166.0
45-64 years					1,444	95.1	1,648	105.9	1,803	113.5
65-74 years					211	51.5	206	51.3	217	54.8
75-84 years					157	48.8	136	42.2	184	57.1
85+ years					60	47.7	65	49.4	70	51.4
Total**					8,875	138.4	9,367	145.9	9,142	142.5

*Rates are age-specific (i.e., number of cases per 100,000 persons per age group). Rates based on counts less than 20 may be unstable and should be interpreted with caution. Rates are not calculated on counts less than five. **Total includes cases for which age or sex was missing.

Table 20. Total Number and Rate of Fatal and Nonfatal Unintentional Traumatic Brain Injuries, MA Residents, 2000-2004

	2000		2001		2002		2003		2004	
Deaths	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*
<1 year	0	--	2	--	0	--	0	--	2	--
1-14 years	11	0.9	13	1.1	7	0.6	8	0.7	8	0.7
15-24 years	44	5.4	52	6.2	57	6.8	46	5.4	43	5.1
25-44 years	48	2.4	76	3.8	58	3.0	48	2.5	42	2.2
45-64 years	58	4.1	63	4.2	63	4.1	44	2.8	71	4.5
65-74 years	43	10.1	33	7.9	36	8.8	28	7.0	33	8.3
75-84 years	73	23.1	84	26.3	73	22.7	60	18.6	61	18.9
85+ years	91	78.0	78	64.3	60	47.7	73	55.5	71	52.2
Total	368	5.8	401	6.3	354	5.5	307	4.8	331	5.2
Nonfatal Hospital Stays	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*	Number	Rate*
<1 year	127	162.8	146	180.4	158	195.3	167	208.4	184	229.4
1-14 years	588	49.8	574	49.9	501	43.4	536	46.9	491	43.4
15-24 years	655	79.9	696	83.4	747	88.7	792	93.3	868	101.9
25-44 years	823	41.4	841	42.3	951	48.5	887	45.8	946	49.5
45-64 years	704	49.6	730	49.2	839	55.2	853	54.8	1059	66.6
65-74 years	377	88.1	425	101.7	422	103.1	470	117.0	478	120.7
75-84 years	660	209.1	678	212.0	767	238.4	800	248.3	886	275.0
85+ years	523	448.2	540	444.9	590	469.5	655	497.6	719	528.2
Total**	4,457	70.2	4,630	72.4	4,976	77.6	5,160	80.4	5,631	87.8
Nonfatal ED Visits					Number	Rate*	Number	Rate*	Number	Rate*
<1 year					1,154	1,426.8	1,293	1,613.5	1,351	1,684.5
1-14 years					8,040	696.8	8,639	756.1	8,391	742.2
15-24 years					5,981	710.2	6,403	754.4	6,600	775.2
25-44 years					6,277	320.3	6,876	355.1	6,865	359.3
45-64 years	Data were not collected prior to 2002				3,728	245.4	4,375	281.0	4,719	297.0
65-74 years					1,124	274.5	1,343	334.3	1,425	359.8
75-84 years					1,713	532.4	1,922	596.5	2,052	637.0
85+ years					1,290	1,026.5	1,466	1,113.6	1,663	1,221.7
Total**					29,307	457.0	32,317	503.4	33,066	515.3

*Rates are age-specific (i.e., number of cases per 100,000 persons per age group). Rates based on counts less than 20 may be unstable and should be interpreted with caution. Rates are not calculated on counts less than five. **Total includes cases for which age or sex was missing.

APPENDIX

Technical Notes and Methodology

Definitions:

Inpatient Hospital Discharges:	Individuals discharged from an acute care hospital.
Observation Stays:	Individuals discharged from an observation bed of an acute care hospital.
Hospital Stays:	Combines hospital discharges and observation bed stays into one category to assist in interpreting analysis.
ED Visits:	Individuals discharged from the emergency department of an acute care hospital.

Injury Parameters:

Injuries are classified using multiple parameters. For example, an injury may be classified by a diagnosis (e.g., a fracture), or by the mechanism or external cause of the injury (e.g., a fall). Injuries are also classified by intent: unintentional ("accidents") or intentional (assaults/homicides or self-inflicted/suicides).

