

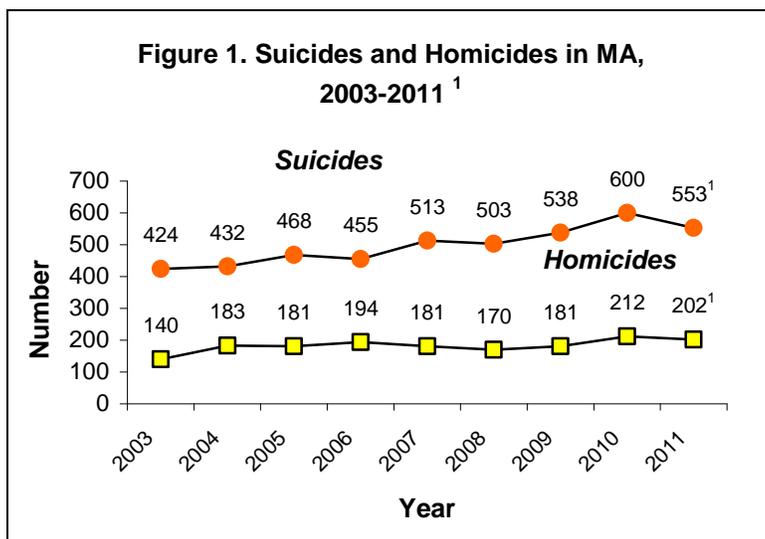


# SUICIDES AND SELF-INFLICTED INJURIES IN MASSACHUSETTS: DATA SUMMARY

Injury Surveillance Program, MA Department of Public Health

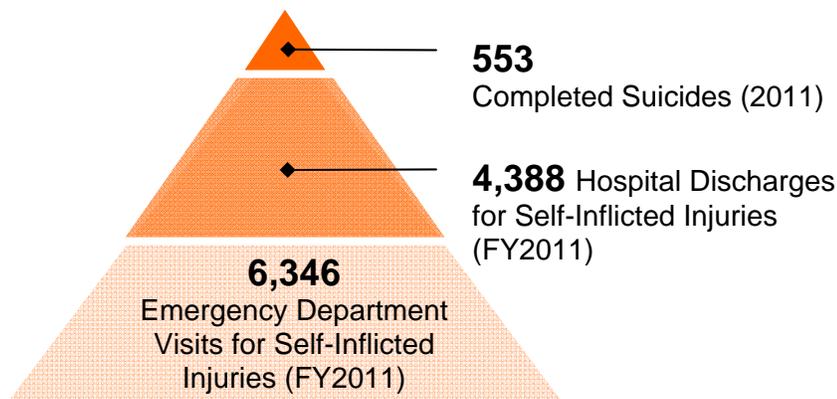
Spring 2013

*Suicide and self-inflicted injuries among Massachusetts residents are a significant yet largely preventable public health problem. The purpose of this bulletin is to provide information for practitioners and prevention specialists on the magnitude, trends, and risk factors for suicides and self-inflicted injuries. While suicide refers to completed suicides, nonfatal self-inflicted injuries can include both suicide attempts and non suicidal self-injury. The MDPH Suicide Prevention Program works in collaboration with multiple state, national, and local partners to reduce these injuries.*



Source: Massachusetts Violent Death Reporting System, Massachusetts Department of Public Health

**Figure 2. Number of Suicides and Hospital Discharges and Emergency Department Discharges for Nonfatal Self-Inflicted Injury, MA<sup>4</sup>**



Sources: Massachusetts Violent Death Reporting System, Massachusetts Department of Public Health; Massachusetts Hospital Discharge Database, Massachusetts Emergency Department Discharges Database, Massachusetts Center for Health Information and Analysis

## Preliminary 2011 Data:

- In 2011, there were 553 suicides that occurred in Massachusetts; a rate of 8.3/100,000. The number of suicides was 2.7 times higher than homicides (N=202).
- Massachusetts has lower rates of suicides compared to the US. The 2009 US age adjusted rate, the most recent year for which data are available, was 11.8/100,000 compared to 7.7/100,000 for Massachusetts.
- During the period of 2003-2011, almost 4,500 persons died of suicide in Massachusetts. Suicide rates increased an average of 4% per year. The overall increase was 26%; from 6.6 to 8.3.<sup>2</sup> There were 129 more suicides in 2011 than in 2003.
- The increase in suicide rates was primarily among White, non-Hispanic males whose rates increased an average of 5% per year between 2003 and 2011.<sup>2</sup>
- Samaritans' organizations in Massachusetts responded to 200,659 crisis calls in 2011.<sup>3</sup>

