# Maine Suicide and Self-Inflicted Injury Surveillance Report

## September 2006

# The Maine Suicide and Self-Inflicted Injury Surveillance Report

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**For more information on the Maine Youth Suicide Prevention Program or a copy of this report please visit the Program Website:**
**http://www.mainesuicideprevention.org or call the Department of Health and Humans Services, Office of Substance Abuse Prevention, Statewide Information Resource Center at**
**1-800-499-0027.**

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# Chapter 1
# Overview of Maine's Suicide and Self-Inflicted Injury Surveillance System

The Maine Youth Suicide Prevention Program (MYSPP) created the State's first comprehensive surveillance system for suicide and self-inflicted injury in 2005 with funding from the Division of Injury Disability Outcomes and Programs within the federal Centers for Disease Control and Prevention (CDCP). Public health surveillance is broadly defined as the "the ongoing and systematic collection, analysis, interpretation, and dissemination of health data used for planning, implementing, and evaluating public health interventions and programs."[1] Surveillance data provide an overview of the health of a population, describing a health outcome or risk factor according to time, personal characteristics—such as gender and age—and geography. Suicide and self-inflicted injury surveillance data can contribute to a clearer understanding of the burden and scope of self-harm. This information will be used to guide prevention efforts in the State.

The Maine suicide and self-inflicted injury surveillance system is limited to data sources that include data collected over multiple time periods using standardized collection methods. For example, Youth Risk Behavior Survey (YRBS) data are collected every other year using many of the same questions. Standardized data collection and analysis of major health indicators ensures comparability of data across time and place. Surveillance does not provide in-depth analysis addressing specific questions. For that reason, it can never replace well-conducted, specialized studies to examine more complicated dynamics of a specific issue in a population.

Suicide is the 10$^{th}$ leading cause of death for Maine residents and the 2$^{nd}$ leading cause for persons aged 15 to 24. The MYSPP focuses prevention efforts on Maine youth aged 10 to 24, though this report also includes data on older age groups. For our analysis, we divided the 10 to 24 year old population into three age groups—10 to 14, 15 to 19, and 20 to 24—while older age groups were examined in broader categories. It is important to note that all analyses were restricted to the population aged 10 years and older. Children under age 10 were excluded because we considered them too young developmentally to have a conceptualization of mortality that is consistent with suicidal behavior, although one could debate the appropriate age cut-off for suicide surveillance. In any event, extremely few suicides or self-inflicted injuries occur in those under age 10.

Data on suicide, self-inflicted injury, and suicide ideation for Maine and, where available, the nation, were gathered from four sources, as shown in Figure 1.a. Death data are from the National Center for Health Statistics (NCHS) death database through the Center for Disease Control's (CDC) WISQARS website (http://www.cdc.gov/ncipc/wisqars/). Inpatient hospitalization data were obtained from legislatively-mandated databases maintained by the Maine Health Data Organization (MHDO). Data on self-reported suicide ideation and behavior in youth are from the Maine Youth Risk Behavior Survey (YRBS) and, separately, the national YRBS. This report is organized by data type: chapter 2 provides data on suicide rates and causes, chapter 3 summarizes inpatient hospitalizations for self-inflicted injuries, and chapter 4 reports data on self-reported suicide ideation and behavior and self-injuries among youth (YRBS) in Maine and the nation.

[1] Klaucke DN, Thacker SB, Parrish RG, et al. Guidelines for evaluating surveillance systems. MMWR 1998;37:1-18.

**Figure 1.a. Databases Used For Maine's Suicide/Self Inflicted Injury Surveillance System**

| Database | Years | Population | Outcome of Interest |
|---|---|---|---|
| ***National Center for Health Statistics (NCHS) Death Database***[2] | 1992-2003[3] | United States residents | Underlying cause of death of suicide<br>Specific cause of injury |
| ***Inpatient Hospitalization Data (Discharge)*** | 1998-2004 | All Maine residents hospitalized in Maine | Discharge codes for self-inflicted injury<br>Specific cause of injury |
| ***Maine Youth Risk Behavior Survey (Maine YRBS[4])*** | 1995, 1997, 2001, 2003, 2005[5] | A state representative sample of students in Maine's publicly-funded middle and high schools | Self-reported depression, suicide ideation, and suicide attempts |
| ***National Youth Risk Behavior Survey*** | 1995, 1997, 1999, 2003, 2005 | A representative national sample of high school students | Self-reported depression, suicide ideation, and suicide attempts |

[2] National death data obtained from: http://wonder.cdc.gov/mortSQL.html and http://webappa.cdc.gov/sasweb/ncipc/mortrate.html.
[3] National and state death data were only available through 2003 at the time of this report.
[4] Brener ND, Kann L, Kinchen SA, Grunbaum JA, Whalen L, Eaton D, Hawkins J, Ross JG. Methodology of the Youth Risk Behavior Surveillance System. MMWR 2004;53 (RR12):1-13.
[5] The Maine 1999 YRBS did not achieve a 60 percent overall response rate, cannot be considered representative of the state, and was not included in this report.

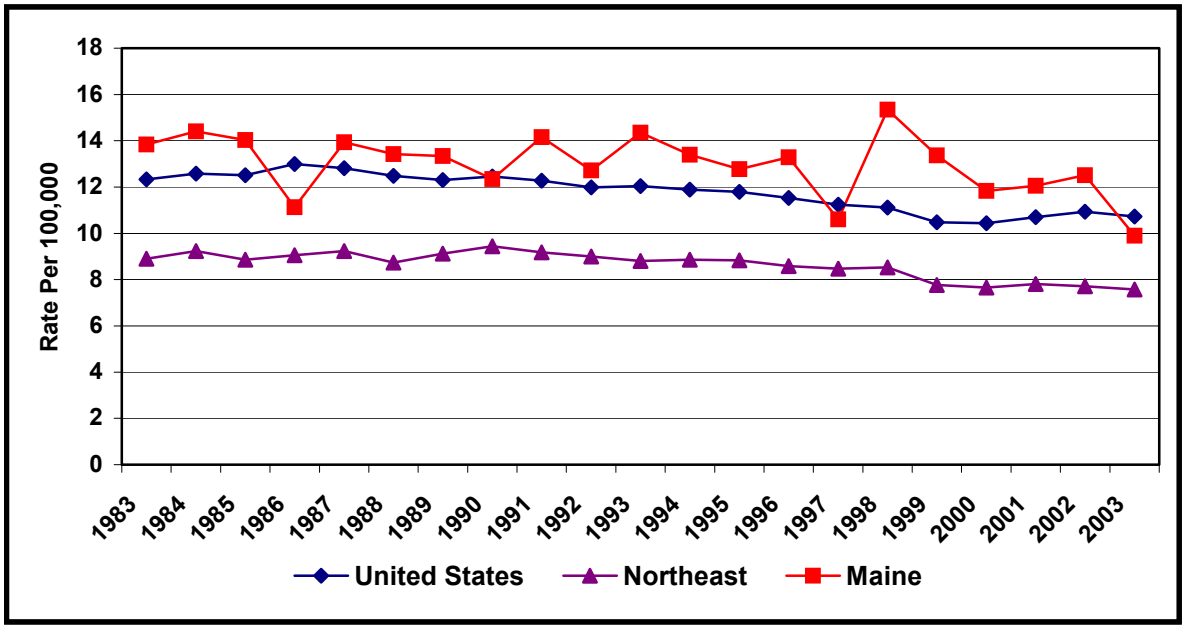
# Chapter 2
# Suicides in Maine

Death data have been maintained for decades in Maine and the nation. National standards for data collection and processing ensure comparability across the country, allowing valid comparisons over time and place.

For consistency, all death data were obtained from the NCHS database through the Center for Disease Control and Prevention's (CDCP) WISQARS. Maine rates were compared to the northeast region and the entire nation from 1983 through 2003. Single year rate estimates were calculated when comparing Maine's overall rates to national and regional data, but five years of data were combined for age-, gender-, county-, and cause-specific analyses of Maine data to increase the stability of rates and percentages. Rates were calculated as the number of suicides per 100,000 population; age-adjusted rates represent the suicide experience that one would expect assuming a population age distribution equal to the U.S. population in the year 2000. That is, age-adjusted rates standardized, allowing for direct comparisons between populations whose age distributions may have differed over time or geography.

Figure 2.a presents age-adjusted suicide rates over a 20 year period for Maine, the U.S., and the Northeast region (New England, New York, and New Jersey). These data support slight declines in suicide over time for each region, and generally higher rates in Maine as compared to the U.S. and northeast region. However, Maine's rates show significant random variability, warranting caution in interpretation.

**Figure 2.a. Suicide Rates (per 100,000) for Maine, Northeast, and the U.S., 1983-2003, All Ages, Age-Adjusted.**




***Data Source: NCHS Database**
****Rates are age-adjusted to the US 2000 standard population**

Table 2.a. shows the 1999-2003 crude and age-adjusted suicide rates in Maine, the Northeast, and the U.S. for all races and for the white, non-Hispanic population. National vital statistics data show that suicide rates vary by race and ethnicity and are highest among white, non-Hispanics.[6] It has been suggested that Maine's suicide rate is higher than the national average due to Maine's demographic composition, with over 95 percent of Maine residents being white, non-Hispanic, according to the 2000 U.S. Census. Due to small numbers, estimates of suicide rates among minority populations in Maine are not stable and therefore are not reported here. Maine's overall suicide rate is significantly higher than the Northeast and U.S. rate. Maine's suicide rate among white non-Hispanics is also higher than the Northeast region's white, non-Hispanic rate, but is not significantly higher than the national white non-Hispanic rate. In sum, these findings do not support the claim that racial/ethnic differences account for Maine's suicide rates.