In this report injuries are classified by their external cause and intent according to the International Classification of Diseases (ICD) system. In 1999 a revised version, ICD-10, was implemented for classifying deaths. Certain injury categories may not be comparable between ICD-9 (the previous version) and ICD-10.

A modified version of the *Matrix of E-code Groupings for Presenting Injury Mortality and Morbidity Data*, developed by the Centers for Disease Control and Prevention, was used to group injury categories. This grouping of ICD-9 and ICD-10 external causes of injury codes can be found on pages 51 and 52.

Data Sources and Inclusion Criteria:

Injury Deaths:

Source: Registry of Vital Records and Statistics, Mass. Dept. of Public Health.

An injury death is defined as any death with an ICD-10 code of V01-Y36, Y40-Y89, U01-U03 in the underlying cause field. This includes Adverse Effects of Medical Care and Drugs.

Massachusetts residents who died in or out-of-state are included in these analyses; out-of-state residents who died in Massachusetts are *not* included.

Injury-Related Hospitalizations:

Source: Massachusetts Inpatient Hospital Discharge Database, MA Division of Health Care Finance and Policy.

An injury-related hospital discharge case is defined as:

any case having an ICD9-CM Nature of Injury Code of: 800-908, 9090-9092, 9094, 9099, 910-994, 99550-99559, 99580-99585, assigned to any of the ICD9 diagnosis fields.

Injury-related hospital discharge cases transferred to another acute care hospital or subsequently dying in the hospital are excluded from these analyses.

Massachusetts residency is based on patient's ZIP code. Only cases having a valid Massachusetts ZIP code are included in these analyses.

Injury-Related Observation Stays:

Source: MA Outpatient Observation Bed Database, MA Division of Health Care Finance and Policy.

This database contains cases admitted to a hospital bed for observation. They are *not* included in the hospital discharge database.

An injury-related "observation" case is defined as:

any case having an ICD9-CM Nature of Injury Code of: 800-908, 9090-9092, 9094, 9099, 910-994, 99550-99559, 99580-99585, assigned to any of the ICD9 diagnosis fields.

Massachusetts residency is based on patient's ZIP code. Only cases having a valid Massachusetts ZIP code are included in these analyses.

Injury-related observation cases subsequently dying in the hospital are excluded from these analyses.

A general definition of Outpatient Observation services is defined for reporting purposes in the Case Mix Regulation 114.1 CMR 17.02 as:

“Observation services are those furnished on a hospital’s premises which are reasonable and necessary to further evaluate a patient’s condition and provide treatment to determine the need for possible admission to the hospital. These services include the use of a bed and periodic monitoring by a hospital’s physician, nursing and other staff.”

Injury-Related Emergency Department Visits:

Source: Massachusetts Emergency Department Discharge Database, MA Division of Health Care Finance and Policy.

This database contains individuals discharged from any acute care emergency department in Massachusetts. These cases are *not* included in the hospital discharge or observation bed stay databases.

An emergency department injury-related case is defined as:

any case having an ICD9-CM Nature of Injury Code of: 800-908, 9090-9092, 9094, 9099, 910-994, 99550-99559, 99580-99585, assigned to any of the ICD9 diagnosis fields.

Massachusetts residency is based on patient’s zip code. Only cases having a valid Massachusetts ZIP code are included in these analyses.

Injury-related emergency department cases subsequently dying in the hospital are excluded from these analyses.

Population Data used for the Calculation of Rates:

1) GCT-T1: Population Estimates for 2001-2004

Source: U.S. Census Bureau, Population Estimates Program.

Release Date: August 11, 2005

2) Census 2000 SF1 file

Source: U.S. Census Bureau.

3) 1999 DPH Population file

A linear interpolation between the preliminary draft Population 2000 file and the 1998 MA Institute for Social and Economic Research population estimates.

Source: MA Department of Public Health.

4) 1998 Population Estimate file

Source: MA Institute for Social and Economic Research, University of MA, Amherst.

5) Population data used to calculate rates by race and ethnicity:

Source: National Center for Health Statistics.

Estimates of the July 1, 2000-July 1, 2004, U.S. resident population from the Vintage 2004 postcensal series, prepared under a collaborative arrangement with the U.S. Census Bureau.