**Due to the change in data sources from Vital Records to MA Violent Death Reporting System, death data cannot be compared to death data in previous bulletins.**

<sup>1</sup> Numbers for 2011 are preliminary and may change as the file is updated. Caution should be used when interpreting these numbers. 2011 numbers were analyzed by death certificate manner. The death data presented in the remainder of this bulletin are from 2010 as the data are final. All death data are Massachusetts occurrent deaths: the death occurred in Massachusetts regardless of which state the person resided.

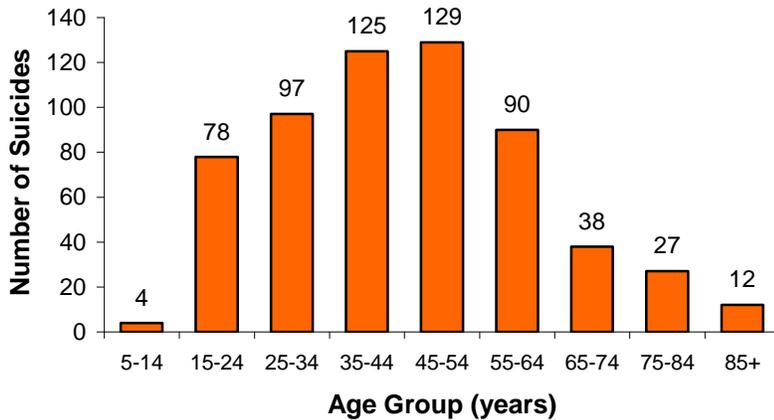
<sup>2</sup> This trend was statistically significant.

<sup>3</sup> This number includes repeat callers (individuals contacting hotlines more than once). Samaritans, Inc.; Samaritans of Fall River; Samaritans of Merrimack Valley; Samaritans on the Cape & Islands.

<sup>4</sup> Hospital Discharges and Emergency Department Visits are MA residents. Deaths are MA occurrent.

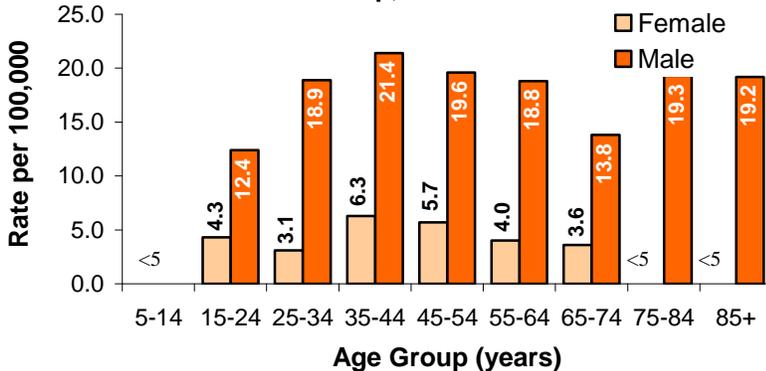
# Suicides and Hospitalizations for Nonfatal Self-inflicted Injuries by Age Group and Sex

**Figure 3A: Suicides in MA, by Age Group, 2010 (N=600)**



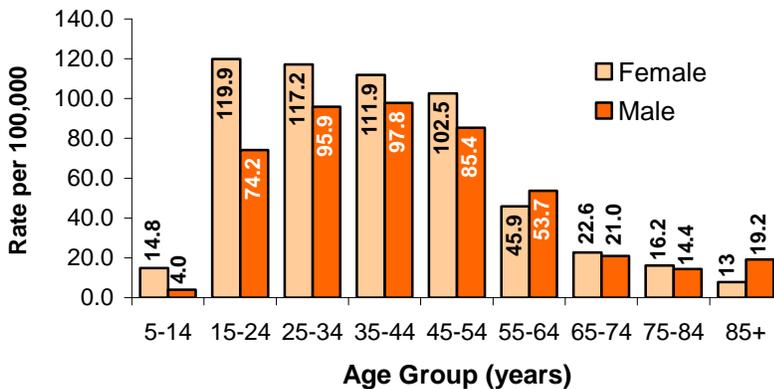
Source: Massachusetts Violent Death Reporting System, Massachusetts Department of Public Health

