



# THE BURDEN OF SUICIDE IN WISCONSIN

2007–2011 | Released 2014

A joint report by the Wisconsin Department of Health Services, the Injury Research Center at the Medical College of Wisconsin, and Mental Health America of Wisconsin

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## Executive Summary

### Purpose of the report

Suicide remains a significant public health problem in Wisconsin. The extraordinary costs of suicide are both economic and emotional. Suicidal behavior imposes a substantial financial burden on the families of decedents and results in lost productivity in the workforce. Moreover, the pain and suffering endured by friends, families, and communities affected by suicide are immeasurable.

The intention of this report is to provide an overview of the burden of suicide in Wisconsin using available data to community members and leaders, health professionals, and other suicide prevention stakeholders at the local and state levels. In addition, this report includes themes for prevention that are based on the analysis of suicide data, which will be incorporated into Wisconsin's suicide prevention strategy. It is beyond the scope of this report to examine the complex relationships between the data presented.

### What you will find in this report

*The Burden of Suicide in Wisconsin* was first released in 2008, covering data from 2001–2006, in order to illustrate a clearer picture of the incidence and characteristics of suicidal behavior in Wisconsin. This 2014 report includes updated data from the Wisconsin Violent Death Reporting System (WVDRS), inpatient hospitalization records, and emergency department records in order to examine the extent of suicide deaths and attempts in Wisconsin from 2007–2011. In addition, results of the 2013 Youth Risk Behavior Survey, administered by the Wisconsin Department of Public Instruction, and 2012 Behavioral Risk Factor Survey, administered by the Wisconsin Department of Health Services, provide insight into the prevalence of suicidal thoughts, behaviors, and associated risk factors among Wisconsin teens and adults. This report only includes data representing Wisconsin residents above the age of 10 in accordance with the definition used by both the World Health Organization and the Centers for Disease Control and Prevention. Data in this report are not directly comparable to those published in the 2008 report. Readers interested in comparing data from 2007–2011 to data from earlier years can utilize the Wisconsin Interactive Statistics on Health (WISH) website. A tutorial for using this tool can be accessed through the Wisconsin Department of Health Services' Injury and Violence Prevention Program website: [www.dhs.wisconsin.gov/health/injuryprevention/](http://www.dhs.wisconsin.gov/health/injuryprevention/)

The first section of this report addresses the question, **“Why should we care about preventing suicide in Wisconsin?”** through a broad examination of the extent and costs of suicidal behavior.

The second section utilizes Wisconsin data to answer the question, **“What do we know about suicidal behavior in Wisconsin?”** The incidence and geographical distribution of suicide are examined. Decedent characteristics including age, sex, race, education level, marital status, sexual orientation, and veteran status are used to determine which populations in Wisconsin have higher rates of suicidal behavior. Data are presented which examine the use and lethality of various means used to attempt suicide. Finally, this section applies the social-ecological model to investigate how factors at the individual, relationship, and community/society levels affect suicidal behavior.

The third section of the report, **“Preventing Suicide in Wisconsin,”** focuses on the implications of the data and their application to strategies for suicide prevention in Wisconsin.

The **“Glossary”** includes a list of key terms found in the report. The **“Technical Notes”** section describes the methodologies of data collection and analysis used to generate this report. The **“Appendix”** includes updated versions of tables presented in the original *“Burden of Suicide in Wisconsin”* report. These tables, referenced throughout the report, provide information supplemental to the tables, figures, and data presented within the body of the report.

## Key Findings 2007–2011

- The **suicide rate** in Wisconsin remained relatively constant during the five-year period from 2007–2011 but **increased** over the eight-year period from 2004–2011. From 2007–2011, there were an average of 724 suicides per year.
- Counties clustered in the **Northern and Western regions** of Wisconsin experienced the highest suicide rates.
- In Wisconsin, individuals **aged 45–54** had the highest rates of suicide among all age groups, while **teens and young adults** were more likely to be seen in emergency departments or to be hospitalized for self-inflicted injuries than people in older age groups.
- Nearly four out of five persons who died by suicide were **male** while approximately three out of five patients hospitalized for a self-inflicted injury were **female**.
- **Whites** experienced the highest suicide rates followed by **American Indians/Alaskan Natives**, Asian/Pacific Islanders, Blacks, and Hispanics. **High school students of racial and ethnic minority backgrounds** were more likely to report suicidal thoughts and behaviors than their White peers.
- People with **less than a high school degree** were over-represented among the population of suicide decedents while people with a graduate or professional level degree were under-represented.
- **Divorced** people were over-represented among the population of suicide decedents while married people were under-represented.
- **Lesbian, gay, and bisexual teens** were more likely to report poor mental health, suicidal thoughts, and suicidal behaviors than their heterosexual peers.
- **Veterans** accounted for one out of five suicides in Wisconsin.
- **Firearms** were the most frequently utilized means of suicide in Wisconsin. Males used firearms more often than females who died by suicide. Suicide attempts using firearms were more likely to result in death than those in which other means were utilized.
- Among suicides with known circumstances, 51% of decedents had a current **mental health problem** and 43% were currently receiving mental health treatment.
- Among suicides with known circumstances, 26% of the decedents had an **alcohol problem** and 13% had another **substance abuse problem**. Among suicides in which toxicology testing was performed, 37% of decedents tested positive for alcohol and 19% tested positive for opiates.
- Of all suicides with known circumstances, 35% involved **intimate partner problems**.
- **Physical health** and **job problems** were life stressors involved in 23% and 21% of suicides with known circumstances.
- Among suicides with known circumstances, 24% of decedents had a **history of suicide attempts** and 34% **disclosed their intent to die by suicide to at least one person**.

## Why Should We Care about Preventing Suicide in Wisconsin?

### Broad Burden of Suicide in the U.S. and Wisconsin

In the United States, suicide is the 10<sup>th</sup> leading cause of death for all ages (US DHHS, 2012). More than one person dies by suicide every 15 minutes in the United States (US DHHS, 2012). In 2011, over 8 million adults reported having serious thoughts about suicide and over 1 million reported a suicide attempt (SAMSHA NSDUH Report, 2011). Nationally, suicide costs \$34.6 billion annually in combined medical and work loss costs (CDC, 2013).

Unfortunately, the picture of suicide in Wisconsin is similar. Suicide is also the 10<sup>th</sup> leading cause of death in the state of Wisconsin (WISH, 2014). Mirroring national trends, the rate of suicide in Wisconsin has significantly increased between 2004 and 2011 from a low of approximately 13 per 100,000 residents in 2004 to a high of approximately 15 per 100,000 residents in 2010. Suicides, however, are just the tip of the iceberg. For every suicide in 2011, there were 11 hospitalizations or emergency department visits for self-inflicted injuries (WISH, 2014). This statistic fails to capture the number of people who only seek outpatient care following a suicide attempt or do not seek medical treatment at all. The different levels of suicidal behavior can be conceptualized as a pyramid structure in which suicidal thoughts constitute the largest level of the pyramid and suicides constitute the smallest level (see Figure 1).

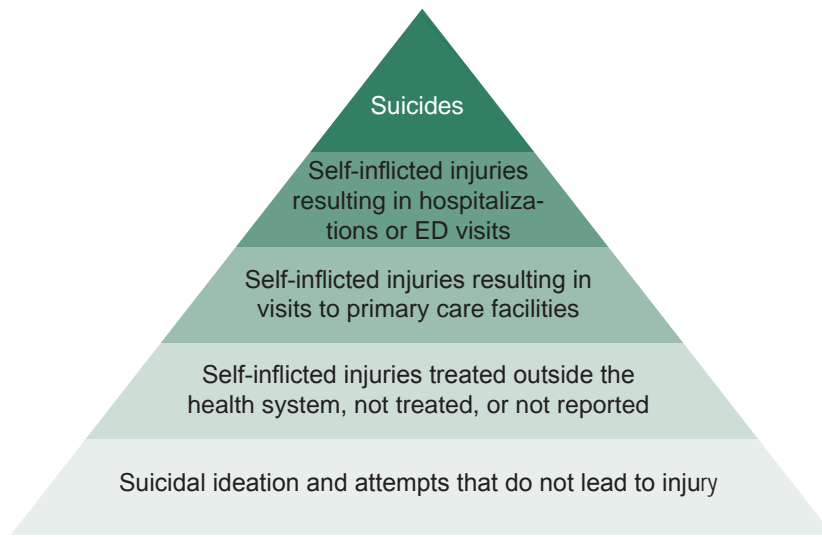


Figure 1. The different levels of suicidal behavior.

### Costs of Suicidal Behavior

The costs of suicide and suicidal behavior are spread across society, communities, families, and individuals. At the societal level in Wisconsin, **suicides occurring during 2007–2011 were related to 22,000 years of potential life lost (YPLL) each year.** In Wisconsin, suicide is the 4th leading cause of YPLL after unintentional injury, malignant neoplasms, and heart disease and results in more years of potential life lost than homicide, diabetes, or liver disease. This measure represents the aggregate number of years that persons in Wisconsin would have lived if they had not died prematurely by suicide. This loss of life translates to substantial lost productivity in our society and subsequent monetary loss. Furthermore, society bears the financial costs associated with suicide attempts that result in inpatient hospital stays and emergency department visits. **The total cost associated with inpatient hospitalizations due to self-inflicted injury in Wisconsin during 2007–2011 was over \$369 million,** with each year representing

a greater proportion of the total. The total costs associated with emergency department visits due to self-inflicted injuries in Wisconsin during 2007–2011 was approximately \$22.6 million, with each year representing a greater proportion of the total. (See Appendix, Table 1).

While the **costs of suicide to society** are great, the costs to communities, families, and individuals may be greater. For employers and communities, suicide results in loss of productivity and profit, as well as loss of contribution of the individual to the community’s vitality and well-being. Communities struggle with the pain and confusion of losing friends, neighbors, coworkers, young people, and other community members to suicide.

Perhaps the **greatest cost of all is the mental and emotional anguish endured by the friends and families** of those who die by suicide. Family survivors of suicide often experience feelings of severe guilt and self-blame in addition to the feelings of profound loss associated with the death of a loved one (McNiel, Hatcher, & Reubin, 1988). While this report seeks to quantitatively assess the burden of suicide in Wisconsin, a more personal understanding comes from hearing the stories of those who have lost someone to suicide or struggled with suicide themselves. In the following piece, Heidi Bryan, a member of the National Action Alliance for Suicide Prevention: Suicide Attempt Survivor Taskforce and resident of Wisconsin, shares how suicide has impacted her life:

*On January 7, 1995, my life and world changed forever. That was the day my older brother killed himself. My belief system, my faith, and my foundation cracked and tumbled down inside of me. I was devastated. All I could think about was how his wife, children, and friends must feel.*

*It was then I realized that suicide was no longer an option.*

*I struggled with suicidal thoughts since childhood and halted an attempt when I realized I would be found in time and would survive. When my brother died, I had a plan, a back-up plan, and a back-up plan to the back-up plan — I was not going to survive. But now I had to live because I knew that whatever my brother was thinking before he killed himself — like we’d be better off without him — he was wrong. It was his disease/ suicidality talking to him and it was not the truth.*

*If it applied to him, then it had to apply to me. This realization forced me to get help and stick with it until I found the proper professional help. I learned that for me, I have to treat my suicidality like a chronic disease. I have a safety plan that changes as I change. Most importantly, I learned to find someone I trust to talk to when I start feeling overwhelmed or suicidal. There’s something almost magical about verbalizing it without fear of being judged or fear of reprisal — it takes away the power and intensity of the thoughts and feelings and lessens my pain. Then I’m able to see outside myself and find solutions. And there are always solutions. Life may not always be easy or fun but no matter what kind of day I have, I’m glad I’m alive.*

Heidi’s lived experience exemplifies the incalculable but all-too-real costs of suicide. Most importantly, her story also demonstrates that getting help is possible and that suicide can be prevented.

## Preventability of Suicide and a Public Health Approach

One way to conceptualize how and why suicide can be prevented is to utilize the social-ecological model. The social-ecological model emphasizes that risk and protective factors at the individual, relationship, community, and society levels all influence the likelihood of suicide. The 2012 National Strategy for Suicide Prevention further supports this conceptualization:

*“Suicide prevention is not exclusively a mental health issue. It is a health issue that must be addressed at many levels by different groups working together in a coordinated and synergistic way.”*

Thus, this report examines individual, relationship, community, and societal level factors that are important for developing suicide prevention strategies in Wisconsin beginning on page 30.



## What Do We Know about Suicidal Behavior in Wisconsin?

In order to prevent suicide, we must gain a better understanding of suicidal behavior: *What is its incidence? Where does it take place? Who is affected? How does it occur and why?* With this knowledge in hand, we can identify important risk and protective factors and begin to form a comprehensive prevention plan around them. Throughout this section, we examine characteristics of suicides, attempts, and related behaviors as well as highlight important results in order to develop an understanding of potential risk and protective factors.

### What is the Incidence of Suicidal Behavior?

To understand the incidence of suicidal behavior in Wisconsin, we can look at suicides, hospitalizations and emergency department visits due to self-inflicted injury, and suicidal thoughts/plans. The Wisconsin Violent Death Reporting System (WVDRS) captures important information about suicides, while inpatient hospitalizations and emergency department visits due to self-injury serve as indicators of suicide attempts. Although data on adult suicidal thoughts and behaviors is limited, a survey of Wisconsin high school students, the 2013 Youth Risk Behavior Survey, examines the prevalence of suicidal thoughts, behaviors, and related risk factors among youth.

During 2007 to 2011, out of every 100,000 Wisconsin residents aged 10 and over:

- More than 14 died by suicide.
- More than 112 were hospitalized for inpatient care due to self-inflicted injury.
- More than 53 visited the emergency department due to self-inflicted injury.

In 2013, among Wisconsin high school students, 1 out of 7 seriously considered attempting suicide.

The difference between the death rate and the self-inflicted injury rates demonstrates that the true burden of suicide in Wisconsin is much greater than death statistics alone might suggest. The high proportion of high school students who report considering suicide further emphasizes this point.

As Figure 2 shows, the **rate of suicide in Wisconsin did not change substantially** during 2007–2011. The **rate of emergency department visits for self-inflicted injury increased** slightly while the **rate of inpatient hospitalizations for self-inflicted injury declined** slightly (see Appendix, Table 2 for the numbers and rates of suicide, emergency department visits, and inpatient hospitalizations in each year).

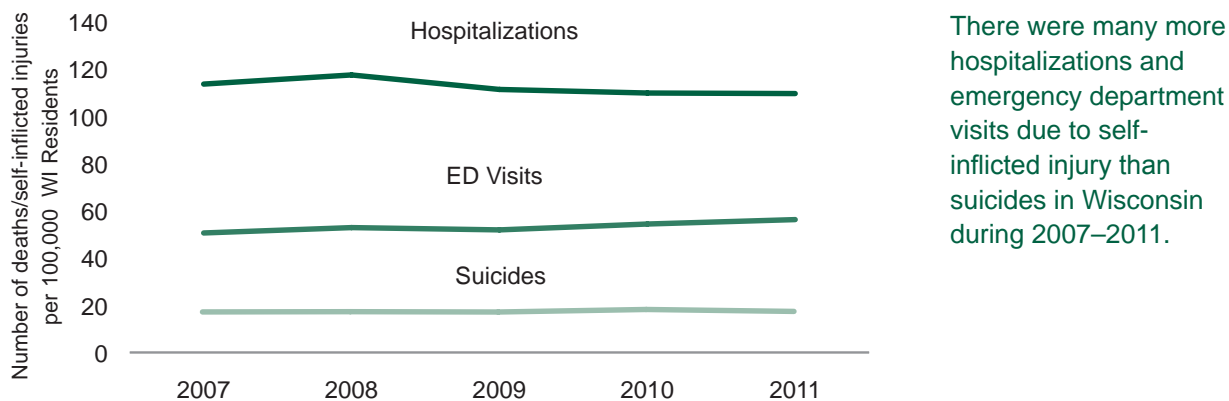


Figure 2. Rates of suicide, inpatient hospitalizations and emergency visits due to self-inflicted injury (per 100,000 Wisconsin residents), 2007–2011.

### Where Does Suicidal Behavior Occur?

While suicidal behavior is a problem across the state of Wisconsin, certain regions of the state bear a greater burden.

Counties with the **highest rates of suicide tend to be clustered in the northern and western regions** of the state (see Figure 3). This finding mirrors national trends showing higher rates of suicide in rural areas (Gamm, Stone & Pittman, 2010). Conversely, low rates of suicide are observed in the southern and southeastern areas of the state. Many factors may contribute to this variation, including availability of mental health treatment, age distribution, and economic climate. Rates of inpatient hospitalizations and emergency department visits (see Figures 4 and 5) are affected by these factors as well as the availability and accessibility of health care facilities (see Appendix, Table 3 for numbers and rates of suicides, inpatient hospitalizations, and emergency department visits in each county in Wisconsin).