Residency:

Analyses for injury *deaths* include Massachusetts residents who died in or out-of-state. All other analyses include Massachusetts residents admitted and released from a Massachusetts acute care hospital or treated and discharged from an emergency department. Massachusetts residents treated at hospitals out of state are not included. Non-Massachusetts residents were excluded from *all* analyses presented in this report.

External Cause (E-Code) Rates:

Among hospital discharge data, 96% of cases for which there was an injury assigned to one of the diagnostic fields had an external cause code provided. Among observation bed stay data the percentage was 84.6% and among emergency department data, the percentage was 98.6%. Overall, external cause codes were assigned to 98.3% of all injury-related cases.

Data Limitations and Exclusions:

Limitations of Small Numbers: Cells in some tables contain small numbers. Rates and proportions based on fewer than five observations are suppressed, and trends based upon small numbers should be interpreted cautiously.

Exclusions: Due to data quality issues, the external cause of injury codes (E-Codes) for one hospital, were excluded from all ED analysis. Total injury counts presented in this report include primary diagnostic codes for this hospital, but associated diagnostic codes have been excluded.

Rates:

All rates reported are per 100,000 individuals.

Crude Death Rate

The crude death rate represents the “true” number of occurrences of a health event in a specified time and population per unit time. It is calculated as follows.

Formula:

$$\text{Crude Rate} = \frac{\text{\# of resident injury deaths (or injuries) in a year}}{\text{resident population for that year}} \times 100,000$$

Age-Adjusted Rate

A summary rate designed to minimize the distortions created by differences in age distribution when comparing rates for populations with different age compositions. Age-adjusted rates are useful when comparing death rates from different populations or in the same population over time. For example, if one wished to compare the 1998 death rates between Barnstable County (Cape Cod) and Hampshire County, the age-adjusted formula would account for the fact that 24% of the Barnstable County residents were 65 years of age or older, whereas only 11% of the Hampshire County residents were in this age group.

Age-adjusted rates are calculated by weighting the age-specific rates for a given year by the age distribution of a standard population. The weighted age-specific rates are then added to produce the adjusted rate for all ages combined.

Age-Specific Rate

A rate for a specified age group is calculated by dividing the actual number of cases in a given year for a specific age group by the population in that age group for that year. The numerator (number of cases) and the denominator (population) refer to the same age group.

Formula:

$$\text{Age-specific Rate (for ages 25-34)} = \frac{\text{\# of injury deaths (or injuries) among residents (ages 25-34) in a given year}}{\text{population of residents (ages 25-34) in that year}} \times 100,000$$

YPLL (Years of Potential Life Lost) was calculated by summing the difference between life expectancy and the age at death for each injury death. Maximum age for YPLL was adjusted to 75 years to exclude deaths beyond average life expectancy.