**Figure 3B: Rate of Suicides in MA by Sex and Age Group, 2010<sup>5</sup>**



Source: Massachusetts Violent Death Reporting System, Massachusetts Department of Public Health

**Figure 4. Hospital Discharge Rates for Nonfatal Self-inflicted Injury by Sex and Age Group, MA Residents, 2011 (N=4,388)**



Source: Massachusetts Hospital Discharge Database, Massachusetts Center for Health Information and Analysis

## Suicides:

- Most suicides occur in the middle age population: 42% of all suicides were among individuals age 35-44 and 45-54 years. Between 2003 and 2010 the suicide rates among these age groups increased an average of 5.6% per year and 9.0% per year, respectively.
- Suicides among males exceeded females by almost 4 to 1. In 2010, there were 475 suicides among males (14.7/ 100,000) compared with 125 among females (3.7/100,000).
- Among males, the highest rate of suicide was among those 35-44 years of age (21.4/ 100,000, N=96).
- Among females the highest rate of suicide was also among those 35-44 years of age (6.3/100,000, N=29).

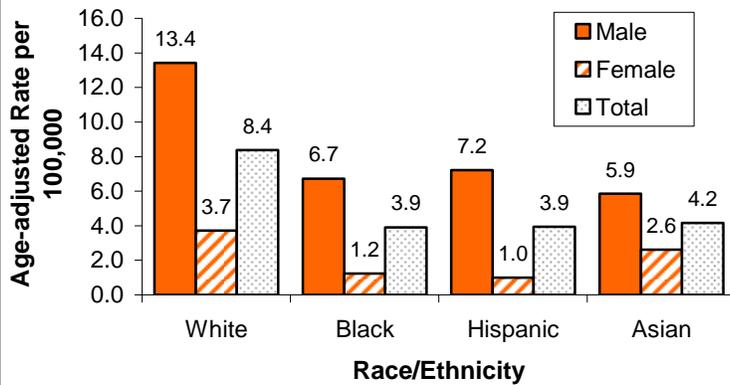
## Nonfatal Self-Inflicted Injuries, Hospital Discharges:

- The overall rate of hospital discharges for self-inflicted injury among MA residents was 66.2/100,000 (N=4,388).
- Females had a higher rate (72.1/100,000, N=2,453) than males (59.9/100,000, N=1,935).
- Females had higher rates of hospital discharges for self-inflicted injury than males for all age groups except 55-64 and 85+ year age groups.
- Among females, the highest rate was in the 15-24 year age group (119.9/100,000, N=554). Among males, the highest rate was in the 35-44 year age group (97.8/100,000, N=438).

<sup>5</sup> Rates are not calculated on counts less than 5.

## Suicides by Race/Ethnicity and Suicide and Nonfatal Self-inflicted Hospitalizations by Method

**Figure 5. Average Annual Suicide Rates in MA, by Sex and Race/Ethnicity, 2006-2010 (N=2,609)<sup>6</sup>**



Source: Massachusetts Violent Death Reporting System, Massachusetts Department of Public Health

- From 2006-2010 the average annual age-adjusted suicide rate was highest among White, non-Hispanic males (13.4/100,000, N=1,801).<sup>7</sup>
- Similarly White, non-Hispanic females had a higher rate (3.7/100,000, N=538) of suicide compared to Black, non-Hispanic and Hispanic females.<sup>7</sup>