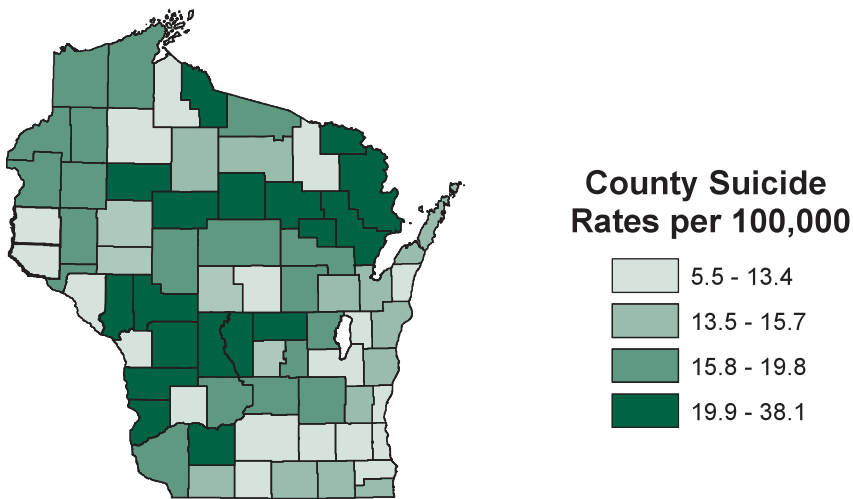


Figure 3. Map of county-level suicide rates (per 100,000 Wisconsin residents), 2007–2011.

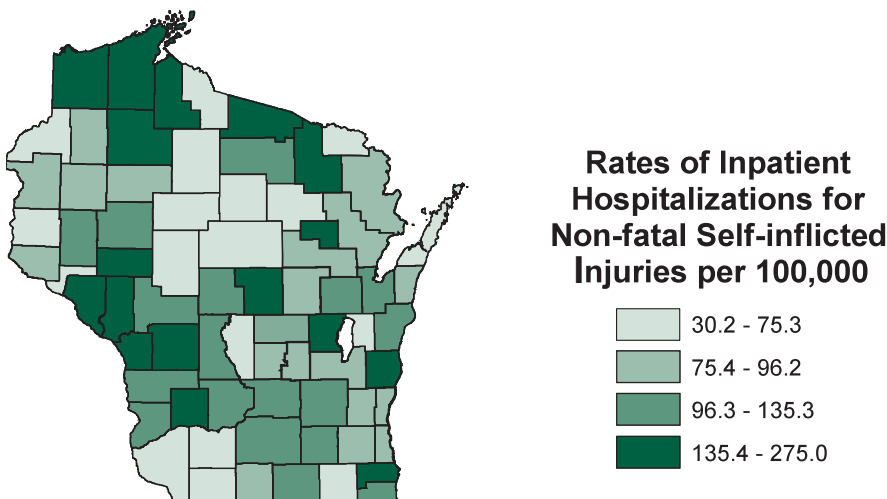


Figure 4. Map of county-level rates of inpatient hospitalizations for non-fatal self-inflicted injuries (per 100,000 Wisconsin residents), 2007–2011.

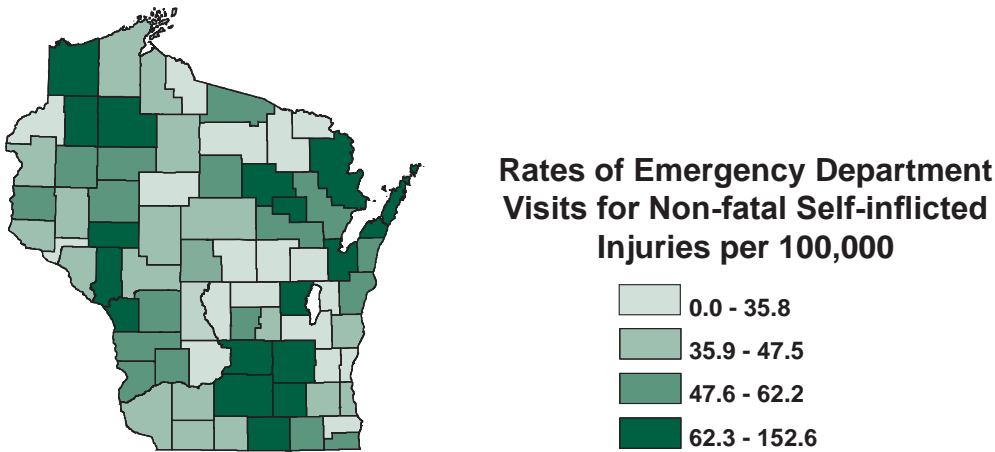


Figure 5. Map of county-level rates of emergency department visits for non-fatal self-inflicted injuries (per 100,000 Wisconsin residents), 2007–2011.

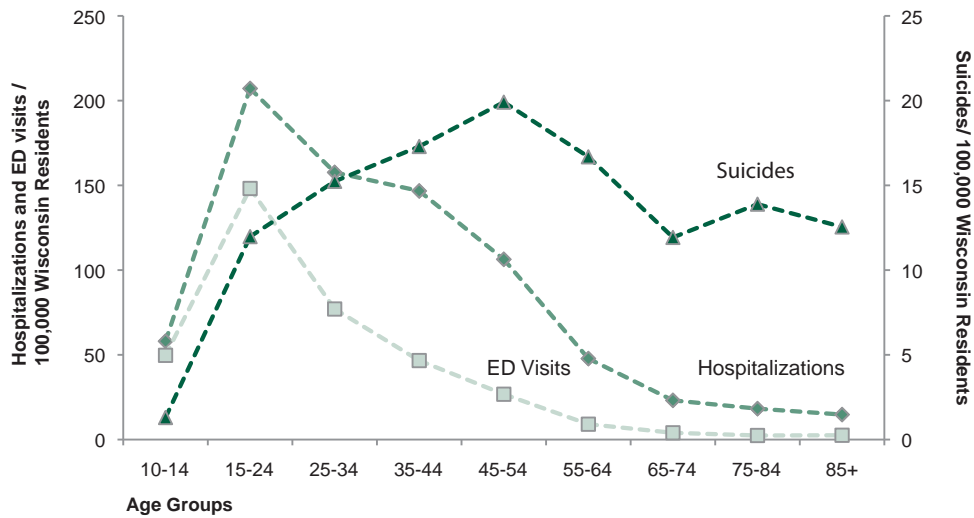
### Who is Affected by Suicidal Behavior?

While suicide affects people in all communities, certain populations are at greater risk than others. Characteristics including age, sex, race, education level, marital status, sexual orientation, and veteran status help elucidate how the burden of suicide is unevenly distributed among different populations in Wisconsin. In this section, we examine rates of suicide and suicide attempts by each of these characteristics. Additionally, 2013 Youth Risk Behavior Survey (YRBS) results provide a closer look at how suicide and associated risk factors affect racial and sexual minority youth.

#### Age

Understanding how suicidal behaviors affect people in different age groups can help stakeholders target the highest-risk populations with specific, age-appropriate suicide prevention strategies.

In Wisconsin, from 2007–2011, the **rate of suicide was highest among adults aged 45–54** and lowest among children and teens aged 10–14 (see Figure 6). In contrast, **rates of emergency department visits and hospitalizations due to self-injury were highest among teens and young adults aged 15–24** and lowest among older age groups (see Appendix, Tables 4, 5, and 6 for numbers and rates of suicide and self-injury in each age group). These data suggest differences in the outcomes and incidence of suicidal behaviors among different age groups. These differences may be explained by the decedents’ intent, choice of means, health status, and proximity to friends or family members who may intervene in order to reduce the likelihood that an attempt results in suicide.



Rates of hospitalizations and emergency department (ED) visits due to self-inflicted injury were higher in younger age groups while suicide rates were highest in middle age groups.

Figure 6. Rates of suicide, inpatient hospitalizations, and emergency department visits due to self-inflicted injury (per 100,000 Wisconsin residents) by age, 2007–2011.

**Sex**

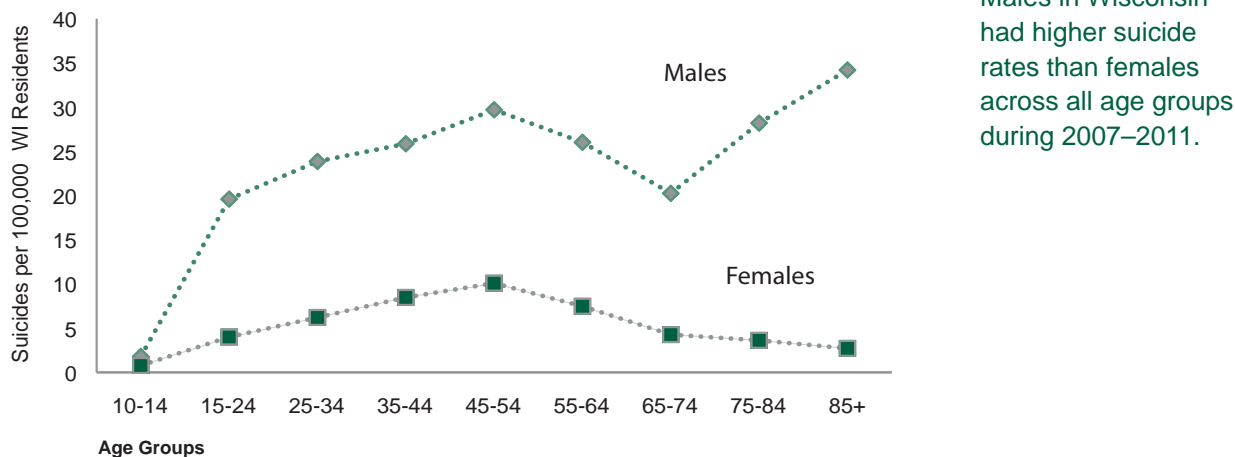
Suicidal behaviors affect males and females differently. Prevention efforts must consider how biological and socially derived differences between sexes contribute to differences in the incidence of suicide and self-injury.

From 2007–2011, **nearly 4 out of 5 persons who died by suicide in Wisconsin were male**, whereas approximately **3 out of 5 patients hospitalized for self-injury were female** (see Table A and Appendix, Tables 7 and 8 for numbers and rates of self-injury by sex each year from 2007–2011).

Table A. Number, rate (per 100,000 Wisconsin residents), and percent of suicides, inpatient hospitalizations for self-injury, and emergency department visits for self-injury, by sex, 2007–2011.

	Male			Female		
	Number	Rate	Percent	Number	Rate	Percent
<b>Suicide</b>	2840	23.2	78.5%	780	6.2	21.5%
<b>Emergency department visits</b>	5212	42.5	40.2%	7743	61.8	59.8%
<b>Inpatient hospitalizations</b>	10363	84.6	37.6%	17196	137.3	62.4%

**Rates of suicide among females were lower than rates of suicide among males in every age group** from 2007–2011. The smallest difference between sexes occurred among 10–14-year-olds while the largest difference occurred among people aged 85+. The female suicide rate was lowest among children aged 10–14 and highest among adults aged 45–54. The male suicide rate was lowest among children aged 10–14 and highest among the elderly aged 85+, with a notable peak among adults aged 45–54 (see Figure 7 and Appendix, Table 9 for number of suicides in each age group by sex).



Males in Wisconsin had higher suicide rates than females across all age groups during 2007–2011.

Figure 7. Suicide rates (per 100,000 Wisconsin residents) by age and sex, 2007–2011.

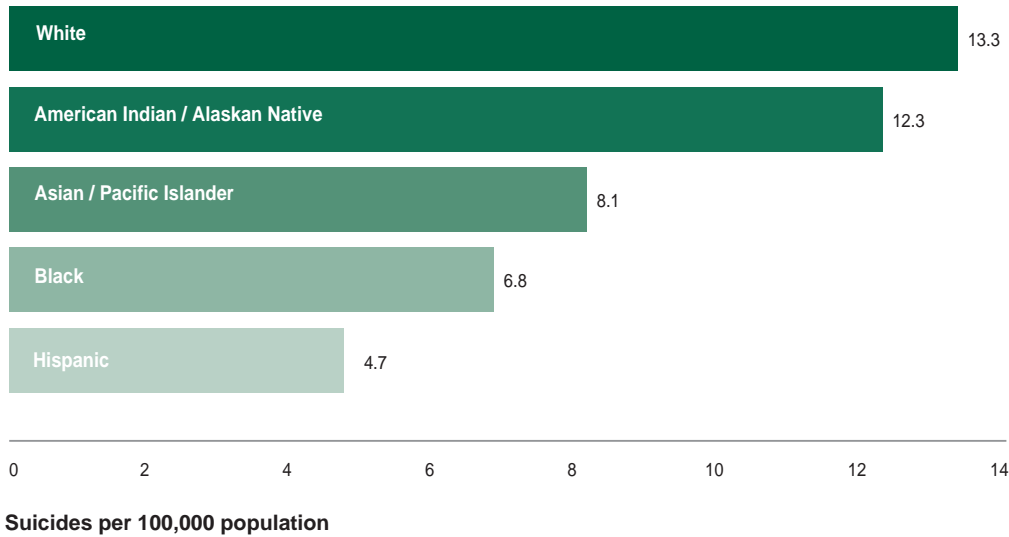
Differences between males and females regarding suicides and self-injury may be explained by multiple factors. Compared to females, males’ greater tendency to use highly fatal means, such as firearms, may help explain their higher rates of death but lower rates of hospitalization for self-injury (Bossarte, Claassen, & Knox, 2010). In addition, biological and socialized differences between males and females related to social integration, emotion regulation, and ability to cope with mental and emotional stress likely play a role in the comparatively high rates of suicide among males (Canetto & Cleary, 2012). Research contends that high adherence to masculine cultural norms such as stoicism and independence may inhibit males from confronting their emotions and seeking mental health services, thereby increasing their risk of suicide (Braswell & Kushner, 2012).

**Race/Ethnicity**

Racial and ethnic disparities in health outcomes including disability, morbidity, and mortality are widely observed in the United States (Rockett, Samora, & Coben, 2006). Examining the role of race and ethnicity in suicidal behavior is important to determining how suicide affects diverse populations in Wisconsin.

Data on suicide and inpatient hospitalizations defines racial categories as White, Asian, Black, or American Indian/Alaskan Native and includes people of both Hispanic and non-Hispanic ethnicity in each race category. People of any race with Hispanic ethnicity are identified as Hispanic. No information on race/ethnicity is available from emergency department records; however, YRBS 2013 survey data provide insight into how suicidal behaviors differ among Wisconsin high school students of various racial and ethnic backgrounds. The YRBS racial categories presented here signify White, Asian, and Black students who are non-Hispanic. Students with Hispanic ethnicity of any racial background are identified as Hispanic. Survey results from 2013 did not include enough American Indian/Alaskan Native students to compare them to other races.

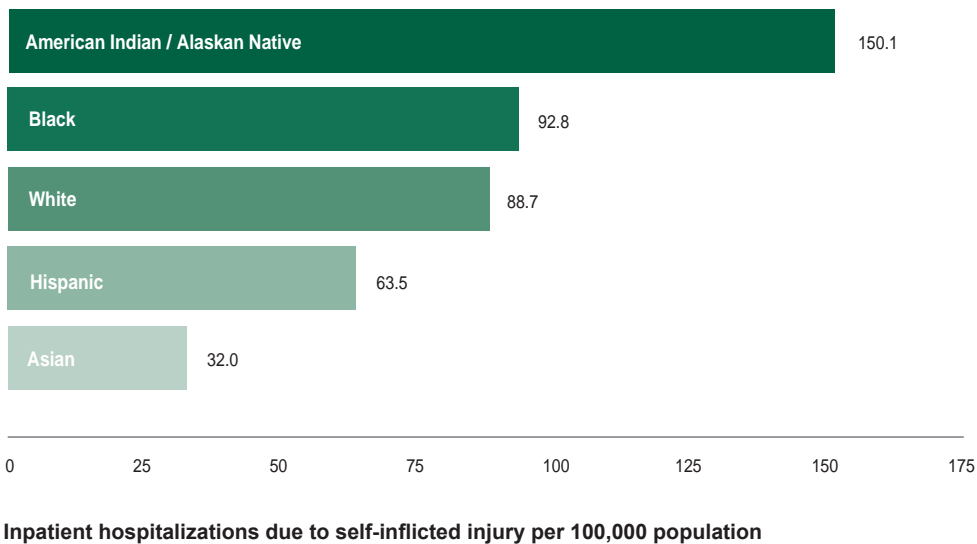
From 2007–2011, **rates of suicide were highest among Whites, followed by American Indians/Alaskan Natives, Asian/Pacific Islanders, Blacks, and Hispanics of any race, respectively** (see Figure 8 and Appendix, Table 10 for numbers and rates of suicide by race and ethnicity).