Recommended Framework of E-code Groupings for Presenting Injury Morbidity Data*

Mechanism/Cause	Manner/Intent				
	Unintentional	Self-inflicted	Assault	Undetermined	Other
Cut/pierce	E920.0-.9	E956	E966	E986	E974
Drowning/submersion	E830.0-.9, E832.0-.9 E910.0-.9	E954	E964	E984	
Fall	E880.0-E886.9, E888	E957.0-.9	E968.1	E987.0-.9	
Fire/burn: Fire/flare	E890.0-E899	E958.1	E968.0, E979.3	E988.1	
Fire/burn: Hot object/substance	E924.0-.9	E958.2,.7	E961, E968.3	E988.2,.7	
Firearm	E922.0-.3,.8, .9	E955.0-.4	E965.0-4, E979.4	E985.0-.4	E970
Machinery	E919 (.0-.9)				
Motor vehicle traffic	E810-E819 (.0-.9)	E958.5	E968.5	E988.5	
Occupant	E810-E819 (.0,.1)				
Motorcyclist	E810-E819 (.2,.3)				
Pedal cyclist	E810-E819 (.6)				
Pedestrian	E810-E819 (.7)				
Unspecified	E810-E819 (.9)				
Pedal cyclist, other	E800-E807 (.3) E820-E825 (.6), E826.1,.9 E827-E829(.1)				
Pedestrian, other	E800-807(.2) E820-E825(.7) E826-E829(.0)				
Transport, other	E800-E807 (.0,.1,.8,.9) E820-E825 (.0-.5,.8,.9) E826.2-8 E827-E829 (.2-.9), E831.0-.9, E833.0-E845.9	E958.6		E988.6	
Natural/environmental	E900.0-E909, E928.0-.2	E958.3		E988.3	
Dog bites	E906.0				
Overexertion	E927				
Poisoning	E850.0-E869.9	E950.0-E952.9	E962.0-.9	E980.0-E982.9	E972
Struck by, against	E916-E917.9		E960.0; E968.2		E973, E975
Suffocation	E911-E913.9	E953.0-.9	E963	E983.0-.9	
Other specified and classifiable	E846-E848, E914-E915, E918, E921(.0-.9), E922(.4, .5), E923(.0-.9), E925.0-E926.9, E928(.3-.5), E929(.0-.5)	E955(.5,.6,.7,.9), E958(.0,.4)	E960.1, E965(.5-.9), E967(.0-.9), E968(.4,.6,.7), E979(.0-.2), E979(.5-.9)	E985(.5,.6,.7), E988(.0,.4)	E971, E978, E990- E994, E996, E997(.0-.2)
Other specified, not elsewhere classifiable	E928.8, E929.8	E958.8, E959	E968.8, E969	E988.8, E989	E977, E995, E997.8, E998, E999
Unspecified	E887, E928.9, E929.9	E958.9	E968.9	E988.9	E976, E997.9
Adverse effects: Medical care					E870-E879
Adverse effects: Drugs					E930.0-E949.9
All injury by Intent	E800-E869, E880-E929	E950-E959	E960-E969, E979	E980-E989	E970-E978, E990-E999
All external causes	E800-E999				

*Modified version of the CDC Recommended E-Code Groupings for Presenting Injury Morbidity, National center for Injury Prevention and Control, Centers for Disease Control and Prevention.

Recommended Framework of E-Code Groupings for Presenting Injury Mortality Data*

Mechanism/Cause	Manner/Intent				
	Unintentional	Self-inflicted	Assault	Undetermined	Other
Cut/pierce	W25-W29, W45	X78	X99	Y28	Y35.4
Drowning/submersion	W65-W74	X71	X92	X21	
Fall	W00-W19	X80	Y01	Y30	
Fire/burn: Fire/flame	X00-X09	X76	X97, U01.3	Y26	Y36.3
Fire/burn: Hot object/substance	X10-X19	X77	X98	Y27	
Firearm	W32-W34	X72-X74	X93-X95, U01.4	Y22-Y24	Y35.0
Machinery	W24, W30-W31				
Motor vehicle traffic:					
Occupant	V30-V79 (.4-.9), V83-V86 (.0-.3)				
Motorcyclist	V20-V28 (.3-.9), V29 (.4-.9)				
Pedal cyclist	V12-V14 (.3-.9), V19 (.4-.6)				
Pedestrian	V02-V04 (.1, .9), V09.2				
Other	V80 (.3-.5), V81.1, V82.1				
Unspecified	V87 (.0-.8), V89.2				
Pedal cyclist, other	V10-V11, V12-V14 (.0-.2), V15-V18, V19 (.0-.3, .8, .9)				
Pedestrian, other	V01, V02-V04 (.0), V05, V06, V09 (.0, .1, .3, .9)				
Land Transport, other	V20-V28 (.0-.2), V29 (.0-.3), V30-V79 (.0-.3), V80 (.0-.2, .6-.9), V81-V82 (.0, .2-.9), V83-V86 (.4-.9), V87.9, V88 (.0-.9), V89 (.0, .1, .3, .9)	X82	Y03	Y32	
Transport, other	V90-V99		U01.1		Y36.1
Natural/environmental	W42-W43, W53-W64, W92-W99, X20-X39, X51-X57				
Overexertion	X50				
Poisoning	X40-X49	X60-X69	X85-X90, U01(.6, .7)	Y10-Y19	Y35.2
Struck by, against	W20-W22, W50-W52	X79	Y00, Y04	Y29	Y35.3
Suffocation	W75-W84	X70	X91	Y20	
Other specified and classifiable	W23, W35-W41, W44, W49, W85-W91, Y85	X75, X81, U03.0	X96, Y02, Y05-Y07, U01 (.0, .2, .5)	Y25-Y31	Y35 (.1, .5), Y36 (.0, .2, .4-.8)
Other specified, not elsewhere classifiable	X58, Y86	X83, Y87.0	Y08, Y87.1, U01.8, U02	Y33, Y87.2	Y35.6, Y89 (.0, .1)
Unspecified	X59	X84, U03.9	Y09, U01.9	Y34, Y89.9	Y35.7, Y36.9
Adverse effects: Medical care					Y40-Y59, Y88.0
Adverse effects: Drugs					Y60-Y84, Y88 (.1-.3)
All injury by Intent	V01-X59, Y85-Y86	X60-X84, Y87.0, U03	X85-Y09, Y87.1, U01, U02	Y10-Y34, Y87.2, Y89.9	Y35-Y36, Y89.0, Y89.1
All external causes	V01-Y36, Y85-Y87, Y89, U01-U03				