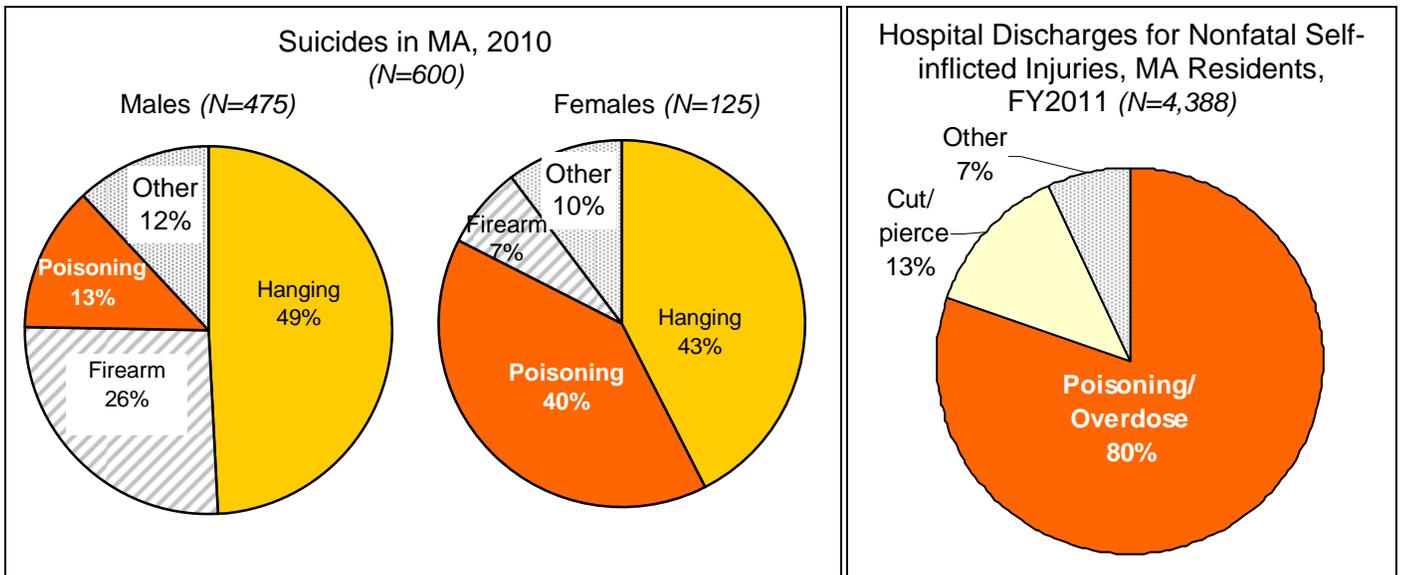
<sup>6</sup>Rates are age-adjusted using the Standard US Census 2000 population. The five most recent years of data were used to improve the stability of the rates.

<sup>7</sup> Statistically significant at the  $p \leq .05$  level. Please refer to the Methods section for an explanation on statistical significance.

**Figure 6A and B: Suicides and Hospital Discharges for Nonfatal Self-Inflicted Injury by Method, Massachusetts**

**Figure 6A.**

**Figure 6B.**

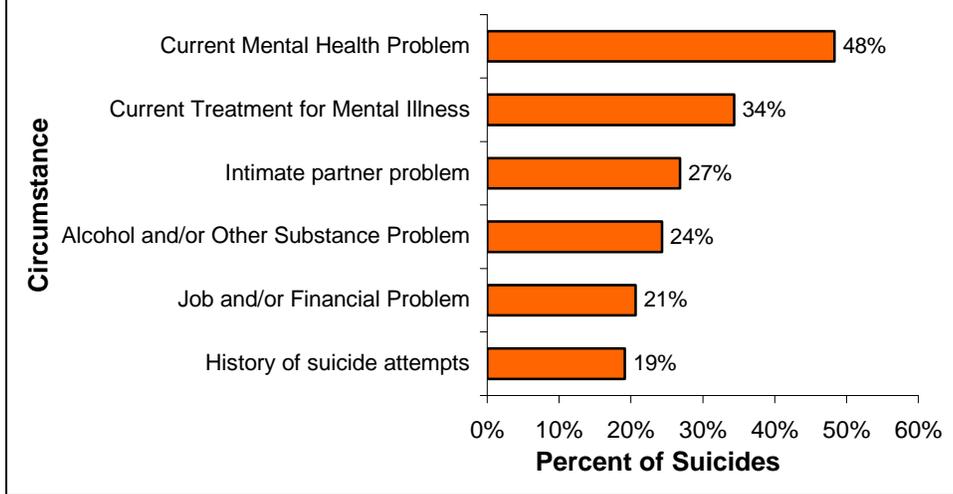


Source: Massachusetts Violent Death Reporting System, Massachusetts Department of Public Health and Massachusetts Hospital Discharge Database, Massachusetts Center for Health Information and Analysis

- In 2010, suicide methods varied by sex. For males, suffocation/hanging (N=234) and firearm (N=124) were the most common methods used. For females, the leading methods were suffocation/hanging (N=53) and poisoning (N=50).
- In FY2011, the leading method of nonfatal self-inflicted injuries resulting in hospitalization was poisoning. This did not vary by sex.

