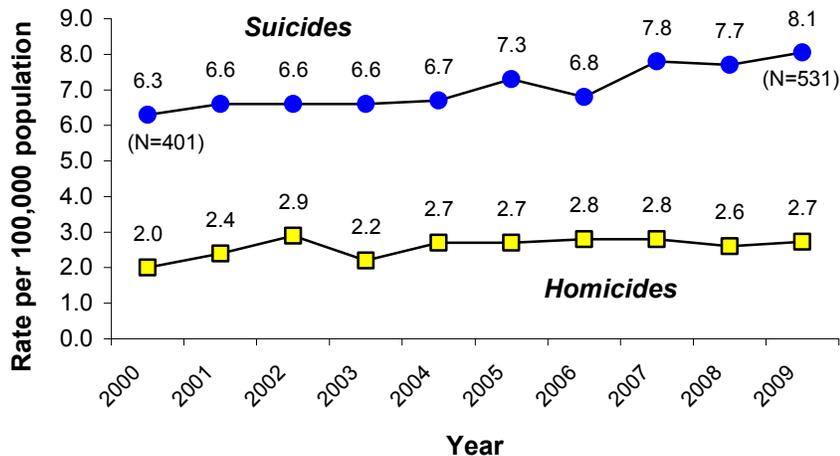




SUICIDES AND SELF-INFLICTED INJURIES IN MASSACHUSETTS: DATA SUMMARY

This bulletin provides an overview of suicide and self-inflicted injuries among Massachusetts residents. While suicide refers to completed suicides, nonfatal self-inflicted injuries can include suicide attempts and other self-injury such as cutting or burning oneself. There is no way to distinguish actual attempts from non-attempts in hospital, observation, and emergency department data, so the broader term "self-inflicted" is used here. 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 4. Age-adjusted rates are used for Figure 4 to minimize distortions that may occur by differences in age distribution among compared groups. Please note that "Hospital Stays" combines hospital discharges with observation stays.

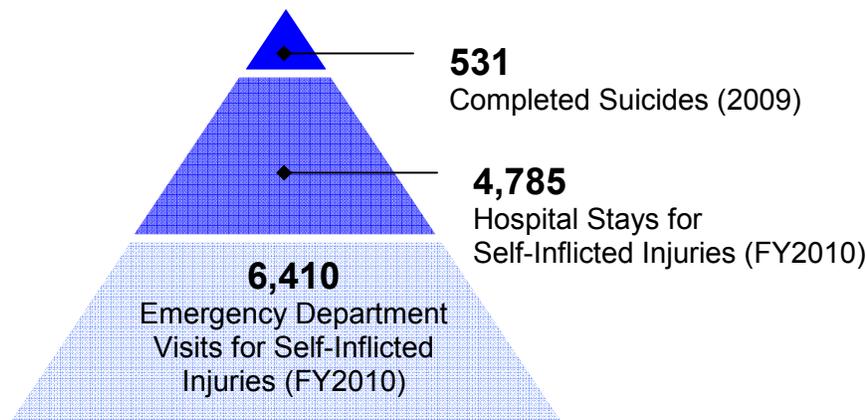
Figure 1. Suicide and Homicide Rates¹, MA Residents, 2000-2009



Source: Registry of Vital Records and Statistics, MA Department of Public Health. Please note that victims (i.e., homicides) of the September 11, 2001 terrorist attacks are not included in the graph.

- In 2009, there were 531 suicides among Massachusetts residents, for a rate of 8.1 per 100,000 residents. This was the highest number of suicides since 1992 (N=541). Preliminary data from the Massachusetts Violent Death Reporting System (MAVDRS) indicates that suicides continued to increase through 2010.²
- In 2009, the number of suicides (N=531) was nearly 3 times higher than homicides (N=180).
- During the ten-year period 2000-2009, more than 4,500 residents died of suicides. Suicide rates increased an average of 2.6% per year, and 28% overall from 6.3 to 8.1.³ There were 130 more suicides in 2009 than in 2000.
- The increase in suicide rates was primarily among White, Non-Hispanic males whose rates increased an average of 2.9% per year between 2000 and 2009.³
- Samaritans organizations in Massachusetts responded to **212,243** crisis calls in 2010; an increase of 14% from 2009.⁴

Figure 2. Magnitude of Suicides and Nonfatal Self-Inflicted Injuries Resulting in Acute Care Hospital Stays or Emergency Department Visits, MA Residents⁵



¹Rates presented in this graph cannot be compared to bulletins published prior to 2008 due to a change in methodology. All rates presented in this graph are crude rates.