Whites and American Indians had the highest suicide rates in Wisconsin during 2007–2011.

Figure 8. Suicide rates (per 100,000 Wisconsin residents) by race/ethnicity, 2007–2011.

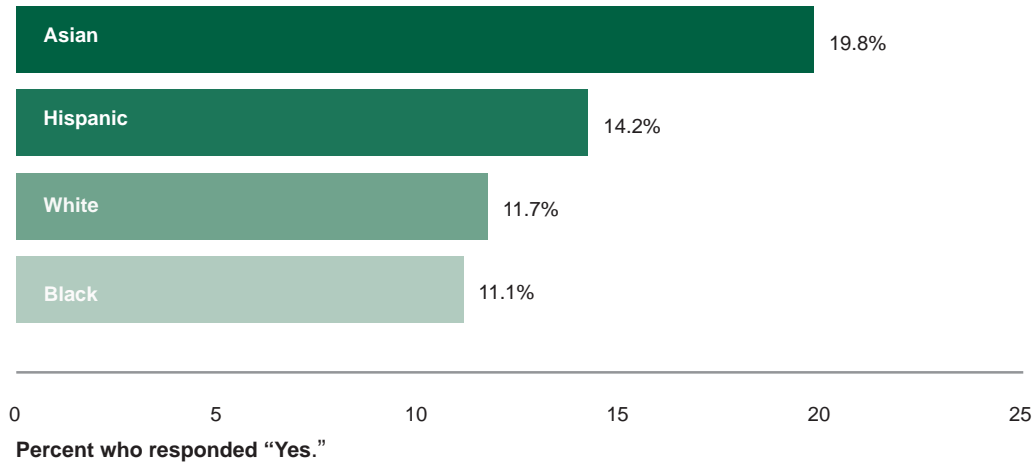
Inpatient hospitalization data from 2007-2011 demonstrate a different pattern whereby **persons of racial minority backgrounds experienced greater rates of inpatient hospitalizations for self-injury**. American Indian/Alaskan Natives had the highest rates of inpatient hospitalizations for self-injury followed by Blacks, Whites, and Hispanics of any race (Figure 9, Appendix Table 11). Persons of Asian/Pacific Islander descent had the lowest rates of hospitalization for self-injury.



American Indians and Blacks had the highest rates of inpatient hospitalizations in Wisconsin during 2007–2011.

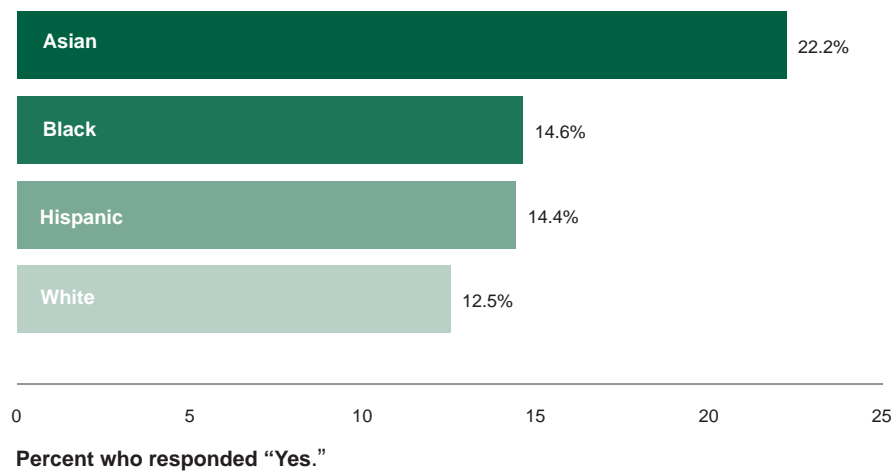
Figure 9. Rates of inpatient hospitalization for self-injury (per 100,000 Wisconsin residents), by race/ethnicity, 2007-2011

YRBS data from 2013 suggest a **greater prevalence of suicidal thoughts and behaviors among Wisconsin high school students of ethnic and racial minority backgrounds** (see Figures 10–12). In 2013, a greater proportion of Asian students reported seriously considering suicide and making a suicide plan compared to Hispanic, Black, or White students. The proportion of students who reported attempting suicide was greatest among Blacks, followed by Hispanics, Asians, and Whites, respectively.



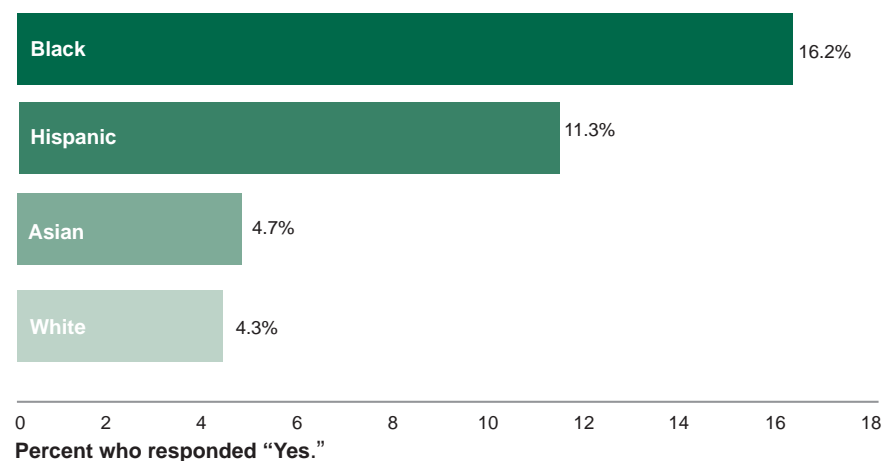
Non-White students were more likely to respond that they had made a plan to attempt suicide in the past 12 months.

Figure 10. Respondents who answered "Yes" to question about making a plan to attempt suicide, by race/ethnicity, Wisconsin Youth Risk Behavior Survey, 2013.



Non-White students were more likely to respond that they had seriously considered attempting suicide in the past 12 months.

Figure 11. Respondents who answered "Yes" to question about seriously considering attempting suicide in the past 12 months, by race/ethnicity, Wisconsin Youth Risk Behavior Survey, 2013.



Non-White students were more likely to respond that they had attempted suicide in the past 12 months.

Figure 12. Respondents who answered "Yes" to question about attempting suicide, by race/ethnicity, Wisconsin Youth Risk Behavior Survey, 2013.

These data indicate that the relationship between race/ethnicity and suicide is complicated. Surveillance data suggest that Whites die by suicide at higher rates than other racial/ethnic groups and that American Indians are hospitalized for self-injury at greater rates than other racial / ethnic groups; however, according to surveys, White youth report suicidal thoughts and attempts less frequently than their minority peers. In part, these differences may arise because YRBS data represent only high school students, are self-reported, and indicate suicide attempts, while WVDRS data include all age groups and indicate suicides. In addition, research suggests that systemic weaknesses in the investigation and classification of minority suicides may result in their underreporting (Rockett, Samora, & Coben, 2006). Discrepancies between rates of suicide and hospitalization for self-injury by race require further investigation. Nevertheless, data clearly indicate that suicidal thoughts and behaviors impose a significant burden on people of all races and ethnicities.

**Education Level**

Several national studies examining the relationship between educational attainment and suicide rates have found that people with lower levels of education are at greater risk for suicide than people with higher levels of education (Abel & Kruger, 2005; Kposowa, 2001).

During 2007–2011, the **largest percentage of persons aged 25 and over who died by suicide by education level were high school graduates with no post-secondary degree** (see Figure 13 and Appendix, Table 12). The smallest percentages were those with graduate level degrees. In order to examine how the proportion of those who died by suicide in each education level compares to the proportion of Wisconsin residents with the same level of education, American Community Survey data from 2008–2012 are used. This comparison reveals that while 9.8% of Wisconsin residents had less than a high school education, 13.6% of those who died by suicide had less than a high school education. This indicates that **people with less than a high school education are over-represented as suicide decedents in Wisconsin**. Conversely, people with a graduate degree appear to be under-represented. Wisconsin residents with either high school or post-secondary degrees appear neither over nor under-represented as suicide decedents.

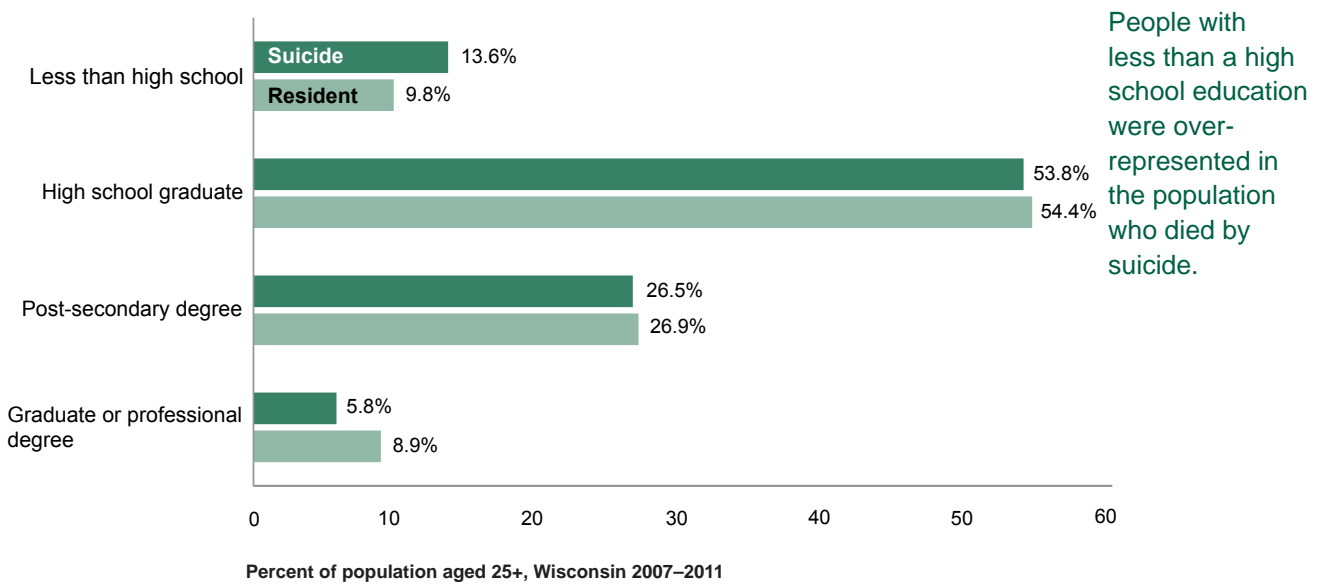


Figure 13. Distribution of educational status, Wisconsin residents compared to Wisconsin suicide decedents, 2007–2011.



**Marital Status**

National research suggests that married persons are less likely to die by suicide than never married, widowed, or divorced persons (Kposowa, 2001). Wisconsin data demonstrate the occurrence of this trend at the state level and help direct suicide prevention efforts in Wisconsin to populations at heightened risk of suicide, such as divorced people.

From 2007–2011, **people who never married constituted the largest proportion of those who died by suicide**, followed by married, divorced, and widowed people, respectively (see Figure 14 and Appendix, Table 13). In order to compare the proportion of those who were married, never married, widowed and divorced and died by suicide to the proportion of all Wisconsin residents in each category, American Community Survey estimates from 2008–2012 are used (see Figure 13). The higher percentage of Wisconsin residents who were married relative to the lower percentage of those who died by suicide and were married indicates that married people are underrepresented among suicide decedents. Conversely, while **divorced people accounted for only 10.4% of Wisconsin residents from 2008–2012, they accounted for 23.4% of suicide decedents during 2007–2011, indicating over-representation**. Never married people also appear over-represented among suicide decedents while widowed people appear neither overrepresented nor under-represented.

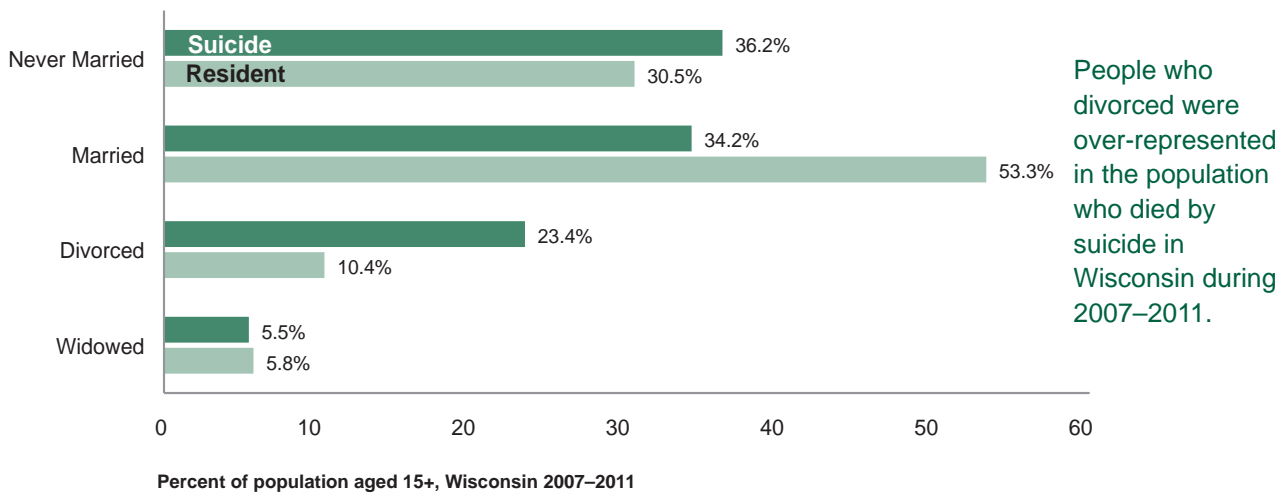


Figure 14. Distribution of marital status, Wisconsin residents compared to Wisconsin suicide decedents, 2007–2011

Divergent explanations of this phenomenon relate to the emotional toll of relationship breakdown and the possibility that psychologically healthy people are more likely to get married and remain married than people with diminished mental or emotional health (Wyder, Ward, & De Leo, 2009). The lower rate of suicide among married people may also reflect the positive effects of strong social connections to intimate partners and/or family members (Kposowa, 2001). These data suggest that marital status may play an important role in suicide prevention among Wisconsin residents.

### Sexual Orientation

While a great deal of research suggests that sexual orientation and gender identity play an important role in suicide risk, related data are very limited in Wisconsin because information regarding sexual orientation and gender identity is not *routinely* collected by law enforcement, coroner/medical examiner, or state vital records systems.

The Wisconsin Violent Death Reporting System (WVDRS) captures a brief narrative for every suicide incident that occurs in Wisconsin. These narratives, derived from law enforcement and coroner/medical examiner records, captured information suggesting lesbian, gay, bisexual, transgender, or queer (LGBTQ) status of the decedent in 34 incidents of suicide during 2009–2011. These incidents occurred in 20 of Wisconsin's 72 counties, spanning all five public health regions of the state. In the 20 counties where LGBTQ status was noted at least once, the percentage of all suicide decedents reported as LGBTQ ranged from 1.5–12.5% by county. Overall, LGBTQ persons accounted for 2.5% of all suicide decedents in these counties from 2009–2011.

While these data are likely to severely under-represent the LGBTQ population, they indicate that **suicide among LGBTQ people is indeed a problem across the state of Wisconsin and emphasize the need for methodological improvements which better examine the issues faced by this population.**

In order to better understand how suicide and associated risk factors affect sexual minorities, we can also examine survey data. In particular, the 2013 Wisconsin Youth Risk Behavior Survey provides insights into the disproportionate burden of suicidal thoughts and behaviors among self-identified lesbian, gay, and bisexual youth. This survey does not address gender identity or transgenderism.

According to 2013 YRBS data, compared to high school students who identified as heterosexual, a larger percentage of students who identified as gay, lesbian, or bisexual (LGB) reported poor mental health, feelings of severe sadness or hopelessness, suicidal thoughts and behaviors, non-suicidal self-harming behaviors, subjection to bullying, disconnection from their school, and lack of relationships to adults at school (see Table B). Approximately **49% of LGB students reported seriously considering suicide in the past 12 months** compared to 11% of heterosexual students. Additionally, **28% of LGB students reported attempting suicide in the past 12 months** compared to 4% of heterosexual students, and **14% of LGB students reported suffering injuries related to suicide attempts** that required medical treatment compared to 2% of heterosexual students.