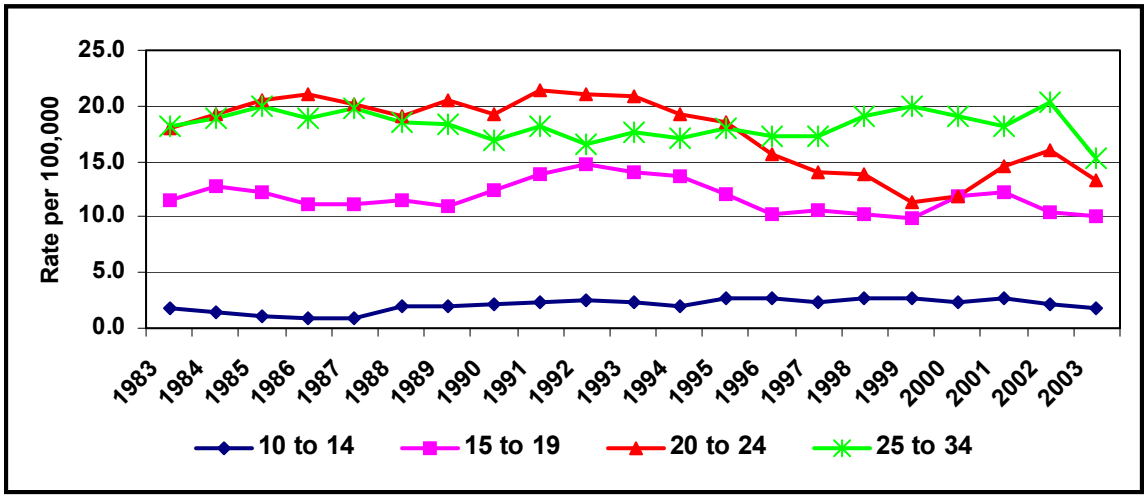
**Table 2.a. Suicide Rates in Maine, Northeast, and U.S. 1999-2003, All Ages.**

| Suicide Rates: | | Crude Rate | Age-Adjusted Rate |
|---|---|---|---|
| **Maine** | ***All Races*** | 12.3 | 11.9 |
| | ***White Non-Hispanic*** | 12.5 | 12.0 |
| **Northeast** | ***All Races*** | 7.9 | 7.7 |
| | ***White Non-Hispanic*** | 9.1 | 8.7 |
| **United States** | ***All Races*** | 10.7 | 10.7 |
| | ***White Non-Hispanic*** | 12.9 | 12.4 |

***Data Source: NCHS Database**
****Northeast is made up of ME, VT, NH, CT, RI, MA, NJ, and NY**

Figure 2.b. displays age-specific suicide rates among 10 to 34 year olds in Maine over the past twenty years as trailing 5-year averages. Despite pooling 5 years of data, there is still substantial variability in rate estimates due to the relatively small numbers of suicide within each age group. Suicide rates for 10 to 14 and 25 to 34 year olds have remained fairly stable since 1983, but it appears that rates have decreased in the 20 to 24 year old age group.

**Figure 2.b. Age-Specific Suicide Rates (per 100,000), Maine, 1983-2003, Trailing 5-Year Averages, Ages 10 to 34.**

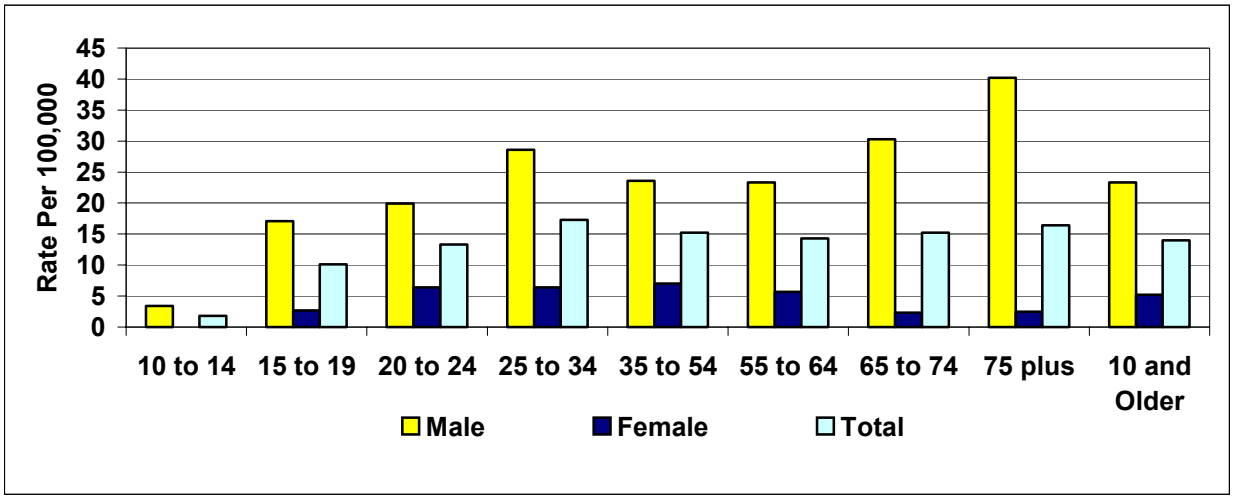



***Data Source: NCHS Database**

[6] Miniño AM, Anderson RN, Fingerhut LA, Boudreault MA, Warner M. Deaths: Injuries, 2002. National Vital Statistics reports; vol 54 no 10. Hyattsville, Maryland: National Center for Health Statistics. 2006.

Figure 2.c. illustrates suicide rates by age and gender in Maine between 1999 and 2003. In all age groups, males have higher suicide rates than females. Those 75 years and older has the highest suicide rate for males, at 40.2 per 100,000 population. Among females, the age group with the highest suicide rate is women aged 35 to 54, with a rate of 7.0 per 100,000 population.

**Figure 2.c. Age and Gender-specific Suicide Rates (per 100,000), Maine, 1999-2003.**




***Data Source: NCHS Database**

Table 2.b. depicts suicide rates by county from 1999-2003. The overall 5 year suicide rate in Maine was 12.3 per 100,000. Suicide rates ranged from 9 (Androscoggin County) to 19.5 (Knox County) per 100,000.

**Table 2.b. Suicide Rates by County in Maine, 1999-2003.**

| COUNTY | All Ages |
|---|---|
| **Maine Total** | **12.3** |
| Knox | 19.5 |
| Oxford | 15.6 |
| Washington | 15.4 |
| Somerset | 15.3 |
| Penobscot | 14.1 |
| Waldo | 14 |
| Piscataquis | 13.9 |
| Sagadahoc | 12.9 |
| Franklin | 12.8 |
| Kennebec | 12.4 |
| Cumberland | 11.4 |
| Aroostook | 11.1 |
| York | 11 |
| Lincoln | 10.6 |
| Hancock | 10 |
| Androscoggin | 9 |

***Source of Data: DHHS, ME CDC and Prevention, Office of Data, Research and Vital Statistics, 3/8/06**
****All rates are per 100,000 population**

## Specific Causes of Suicide

The distribution of cause-specific suicides varies across age and gender. (Table 2.c. and figure 2.d) Firearms were the most common cause of suicide across all age groups and accounted for more than half of all suicides in Maine between 1999 and 2003. Among those over age 65, 70 percent of those who committed suicide use a firearm; 45 percent of suicides aged 25 to 34 used a firearm. Poisoning and hanging were the next most common causes, each accounting for approximately 19 percent of all suicides. Hanging was more prevalent in the younger population than poisoning, but the prevalence of suicide by poisoning increased in older age groups, exceeding hanging in 35 to 64 year olds.