²For more information or data, contact MAVDRS directly at 617-624-5664.

³This trend was statistically significant.

⁴This number includes repeat callers (individuals contacting hotlines more than once).

⁵For technical notes and information on data sources refer to page 6, Methods.

Figure 3. Suicides and Nonfatal Hospital Stays for Self-Inflicted Injury by Method, MA Residents

Figure 3A.

Figure 3B.

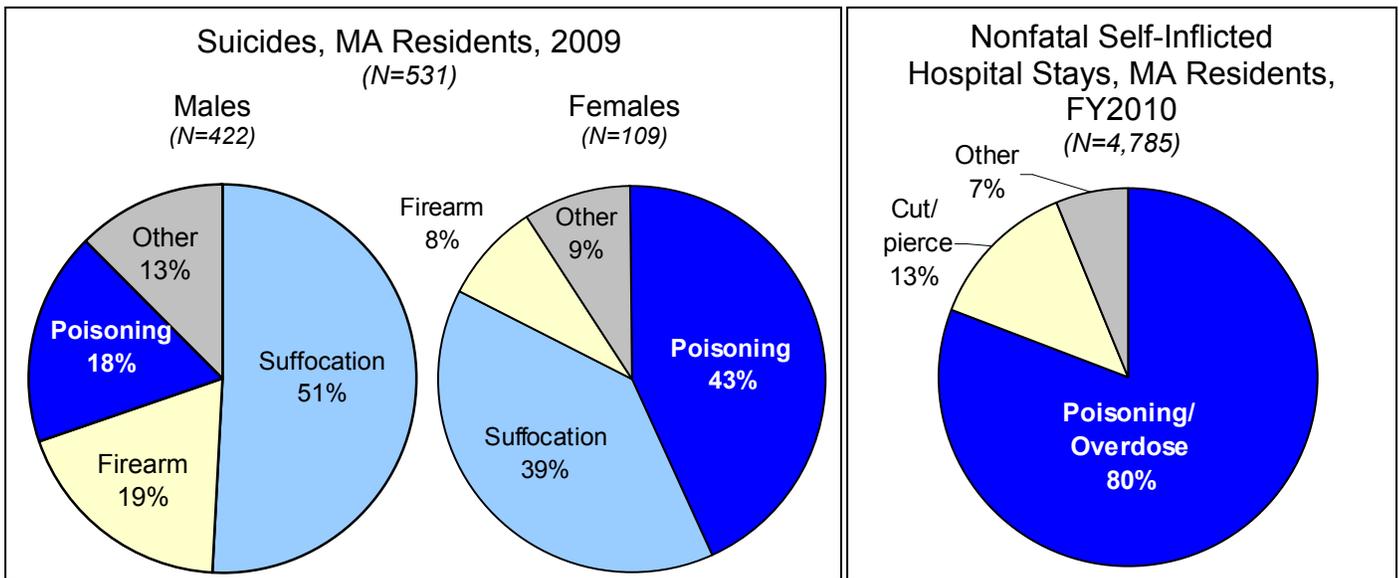
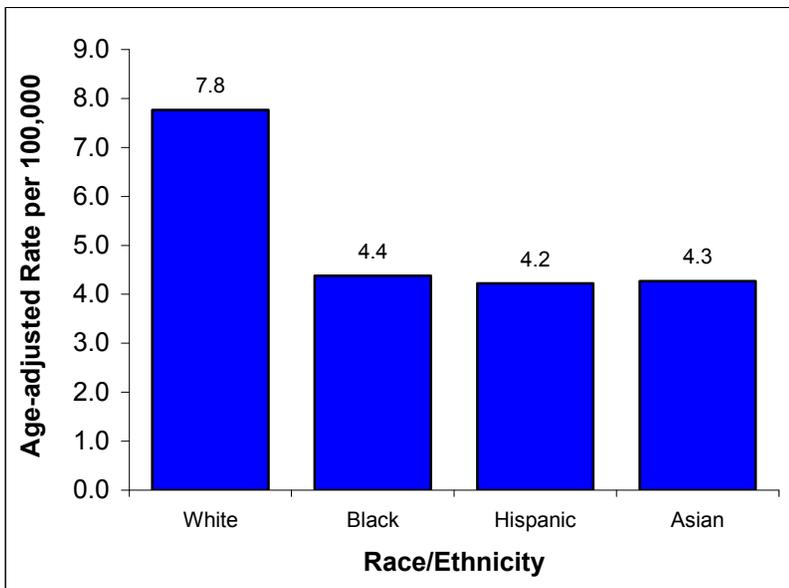