Greater subjection to bullying, reduced sense of belonging, and fewer relationships with trusted adults at school may contribute to higher reported levels of the above selected behaviors. Conversely, LGB youth who do not experience anti-gay bullying report the lowest levels of depression and suicidal feelings of all student groups (Birkett, Espelage & Koenig, 2009). Nevertheless, while the importance of a safe and welcoming school environment should not be overlooked, research suggests that a positive family life may play a larger role in mitigating suicide risk among young people (Kaminski, Puddy, Hall, Cashman, Crosby, & Ortega, 2009). For vulnerable populations such as LGB youth, strong family relationships and a supportive home environment are particularly critical to promoting good mental health and reducing suicide risk (Ryan, Russell, Huebner, Diaz, & Sanchez, 2010).

Table B. Percentage of respondents by sexual identity, selected questions from Wisconsin YRBS, 2013.

Health risk behavior reported	Students identifying as heterosexual		Students identifying as lesbian, gay, or bisexual	
	N	%	N	%
They strongly disagree, disagree, or are not sure that they feel like they belong at this school	2235	24%	121	54%*
There is not at least one teacher or other adult in this school that they can talk to if they have a problem or they were not sure if there is at least one	2228	25%	121	39%*
They had ever been bullied on school property during the past 12 months	2361	21%	153	37%*
They had ever been electronically bullied during the past 12 months	2382	17%	153	34%*
Someone had tried to hurt them by hitting, punching, or kicking them while on school property one or more times during the past 12 months	2371	13%	157	30%*
Their mental health was not good on one or more of the past 30 days	2231	54%	122	83%*
They felt so sad or hopeless almost every day for two weeks or more in a row that they stopped doing some usual activities during the past 12 months	2382	22%	151	57%*
They did something to purposely hurt themselves without wanting to die, such as cutting or burning themselves on purpose, one or more times during the past 12 months	2378	15%	157	59%*
They seriously considered attempting suicide during the past 12 months	2383	11%	152	49%*
They made a plan about how they would attempt suicide during the past 12 months	2376	10%	151	41%*
They actually attempted suicide one or more times during the past 12 months	2152	4%	138	28%*
They made a suicide attempt during the past 12 months that resulted in an injury, poisoning, or overdose that had to be treated by a doctor or nurse	2147	2%	136	14%*

Note. Asterisks indicate a statistically significant difference between the groups.

### Veteran Status

Recent research suggests that military experience serves as a risk factor for a number of negative health outcomes including PTSD, intimate partner violence, substance abuse, depression, and suicide (Prigerson, Maciejewski, & Rosenheck, 2002; Rudd, Goulding, & Bryan, 2011). In order to address suicide and contributing health issues among Wisconsin veterans, we must examine how suicide affects this population.

From 2007–2011, there were **680 veterans who died by suicide in Wisconsin, accounting for 19.0% of all suicides among people aged 18 and over** in the state (see Figure 15 and Appendix, Table 14). By comparison, only 9.7% of Wisconsin residents over age 18 were veterans (American Community Survey, 2008–2012). Therefore, veterans were overrepresented among suicides in Wisconsin.

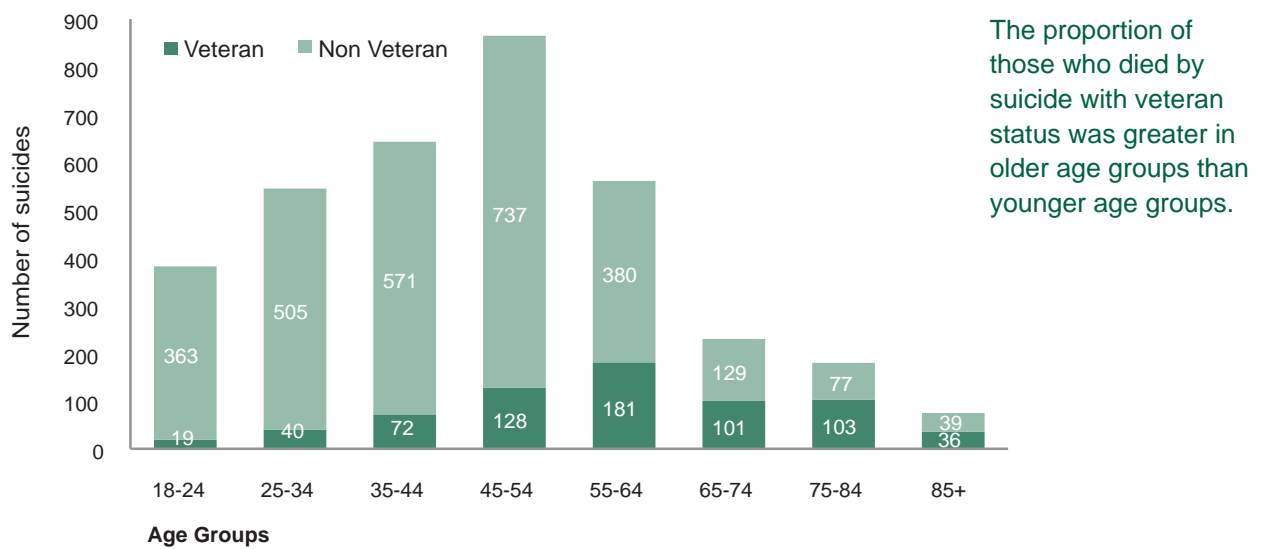


Figure 15. Suicides by age and veteran status, Wisconsin residents, 2007–2011.

The proportion of suicides in which the decedent was a veteran was greater in older age groups. Veterans constituted 5.0% of suicides among decedents aged 18–24, 7.3% of suicides among those aged 25–34, and over 30% of suicides in all age groups after age 54 (see Figure 15). Among suicide decedents aged 75–84, 57.2% were veterans. The majority (95.9%) of suicide decedents with veteran status were male. The percentage of male suicide decedents with veteran status was lowest among 18–24-year-olds and increased in older age groups. The percentage of veterans in the population of male Wisconsin residents also increases with age. The percentage of females with veteran status who died by suicide ranged from 0% among women aged 55–74 and 85+ to 5.9% among women aged 45–54. No clear trend is apparent regarding the relationship between age and veteran status among females who died by suicide.

The large percentage of persons with veteran status who died by suicide reinforces the significant body of evidence indicating that veterans constitute a high-risk group for suicide (Braswell & Kushner, 2012). In particular, older veterans bear a substantial portion of the burden of suicide in Wisconsin. Given that most veterans are males, factors that increase the risk of suicide among males may be conflated with those particular to military experience, further exacerbating suicide risk for many veterans.

**Conclusion**

Based on available Wisconsin data, the burden of suicide disproportionately affects males, middle-aged adults and elderly males, Whites and American Indian/Alaskan natives, people who did not graduate high school, and divorcees. Veterans are also over-represented in the population of suicide decedents. Suicidal thoughts and attempts appear to most affect teens and young adults, females, young people of racial and ethnic minorities, and LGB youth. Stakeholders in suicide prevention should use this information to target populations with contextually appropriate prevention strategies. Improvements in data collection systems and methodology are needed in order to better examine the roles of race, ethnicity, sexual orientation, and gender identity in suicide risk.

## How Do People Die by Suicide? – Mechanisms and Means

For the prevention of suicide, it is not only important to understand the *who*, *where*, and *why* of events but also *how* individuals die by suicide. Understanding the means of suicide can afford opportunities to interrupt the transformation of suicidal ideation into action by reducing the lethality or the availability of means.

The means of suicide is the method by which an individual intentionally carries out self-injury. Nationally, the most common means of suicide are firearms, hanging / strangulation / suffocation, poisoning, sharp instruments, falls, motor vehicles, drowning, fire / burns, and blunt force instruments (CDC, 2014). The means with which one chooses to attempt suicide is affected by the availability, acceptability, and possibly, the lethality of a given method (Peterson, Peterson, O’Shanick, & Swann, 1985; Skopek & Perkins, 1998). The perception and relative weight of these factors may be influenced by age, gender, and the intent of the individual contemplating suicide (Denning, Conwell, King, & Cox, 2000; Nordentoft & Branner, 2008).

### Means of suicide and self-injury

WVDRS data indicate that during 2007–2011 the three primary means of suicide in Wisconsin were **firearms (45.4%), hanging / strangulation / suffocation (25.0%), and poisoning (19.5%)**. Alternate means, such as sharp instrument, fall, drowning, motor vehicle, other transport vehicle, fire / burns, and other\* constituted less than 10% of suicide deaths (see Figure 16). The **primary means of suicide did not change drastically from 2007–2011** (see Appendix, Table 15).

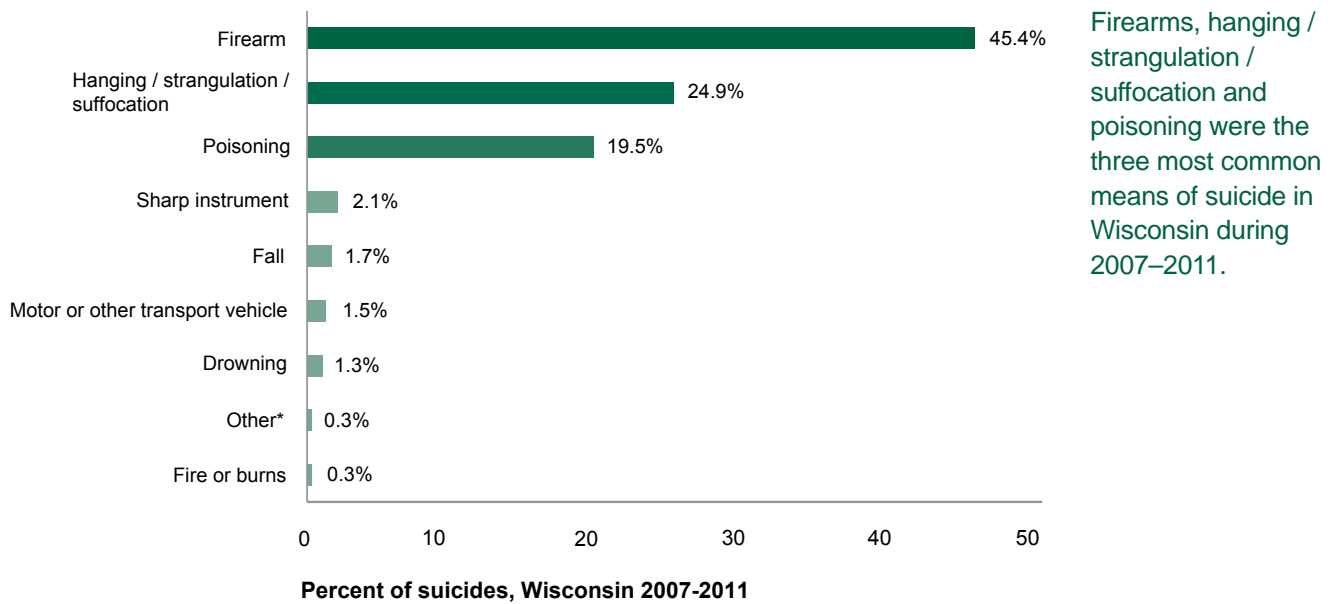


Figure 16. Distribution of means used in suicides, Wisconsin 2007-2011.

The primary means among hospitalizations and emergency department visits due to self-injury differs from the primary means of suicide. The **leading means of these self-injuries were poisoning (67.1%) and sharp instruments (21.6%)**. Less than 1% of self-injuries involved a firearm, which likely reflects the high probability of death with this choice of means.

WVDRS data indicate that the choice of means may be associated with demographic characteristics such as sex and age. For instance, **over half of suicides occurring in Wisconsin during 2007–2011 in which the decedent was male involved firearms** compared to only a quarter of those with female decedents (see Figure 17 and Appendix, Table 16). Conversely, **a greater proportion of suicides with female decedents involved poisoning (41.4%)** compared to those with male decedents (13.4%). Among self-inflicted injuries, males had a higher use of firearms and lower use of poisoning as the means than females (See Appendix, Tables 17 and 18).

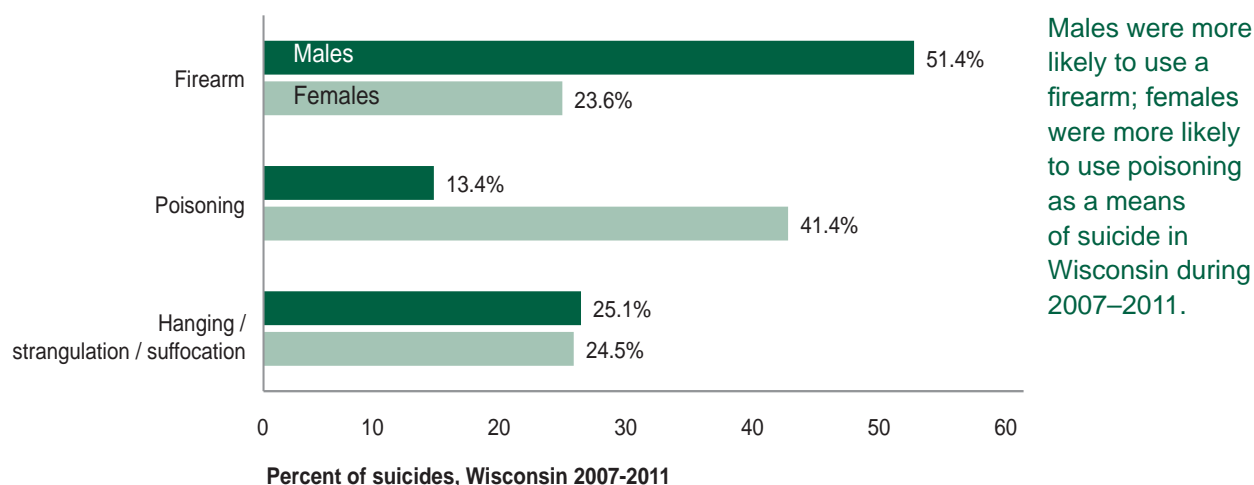


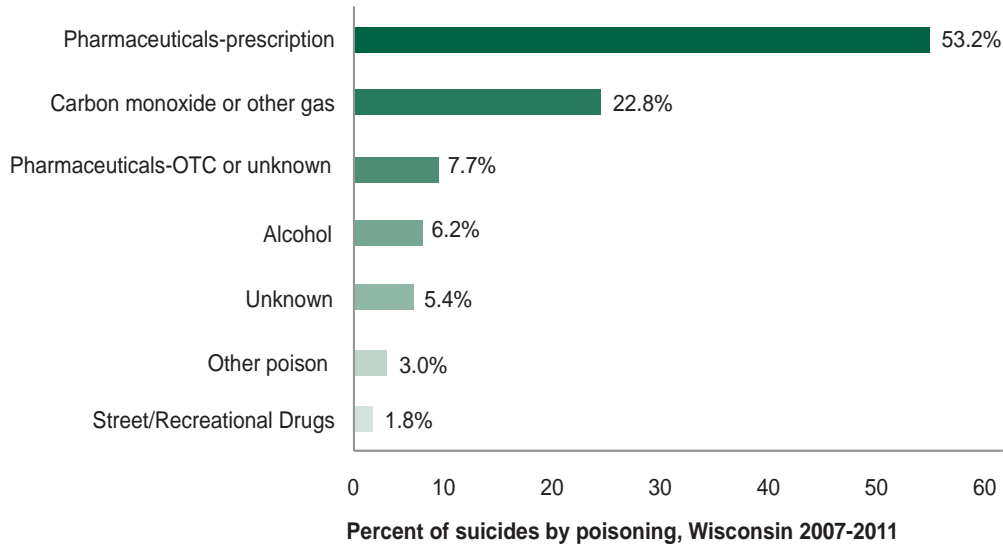
Figure 17. Distribution of method used for suicide by sex, Wisconsin 2007–2011.

The choice of means may also be influenced by age, with the **use of more lethal means becoming more prevalent in older age groups** (see Appendix, Table 19). The use of firearms as a means of suicide increased steadily from about 4 in 10 suicides among adolescents and young adults to nearly 7 in 10 suicides among individuals aged 75–84 years. Poisoning also increased from adolescence to adulthood, reaching a high of 28.2% among decedents aged 45–54 years before decreasing steadily. Hanging / strangulation / suffocation decreased in incidence as a means of suicide over the life course from over 5 in 10 suicides among 10–14-year-olds to under 2 in 10 suicides among individuals 55 years and older. Although the incidence of various means differs greatly between suicides and self-injuries, the trends in use of means by age are consistent across suicides and self-injuries (see Appendix, Tables 19, 20 and 21).

### Poisoning as a means of suicide

Nationally, there are nearly 7,000 suicides by poisoning each year (CDC, 2014). This number is probably an underestimate since the suicidal intent of an individual who dies by poison might be hard to determine based on the evidence left behind.