*CDC Recommended E-Code Groupings for Presenting Injury Mortality, National Center for Injury Prevention and Control, Centers for Disease Control and Prevention.

Interpretation of Selected E Codes

The following list provides sample scenarios to assist with the interpretation of selected ICD9 External Cause of Injury codes. This is *not* a comprehensive listing.

<i>Injury Cause</i>	Manner/Intent	ICD-9 E Codes	Sample
Fall	Assault-Related	E968.1	Pushed down a flight of stairs.
	Self-Inflicted	E957.0-E957.9	Jumped off building with intent to harm self
	Unintentional	E880.0-E886.9 E888	Fell off of bed. Tripped down stairs. Slipped on ice. Fell during football game.
Fire/Burn	Assault-Related	E961, E968.0, E968.3	Purposely burned by boiling water thrown by another person.
	Self-Inflicted	E958.1, E958.2, 958.7	Purposely burned oneself with cigarette.
	Unintentional	E890.0-E899 E924.0-E924.9	Spilled hot coffee. Burned on stove. Burned in bath water that was too hot.
Motor Vehicle Traffic -Motorcycle	Unintentional	E810-E819(.2, .3)	Rider injured in crash with truck. Motorcycle slid on gravel.
Motor Vehicle Traffic -Occupant	Self-Inflicted	E958.5	Driver purposely ran into telephone pole.
Motor Vehicle Traffic -Occupant	Unintentional	E810-E819(.0, .1)	Car rear-ended at stop sign. Head on collision with another car.
Motor Vehicle Traffic -Unspecified	Unintentional	E810-E819(.8, .9)	Injury to someone involved in motor vehicle crash but unknown if occupant, or other, etc.
Overexertion	Unintentional	E927	Pulled muscle during sports. Twisted ankle walking down stairs. Injured back lifting heavy boxes.
Pedal Cycle: motor vehicle & non-motor vehicle- related	Unintentional	E810-E819(.6) E800-E807(.3) E820-E825(.6) E826.1 E826.9 E827-E829(.1)	Fell off bike on mountain trail. Hit by a car while riding bike in the street. Ran into a pedestrian on the sidewalk. Ran into a dog with tricycle.
Pedestrian: motor vehicle & non-motor vehicle- related	Unintentional	E810-E819(.7) E800-E807(.2) E820-E825(.7) E826-E829(.0)	Hit by car while walking across street. Collision with bicycle courier. Run over by three-wheeler.
Poisoning	Assault-Related	E962.0-E962.9	Was served drink intentionally laced with pesticide.
	Self-Inflicted	E950.0-E952.9	Purposely breathed exhaust fumes from car. Intentional overdose of sleeping pills.
	Unintentional	E850.0-E869.9	Child drank cleanser from bottle under sink. Unknowingly ate poisonous mushroom.
Nature/Environment: (e.g., animal bites, insect stings, exposure to cold/heat, earthquake, etc.)	Unintentional	E905.0-E905.6 E905.9 E906.0-.5 E906.9	Bitten by any animal, including dog, cat, rat, or snake. Bitten or stung by an insect, including bee, wasp, spider, scorpion.
Struck by/against	Unintentional	E916-918	Struck by falling box. Crushed fingers in car door. Collided with another player during football game.
Suffocation	Assault-Related	E963	Person strangled.
	Self-Inflicted	E953.0-E953.9	Hanged self.
	Unintentional	E911-E913.9	Choked on piece of meat.