Figure 3A Source: Registry of Vital Records and Statistics, MDPH

Figure 3B Sources: MA Hospital Discharge Database and MA Outpatient Observation Stay Database, MA Division of Health Care Finance and Policy

- Suicide methods vary proportionally by sex. For males, suffocation/hanging (N=214) and firearm (N=80) were the most common methods used. For females, the leading methods were poisoning (N=47), followed by suffocation/hanging (N=43).
- The leading method of nonfatal self-inflicted hospital stays, however, *did not vary* by sex. Poisoning was the leading method for *both* males and females.

Figure 4. Average Annual Suicide Rates⁵ by Race/Ethnicity, MA Residents, 2005-2009 (N=2,440)



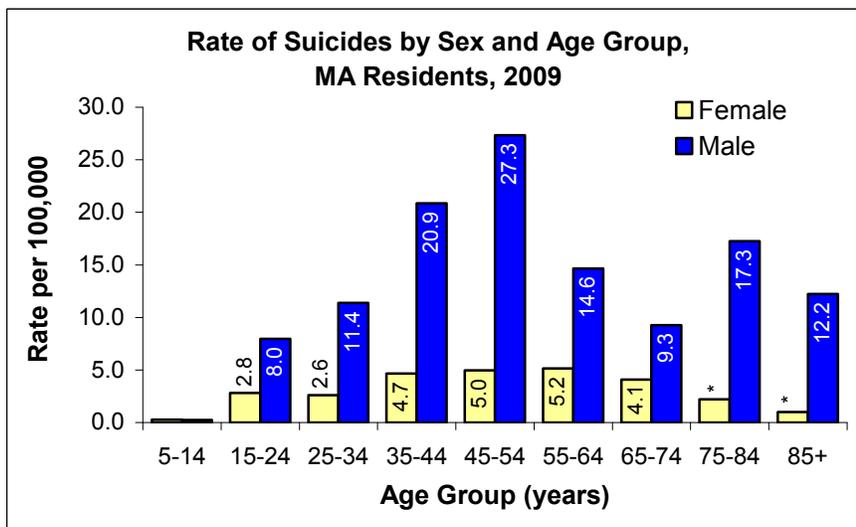
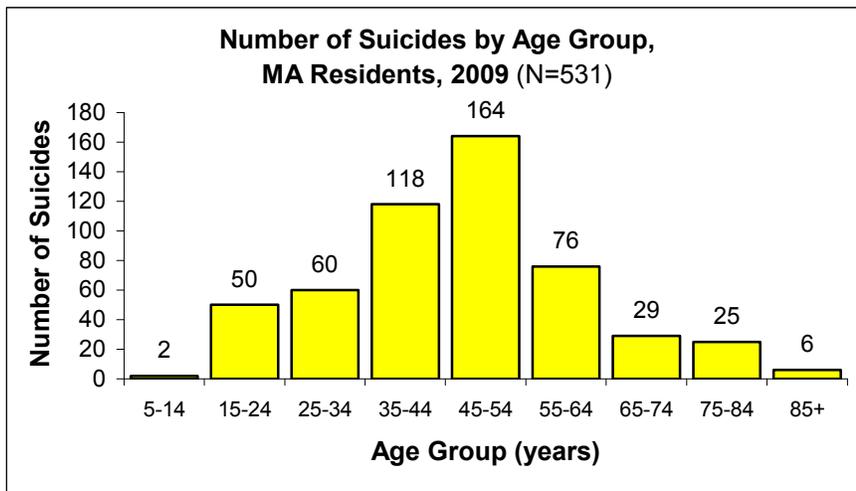
- Average annual age-adjusted rates for 2005-2009 were highest among White, Non-Hispanic residents (7.8 per 100,000; N=2,177). This was statistically higher than all other race and ethnic groups.⁶
- Black, Non-Hispanic residents had the second highest rate (4.4 per 100,000, N=88), followed by Asians (4.3 per 100,000, N=66) and Hispanic residents (4.2 per 100,000, N=101).