During 2007–2011, **there were 705 suicide deaths attributed to poison in Wisconsin. Prescription pharmaceuticals were implicated in over half of these deaths (53.2%; see Figure 18)**. The most commonly identified prescription drugs involved in the suicides by poison were Xanax / alprazolam, Tylox / oxycodone, morphine, amitriptyline, hydrocodone, methadone, bupropion, citalopram, Seroquel / quetiapine, tramadol, Ambien, and fentanyl.



Over half of suicides by poisoning in Wisconsin during 2007–2011 involved prescription drugs.

Figure 18. Agents identified in suicide by poisoning, Wisconsin 2007–2011.

After prescription drugs, the next three leading agents involved in suicide poisoning deaths were carbon monoxide (22.8%), over-the-counter pharmaceuticals (7.4%), and alcohol (6.2%). Illicit drugs were implicated in 1.8% of suicides by poisoning.

**Alcohol and/or drug use with suicide**

Drugs are often involved in suicides even when they are not the means of death. Alcohol and drug abuse are second only to depression and other mental health disorders as the most common risk factors for suicide (SAMSHA, 2008). The use of alcohol and drugs by an individual under psychological duress may prove disinhibiting (Hufford, 2001; Cherpitel, Borges, & Wilcox, 2006) or may promote feelings of depression and hopelessness, impair problem-solving abilities, and increase aggression (Conner & Chiapella, 2004). Alcohol and drug abuse may also be associated with suicide through shared risk factors such as depression, impulsivity, or a tendency to pursue thrill-seeking /life-threatening behaviors (Goldston, 2004).

During 2007–2011, of the over 2,000 suicides that received testing and had conclusive results for drugs (See Appendix, Table 22):

- 37% were positive for alcohol
- 32% were positive for anti-depressants
- 19% were positive for opiates
- 8% were positive for marijuana
- 5% were positive for cocaine
- 3% were positive for amphetamines
- 50% were positive for other drugs



**Case-fatality of means of suicide**

The selection of a given means for a suicidal attempt may be influenced by its lethality, which can be expressed as a case-fatality rate. The case-fatality rate for suicide indicates the likelihood that a certain method will result in death. A higher case-fatality rate indicates greater lethality.

Overall, **firearms had the highest case-fatality rate (92.2%;** see Figure 19), followed by drowning (76.7%), and hanging / strangulation / suffocation (62.3%). The case fatality rate for all means was 8.5%.

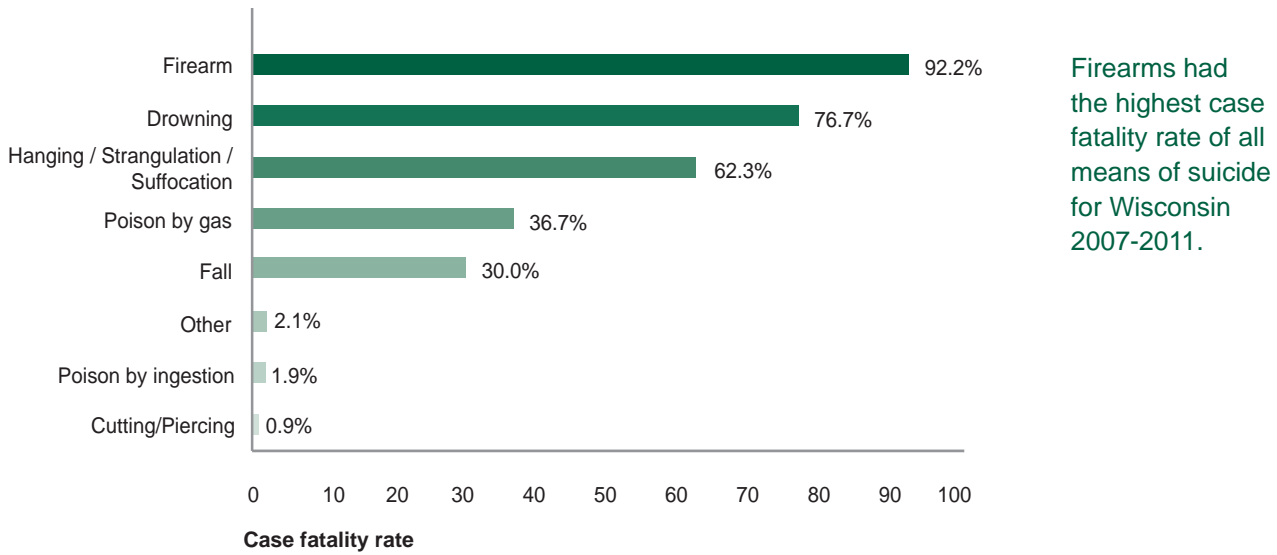


Figure 19. Case-fatality rates for means of suicide, Wisconsin 2007–2011

**Conclusion**

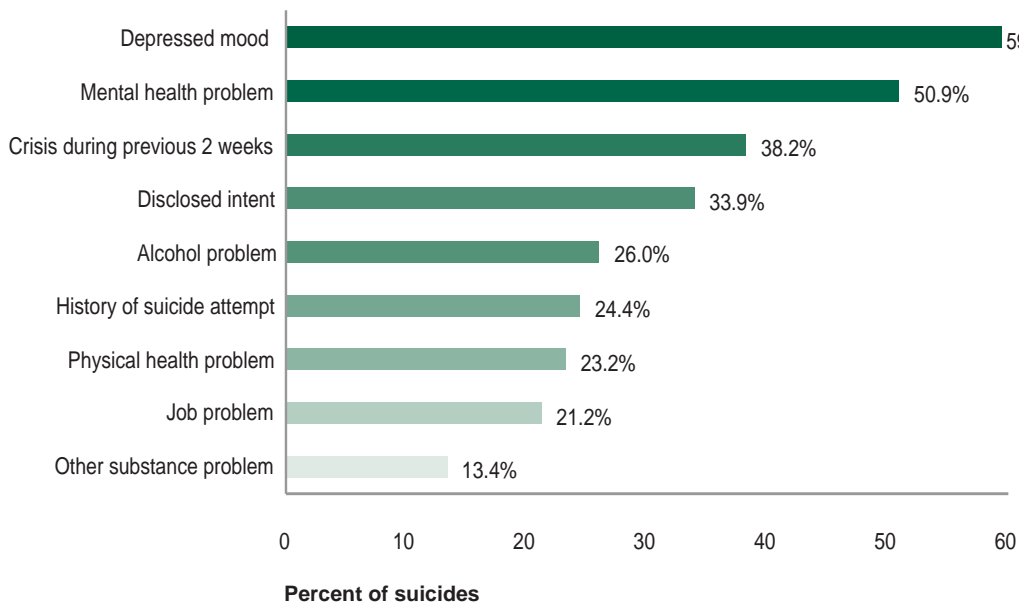
Overall, **firearms, hanging / strangulation / suffocation, and poisoning (especially pharmaceuticals) are the most commonly used means of suicide in Wisconsin.** Firearms, hanging / strangulation / suffocation, and drowning were the most lethal. Demographic characteristics including age and sex influence decedents’ choice of means and their likelihood of surviving a suicide attempt. These data highlight the importance of identifying persons at risk for suicide, improving access to mental and behavioral health treatment, and promoting safety regarding firearms and other highly fatal means. While restricting suicidal individuals’ access to lethal means can help prevent suicide deaths, different prevention strategies related to more common yet less lethal means are also important to reducing the broader burden of suicidal behavior.

## Why Does Suicidal Behavior Occur in Wisconsin? – Associated Circumstances and Factors

Factors associated with suicide can be conceptualized from a social-ecological perspective. Research has shown that risk and protective factors at the individual, relationship, community, and societal levels can all influence the likelihood of suicidal behavior (US DHHS, 2012). At the individual level, mental illness, interpersonal problems, and life stressors are known risk factors for suicidal behavior (Fliege, Lee, Grimm, & Klapp, 2009). Substance abuse problems and prior suicide attempts have also been linked to suicide (Hawton & van Heeringen, 2009). Studies further suggest that the influence of risk factors on suicidal behavior may vary by a person’s age and sex (Hawton & van Heeringen, 2009). We must examine the role of these multi-level risk and protective factors in Wisconsin in order to inform our approaches to suicide prevention.

### Individual Level Factors

WVDRS data reveal that poor mental health, substance abuse problems, and life stressors played a substantial role in suicidal behavior in Wisconsin. Results of the 2013 Youth Risk Behavior Survey (YRBS) and 2012 Behavioral Risk Factor Survey (BRFS) help us to better understand the prevalence of these individual-level risk factors in Wisconsin.



Over half of the population who died by suicide in Wisconsin during 2007–2011 had an indication of current depressed mood or a current mental health problem.

Figure 20. Circumstances associated with suicide decedents, Wisconsin 2007–2011.

Of all suicides occurring during 2007-2011, **59% of decedents had an indication of current depressed mood, and 51% had an indication of a current mental health problem** (see Figure 20 and Appendix, Table 23). The BRFSS 2012 results indicate that **23% of Wisconsin adults reported four or more poor mental health days in the last month**. Similarly, the YRBS 2013 results indicate that nearly **30% of Wisconsin high school students reported that their mental health was not good 4 or more of the past 30 days**. Nearly 25% of Wisconsin high school students felt so sad or hopeless almost every day for two weeks or more in a row that they stopped doing some usual activities. These data demonstrate the role of mental health in suicidal behavior.

From 2007-2011, **26% of persons who died by suicide had an indication of an alcohol problem, and about 13% had an indication of other substance problems** (see Figure 20 and Appendix, Table 23). The YRBS 2013 and the BRFSS 2012 provide insight into the use of alcohol throughout Wisconsin. Approximately **30% of Wisconsin high school students reported having at least one drink of alcohol in the past 30 days** (YRBS, 2013), and nearly **40% of Wisconsin adults reported heavy/at-risk drinking** (five or more drinks for men or four or more drinks for women on one occasion) at least once in the past 30 days (BRFSS, 2013). These data demonstrate the role of alcohol in suicidal behavior and suggest that underage and unhealthy alcohol consumption are significant problems in Wisconsin.

**Life stressors, including experiencing a crisis during the previous two weeks, physical health problem, and job problem, were circumstances surrounding 21-38% of suicides** (see Figure 20 and Appendix, Table 23). The BRFSS 2012 and YRBS 2013 results shed further light on the prevalence of physical health problems, indicating that **23% of Wisconsin adults and 17% of Wisconsin high school students experienced at least four or more days during the past 30 days in which their physical health was not good**. The frequency of crises, physical health problems, job problems, and other life stressors as circumstances of suicide speaks to the need for suicide prevention programming in settings where individuals experiencing such stressors are likely to be found. Given the large number of Wisconsin residents who report poor physical health, the health care sector may be a critical area of focus for suicide prevention activities.

Prior suicide attempt is also an important factor surrounding suicide. In Wisconsin, **24% of all persons who died by suicide had an indication of prior suicide attempt(s)**. Related reports about the deaths indicated that **34% of decedents had disclosed intent to die by suicide to at least one person**. YRBS 2013 results indicate that 12-13% of high school students reported having seriously considered attempting suicide in the past 12 months or having made a suicide plan.

Overall, these data demonstrate that mental health issues, substance use problems, life stressors, and suicide-related thoughts and behaviors are prominent among suicide decedents in Wisconsin and that many Wisconsin adolescents and adults experience these behaviors.

#### **Relationship Level Factors**

Relationship level factors, including intimate partner problems, other relationship problems, and the death of a friend or family member, are frequently related to suicide in Wisconsin (see Appendix, Table 23 for additional data on suicide circumstances related to interpersonal issues.)

Of persons who died by suicide in Wisconsin during 2007-2011:

- **35% had an indication of intimate partner problems**
- **16% had an indication of other relationship problems**
- **10% had an indication of the death of a friend or family member**

Although the Wisconsin Violent Death Reporting System does not have data on additional relationship factors related to suicide, research suggests that limited connectedness to other people and the disruption of previously established social networks due to family discord or relationship breakdown are significant risk factors (CDC, 2014).

**Community & Society Level Factors**

Factors at the community level are also related to suicidal behavior. Individuals suffering from mental health problems who live in communities that lack **mental health treatment** facilities or providers may be at higher risk for suicide. Community engagement and **social connectedness** between individuals, families, and community organizations may also serve as protective factors against suicide and have been shown to reduce morbidity and mortality (CDC, 2014; House, 2001; Kawachi, Kennedy, & Glass, 1999). Yet the level of these factors varies across the state of Wisconsin.

Of persons who died by suicide in Wisconsin, about **43% were currently receiving mental health treatment and 52% had received mental health treatment at some point** in their lives. Nevertheless, the part of the state in which a person lives may determine whether he or she is able to easily access and receive needed mental health treatment. Below, the map shows the availability of mental health providers (including child psychiatrists, psychiatrists, psychologists, licensed clinical social workers, licensed counselors, and advanced practice nurses specializing in mental health care active in patient care) in Wisconsin counties (see Figure 21) – a smaller ratio indicates better mental health provider availability. The map demonstrates that availability varies greatly across Wisconsin.

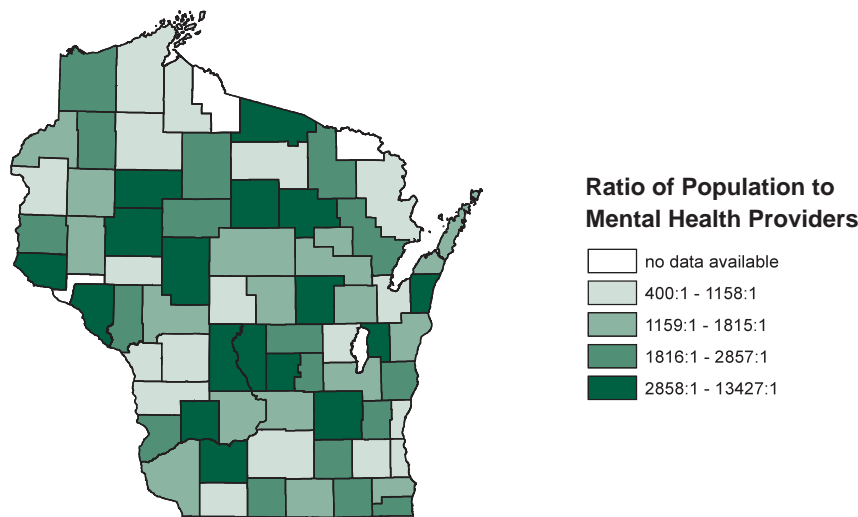


Figure 21. Map of county-level ratios of county population to number of mental health providers, National Plan and Provider Enumeration System – NPI Files 2013.

Social connectedness also varies across the state. The map below (see Figure 22) shows the percent of adults that perceive they have low social support based on data from the County Health Rankings (2005-2010).

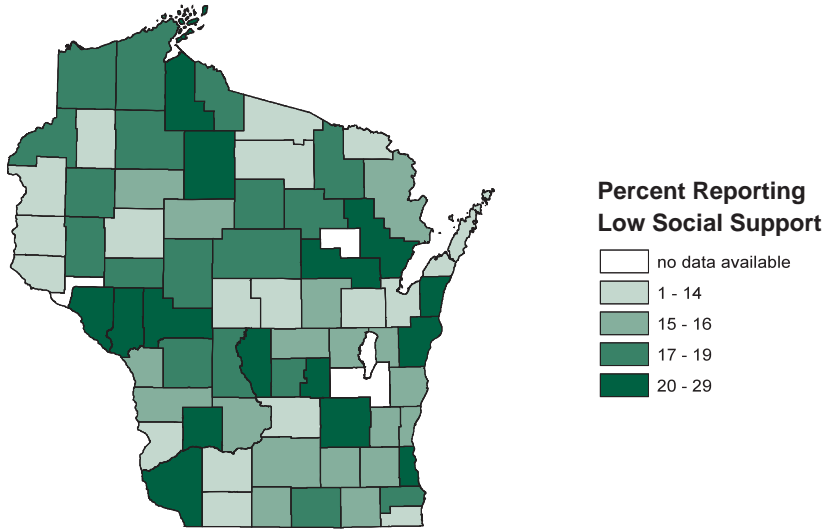


Figure 22. Map of county-level percentages of adults reporting low social support, County Health Rankings, 2005-2010

### Conclusion

While the circumstances surrounding every suicide are different, prominent risk-factors at the individual, relationship, and community / societal levels are observed in Wisconsin. These risk factors include mental health and substance abuse issues, life stressors (including physical health problems, job problems, and personal crises), interpersonal problems, limited access to care, and low levels of social support.