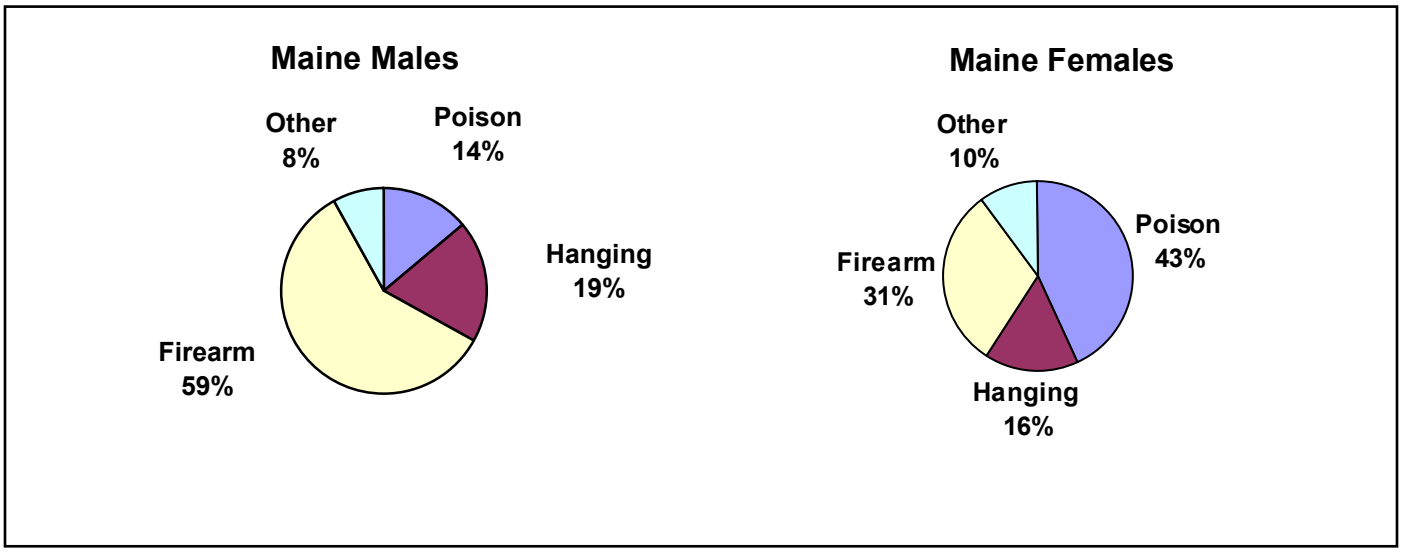
**Table 2.c. Distribution of Suicide Methods by Age in Maine, 1999-2003.**

| | 10 to 14 | 15 to 19 | 20 to 24 | 25 to 34 | 35 to 64 | 65 plus | Total All Ages 10 and Older |
|---|---|---|---|---|---|---|---|
| **Number of Deaths** | 8 | 46 | 50 | 132 | 411 | 146 | 793 |
| **Percentages (%):** | | | | | | | |
| **Firearms** | 50% | 48% | 52% | 45% | 53% | 70% | 54% |
| **Hanging** | 50 | 39 | 40 | 25 | 14 | 11 | 19 |
| **Poison/gases** | 0 | 4 | 6 | 22 | 25 | 12 | 19 |
| **Other methods** | 0 | 9 | 2 | 8 | 9 | 8 | 8 |

*Data Source: NCHS Database

Causes of suicide differed for males and females (over age 10), as demonstrated in Figure 2.d. A firearm was used in 59 percent of all male suicides, and in 31 percent of female suicides. Hanging was the second most frequent method used by males, while females were far more likely to poison themselves.

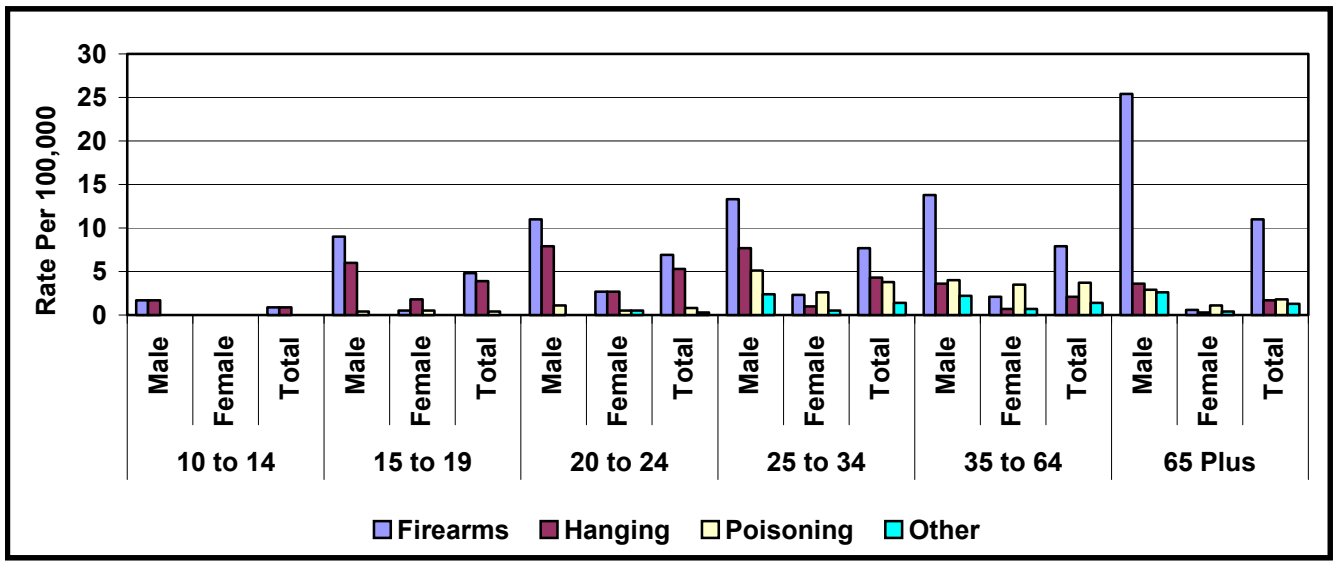
**Figure 2.d. Percent of Suicide Causes by Gender in Maine, Ages 10 and Older, 1999-2003.**




*Data Source: NCHS Database

Figure 2.e. presents cause-specific suicide rates for Maine males and females by age. As previously shown, the distribution of suicide causes varies across age groups and by gender. Males commit suicide using firearms more frequently than females across all age categories, especially in the 65 plus category. Among females, hanging is the most common method of suicide for those aged 15 to 24. Among women age 25 and older, poisoning is the most common method of suicide.

**Figure 2.e. Causes of Suicide by Gender and Age in Maine, 1999-2003.**

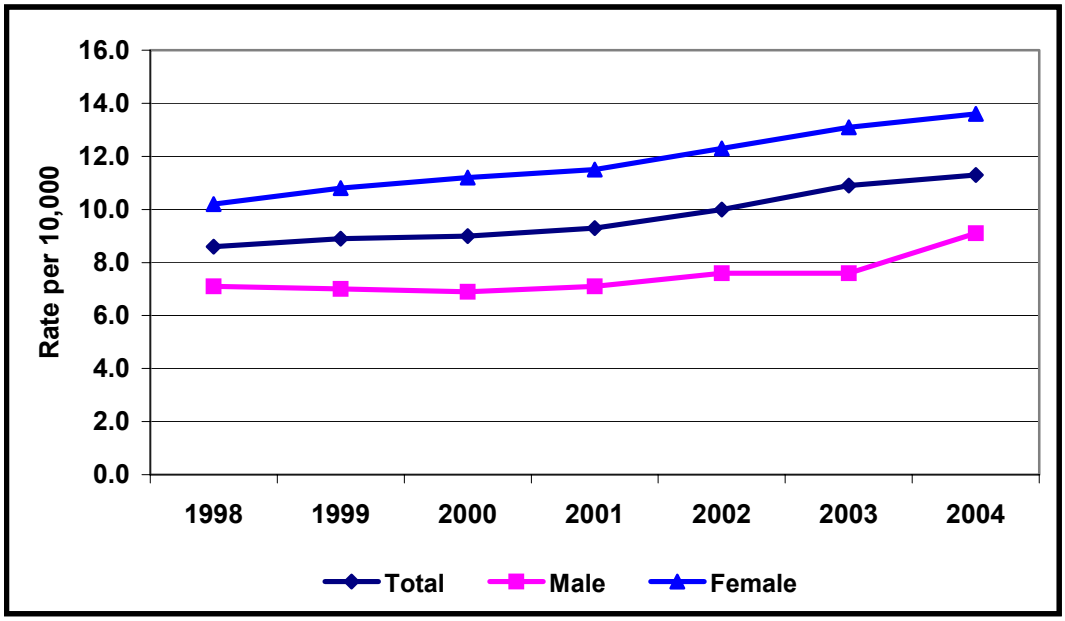



*Data Source: NCHS Database

# Chapter 3
# Inpatient Hospitalizations for Self-Inflicted Injury in Maine

Between 1998 and 2004, there were 7,081 hospitalizations for self-inflicted injuries in patients 10 years and older. Of those, 4,401 were female and 2,680 were male. Over this time period, hospitalizations for self-inflicted injury increased by roughly 33 percent, from an age-adjusted rate of 7.9 per 10,000 discharges in 1998 to 10.5 per 10,000 in 2004 (Figure 3.a). Over the same 7-year period, male hospitalization rates for self-inflicted injury increased from 6.3 to 8.4 per 10,000 discharges, while the female rate increased from 9.4 to 12.5 per 10,000.