⁵Rates 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.

⁶Statistically significant at the $p \leq .05$ level. Please refer to the Methods section for an explanation on statistical significance.

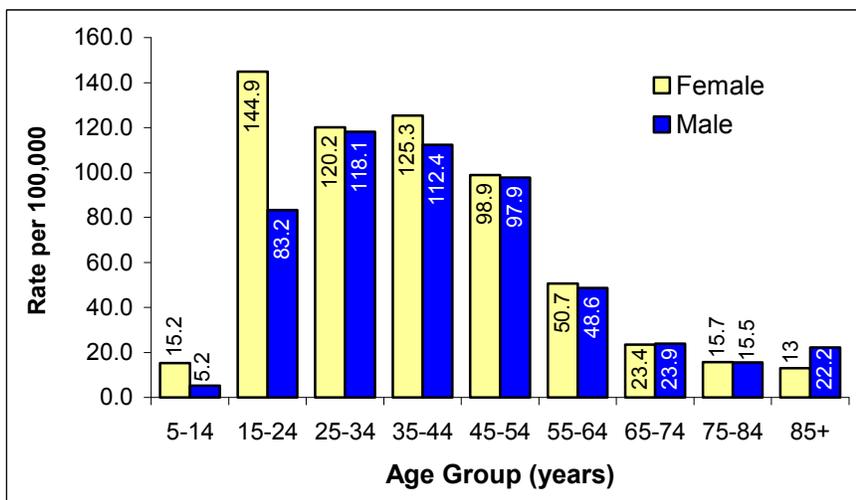
Source: Registry of Vital Records and Statistics, Massachusetts Department of Public Health

Figure 5. Number and Rate of Suicides by Age Group and Sex, MA Residents, 2009



Source: Registry of Vital Records and Statistics, Massachusetts Department of Public Health

Figure 6. Rate of Hospital Stays for Self-Inflicted Injury by Age Group and Sex, MA Residents, 2010 (N=4,785)



Sources: MA Hospital Discharge Database and MA Outpatient Observation Stay Database, MA Division of Health Care Finance and Policy

Suicides:

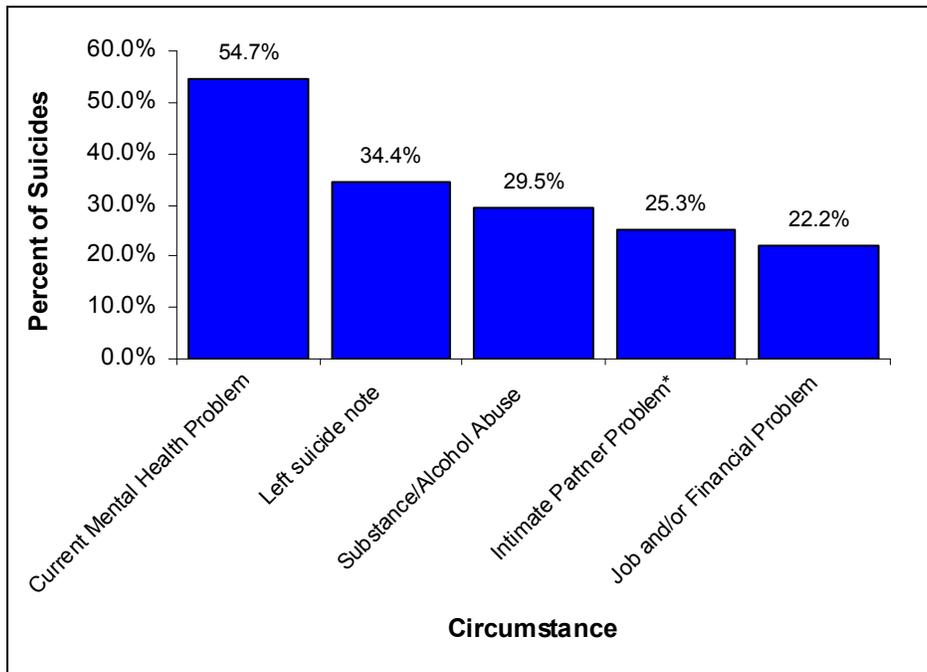
- Most suicides occur in the middle age population; 51.3% of all suicides were among individuals, ages 35-44 and 45-54 years.
- Suicides among males exceeded females by nearly 3 to 1. In 2009, there were 421 suicides among males (13.1 per 100,000) compared with 109 among females (3.2 per 100,000).
- Among males, the highest number and rate of suicides was among those 45-54 years of age (N=136, 27.3 per 100,000).
- Among females the highest number and rate of suicides was also among those 45-54 years of age (N=26, rate=5.0 per 100,000).

* Rates are not calculated on counts less than 5.

Nonfatal Self-Inflicted Injuries, Hospital Stays:

- The overall rate of hospital stays for self-inflicted injury among MA residents was 73.1 per 100,000 (N=4,785).
- Females had a higher rate (78.2 per 100,000, N=2,645) than males (67.6 per 100,000, N=2,140).
- Up to the age of 64, females had higher rates of hospitalization for self-inflicted injury than males.
- Among females, the highest rate was in the 15-24 year age group (144.9 per 100,000, N=677); among males, the highest rate was in the 25-34 year age group (118.1 per 100,000, N=492).

Figure 7. Circumstances⁷ Associated with Suicide, MA Residents, 2009



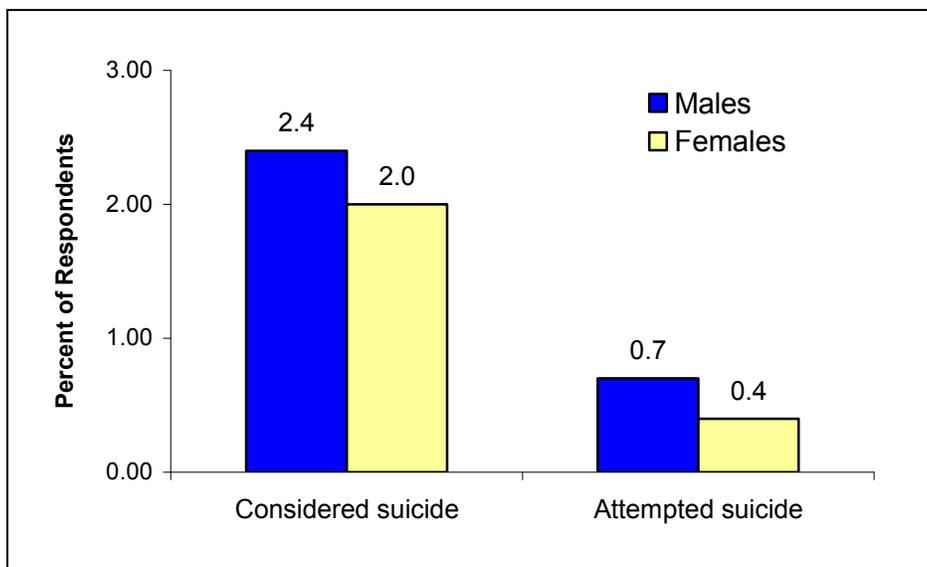
Source: Massachusetts Violent Death Reporting System, Massachusetts Department of Public Health

Some information on suicide circumstances is available from the MA Violent Death Reporting System. Among suicides in 2009:

- 55% had a current mental health problem such as depression;
- 34% left a suicide note;
- 29.5% had a history of substance/alcohol abuse;
- 25% had current intimate partner problems;⁸ and
- 22% had job and/or financial problems.