## Implications of the Report: Preventing Suicide in Wisconsin

### In What Direction Does our Data Point Us?

The 2014 Burden of Suicide report examines the incidence of suicide and self-injury, the populations most affected by suicidal behavior, and the primary circumstances related to suicide in Wisconsin. Key findings from the report demonstrate risk factors at each level of the social-ecological model (Figure 23).

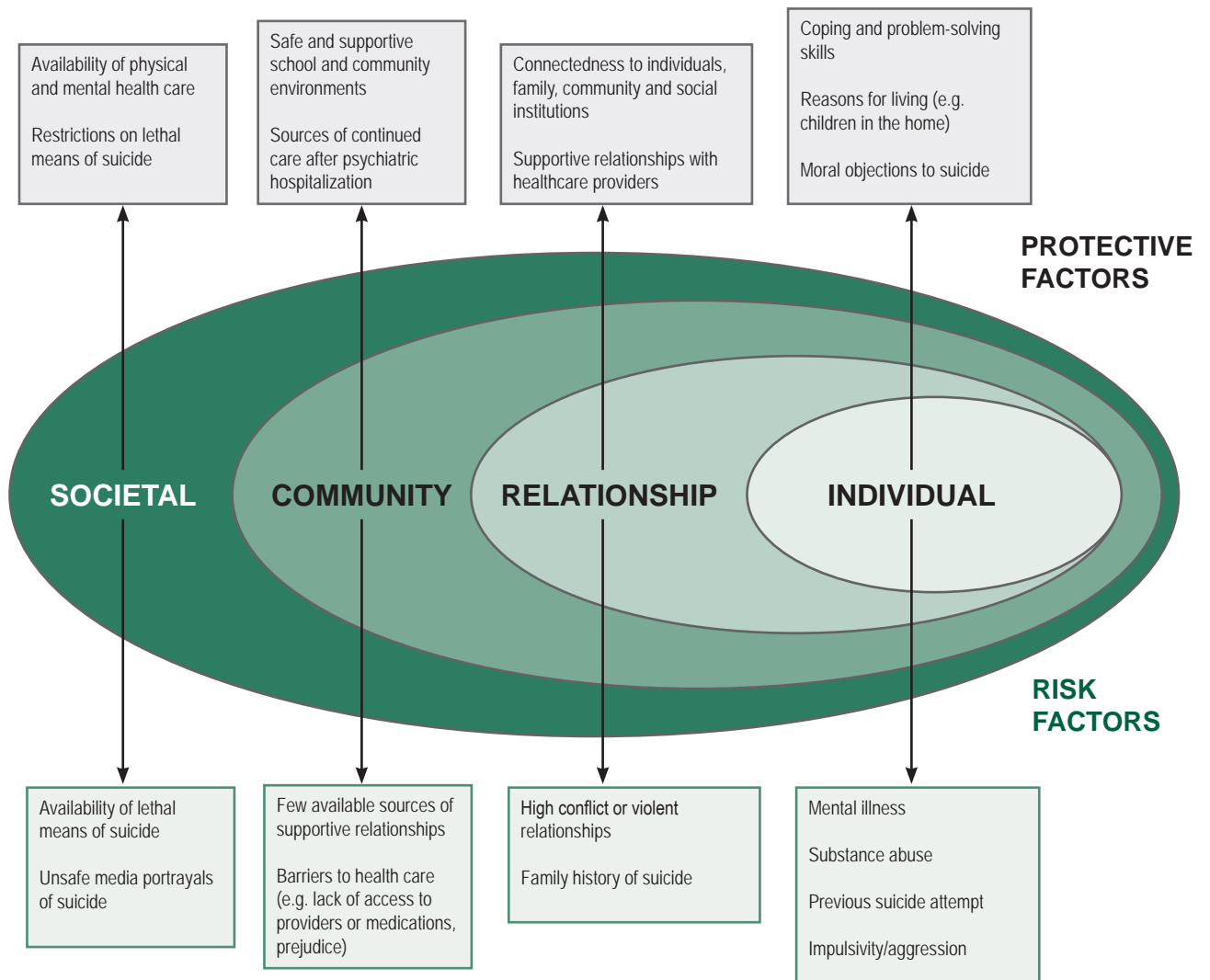


Figure 23. A social-ecological model for suicide prevention as outlined in the 2012 National Strategy for Suicide Prevention (USDHHS, 2012. Adapted from: Dahlberg LL, Krug EG. Violence - a global health problem. In: Krug E, Dahlberg LL, Mercy JA, Zwi AB, Lozano R, eds. World report on violence and health. Geneva, Switzerland: World Health Organization; 2002:1–56.).

At the individual level, Wisconsin data show that males, Whites and American Indian/Alaskan Natives, middle aged, and elderly adults have the highest suicide rates. People with low educational attainment and veterans are also over-represented in the population of suicide decedents. Physical and mental health problems, substance abuse problems and job problems were cited in a high proportion of suicides. In addition, teens and young adults, females, and racial and sexual minority youth are disproportionately burdened by suicidal thoughts and suicide attempts.

At the relationship level, the presence of an intimate partner problem was a factor in over one third of suicides in Wisconsin. Divorced persons were over-represented in the population of suicide decedents, while married persons were under-represented. Additionally, the large proportion of suicide decedents who disclosed their suicidal intent suggests that many neighbors, friends, and family members throughout Wisconsin are not well equipped to deal with a person experiencing a suicidal crisis.

Community and society level risk factors reflect shortcomings in systems with which suicidal individuals interact. The finding that most decedents had at some point received mental health treatment or were currently receiving treatment shows gaps in suicide prevention capacity within the mental health system. The large proportion of decedents with physical health problems and large number of patients hospitalized for suicide attempts also suggest a role for traditional health care providers in suicide prevention. Individual level risk factors including job and substance abuse problems can also be thought of as products of conditions within a community or society. The ease with which suicidal individuals can access commonly used means including firearms and prescription medications has prevention implications at all levels of the social-ecological model.

Factors at all levels of the social ecology can be targeted by different types of prevention strategies. Primary prevention strategies emphasize general health promotion, risk factor reduction, and other methods to promote health. Secondary prevention focuses on early detection and quick intervention or treatment of suicidal behavior. Finally, tertiary prevention involves intervention and treatment once suicidal behavior has occurred and preventing recurrence. The next section outlines three themes that Wisconsin can incorporate into suicide prevention work and provides numerous resources on programs and interventions.

## What Can Wisconsin Do to Prevent Suicide?

### 1 TARGET HIGHER-RISK POPULATIONS WITH APPROPRIATE PRIMARY AND SECONDARY PREVENTION STRATEGIES AND PROGRAMS

The analysis of suicide data indicate that there are many populations in Wisconsin that are disproportionately affected by suicide and suicidal behavior. Thus, using primary and secondary prevention strategies and programs may reduce the risk factors for suicide and promote well-being among these groups. Below is a list of possible activities, programs, and interventions that could be implemented to target the populations that the data indicated are at heightened risk.

#### Resources:

- Universal
  - Question, Persuade, Refer (QPR) Gatekeeper Training – a brief educational program designed to teach “gatekeepers”--those who are strategically positioned to recognize and refer someone at risk of suicide (e.g., parents, friends, neighbors, teachers, coaches, caseworkers, police officers)--the warning signs of a suicide crisis and how to respond by following three steps: (1) Question the individual’s desire or intent regarding suicide; (2) Persuade the person to seek and accept help; (3) Refer the person to appropriate resources. [www.qprinstitute.com](http://www.qprinstitute.com)

- Men
  - Man Therapy – an interactive mental health campaign targeting working-age men (25-54) that employs humor to cut through stigma and tackle issues like depression, divorce, and anxiety. [www.mantherapy.org](http://www.mantherapy.org)
  
- Adolescents/Teens/Young Adults
  - American Indian Life Skills Development/Zuni Life Skills Development – a school-based suicide prevention curriculum designed to reduce suicide risk and improve protective factors among American Indian adolescents 14-19 years old. [www.nrepp.samhsa.gov/ViewIntervention.aspx?id=81](http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=81)
  - Coping and Support Training (CAST) – a high school-based suicide prevention program targeting youth 14-19 years old. CAST delivers life-skills training and social support in a small-group format. [www.nrepp.samhsa.gov/ViewIntervention.aspx?id=51](http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=51)
  - Kognito At-Risk for College Students – a 30-minute, online, interactive training simulation that prepares college students and student leaders, including resident assistants, to provide support to peers who are exhibiting signs of psychological distress such as depression, anxiety, substance use, and suicidal ideation. [www.nrepp.samhsa.gov/ViewIntervention.aspx?id=303](http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=303)
  - Kognito At-Risk for High School Educators – a one-hour, online, interactive gatekeeper training program that prepares high school teachers and other school personnel to identify, approach, and refer students who are exhibiting signs of psychological distress such as depression, anxiety, substance abuse, and suicidal ideation. [www.nrepp.samhsa.gov/ViewIntervention.aspx?id=317](http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=317)
  - Peer Assistance and Leadership (PAL) – a peer-helping program that seeks to build resiliency in youth by pairing youth with peer helpers who receive training and support from teachers participating in the program. The peer-based assistance provided through PAL is designed to help youth avoid risk factors for substance use as well as other problems, such as low achievement in school, dropout, absenteeism, violence, teen pregnancy, and suicide. [www.nrepp.samhsa.gov/ViewIntervention.aspx?id=205](http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=205)
  - Sources of Strength – a universal suicide prevention program, designed to build socioecological protective influences among youth to reduce the likelihood that vulnerable high school students will become suicidal. [www.nrepp.samhsa.gov/ViewIntervention.aspx?id=248](http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=248)
  - Steps to Respect: A Bullying Prevention Program – a school wide intervention designed to prevent bullying behavior and counter the personal and social effects of bullying where it occurs by promoting a positive school climate. [www.nrepp.samhsa.gov/ViewIntervention.aspx?id=336](http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=336)
  
- Veterans/Military Families
  - Kognito Family of Heroes – a one-hour, online role-playing training simulation for military families of service members recently returned from deployment (within the past four years). The training is designed to: (1) increase awareness of signs of post deployment stress, including posttraumatic stress disorder (PTSD), traumatic brain injury (TBI), depression, and suicidal ideation, and (2) motivate family members to access mental health services when they show signs of post deployment stress. [www.nrepp.samhsa.gov/ViewIntervention.aspx?id=312](http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=312)



- United States Air Force Suicide Prevention Program (AFSPP) – a population-oriented approach to reducing the risk of suicide. The Air Force has implemented 11 initiatives aimed at strengthening social support, promoting development of social skills, and changing policies and norms to encourage effective help-seeking behaviors. [www.nrepp.samhsa.gov/ViewIntervention.aspx?id=121](http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=121)
- Elderly Persons
  - Prevention of Suicide in Primary Care Elderly: Collaborative Trial (PROSPECT) – aims to prevent suicide among older primary care patients by reducing suicidal ideation and depression. It also aims to reduce their risk of death. [www.nrepp.samhsa.gov/ViewIntervention.aspx?id=257](http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=257)
- Native American / American Indians
  - Native HOPE - creates a safe, sacred place through culture, spirituality, and humor for participants to address suicide, depression, trauma, violence, and substance abuse. Participants share the challenges in their lives; they commit to effect positive changes in their attitude and behavior and to support each other. This peer-counseling approach has proven to be highly effective for Native youth to break the “code of silence.” [www.nativeprideus.org/programs.html](http://www.nativeprideus.org/programs.html)
  - Planting Seeds of Hope - builds resilience in Native American youth and capacity for suicide prevention on reservations by: promoting awareness; training gatekeepers; implementing screening and brief intervention; building protective factors for youth and veterans; implementing interventions for youth who have attempted suicide; helping families who have lost someone to suicide; and strengthening coordination and collaboration across sectors. [www.mtwytlc.org/tlc-programs/planting-seeds-of-hope.html](http://www.mtwytlc.org/tlc-programs/planting-seeds-of-hope.html)
- Sexual Minority Youth / Lesbian, Gay, Bisexual, Transgender, and Questioning (LGBTQ) Youth
  - School policies and practices that create a safe and supportive school environment – provide curricula or supplementary materials relevant to LGBTQ youth, identify safe spaces, prohibit harassment, encourage staff to attend professional development on safe and supportive school environments for all students, have a Gay / Straight Alliance
  - Safe School Ambassadors - a bystander education program that aims to reduce emotional and physical bullying and enhance school climate in elementary, middle, and high schools. The program recruits and trains socially influential student leaders from diverse cliques and interest groups within a school to act as “Ambassadors” against bullying. [www.nrepp.samhsa.gov/ViewIntervention.aspx?id=331](http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=331)

## **2 PROMOTE AND USE EVIDENCE-BASED INTERVENTIONS AND PROGRAMS THAT CAN IMPROVE MENTAL HEALTH, BEHAVIORAL HEALTH, AND INTERPERSONAL RELATIONSHIPS**

The analysis of suicide data indicate that mental health problems, behavioral health problems (such as substance and alcohol use), and relationship problems were prevalent among suicide decedents in Wisconsin. Thus, primary and secondary prevention strategies and programs may reduce these risks for suicide. Below is a list of possible activities, programs, and interventions that could be implemented to reduce these risks and subsequently reduce the likelihood of suicidal behavior.

**Resources:**

- Mental Health Promotion/Depression and Mental Health Interventions
  - Mental Health First Aid – an adult public education program designed to improve participants’ knowledge and modify their attitudes and perceptions about mental health and related issues, including how to respond to individuals who are experiencing one or more acute mental health crises (e.g. suicidal thoughts and/or behavior, acute stress reaction, panic attacks, and/or acute psychotic behavior) or are in the early stages of one or more chronic mental health problems (e.g. depressive, anxiety, and/or psychotic disorders, which may occur with substance abuse). [www.nrepp.samhsa.gov/ViewIntervention.aspx?id=321](http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=321)
  - Depression Prevention (Managing Your Mood) – a computer-tailored intervention for adults who are experiencing at least mild symptoms of depression. The goal of the program is to help individuals take proactive steps to recognize, manage, and reduce their depression symptoms and to prevent the onset of major depression. Improvement in physical functioning is also targeted, given the link between depression, medical illness, and physical functioning. [www.nrepp.samhsa.gov/ViewIntervention.aspx?id=275](http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=275)
  - JOBS Program – intended to prevent and reduce negative effects on mental health associated with unemployment and job-seeking stress, while promoting high-quality reemployment. Structured as a job search seminar, the program teaches participants effective strategies for finding and obtaining suitable employment as well as for anticipating and dealing with the inevitable setbacks they will encounter. [www.nrepp.samhsa.gov/ViewIntervention.aspx?id=170](http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=170)
  - Adolescent Coping with Depression (CWD-A) – a cognitive behavioral group intervention course that targets specific problems typically experienced by depressed adolescents. These problems include discomfort and anxiety, irrational/negative thoughts, poor social skills, and limited experiences of pleasant experiences. [www.nrepp.samhsa.gov/ViewIntervention.aspx?id=11](http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=11)
  - Attachment-based Family Therapy (ABFT) – a treatment for adolescents age 12-18 that is designed to treat clinically diagnosed major depressive disorder, eliminate suicidal ideation, and reduce dispositional anxiety. [www.nrepp.samhsa.gov/ViewIntervention.aspx?id=314](http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=314)
  - Cognitive Behavioral Therapy for Late-Life Depression – an active, directive, time-limited, and structured problem-solving approach program that follows the conceptual model and treatment program developed by Aaron Beck and his colleagues. [www.nrepp.samhsa.gov/ViewIntervention.aspx?id=119](http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=119)
  - Dynamic Deconstructive Psychotherapy – a 12- to 18-month, manual-driven treatment for adults with borderline personality disorder and other complex behavior problems, such as alcohol or drug dependence, self-harm, eating disorders, and recurrent suicide attempts. [www.nrepp.samhsa.gov/ViewIntervention.aspx?id=240](http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=240)
  - MoodGYM – a free online program that aims to reduce mild to moderate symptoms of depression in adults by teaching them the principles of cognitive behavior therapy. The program is made up of five 20- to 40-minute modules, an interactive game, anxiety and depression assessments, a downloadable relaxation audio file, an online workbook for users to record their responses to quizzes and exercises and track their progress through the program, and a feedback assessment. [www.nrepp.samhsa.gov/ViewIntervention.aspx?id=319](http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=319)
  - Emergency Room Intervention for Adolescent Females – a program for teenage girls 12- 18 years old who are admitted to the emergency room after attempting suicide. The intervention, which involves the girl and one or more family members who accompany her to the emergency room, aims to increase attendance in outpatient treatment following discharge from the emergency room and to reduce future suicide attempts. [www.nrepp.samhsa.gov/ViewIntervention.aspx?id=33](http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=33)