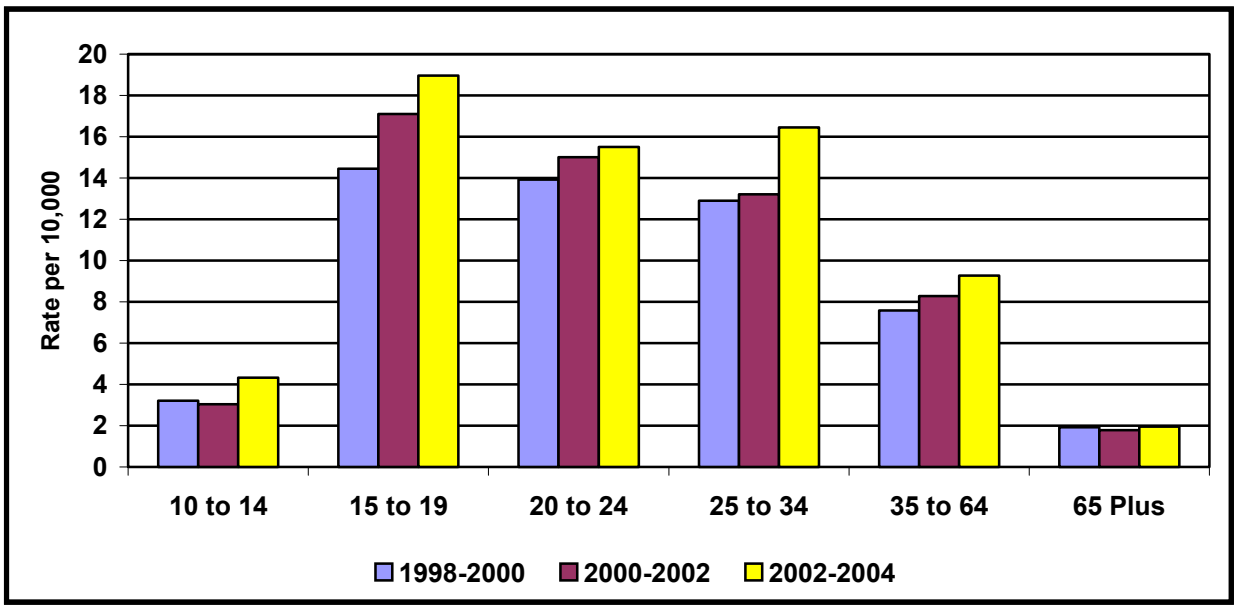
**Figure 3.a. Year and Gender-Specific Rates of Hospitalization (per 10,000) for Self-Inflicted Injury in Maine, Ages 10 and Older, Age-Adjusted, 1998-2004.**




*Data Source: Maine Uniform Hospital Discharge Database

Figure 3.b. presents 3-year rolling average hospitalization rates for self-inflicted injury by age for 3 periods: 1998-2000, 2000-2002, and 2002-2004. Hospital rates for self-inflicted injury appeared to increase over time in each age group except those 65 years and older. (Figure 3.b)

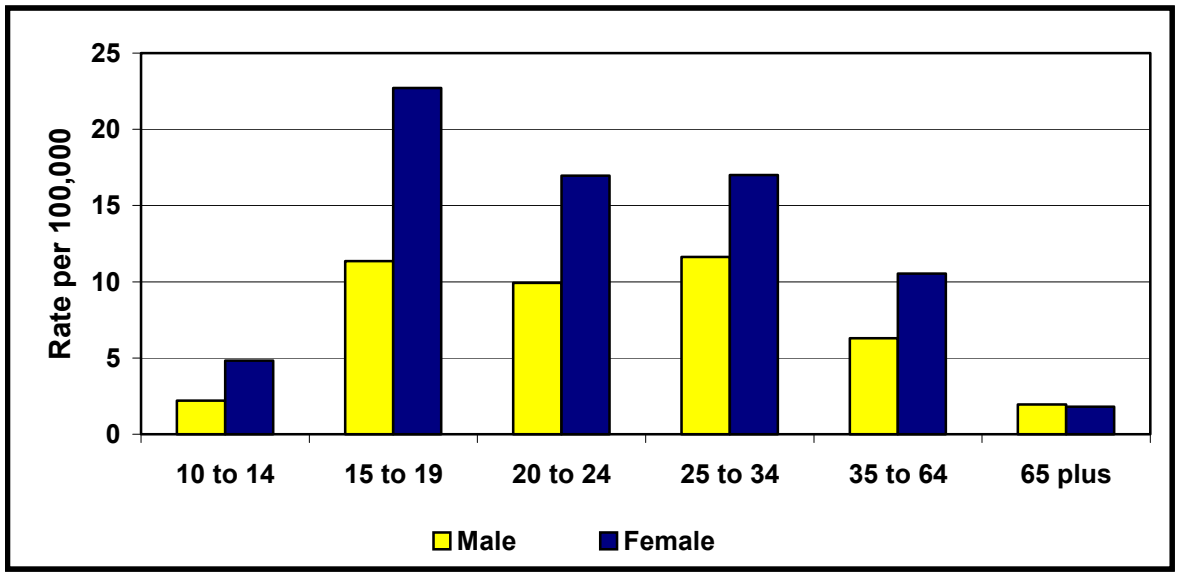
**Figure 3.b. Age-Specific Rates of Hospitalization (per 10,000) for Self-Inflicted Injury in Maine, 3-Year Rolling Averages, 1998-2004.**




*Data Source: Maine Uniform Hospital Discharge Database

Rates of hospitalization for self-inflicted injury were higher for females in every age group as compared to males, except for individuals over age 65, among whom male and female rates were approximately equal (Figure 3.c). Females between the ages of 15 and 19 exhibited the highest rate of self-injury hospitalization of any group in the state.

**Figure 3.c. Age and Gender-Specific Rates of Hospitalization (per 10,000) for Self-Inflicted Injury in Maine, 1998-2004.**




*Data Source: Maine Uniform Hospital Discharge Database

Table 3.a. illustrates that poisonings comprised the majority of hospitalizations for self-inflicted injuries between 1998 and 2004. The number of hospitalizations for poisoning was 8.5 times higher than the next leading cause of hospitalization, cutting. Poisonings accounted for a greater percentage of self-inflicted injury hospitalizations in females (84 percent) than in males (75 percent). The percentages of female hospitalizations for self-inflicted injuries from firearms or hanging were 0.5 and 0.4, respectively, as compared to 2.4 and 2.0 percent among males.

**Table 3.a.: Cause-Specific Distribution of Self-Inflicted Injury Hospitalizations in Maine, 1998-2004.**

| Causes: | Total | Percent | Male | | Female | |
|---|---|---|---|---|---|---|
| | | | Number | Percent | Number | Percent |
| **Poisoning/gases** | 5,674 | 80% | 2,001 | 75% | 3,673 | 84% |
| **Cutting/sharp objects** | 691 | 9.8 | 297 | 11 | 394 | 9.0 |
| **Firearms** | 86 | 1.2 | 64 | 2.4 | 22 | 0.5 |
| **Hanging/suffocation** | 70 | 0.9 | 54 | 2.0 | 16 | 0.4 |
| **Jumping** | 33 | 0.5 | 15 | 0.6 | 18 | 0.4 |
| **Drowning** | 4 | 0.06 | 3 | 0.1 | 1 | 0.02 |
| **Other** | 441 | 6.2 | 207 | 7.7 | 234 | 5.3 |
| **Late effects**** | 82 | 1.2 | 39 | 1.5 | 43 | 1.0 |
| **Total** | 7,081 | 100 | 2,680 | 100 | 4,401 | 100 |

***Data Source: Maine Uniform Hospital Discharge Database**

****Late effects are defined as a hospitalization where a previous injury was the primary cause.**

# Chapter 4
# Suicide Ideation and Attempts Reported by Maine Middle and High School Students

Information on suicide ideation and self-reported suicide attempts is available for middle and high school students from the Maine Youth Risk Behavior Survey (YRBS), a statewide survey of students enrolled in publicly-funded schools. The YRBS is conducted in the spring of odd numbered years, and has included suicide ideation and behavior questions since 1995. In 1995, the YRBS included only high school students, but in subsequent years both middle and high school students were surveyed. In 1999, Maine did not achieve the 60 percent overall response rate needed to disseminate YRBS data; therefore, no data are available for that year.

The YRBS queries students on a variety of risk behaviors including: unintentional and intentional injuries, tobacco, alcohol and other drug use, sexual behaviors, dietary behaviors, and physical activity. With respect to suicide ideation and behavior, the high school YRBS includes four separate questions asking, "During the past 12 months:"

- "did you seriously consider attempting suicide?"
- "did you make a plan about how you would attempt suicide?"
- "how many times did you actually attempt suicide?"
- "if you attempted suicide, did any attempt result in an injury, poisoning, or overdose that had to be treated by a doctor or nurse?"

The middle school YRBS also includes questions about suicide ideation and behavior, with different wording from the high school questions. They include:

- "Have you ever seriously thought about killing yourself?"
- "Have you ever made a plan about how you would kill yourself?"
- "Have you ever tried to kill yourself?"

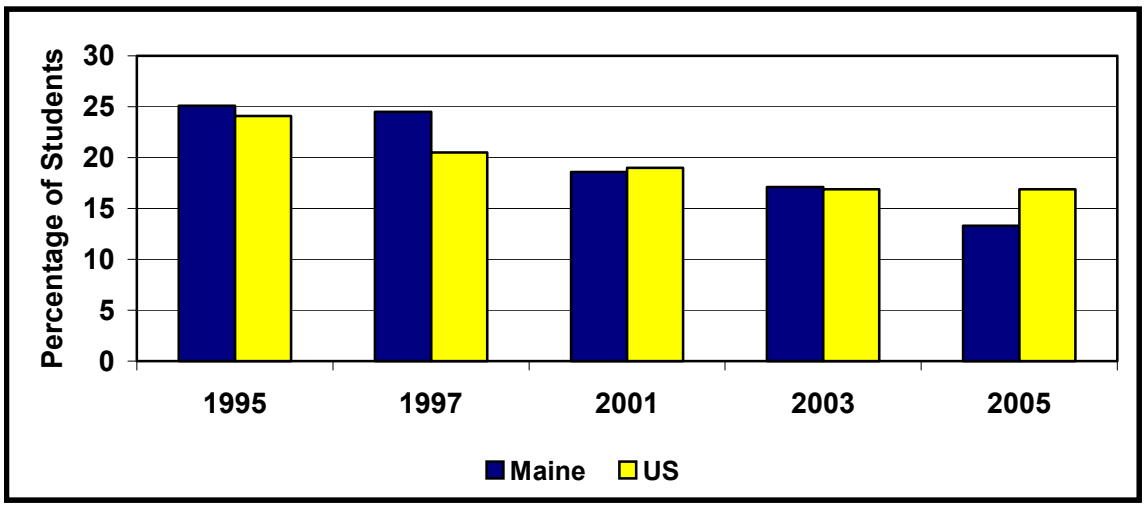
In 2001, the Maine YRBS began including a question asking students if they "felt so sad or hopeless almost every day for 2 weeks or more in a row that they stopped doing some usual activities" (here called "depression") in the survey administered to high school students.