Among suicide victims who were tested for alcohol, 22% had a Blood Alcohol Content (BAC) level of 0.08 or over; the legal limit for operating a motor vehicle in Massachusetts.

Figure 8. Suicidal Thinking and Behavior among MA Residents Ages 18 and Older, 2008-2010



Source: MA Behavioral Risk Factor Surveillance System, Health Survey Program, MA Department of Public Health

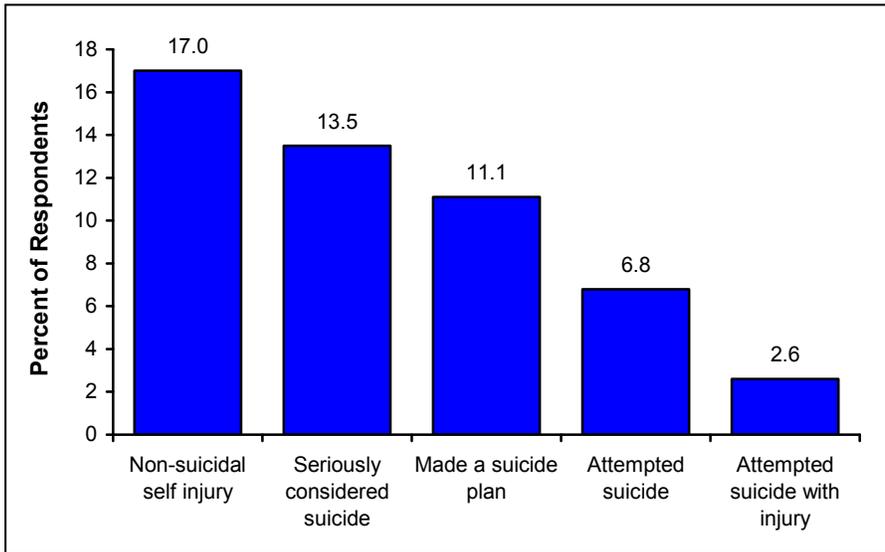
Survey findings from the MA Behavioral Risk Factor Surveillance System, an anonymous random digit dialing telephone survey of Massachusetts residents ages 18 and older indicates that between 2008 and 2010:

- 2.2% of MA adults seriously considered attempting suicide during the past 12 months; 2.4% of males and 2.0% of females.
- 0.5% of MA adults, ages 18 and older, attempted suicide during the past 12 months.

⁷ More than one circumstance may be noted for a suicide.

⁸ Intimate Partner Problem refers to any problem with a current or former intimate partner and may or may not involve violence.

Figure 9. Suicidal Thinking and Behavior among MA High School Students, 2009



Sources: CDC, MMWR. *Youth Risk Behavior Surveillance – United States, 2009*. Vol. 59, No. SS-5. June 4, 2010 and the MA Department of Education and MA Department of Public Health, August 2010.

Survey findings from the MA Youth Risk Behavior Survey, an anonymous written survey of youth in public high schools in MA, indicated that in 2009:

- 17% of high school students reported a self-inflicted injury that was not a suicide attempt;
- 13.5% of students seriously considered suicide during the past year, 11% made a suicide plan and 6.8% made an attempt;
- In 2009, 24% 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 (29.1%) than males (19.2%) reported feeling this way (data not shown).