## Circumstances Associated with Suicide in Massachusetts

**Figure 7a. Circumstances Associated with Suicide in MA, 2010<sup>8</sup>**

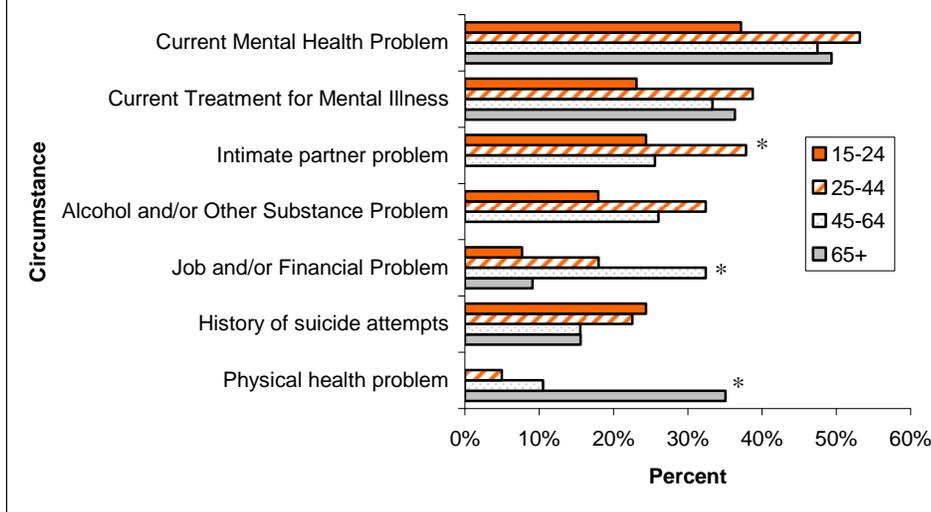


Source: Massachusetts Violent Death Reporting System, Massachusetts Department of Public Health

Circumstance data provides useful information for better understanding what may have precipitated a suicide and informs prevention programming. Information presented shows circumstances known.

- 48% of suicide victims had a current mental health problem such as depression or other mental illness.
- 34% were currently receiving some form of mental health treatment.
- 27% had a noted problem with a former or current intimate partner (such as divorce, break-up or argument.)<sup>9</sup>
- 24% had an alcohol and/or other substance problem noted.
- 21% had a job problem, such as increased pressure at work, feared layoff, recent layoff and/or financial problem.
- 19% had a history of suicide attempts.

**Figure 7b. Circumstances Associated with Suicide in MA, by Age Group, 2010<sup>8</sup>**



Source: Massachusetts Violent Death Reporting System, Massachusetts Department of Public Health

<sup>8</sup> More than one circumstance may be noted for a suicide.

<sup>9</sup> "Intimate Partner Problem" refers to any problem with a current or former intimate partner and may or may not involve violence.

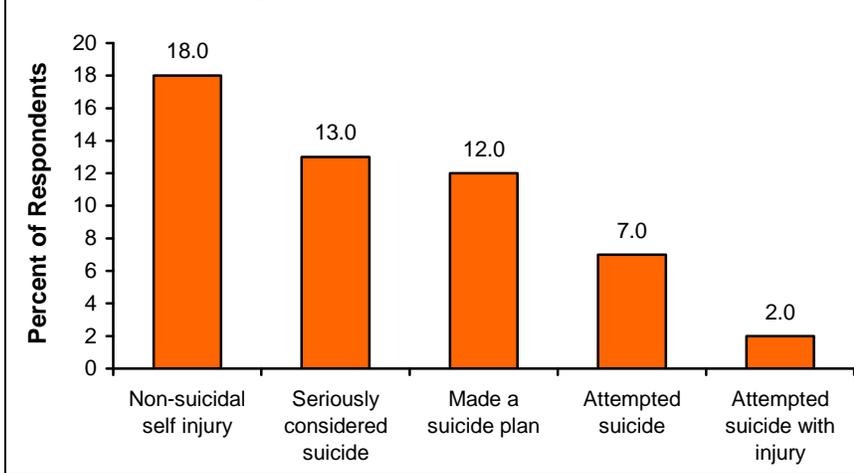
There were differences in circumstances when analyzed by age group. In 2010:

- 25 to 44 year olds had higher percents of intimate partner problem compared to other age groups.
- 45 to 64 year olds had the highest percent of job and/or financial problem.
- Individuals ages 65 and over had the highest percent of physical health problem compared to other age groups.