Exact wording of YRBS questions and selected YRBS data can be found in the appendix of this document. In addition to the state YRBS, national YRBS data for high school students using the same core questionnaire and sampling scheme were used, allowing for state-national comparisons of the high school population. The questions used for the national survey can be found at http://www.cdc.gov/HealthyYouth/yrbs/index.htm. National YRBS data are not available for middle school students, preventing Maine-national comparisons of middle school data.

## Considered or Thought About Suicide

The percentage of high school students reporting having seriously considered suicide in the past 12 months has decreased in Maine over time (Figure 4.a.). In 1995, one in four (25 percent) of Maine high school students reported having considered suicide in the past twelve months. By 2005 that percentage dropped to one in ten (13.3 percent), a 47 percent decrease. The same trend was apparent nationally with 24.1 percent of U.S. high school students reporting having considered suicide in 1995, and 16.9 percent in 2003.

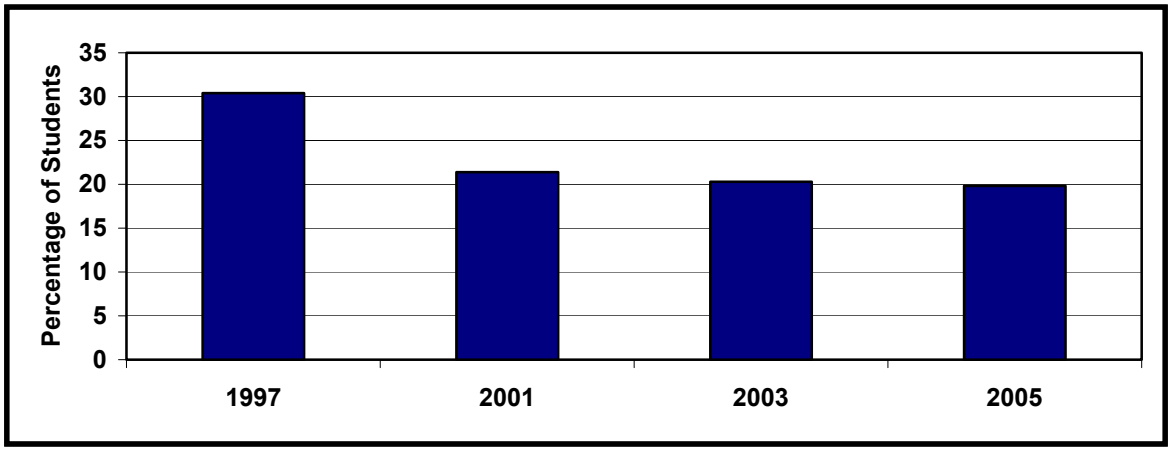
**Figure 4.a. Percentage of High School Students Who Reported Having Considered Suicide in the Past 12 Months.**




*Data Source: YRBS, 1995, 1997, 2001, 2003, 2005

As shown in Figure 4.b., similar declines were observed for Maine's middle school students from 1997 to 2005. In 1997, 30 percent of students reported having ever considered suicide, which declined by 35 percent to 19.8 percent in 2005.

**Figure 4.b. Percentage of Maine Middle School Students Who Reported Having Ever Thought About Killing Themselves.**

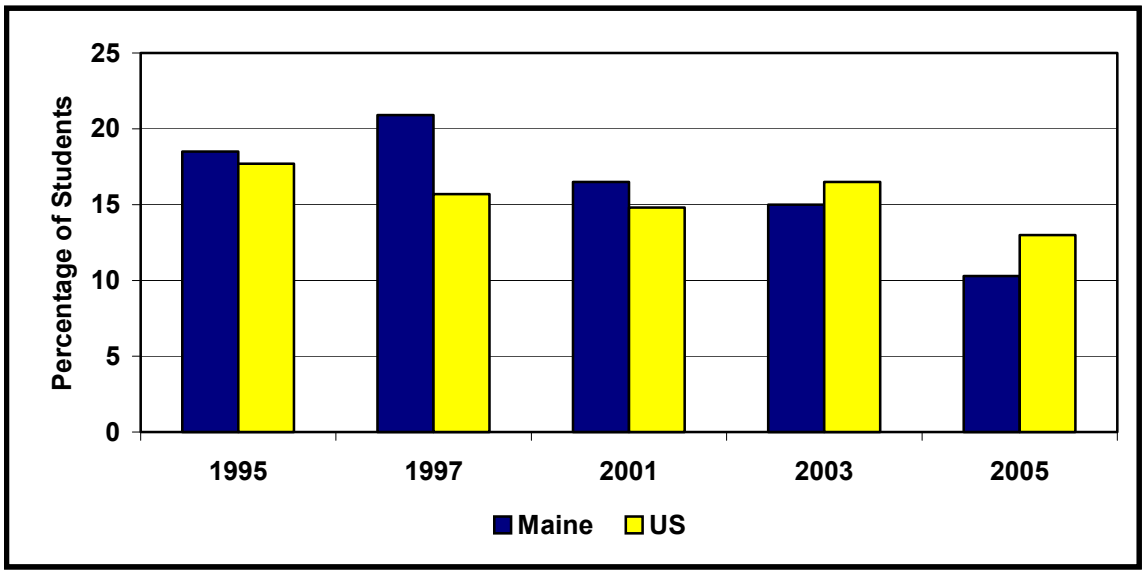



*Data Source: YRBS, 1997, 2001, 2003, and 2005

## Planned a Suicide

There is no clear trend in the percentage of high school students nationally who reported having planned suicide in the past twelve months, while in Maine, the percentage has decreased since 1997 (figure 4.c.).

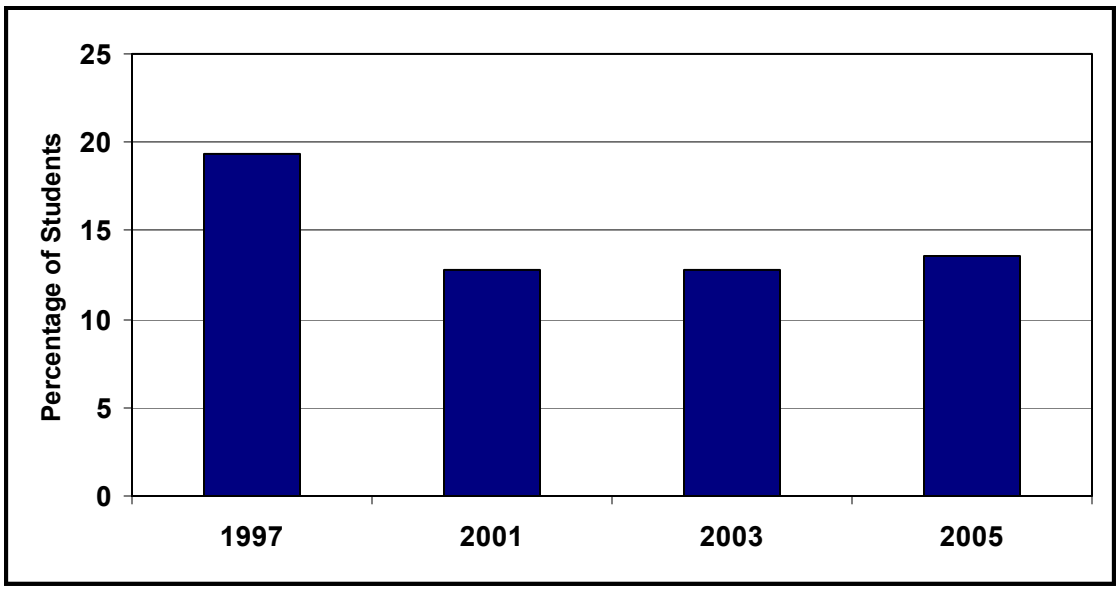
**Figure 4.c. Percentage of High School Students Who Reported Having Planned Suicide in the Past 12 Months.**




*Data Source: YRBS, 1995, 1997, 2003 and 2005

Among middle school students, the percentage of participants who reported having ever made a plan about how they would kill themselves decreased from 19 percent in 1997, to 13 percent in 2001, since which it has remained stable (Figure 4.d.).