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, 6th 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, 4th Floor
Boston, MA 02108

Phone: 617-624-5544

<http://www.mass.gov/dph/suicideprevention>

Bureau of Substance Abuse Services

Massachusetts Department of Public Health
250 Washington Street, 3rd 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: 781-223-7369

nlescarbeau@masspreventsuicide.org

www.MassPreventsSuicide.org

24-hour help lines:

Samaritans:

1-877-870-HOPE (4673)

Samariteens:

1-800-252-TEEN (8336)

National LifeLine:

1-800-273-TALK (8255)

TTY: 1-800-799-4TTY (4889)

Methods

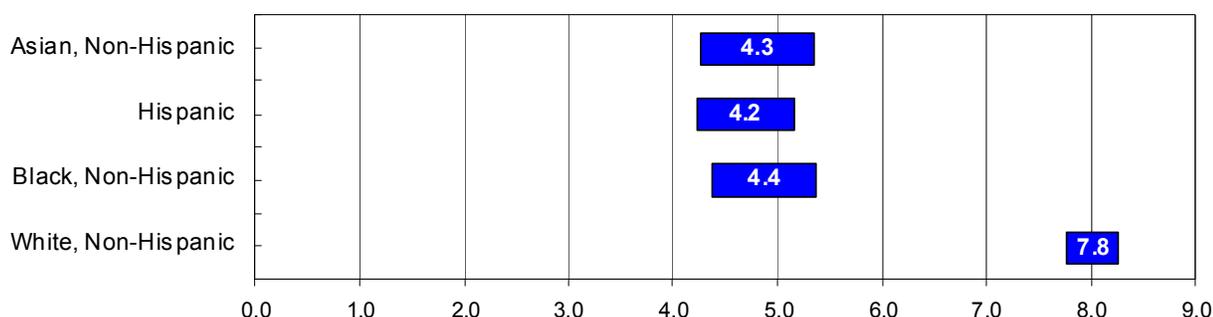
General Notes:

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. All rates reported in this bulletin are crude rates with the exception of Figure 4. Age-adjusted rates are used for Figure 4 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 we excluded ages less than 10 in both the numerator and denominator due to the rarity of children <10 completing suicide. For consistency with other publications we modified our analysis to include all ages for both numerator and denominator. This change results in slightly lower rates.

Data Sources:

- *Death Data (with the exception of Figure 7):* Registry of Vital Records and Statistics, MA Department of Public Health. Data reported are for calendar year. *Death Data (Figure 7 only):* Massachusetts Violent Death Reporting System, MA Department of Public Health. Data reported are for calendar year.
- *Statewide Acute-care Hospital Stays:* Massachusetts Inpatient Hospital Discharge Database, MA Division of Health Care Finance and Policy and Massachusetts Outpatient Observation Stay Database, MA Division of Health Care Finance and Policy. 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:* Massachusetts Emergency Department Discharge Database, MA Division of Health Care Finance and Policy. 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. 59, No. SS-5, June 2010.
- *MA Behavioral Risk Factor Surveillance System:* MA Department of Public Health.
- *Population Data:* Postcensal estimates of the resident population of the U.S. by year, county, age, bridged race, Hispanic origin, and sex (annual corresponding vintage files used). U.S. Census Bureau Estimates for 2010 were used for Figure 6 (ST-EST2010-03-25).

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. The confidence interval (CI) is a measure of uncertainty for a given value. It calculates a range with a higher and lower value assigned to a numeric statistical value, such as rate. As a general rule, we use a CI of 95% -- this means we can be 95% certain that the “true” value (such as a rate) falls within the range provided.



Statistical significance is influenced in part by the number of cases (N). Typically, a small N provides a large confidence interval (CI) and a large N provides a small CI. If the CI range of one group does not overlap with another group, then the difference in rates for those two groups **is** statistically significant. Where the CI does overlap, the rates are not statistically significant. In the table above White, non-Hispanics have a rate of 7.8 per 100,000 and the CI range is 7.4 – 8.1 per 100,000. The CI range for White, non-Hispanics *does not* overlap with the CI ranges for Black, non-Hispanics, Hispanics, and Asian/Pacific Islanders and is therefore statistically significantly higher than those groups. The CI range for all other race and ethnicity groups *overlap with each other* and are therefore not statistically significant.

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.

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