\* Statistically significantly higher than all other age groups

## Suicidal Thoughts and Behaviors in Youth

**Figure 9. Suicidal Thinking and Behavior among MA High School Students, YRBS, 2011**

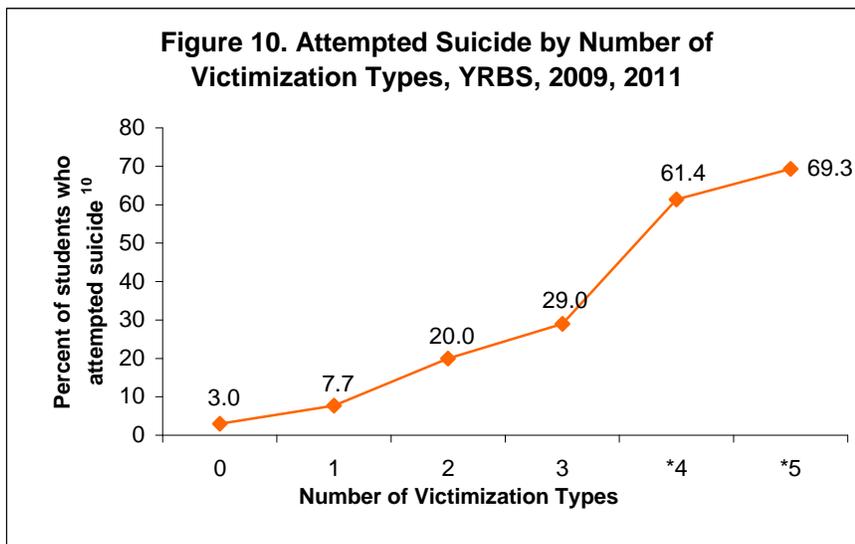


Source: Massachusetts Youth Risk Behavior Survey, 2011, weighted data

The MA Youth Risk Behavior Survey, (MA YRBS) an anonymous written self report survey of youth in public high schools in MA, indicated that in 2011:

- 18% of high school students reported a self-inflicted injury that was not a suicide attempt
- 13% of students seriously considered suicide during the past year, 12% made a suicide plan and 7% made an attempt
- 25% of high school students reported feeling so sad or depressed daily for at least two weeks during the previous year that they discontinued usual activities. A significantly larger percentage of females (32%) than males (19%) reported feeling this way (not depicted)

**Figure 10. Attempted Suicide by Number of Victimization Types, YRBS, 2009, 2011**



Source: Massachusetts Youth Risk Behavior Survey, questions on survey in 2009 and 2011, weighted data

Survey findings from the MA YRBS can also show the relationship between victimization and suicide attempts. As the number of victimization types experienced increases, so does the percent of those students attempting suicide. The victimization types from YRBS include:

- students who had ever been bullied on school property during the past 12 months
- students who did not go to school on one or more of the past 30 days because they felt they would be unsafe at school or on their way to or from school
- students who had been threatened or injured with a weapon such as a gun, knife, or club on school property one or more times during the past 12 months
- students who had ever been hurt physically by a date or someone they were going out with
- students who responded that someone had ever had sexual contact with them against their will.

\* Estimates may be unreliable due to small numbers, interpret with caution

<sup>10</sup>Attempted suicide one or more times in the past 12 months

## Resources

For more information on suicide data or to learn more about suicide prevention activities in Massachusetts, please contact:

### Injury Surveillance Program

Bureau of Health Information, Statistics, Research, and Evaluation  
Massachusetts Department of Public Health  
250 Washington Street, 6<sup>th</sup> Floor  
Boston, MA 02108  
Phone: 617-624-5648 (general injury)  
Phone: 617-624-5664 (MAVDRS)  
<http://www.mass.gov/dph/isp>

### Massachusetts Suicide Prevention Program

Bureau of Community Health and Prevention  
Massachusetts Department of Public Health  
250 Washington Street, 4<sup>th</sup> Floor  
Boston, MA 02108  
Phone: 617-624-6076  
<http://www.mass.gov/dph/suicideprevention>

### Bureau of Substance Abuse Services

Massachusetts Department of Public Health  
250 Washington Street, 3<sup>rd</sup> Floor  
Boston, MA 02108  
1-800-327-5050  
TTY 1-888-448-8321  
<http://www.mass.gov/dph/bsas>