**Figure 4.d. Percentage of Maine Middle School Students Who Reported Having Ever Made a Plan About Killing Themselves.**

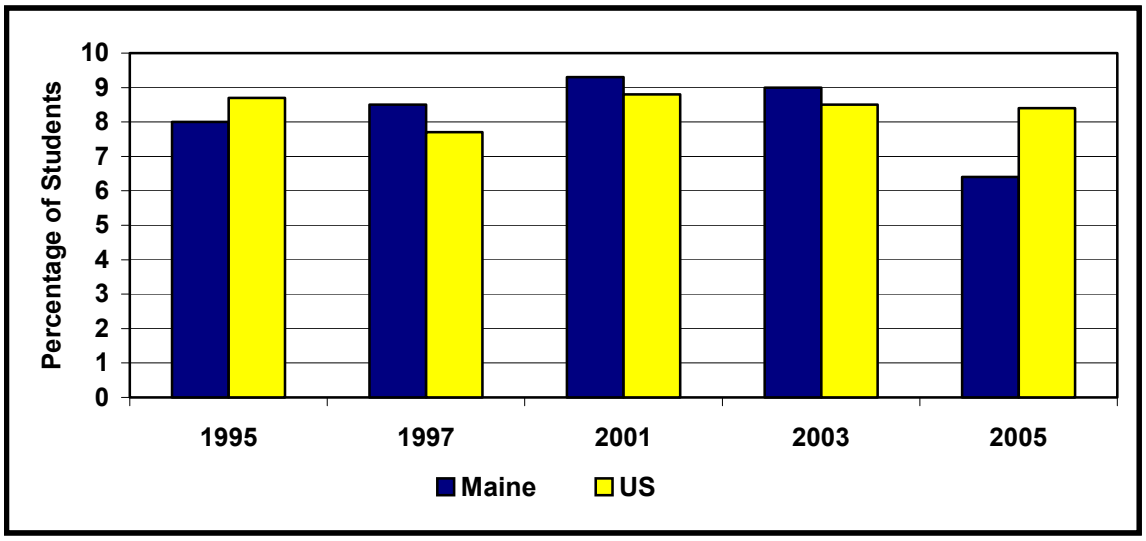



*Data Source: YRBS, 1995, 1997, 2003 and 2005

## Suicide Attempts

The percentage of high school students nationally who reported having attempted suicide in the past 12 months has remained relatively stable since 2001. YRBS data specific to Maine high school students revealed a decline in 2005 (Figure 4.e.). However, prior to 2005, the percentage was unchanged or even slightly increased. It is not clear whether the 2005 percentage will remain or simply represents variability in the estimate.

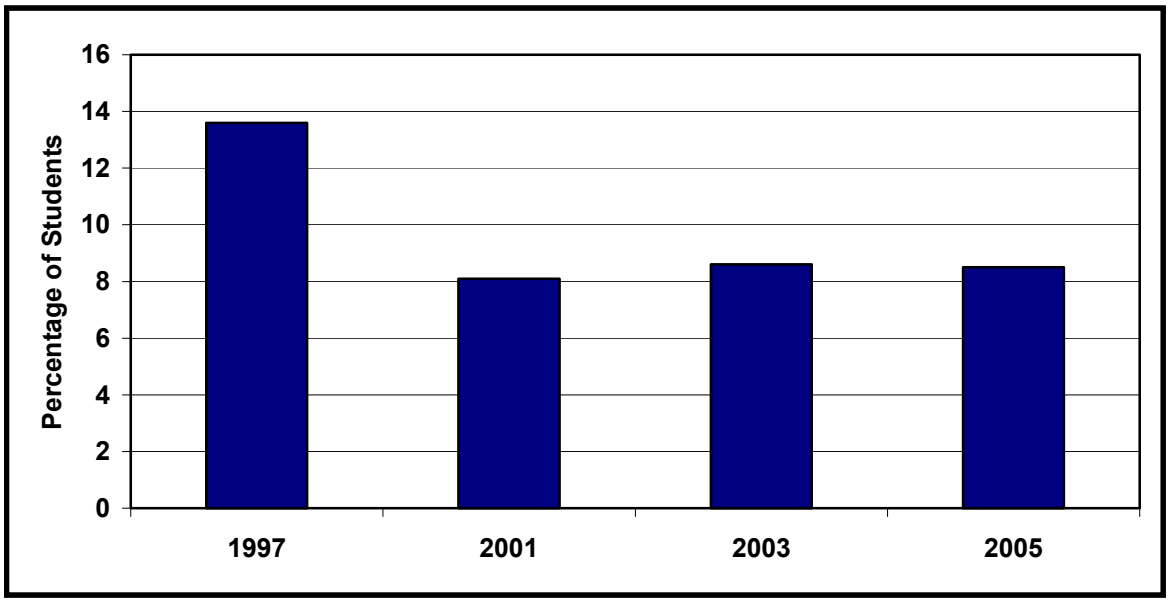
**Figure 4.e. Percentage of High School Students Who Reported Having Attempted Suicide in the Past 12 Months.**




*Data Source: YRBS, 1995, 1997, 2001, 2003, and 2005

In 1997 nearly 14 percent of Maine's middle school population reported having ever attempted suicide; the 2005 data shows a decline to less than 8.5 percent.

**Figure 4.f. Percentage of Maine Middle School Students Who Reported Having Ever Tried to Kill Themselves.**

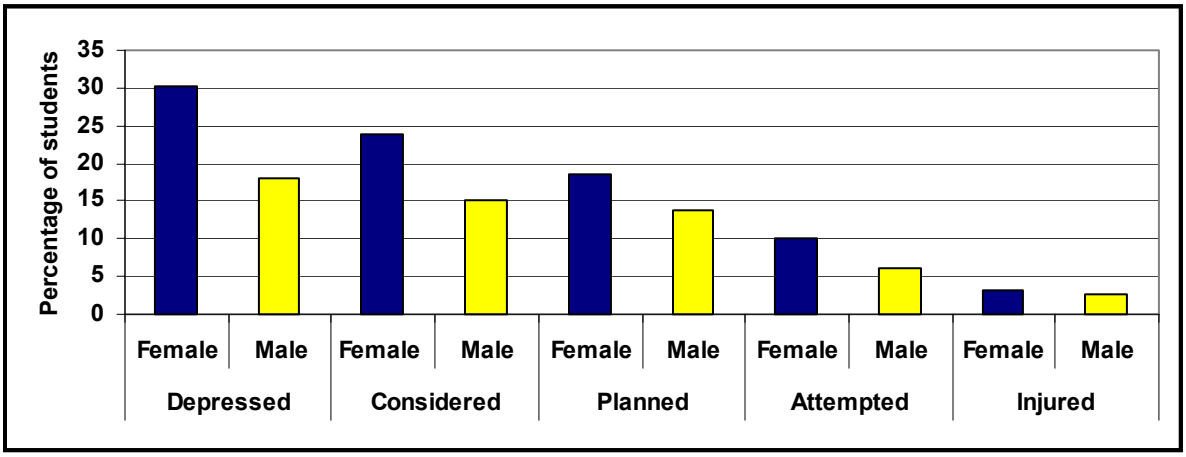



*Data Source: YRBS Data, 1997, 2001, 2003, and 2005

## Suicide Ideation and Attempts by Gender

Figure 4.g. illustrates that in all five categories (had been depressed, considered, planned or attempted suicide, and were injured by a suicide attempt), female high school students were more likely to report suicide ideation and behavior than males. Almost 33 percent of high school girls reported feelings of depression within the previous 12 months, nearly 25 percent considered suicide, and 17 percent planned suicide. Among high schools boys, about 17 percent reported depressive feelings, 15 percent considered committing suicide and 14 percent planned suicide. About 1 in 10 high school girls and 1 in 17 boys reported actually attempting suicide within the past year. Of the 11 percent of females who attempted, one third (32 percent) required medical attention; of the 6 percent of males who attempted suicide, almost half (46 percent) required medical attention. Although fewer males reported attempting suicide, their attempts were more likely to cause serious injury.

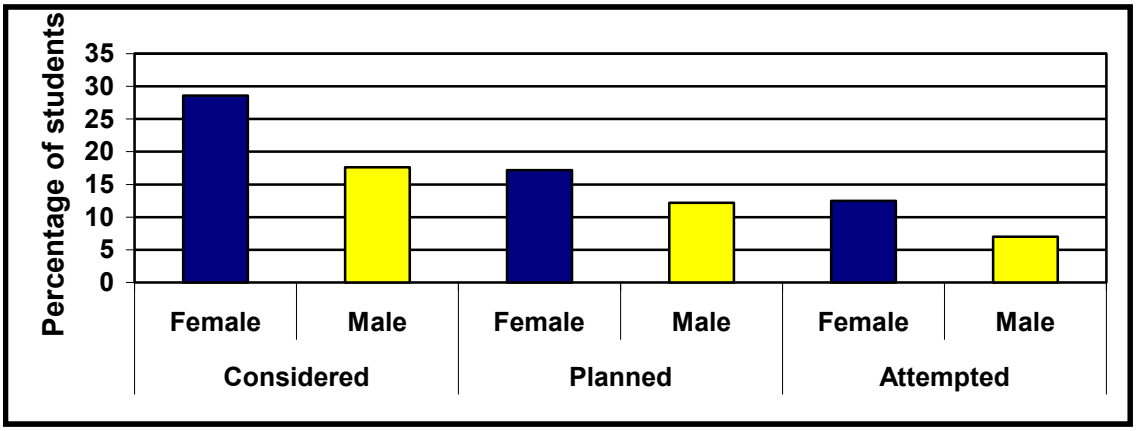
**Figure 4.g. Percentage of Maine High School Students Who Reported Depression or Having Considered, Planned, or Attempted Suicide in the Past 12 Months.**




***Data Source: YRBS Data, 1995, 1997, 2001, 2003, and 2005**
****The category "depressed" includes only data from 2001, 2003, and 2005.