- Behavioral Health/Substance Use
  - Community Trials Intervention to Reduce High-Risk Drinking – a multi-component, community-based program developed to alter the alcohol use patterns and related problems of people of all ages. The program incorporates a set of environmental interventions that assist communities in (1) using zoning and municipal regulations to restrict alcohol access through alcohol outlet density control; (2) enhancing responsible beverage service by training, testing, and assisting beverage servers and retailers in the development of policies and procedures to reduce intoxication and driving after drinking; (3) increasing law enforcement and sobriety checkpoints to raise actual and perceived risk of arrest for driving after drinking; (4) reducing youth access to alcohol by training alcohol retailers to avoid selling to minors and those who provide alcohol to minors; and (5) forming the coalitions needed to implement and support the interventions that address each of these prevention components. [www.nrepp.samhsa.gov/ViewIntervention.aspx?id=9](http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=9)
  - Seeking Safety – a present-focused treatment for clients with a history of trauma and substance abuse. The treatment was designed for flexible use: group or individual format, male and female clients, and a variety of settings (e.g., outpatient, inpatient, residential). [www.nrepp.samhsa.gov/ViewIntervention.aspx?id=139](http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=139)
  - Computer-Assisted System for Patient Assessment and Referral (CASPAR) – a comprehensive assessment and services planning process used by substance abuse clinicians to conduct an initial assessment, generate a treatment plan, and link clients admitted to a substance abuse treatment program to appropriate health and social services available either on site within the program or off site in the community. [www.nrepp.samhsa.gov/ViewIntervention.aspx?id=160](http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=160)
  - COPE: Collaborative Opioid Prescribing Education – a free online training course that is designed to increase physicians' knowledge, competence, and satisfaction regarding the use of opioid medications in managing chronic noncancerous pain experienced by outpatients. [www.nrepp.samhsa.gov/ViewIntervention.aspx?id=270](http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=270)
- Healthy/Unhealthy Relationships
  - Prevention and Relationship Enhancement Program (PREP) – a marriage and relationship education intervention that teaches couples (premarital and marital) how to communicate effectively, work as a team to solve problems, manage conflicts without damaging closeness, and preserve and enhance commitment and friendship. [www.nrepp.samhsa.gov/ViewIntervention.aspx?id=326](http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=326)
  - Relationship Smarts PLUS (RS+) – designed to help youth ages 14-18 gain knowledge and develop skills for making good decisions about forming and maintaining healthy relationships. Based on the cognitive and communications theories and concepts embodied in the Prevention and Relationship Enhancement Program (PREP), reviewed separately by NREPP, RS+ aims to increase reasoning and positive conflict management skills, healthy relationship skills and knowledge, and beliefs regarding healthy relationships, while decreasing destructive verbal and physical aggression. [www.nrepp.samhsa.gov/ViewIntervention.aspx?id=280](http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=280)
  - I Can Problem Solve (ICPS) – a universal school-based program that focuses on enhancing the interpersonal cognitive processes and problem-solving skills of children ages 4-12. ICPS is based on the idea that there is a set of these skills that shape how children (as well as adults) behave in interpersonal situations, influencing how they conceptualize their conflicts with others, whether they can think of a variety of solutions to these problems, and whether they can predict the consequences of their own actions. [www.nrepp.samhsa.gov/ViewIntervention.aspx?id=211](http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=211)

- Fourth R: Skills for Youth Relationships – a curriculum for 8<sup>th</sup> and 9<sup>th</sup> grade students that is designed to promote healthy and safe behaviors related to dating, bullying, sexuality, and substance use. [www.nrepp.samhsa.gov/ViewIntervention.aspx?id=207](http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=207)
- Creating Lasting Family Connections Marriage Enhancement Program (CLFCMEP) – a community-based effort designed for couples in which one or both partners have been physically and/or emotionally distanced because of separation due to incarceration, military service, substance abuse, or other circumstances. [www.nrepp.samhsa.gov/ViewIntervention.aspx?id=322](http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=322)

### 3 REDUCE ACCESS TO LETHAL MEANS OF SUICIDE FOR POPULATIONS WITH IMMINENT RISK OF SUICIDE

Persons with imminent risk of suicide – those that have attempted suicide in the past, those with suicidal ideations, those who have indicated intent or other imminent risk factors – are likely to benefit from reduced access to the most lethal means of suicide. This may include reduced access to rope, medications, and firearms. Below are two interventions that have been effective in reducing risk for suicide.

**Resources:**

- Emergency Department Means Restriction Education – an intervention for the adult caregivers of youth (aged 6 to 19 years) who are seen in an emergency department and determined through a mental health assessment to be at risk for suicide. [www.nrepp.samhsa.gov/ViewIntervention.aspx?id=15](http://www.nrepp.samhsa.gov/ViewIntervention.aspx?id=15)
- CALM: Counseling on Access to Lethal Means – 1.5- to 2-hour workshop designed to help providers implement counseling strategies to help clients at risk for suicide and their families reduce access to lethal means, particularly (but not exclusively) firearms. [www.sprc.org/bpr/section-III/calm-counseling-access-lethal-means](http://www.sprc.org/bpr/section-III/calm-counseling-access-lethal-means)

### 4 LEARN MORE ABOUT WISCONSIN-SPECIFIC PREVENTION ACTIVITIES

Prevent Suicide Wisconsin maintains a website listing contact information for local coalitions and groups active at the county level as well as a listing of other organizations working on suicide prevention across the state and nation. [www.preventsuicidewi.org](http://www.preventsuicidewi.org)

## Glossary of Key Terms

### As defined by the 2012 National Strategy for Suicide Prevention (USDHHS, 2012)

**BEHAVIORAL HEALTH:** A state of mental and emotional being and/or choices and actions that affect wellness. Behavioral health problems include mental and substance use disorders and suicide.

**MEANS:** The instrument or object used to carry out a self-destructive act (e.g., chemicals, medications, illicit drugs).

**MENTAL DISORDER/ILLNESS:** A diagnosable illness characterized by alterations in thinking, mood, or behavior (or some combination thereof) associated with distress that significantly interferes with an individual's cognitive, emotional, or social abilities; often used interchangeably with mental illness.

**METHODS:** Actions or techniques that result in an individual inflicting self-directed injurious behavior (e.g., overdose).

**PROTECTIVE FACTOR:** Factors that make it less likely that an individual will develop a disorder. Protective factors may encompass biological, psychological, or social factors in the individual, family, and environment.

**RATE:** Refers to the number per unit of the population with a particular characteristic, for a given unit of time. Rates were calculated per 100,000 persons for this report. Rates based on numbers of 20 or less are considered unstable due to random chance and should be interpreted with caution.

**RISK FACTOR:** Factors that make it more likely that an individual will develop a disorder. Risk factors may encompass biological, psychological, or social factors in the individual, family, and environment.

**SUICIDAL BEHAVIORS:** Behaviors related to suicide, including preparatory acts, suicide attempts, and deaths.

**SUICIDAL IDEATION:** Thoughts of engaging in suicide-related behavior.

**SUICIDE:** Death caused by self-directed injurious behavior with any intent to die as a result of the behavior.

**SUICIDE ATTEMPT:** A nonfatal, self-directed, potentially injurious behavior with intent to die as a result of the behavior. A suicide attempt may or may not result in injury.

## Technical Notes

### Primary Data Sources

#### Suicide data source

Death information for this report was obtained from the Wisconsin Violent Death Reporting System (WVDRS; 2007-2011). WVDRS data are maintained at the Wisconsin Department of Health Services.

This system provides comprehensive data on all violent deaths in Wisconsin, including suicides. Cases are initiated through a death certificate. Information on each case is then collected from coroner/medical examiner records, police records, and crime lab records. WVDRS is funded by the Centers for Disease Control and Prevention (CDC) and is part of the National Violent Death Reporting System (NVDRS). More information about NVDRS may be obtained at [www.cdc.gov/violencePrevention/NVDRS/index.html](http://www.cdc.gov/violencePrevention/NVDRS/index.html)

#### Self-injury data sources

Inpatient hospitalization and emergency department visits data on self-injury, which were used as an indication of suicide attempts, were obtained from the Office of Health Information, Division of Public Health, Wisconsin Department of Health Services, with data collected by the Wisconsin Hospital Association Information Center. Psychiatric hospitals are not included in these data sources. The Wisconsin Interactive Statistics on Health (WISH) was used to obtain cost information for inpatient hospitalizations and emergency department visits.

Simple queries may be performed on WVDRS, inpatient hospitalization, and emergency department visit data via the Wisconsin Interactive Statistics on Health (WISH) web-based query system. Please visit [www.dhs.wisconsin.gov/wish/](http://www.dhs.wisconsin.gov/wish/).

#### Youth Risk Behavior Surveillance Survey (YRBS)

The Youth Risk Behavior Surveillance Survey monitors six types of health-risk behaviors that contribute to the leading causes of death and disability among youth and adults, including: (1) behaviors that contribute to unintentional injuries and violence; (2) sexual behaviors that contribute to unintended pregnancy and sexually transmitted diseases, including HIV infection; (3) alcohol and other drug use, (4) tobacco use; (5) unhealthy dietary behaviors; and (6) inadequate physical activity. The YRBS collects this information through a national school-based survey conducted by the CDC and state, territorial, tribal, and local survey conducted by state, territorial, and local education and health agencies and tribal governments. This report contains data from the 2013 version of the YRBS. More information can be obtained at [www.cdc.gov/HealthyYouth/yrbs/index.htm](http://www.cdc.gov/HealthyYouth/yrbs/index.htm).

#### Behavioral Risk Factor Surveillance Survey (BRFSS)

BRFSS is the nation's premier system of health-related telephone surveys that collect state data about U.S. adult residents regarding their health-related risk behaviors, chronic health conditions, and use of preventive services. BRFSS collects data in all 50 states as well as the District of Columbia and three U.S. territories. This report contains data from the 2012 version of the BRFSS. More information can be obtained at [www.cdc.gov/brfss/index.htm](http://www.cdc.gov/brfss/index.htm).

## Secondary Data Sources

**American Community Survey 2008-2012**, United States Census Bureau, available at <https://www.census.gov/acs/www/>.

**County Health Rankings 2013**, Robert Wood Johnson Foundation, available at [www.countyhealthrankings.org/](http://www.countyhealthrankings.org/)

**National Plan and Provider Enumeration System – NPI Files 2013**, Centers for Medicare and Medicaid Services, available at [www.cms.gov/Regulations-and-Guidance/HIPAA-Administrative-Simplification/NationalProvIdentStand/DataDissemination.html](http://www.cms.gov/Regulations-and-Guidance/HIPAA-Administrative-Simplification/NationalProvIdentStand/DataDissemination.html)

## Case Definitions

Only suicides that occurred to Wisconsin residents aged 10 years and older are included in this report. Cases of suicide attempts were defined as inpatient hospitalizations and emergency department visits due to self-inflicted injury that had External Cause of Injury groupings (E-codes) within the International Classification of Diseases, Ninth Revision (ICD-9-CM) of codes E950-E959. Again, only inpatient hospitalizations and emergency department visits that occurred to Wisconsin residents aged 10 and older were included in this report.

## Definitions of Measures and Analytic Methodology for “Who Is Affected by Suicidal Behavior”

**Age:** denotes the decedent’s age at the time of death, gathered from death certificates.

**Sex:** defined as the decedent’s biological sex, gathered from death certificates.

**Race/Ethnicity:** information is obtained from death certificates, coroner/medical examiner reports, or police reports. Race categories include White, Black, American Indian/Alaskan Native, Asian, Pacific Islander, and Unknown. Ethnicity categories include Hispanic and Non-Hispanic.

**Education level:** defined as less than high school if the decedent had completed less than 12 years of school; “high school graduate” if the decedent completed 12 years of school; “post-secondary education or degree” if the decedent completed more than 12 and greater than or equal to 16 years of school; and “post-graduate education or degree” if the decedent completed more than 16 years of school, gathered from death certificates.

**Marital status:** defined using data from death certificates. Categories include married, never married, widowed, divorced and unknown. Information regarding separations is not collected on death certificates, and thus would be classified as married. Same-sex relationship information is not collected on death certificates. Only persons who died by suicide and Wisconsin residents aged 15 and over were considered in analysis of the relationship between suicide and marital status.

**Sexual orientation:** for suicide deaths, sexual orientation other than heterosexual is based on narratives derived from law enforcement and coroner/medical examiner records that suggested the lesbian, gay, bisexual, transgender, or queer (LGBTQ) status of the decedent. LGBTQ status indicates that the WVDRS narrative was suggestive of homosexuality, bisexuality, transgenderism, issues or problems related to sexual orientation/identity, or gender queer behaviors such as cross-dressing. For YRBS data, the data indicate suicidal thoughts and behaviors among self-identified lesbian, gay, and bisexual youth.

**Veteran status:** determined from the death certificate, which asks if the decedent was ever in the U.S. Armed Forces (any branch, including the National Guard or Reserves). Only persons who died by suicide and Wisconsin residents aged 18 and over were considered in analyses of the relationship between suicide and veteran status.

**Analytic methodology for suicide trends over time:** Differences in suicide rates over time were determined using the Fisher's exact test with an alpha of 0.05 and by comparison of 95% confidence intervals.

## Definitions of Measures and Analytic Methodology for "How Do People Die by Suicide"

**Method:** refers to the method used to self-inflict the injury. "*Firearm*" refers to shotguns, rifles, and handguns as well as unspecified firearms. "*Sharp instrument*" refers to knives, razors, or other pointed instruments. "*Poisoning*" refers to intentional overdose of drugs, medical substances, biologicals, solid and liquid substances and gases and vapors. "*Hanging, strangulation, suffocation*" refers to the inhalation of objects that block respiration or other mechanical means that hinder breathing. "*Fall*" refers to jumping. "*Drowning*" refers to deaths from drowning and submersion with and without the involvement of watercraft. "*Fire or burns*" refers to deaths as a result of fire, flames, and hot objects or substances. "*Motor vehicle*" refers to intentional deaths resulting from motor vehicle traffic crashes involving automobiles, vans, trucks, motorcycles and other motorized cycles known or assumed to be traveling on public roads or highways. "*Other*" refers to non-powder gun, explosives, blunt instrument, and additional methods that do not fall within the categories outlined WVDRS.

**Toxicology:** In Wisconsin, all suicides are considered required reportable deaths to the coroner or medical examiner of that county (§ 929.01). Coroners and medical examiners consider the facts of each case individually, and determine what level of investigation/examination is necessary to determine the cause and manner of death and to clarify the circumstances surrounding the death. Toxicology screens may or may not be done in each investigation. "*Tested*" refers to the number of decedents that received toxicological screening. "*Present in those tested*" refers to the number of decedents who had the specific drug (alcohol, antidepressant, amphetamine, cocaine, marijuana, opiates, and other drugs) present in their toxicological screen. "*Not tested or unknown*" refers to the number of decedents that did not receive toxicological testing or it was unknown if the decedent received toxicological testing.

**Analytic methodology for case-fatalities:** To investigate the relative lethality of the most prevalent means of suicide in Wisconsin, case-fatality rates were calculated using 2007-2011 data from Wisconsin's VDRS, hospital discharge (HD), and emergency department (ED) databases. All deaths with an incident type of suicide in WVDRS were included. Suicide attempts were ascertained through ICD-9-CM E-codes for intentional self-inflicted injury on HD and ED records. In order to de-duplicate multiple records for the same attempt, HD and ED records were excluded if the discharge status indicated transfer or death of the patient. Case-fatality rates were calculated as the number of deaths divided by the sum of the number of deaths and the number of attempts for a given means in the overall population and stratified by sex and age group.

These case-fatality rates likely overestimate the lethality of various means, especially for those means least likely to cause mortal injury. Many individuals who attempt suicide yet do not sustain severe injury may not seek medical attention and will consequently not be documented in available data sources. In addition, many more acts of intentional self-harm may go undocumented because they are coded as unintentional injuries either mistakenly or to protect individuals or families. Wisconsin residents who attempt suicide in Wisconsin but receive care in a neighboring state with which Wisconsin does not share hospital data, such as Michigan or Illinois, can also not be identified in existing data sources.



## Definitions of Measures for “Why do People Die by Suicide”

**Crisis during previous two weeks:** refers to decedents who experienced a crisis within two weeks of the suicide, or a crisis was imminent within two weeks of the suicide. Examples of crises include a very recent or impending arrest, job loss, argument or fight, relationship break-up, police pursuit, financial loss, loss in social standing, eviction, or other loss.

**Current depressed mood:** identifies suicide decedents who were documented as having a current depressed mood. The depressed mood may be part of a clinical depression or a short-term sadness.

**Current mental health problem:** identifies suicide decedents who were identified as having a mental health problem including those disorders and syndromes listed in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Revision.

**Current mental health treatment:** refers to decedents who were identified as seeing a mental health professional within the past two months or had a current prescription for a psychiatric medication.