### Massachusetts Coalition for Suicide Prevention

Phone: 617-297-8774  
[info@masspreventssuicide.org](mailto:info@masspreventssuicide.org)

### 24-hour help lines

<b>Samaritans:</b> 1-877-870-HOPE (4673)	<b>National LifeLine:</b> 1-800-273-TALK (8255)
<b>Samaritans:</b> 1-800-252-TEEN (8336)	TTY: 1-800-799-4TTY (4889)

## Methods

### General Notes:

All suicides and self-inflicted injuries were ascertained using guidelines recommended by the Centers for Disease Control and Prevention and are based upon the International Classification of Disease codes for morbidity and mortality. The most recently available year of data for each data source was used for this bulletin. All rates reported in this bulletin are crude rates with the exception of Figure 5. Age-adjusted rates are used for Figure 5 to minimize distortions that may occur by differences in age distribution among compared groups. Rates presented in Figure 1 of this bulletin cannot be compared to bulletins published prior to 2008 due to a methodology change. In prior bulletins individuals less than 10 were excluded in both the numerator and denominator due to the rarity of children <10 completing suicide. For consistency with other publications the analysis was modified to include all ages for both numerator and denominator. This change results in slightly lower rates. Death data used in prior bulletins was from the Massachusetts Registry of Vital Records and Statistics and was Massachusetts residents regardless of where the death occurred.

### Data Sources:

- **Death Data:** MA Violent Death Reporting System, MA Department of Public Health. The National Violent Death Reporting System is a Centers for Disease Control and Prevention funded system in 18 states that links data from death certificates, medical examiner files, and police reports to provide a more complete picture of the circumstances surrounding violent deaths. The Massachusetts Violent Death Reporting System (MAVDRS) operates within the Injury Surveillance Program at the Massachusetts Department of Public Health. MAVDRS captures all violent deaths (homicides, suicides, deaths of undetermined intent and all firearm deaths) occurring in MA and has been collecting data since 2003. Data reported are for calendar year. Data were analyzed by icd-10 with the exception of 2011 which was analyzed by death certificate manner. Data includes Massachusetts occurrent deaths regardless of residency.
- **Statewide Acute-care Hospital Discharges:** MA Inpatient Hospital Discharge Database, MA Center for Health Information and Analysis. Data reported are for fiscal years (October 1 -September 30). Deaths occurring during the hospital stay and transfers to another acute care facility were excluded from the counts presented. All discharge diagnoses were analyzed to ascertain injury.
- **Statewide Emergency Department Discharges at Acute Care Hospitals:** MA Emergency Department Discharge Database, MA Center for Health Information and Analysis. Data reported are for fiscal years (October 1 -September 30). Deaths occurring during treatment or those admitted to the hospital were excluded from the counts presented. All discharge diagnoses were analyzed to ascertain injury.
- **Suicide Crisis Data:** Samaritans, Inc.; Samaritans of Fall River; Samaritans of Merrimack Valley; Samaritans on the Cape & Islands.
- **MA Youth Risk Behavior Survey:** MA Department of Education, MA Department of Public Health, and CDC MMWR Vol. 61, No. 4, June 2012.
- **Population Data:** National Center for Health Statistics. Postcensal estimates of the resident population of the United States for July 1, 2000-July 1, 2010, by year, county, single-year of age (0, 1, 2, ..., 85 years and over), bridged race, Hispanic origin, and sex (Vintage 2010). Prepared under a collaborative arrangement with the U.S. Census Bureau. Available from: [http://www.cdc.gov/nchs/nvss/bridged\\_race.htm](http://www.cdc.gov/nchs/nvss/bridged_race.htm) as of May 31, 2012

**Statistical Significance:** A result that is statistically significant is one that is *unlikely* to have occurred by chance alone, and is therefore, *likely* to represent a true relationship between a risk factor such as race, age, or sex and a disease or injury of interest. Statistical significance does not necessarily imply importance and should not be the only consideration when exploring an issue. Because a rate is not "statistically" significant does not mean there is not a real problem that could or should be addressed.

This document was produced in conjunction with CDC's Violent Death Reporting System under Cooperative Agreement 3U17CE001316 and CDC's Core Violence and Injury Prevention Program under Cooperative Agreement 11-1101. Its contents are solely the responsibility of the authors and do not represent the official views of the Centers for Disease Control and Prevention.