In all three categories, female middle school students were more likely than males to report having ever thought about suicide, having made a suicide plan, and trying to kill themselves. (Figure 4.h.)

**Figure 4.h. Percentage of Maine Middle School Students Who Reported Having Ever Thought About, Made a Plan, or Tried to Kill Themselves.**




***Data Source: YRBS Data, 1997, 2001, 2003 and 2005**

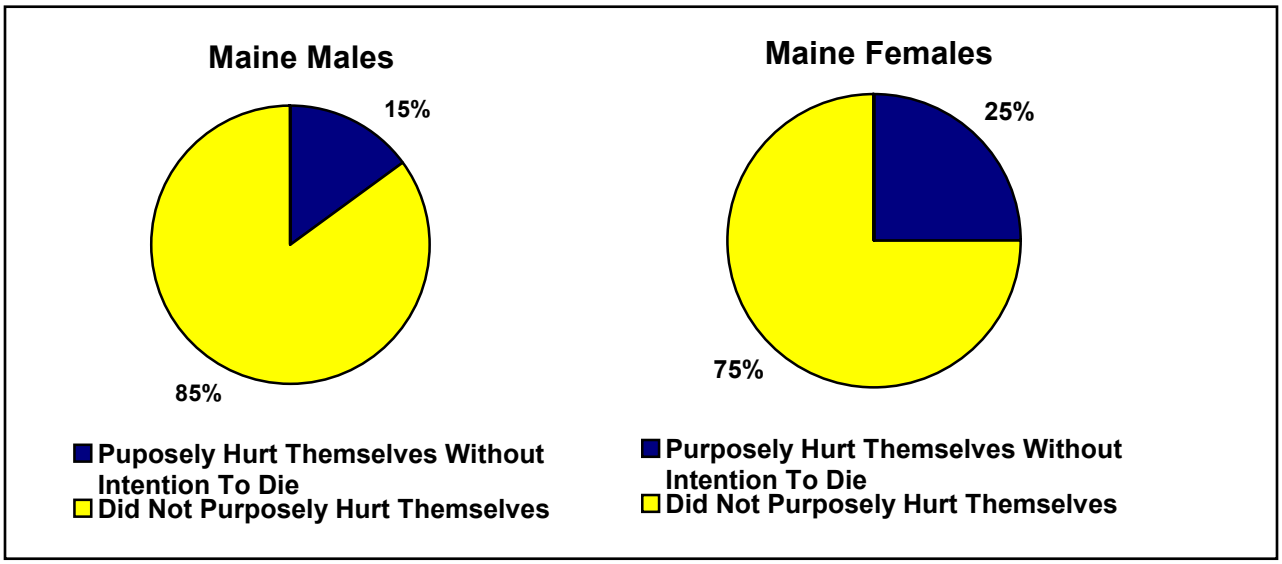
## Non-Suicidal Self-Injurious Behavior

Most self-injurious behavior is not intended to cause death. Self-injurious behavior, defined as the deliberate destruction or alteration of body tissue without suicidal intent among adolescents, is not a new phenomenon and has been shown through studies to be increasing among both boys and girls. There are five key concepts in defining self-injurious behavior. First, it is an act done to the self, second, it is done by the self, third, it must include a type of physical violence, fourth, it is not done with the intent to kill oneself, and fifth, it is an intentional act.[7]

Researchers argue that the difference between self-injurious behavior (SIB) and suicidal behavior is that people who engage in SIB are trying to manage stress and to feel better. Suicidal individuals want to escape from the pain by ending their life. SIB is associated with a motivation to live and relieve the pain they are experiencing whereas suicidal individuals are motivated to cease living.[8] Both SIB and suicidal behavior indicate a need for assessment and intervention.

On the 2005 Maine YRBS, one in five high school students (20 percent) reported that they had purposely hurt themselves without wanting to die in the 12 months prior to the survey. (Figure 4.j.) Female high school students (25 percent) were more likely to report this behavior than male high school students (15 percent).

**Figure 4.j. Percentage of High School Students Who Have Purposely Hurt Themselves Without Wanting to Die in the 12 Months Prior to the Survey.**



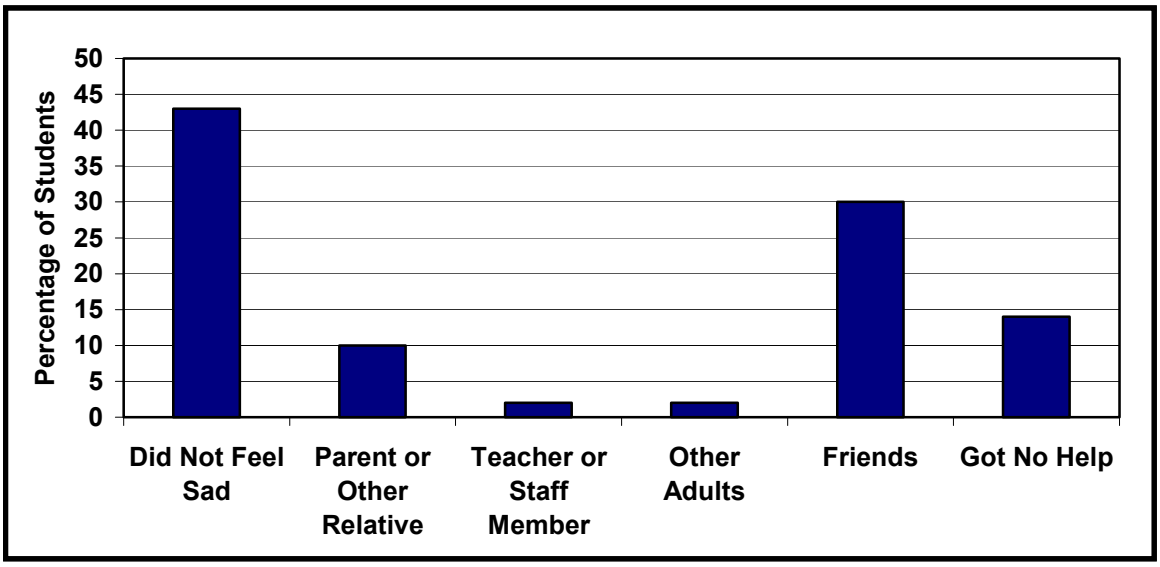

***Data Source: Maine YRBS, 2005**

[7] Self-Injury: A Search For Understanding. http://www.thehelpline.net/selfinjury.html 9 May 2006.
[8] Muehlenkamp, Jennifer, MA, and Peter Gutierrez, PhD. An Investigation of Differences Between Self-Injurious Behavior and Suicide Attempts in a Sample of Adolescents. Suicide and Life-Threatening Behavior 34 (1) Spring 2004.

## Where High School Students Got Help

In 2001, students were asked on the YRBS, "when you felt sad or hopeless, from whom did you get help." Forty-three percent (43%) of high school students reported that they had not felt sad or hopeless in the 12 months preceding the survey (Figure 4.k.). Three in ten high school students (30%) reported that they got help from their friends when they felt sad or hopeless in the past year. Ten percent (10%) reported getting help from their parents or other adult relatives. Fourteen percent (14%) did not get help when they felt sad or hopeless.

**Figure 4.k. Where High School Students Got Help When They Felt Sad or Hopeless in the 12 Months Preceding the Survey.**




*Data Source: Maine YRBS, 2005

# Conclusions

The decreasing suicide rates in Maine and nationally suggest that suicide prevention efforts have been effective in reducing suicide-related deaths, but the results of this report indicate that suicide in Maine remains a significant problem affecting youth, adults, and the elderly. Each year about 150 people die by suicide and 1,000 people are hospitalized for a self-inflicted injury. Suicide is the second leading cause of death among youth age 15-24. Each year, approximately 1 in 10 adolescents, including almost 1 in every 4 adolescent girls, consider attempting suicide and about 7 percent actually attempt to kill themselves.

The Maine Youth Suicide Prevention Program (MYSPP) is working with the governor, legislature, schools, and communities to increase awareness of suicide and develop, implement, and evaluate intervention strategies to address the problem. MYSPP activities, including education, training, public awareness, guidelines for schools, improved data collection, and programs for at-risk youth have yielded concrete interim results. For more information about Maine's suicide prevention efforts and to read Maine's Suicide Prevention Plan, please visit the MYSPP's website: http://www.mainesuicideprevention.org.

# Definition of Terms

**5-year trailing average**: In some instances, five years of data are combined and the average across the five years presented. This is done to improve the stability of the estimates, which would otherwise fluctuate due to small numbers of occurrences. The five years "trail" or precede the year presented. For example, the 5-year trailing average for 2004 is calculated using data from the years 2000-2004.

**E-codes:** E-codes or "external cause of injury" codes are diagnostic categories, using the 9th revision of the International Classification of Diseases (ICD-9). E-codes differ from nature of injury codes (N-codes) in providing data on the cause, rather than type, of injury. For example, a traumatic head injury, coded with an N-code, could result from, say, a car accident or gunshot wound, both coded with E-codes. Additionally, E-codes distinguish self-inflicted injuries, essential information for suicide surveillance.

**Age-adjusted rate:** Age-adjusted rates are calculated by multiplying age-specific rates by a standard population weight, which equals the proportion of the U.S. population in year 2000 that was in that age category, and summing the results. Age-adjusting enables comparisons across time and among different populations by eliminating differences in the age distribution. Age-adjusted rates represent those we would have expected if our population had the age distributions of the standard population, here the U.S. 2000 standard population. Maine's age distribution is shifted to older ages when compared to the entire U.S. Further, the average age is increasing with time, and differs geographically across counties in Maine. Suicide rates are higher in Maine's older population, and, all else being equal, we would expect to observe higher rates in Maine as a result of having an older population. By standardizing the age distributions of the U.S. and Maine, we eliminate the potential for confounding by age.

# Technical Notes/Data Limitations

**Suicide Mortality Rates**

Data for suicide mortality rates were obtained through the Center for Disease Control and Prevention's WISQARS website: http://www.cdc.gov/ncipc/wisqars/. Deaths with an underlying cause of death coded as suicide (E950-E959 and X60-X84, Y878.0 in 1999-2003) were selected.

When considering suicide related deaths using death certificates, it is important to note that death certificates not completed by April 30th of the following year are not included in the electronic records of National Center for Health Statistics (NCHS). April 30th is the close-out date for reporting deaths to the NCHS. Any death data finalized after this date are not added to the electronic record. Roughly 300 deaths per year (out of a total of 12,000-13,000 deaths) are not included in the electronic record because the cause remains undetermined. Although this rate, roughly 2.5 percent, is relatively low, it is likely that suicides will comprise one of the larger causes missed through this mechanism since suicides are more likely than many other causes to go through a longer review process and be labeled undetermined for a longer period of time.

In addition, it is possible that at least some deaths labeled accidents were in fact suicides. Suicides misclassified as accidents could include, for example, single vehicle crashes, poisoning, drowning, and overdoses.

**Self-Inflicted Injuries Resulting in Hospitalization**

Hospitalization data capture the population whose injuries are serious enough to merit admission to hospital. Missing from our current surveillance system is an accounting of self-inflicted injuries that did not result in a hospitalization. The MHDO recently began to collect and distribute outpatient data, which will be a valuable addition to suicide surveillance.

The rate of E-coding injury hospitalizations in Maine hospitals is not 100 percent, which may produce underestimates of the true number of hospitalizations for self-inflicted injuries. In addition, E-coding practice may differ by hospital, which could result in a systematic bias in the E-coding rate or how E-codes are assigned for a given event.

**Youth Risk Behavior Survey**

The YRBS survey cannot be used to examine geographical units smaller than the state, and so cannot be used for studying possible local level differences. In addition, the survey is based on youth self-report, which can be subject to biases including recall bias and social desirability bias.

The Youth Risk Behavior Survey (YRBS) is the only data source on suicide ideation and self-reported attempts. Of those who reported ever having attempted suicide, only a third reported having required medical attention for their injury. This is suicidal behavior that would go undetected using hospital discharge, emergency department, and emergency medical services data. In addition, the YRBS is the only data source that combines suicidal behavior data with other risk behaviors that may be associated with suicidal behavior. To this point, we have lacked data on suicide ideation for any population but youth. However, the MYSPP plans to add the YRBS questions to the Behavioral Risk Factor Surveillance System, a survey of Maine adults, in the future.

# Supplemental Data Tables

**Table A.1. Suicide Rates and numbers (per 100,000) by Age and Gender in Maine 1999-2003.**

| | Male Rate | Female Rate | Total Rate | Total Number |
|---|---|---|---|---|
| **10 to 14** | 3.4 | 0 | 1.8 | 8 |
| **15 to 19** | 17.1 | 2.7 | 10.1 | 46 |
| **20 to 24** | 19.9 | 6.4 | 13.3 | 50 |
| **25 to 34** | 28.6 | 6.4 | 17.3 | 132 |
| **35 to 54** | 23.6 | 7.0 | 15.2 | 317 |
| **55 to 64** | 23.3 | 5.7 | 14.3 | 94 |
| **65 to 74** | 30.3 | 2.3 | 15.2 | 73 |
| **75 plus** | 40.2 | 2.5 | 16.4 | 73 |
| **10 and older** | 23.3 | 5.2 | 14.0 | 793 |

***Data Source: NCHS Death Database**

**Table A.2. Suicide Numbers and Rates by County and Age in Maine, 1999-2003.**

| COUNTY | Suicides All Ages (n) | Rate |
|---|---|---|
| **Maine Total** | **793** | **12.3** |
| Knox | 39 | 19.5 |
| Oxford | 43 | 15.6 |
| Washington | 26 | 15.4 |
| Somerset | 39 | 15.3 |
| Penobscot | 103 | 14.1 |
| Waldo | 26 | 14 |
| Piscataquis | 12 | 13.9 |
| Sagadahoc | 23 | 12.9 |
| Franklin | 19 | 12.8 |
| Kennebec | 73 | 12.4 |
| Cumberland | 153 | 11.4 |
| Aroostook | 41 | 11.1 |
| York | 105 | 11 |
| Lincoln | 18 | 10.6 |
| Hancock | 26 | 10 |
| Androscoggin | 47 | 9 |

**Source: Maine Office of Data, Research and Vital Statistics**

**Table A.3. Suicide Rates by Age, Gender, and Methods in Maine, 1999-2003.**

| Method | 10 to 14 | | | 15 to 19 | | | 20 to 24 | | |
|---|---|---|---|---|---|---|---|---|---|
| | Male | Female | Total | Male | Female | Total | Male | Female | Total |
| Firearms | 1.7 | 0 | 0.9 | 9.0 | 0.5 | 4.8 | 11.0 | 2.7 | 6.9 |
| Hanging | 1.7 | 0 | 0.9 | 6.0 | 1.8 | 3.9 | 7.9 | 2.7 | 5.3 |
| Poisoning | 0 | 0 | 0 | 0.4 | 0.5 | 0.4 | 1.1 | 0.5 | 0.8 |
| Other | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0.5 | 0.3 |
| **Method** | **25 to 34** | | | **35 to 64** | | | **65 Plus** | | |
| | Male | Female | Total | Male | Female | Total | Male | Female | Total |
| Firearms | 13.3 | 2.3 | 7.7 | 13.8 | 2.1 | 7.9 | 25.4 | 0.6 | 11.0 |
| Hanging | 7.7 | 1.0 | 4.3 | 3.6 | 0.7 | 2.1 | 3.6 | 0.3 | 1.7 |
| Poisoning | 5.1 | 2.6 | 3.8 | 4.0 | 3.5 | 3.7 | 2.9 | 1.1 | 1.8 |
| Other | 2.4 | 0.5 | 1.4 | 2.2 | 0.7 | 1.4 | 2.6 | 0.4 | 1.3 |

***Data Source: NCHS Death Database**

**Table A.4. Self-inflicted Injury Hospitalization Numbers by Gender, Ages 10 and Older, 1998-2004.**

| Year | Male | Female | Total |
|---|---|---|---|
| **1998** | 337 | 535 | 872 |
| **1999** | 348 | 560 | 908 |
| **2000** | 321 | 579 | 900 |
| **2001** | 366 | 614 | 981 |
| **2002** | 393 | 664 | 1,057 |
| **2003** | 444 | 700 | 1,144 |
| **2004** | 471 | 749 | 1,220 |
| **Total** | 2,680 | 4,401 | 7,081 |

***Data Source: Maine Uniform Hospital Discharge Database, 1998-2004**

# Youth Risk Behavior Survey Questions

**YRBS High School Questions**

During the past 12 months, when you felt sad or hopeless, from whom did you get help?
A. I did not feel sad or hopeless
B. Parent or other adult relative
C. Teacher or other school staff
D. Other adults
E. Friends
F. I did feel sad or hopeless, but did not get the help I needed

During the past 12 months, did you ever feel so sad or hopeless almost every day for **two weeks or more in a row** that you stopped doing some usual activities?
A. Yes
B. No

During the past 12 months, did you ever **seriously** consider attempting suicide?
A. Yes
B. No

During the past 12 months, did you make a plan about how you would attempt suicide?
A. Yes
B. No

During the past 12 months, how many times did you actually attempt suicide?
A. 0 times
B. 1 time
C. 2 or 3 times
D. 4 or 5 times
E. 6 or more times

**If you attempted suicide** during the past 12 months, did any attempt result in an injury, poisoning, or overdose that had to be treated by a doctor or nurse?
A. **I did not attempt suicide** during the past 12 months
B. Yes
C. No

During the past 12 months, how many times did you do something to purposely hurt yourself without wanting to die, such as cutting or burning yourself on purpose?
A. 0 times
B. 1 time
C. 2 or 3 times
D. 4 or 5 times
E. 6 or 7 times
F. 8 or 9 times
G. 10 or 11 times
H. 12 or more times

**YRBS Middle School Questions**

Have you ever **seriously** thought about killing yourself?
A. Yes
B. No

Have you ever made a **plan** about how you would kill yourself?
A. Yes
B. No

Have you ever **tried** to kill yourself?
A. Yes
B. No