**Disclosed intent:** refers to suicides in which the decedent had previously expressed suicidal feelings to another person whether explicitly or indirectly

**Ever had alcohol problem:** refers to decedents who were perceived by self or others to have a problem with, or to be addicted to, alcohol or were noted as participating in an alcohol rehabilitation program. This does not refer to problems in the past (i.e. five years ago or more) that have been resolved and no longer appear to apply.

**Ever had mental health treatment:** refers to decedents who were noted as ever having received professional treatment for a mental health problem, either at the time of death or in the past.

**Had history of suicide attempt(s):** refers to suicides in which the decedent was known to have made previous suicide attempts, regardless of the severity of those attempts.

**Intimate partner problem:** refers to suicides that are related to friction or conflict between intimate partners.

**Left a suicide note:** refers to suicides in which the decedent left a note, email, video or other written communications that they intended to commit suicide.

**Non-criminal legal problem:** refers to suicides that appear to be related to legal (non-criminal) problems such as a custody dispute or civil lawsuit.

**Other death of friend/family:** identifies suicides that may have been impacted by a death (non-suicide) of a family member or friend within the past five years.

**Other relationship problem:** refers to problems with a family member or friend (other than an intimate partner) that appear to have contributed to the decedent’s decision to suicide.

**Other substance problem:** refers to persons who were perceived by self or others to have a problem with, or to be addicted to, illegal drugs, prescription medications, or inhalants.

**Perpetrator of violence in past month:** identifies decedents who were perpetrators of interpersonal violence within the past month.

**Physical health problem:** refers to suicides in which a physical health problem appears to have contributed to the suicide. Examples of physical health problems include terminal disease, debilitating condition and chronic pain.

**Recent criminal legal problem:** refers to suicides that appear to be related to criminal problems such as recent or impending arrest, police pursuit, or impending criminal court dates in which evidence of negative legal or law enforcement consequences exists.

**Recent suicide of friend/family:** identifies suicides that may have been impacted by a suicide of a family member or friend within the past five years

**School problem:** refers to suicides in which problems at school appear to have contributed to the suicide. Problems at school include poor grades, bullying, and social exclusion at school or performance pressures.

**Victim of violence in past month:** identifies those who were decedents of interpersonal violence within the past month.

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## Appendix: Data Tables

Table 1. Inpatient hospitalizations and emergency department visit costs due to self-inflicted injuries, Wisconsin 2007-2011.

	Year				
	2007	2008	2009	2010	2011
<b>Hospitalization charges</b>	\$65,813,566	\$70,526,649	\$76,383,249	\$78,154,247	\$78,466,435
<b>Average Cost per Stay</b>	\$11,761	\$12,166	\$13,926	\$14,611	\$14,716
<b>ED Visit Charges</b>	\$3,677,838	\$4,206,177	\$4,611,637	\$4,969,372	\$5,134,521
<b>Average Cost per Visit</b>	\$1,484	\$1,627	\$1,808	\$1,892	\$1,892

Table 2. Number and age-adjusted rates (per 100,000 population) of suicides, inpatient hospitalizations, and emergency department visits due to self-inflicted injury for Wisconsin residents aged 10 and over, 2007–2011.

	Year									
	2007		2008		2009		2010		2011	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
<b>Suicides</b>	708	14.27	716	14.38	710	14.24	764	15.31	723	14.49
<b>Inpatient Hospitalizations</b>	5598	113.42	5801	117.28	5491	111.15	5356	109.64	5336	109.41
<b>ED Visits</b>	2493	50.5	2600	52.77	2571	51.8	2647	54.28	2742	56.15

Table 3. Suicides, inpatient hospitalizations due to self-inflicted injury, and emergency department visits due to self-inflicted injury, by Wisconsin county of residence, 2007-2011

County	Suicides		Inpatient Hospitalizations		Emergency Department Visits	
	Number	Rate	Number	Rate	Number	Rate
Adams	24	24.6	65	66.7	33	33.9
Ashland	9	12.4*	199	275.0	26	35.9
Barron	35	16.9	198	95.4	117	56.4
Bayfield	12	17.2*	105	150.5	29	41.6
Brown	152	14.2	1093	102.4	1002	93.9
Buffalo	6	9.8*	90	147.3	24	39.3
Burnett	13	17.7*	53	72.2	22	30.0
Calumet	27	13.4	61	30.2	27	13.4
Chippewa	40	14.8	366	135.3	141	52.1
Clark	24	16.5	103	70.9	53	36.5
Columbia	45	18.1	334	134.7	161	64.9
Crawford	16	21.2*	99	131.0	47	62.2
Dane	276	13.0	2388	112.8	1717	81.1
Dodge	75	19.1	495	126.1	250	63.7
Door	19	14.5*	70	53.3	131	99.7
Douglas	31	15.9	480	245.7	235	120.3
Dunn	31	16.1	200	103.9	91	47.3
Eau Claire	60	13.8	864	198.5	279	64.1
Florence	5	22.6*	7	31.7*	X	4.5*
Fond du Lac	46	10.3	426	95.6	134	30.1
Forest	X	9.1*	79	180.2	15	34.2*
Grant	36	15.9	163	71.9	89	39.2
Green	21	13.2	127	79.7	59	37.0
Green Lake	16	18.9*	64	75.5	31	36.6
Iowa	21	20.2	72	69.2	48	46.2
Iron	10	33.4*	12	40.1*	0	0.0
Jackson	18	20.1	121	135.3	38	42.5
Jefferson	43	12.0	352	98.1	311	86.7
Juneau	27	22.4	143	118.8	100	83.1
Kenosha	106	14.9	845	119.1	350	49.3
Kewaunee	5	5.5*	73	79.8	50	54.7
La Crosse	67	13.3	1063	211.4	313	62.3
Lafayette	11	15.3	54	74.9	32	44.4
Langlade	20	21.6	57	61.7	62	67.1
Lincoln	28	21.2	77	58.3	63	47.7

County	Suicides		Inpatient Hospitalizations		Emergency Department Visits	
	Number	Rate	Number	Rate	Number	Rate
Manitowoc	55	15.1	375	102.8	194	53.2
Marathon	96	16.4	431	73.5	271	46.2
Marinette	41	21.1	159	82.0	143	73.7
Marquette	10	14.5*	59	85.8	34	49.4
Menominee	7	38.1*	48	261.6	28	152.6
Milwaukee	500	12.4	3732	92.3	1747	43.2
Monroe	40	20.9	312	162.9	99	51.7
Oconto	39	23.0	162	95.4	91	53.6
Oneida	26	15.3	205	120.8	41	24.2
Outagamie	114	15.0	998	131.4	213	28.1
Ozaukee	40	10.5	332	87.0	101	26.5
Pepin	6	18.2*	24	72.7	10	30.3*
Pierce	23	12.8	150	83.4	73	40.6
Polk	39	19.7	189	95.5	90	45.5
Portage	39	12.6	516	166.4	100	32.3
Price	10	14.7*	34	50.0	32	47.1
Racine	112	13.2	1417	167.3	248	29.3
Richland	8	10.0*	128	160.6	45	56.5
Rock	108	15.6	829	119.5	555	80.0
Rusk	14	20.9*	56	83.6	37	55.2
St. Croix	46	13.1	247	70.3	199	56.7
Sauk	52	19.5	258	96.7	94	35.2
Sawyer	8	10.4*	105	136.8	50	65.1
Shawano	36	19.5	164	88.8	105	56.9
Sheboygan	75	14.8	1017	201.3	227	44.9
Taylor	19	21.6*	34	38.6	17	19.3*
Trempealeau	26	20.8	189	151.2	85	68.0
Vernon	27	21.2	133	104.3	76	59.6
Vilas	18	17.6*	171	167.6	59	57.8
Walworth	69	15.5	274	61.4	214	48.0
Washburn	13	17.3*	69	91.6	47	62.4
Washington	79	13.8	455	79.8	103	18.1
Waukesha	198	11.8	1421	84.4	706	41.9
Waupaca	37	15.8	222	94.6	61	26.0
Waushara	27	23.9	113	100.0	32	28.3
Winnebago	106	14.5	1183	162.3	462	63.4
Wood	51	15.3	350	105.3	185	55.6

\*Rates based on less than 20 deaths are unstable and should be used and interpreted with caution. An X indicates a number less than 5 and is used to protect the privacy of the individuals.

Table 4. Inpatient hospitalizations due to self-inflicted injury, by age, Wisconsin 2007-2011.

	Year									
	2007		2008		2009		2010		2011	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
<b>10-14</b>	220	59.18	220	60.22	214	59.51	187	49.74	231	61.73
<b>15-24</b>	1686	211.3	1790	224.6	1678	203.2	1550	197.3	1565	199.4
<b>25-34</b>	1226	170.9	1145	158.1	1122	158.1	1108	153.5	1080	147.9
<b>35-44</b>	1150	144.5	1201	155.3	1111	149.3	1045	144	990	139.9
<b>45-54</b>	863	98.9	981	111.2	908	103.4	938	107.4	958	111
<b>55-64</b>	304	48.3	321	49.2	299	44.5	339	48.4	355	48.5
<b>65-74</b>	84	22.9	73	19.1	98	25	109	27.2	88	21.4
<b>75-84</b>	45	17.4	43	16.8	43	16.7	53	20.5	51	19.7
<b>85+</b>	18	15.5*	23	19.5	12	10.4*	20	16.9	14	11.5*

\*Rates based on less than 20 cases are unstable and should be used and interpreted with caution.

Table 5. Emergency department visits due to self-inflicted injury, by age, Wisconsin, 2007-2011.

	Year									
	2007		2008		2009		2010		2011	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
<b>10-14</b>	162	43.6	199	54.5	184	51.2	177	47.1	196	52.4
<b>15-24</b>	1114	139.6	1147	143.9	1137	137.7	1229	156.4	1287	163.9
<b>25-34</b>	546	76.1	555	76.6	549	77.3	547	75.8	579	79.3
<b>35-44</b>	379	47.6	366	47.3	344	46.2	342	47.1	316	44.6
<b>45-54</b>	209	23.9	234	26.5	240	27.3	243	27.8	243	28.2
<b>55-64</b>	46	7.3	60	9.2	68	10.1	61	8.7	72	9.8
<b>65-74</b>	13	3.5*	12	3.1*	19	4.8*	20	5	14	3.4*
<b>75-84</b>	X	1.5*	9	3.5*	8	3.1*	5	1.9*	5	1.9*
<b>85+</b>	6	5.2*	X	2.5*	X	1.73*	X	1.68*	X	1.64*

\*Rates based on less than 20 deaths are unstable and should be used and interpreted with caution. An X indicates a number less than 5 and is used to protect the privacy of the individuals.



Table 6. Suicides, by age, Wisconsin 2007-2011.

	Year					Age-Specific Rates
	2007	2008	2009	2010	2011	All Years
10-14	X	X	6	5	7	1.3
15-24	95	74	97	101	111	12.0
25-34	109	111	94	117	118	15.2
35-44	142	141	141	114	110	17.3
45-54	177	171	163	183	176	19.9
55-64	89	124	107	136	109	16.7
65-74	46	48	51	47	41	11.9
75-84	36	31	34	41	37	13.9
85+	10	14	17	19	14	12.5
<b>Total</b>	708	716	710	763	723	
<b>Age adjusted rate</b>	12.4	12.5	12.4	13.3	12.6	

An X indicates a number less than 5 and is used to protect the privacy of the individuals.

Table 7. Inpatient hospitalizations due to self-inflicted injury, by sex, Wisconsin 2007-2011.

	Year									
	2007		2008		2009		2010		2011	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
<b>Males</b>	2050	84.1	2135	87.1	2084	85.0	2042	83.3	2052	83.3
<b>Females</b>	3546	142.5	3662	146.4	3401	135.8	3307	131.8	3280	130.2

Table 8. Emergency department visits due to self-inflicted injury, by sex, Wisconsin 2007-2011.

	Year									
	2007		2008		2009		2010		2011	
	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
<b>Males</b>	976	40.0	1032	42.1	1055	43.1	1035	42.2	1114	45.2
<b>Females</b>	1503	60.4	1553	62.1	1496	59.7	1591	63.4	1600	63.5

Table 9. Suicides, by age and sex, Wisconsin 2007-2011.

	Year									
	2007		2008		2009		2010		2011	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
<b>10-14</b>	X	X	X	0	X	X	X	X	5	X
<b>15-24</b>	79	15	63	12	83	14	87	14	88	23
<b>25-34</b>	86	24	95	16	71	23	98	19	91	27
<b>35-44</b>	112	30	109	31	102	39	85	29	82	28
<b>45-54</b>	134	43	127	44	122	41	143	40	124	52
<b>55-64</b>	71	19	95	29	83	24	105	31	85	24
<b>65-74</b>	37	8	36	11	42	9	37	10	35	6
<b>75-84</b>	33	X	24	8	28	6	35	6	33	X
<b>85+</b>	7	X	12	X	15	X	17	X	12	X
<b>Total</b>	562	146	563	153	549	161	611	152	555	168

An X indicates a number less than 5 and is used to protect the privacy of the individuals.

Table 10. Suicides, by race and ethnicity, Wisconsin 2007-2011.

	Year					Rate
	2007	2008	2009	2010	2011	All Years
<b>Race</b>						
<b>White</b>	663	676	661	700	685	13.3
<b>Black</b>	22	22	37	32	19	6.8
<b>Asian / Pacific Islander</b>	11	6	8	20	11	8.1
<b>American Indian / Alaskan Native</b>	9	11	3	11	7	12.3
<b>Other</b>	X	X	X	0	X	X
<b>Unknown</b>	X	0	0	0	0	X
<b>Total</b>	708	716	710	763	723	12.8
<b>Ethnicity</b>						
<b>Hispanic</b>	13	17	16	12	18	4.7
<b>Non-Hispanic</b>	695	699	694	751	705	13.2
<b>Unknown</b>	0	0	0	0	0	X
<b>Total</b>	708	716	710	763	723	12.8

An X indicates a number less than 5 and is used to protect the privacy of the individuals.

Table 11. Inpatient hospitalizations for self-inflicted injury, by race and ethnicity, Wisconsin 2007-2011

Race	N, Year					Rate
	2007	2008	2009	2010	2011	All Years
White	4548	4758	4519	4380	4342	88.7
Black	352	361	313	383	390	92.8
Asian / Pacific Islander	46	52	40	36	47	32.0
American Indian / Alaskan Native	123	116	97	81	85	150.1
Other	164	161	178	168	149	-
Unknown	365	353	344	308	323	-
<b>Total</b>	<b>5598</b>	<b>5801</b>	<b>5491</b>	<b>5356</b>	<b>5336</b>	<b>97.2</b>
<b>Ethnicity</b>						
Hispanic	197	188	212	219	211	63.5
Non-Hispanic	4975	5201	4891	4798	4784	92.1
Unknown	426	412	388	339	341	-
<b>Total</b>	<b>5598</b>	<b>5801</b>	<b>5491</b>	<b>5356</b>	<b>5336</b>	<b>97.2</b>

Table 12. Suicides, by education level, Wisconsin 2007-2011.

	Year				
	2007	2008	2009	2010	2011
Less than high school	119	115	120	134	107
High school graduate	344	346	332	342	347
Post-secondary education or degree	209	207	217	248	236
Post-graduate education or degree	34	42	40	37	33
Unknown	X	6	X	X	0
<b>Total</b>	<b>708</b>	<b>716</b>	<b>710</b>	<b>763</b>	<b>723</b>

An X indicates a number less than 5 and is used to protect the privacy of the individuals.

Table 13. Suicides among people aged 15 and over, by marital status, Wisconsin 2007-2011.

	Year											
	2007		2008		2009		2010		2011		All Years	
Married	240	34.1%	245	34.3%	262	37.2%	273	36.0%	217	30.3%	1237	34.4%
Never Married	251	35.7%	254	35.6%	232	33.0%	272	35.9%	303	42.3%	1312	36.5%
Widowed	31	4.4%	44	6.2%	45	6.4%	44	5.8%	36	5.0%	200	5.6%
Divorced	181	25.7%	171	23.9%	165	23.4%	169	22.3%	160	22.3%	846	23.5%
Unknown	X	0.1%	0	0.0%	0	0.0%	0	0.0%	0	0.0%	X	0.0%
<b>Total</b>	<b>704</b>		<b>714</b>		<b>704</b>		<b>758</b>		<b>716</b>		<b>3596</b>	

An X indicates a number less than 5 and is used to protect the privacy of the individuals.

Table 14. Suicides, by veteran status, Wisconsin 2007-2011.

	Year				
	2007	2008	2009	2010	2011
<b>No</b>	579	577	570	594	599
<b>Yes</b>	127	131	134	168	120
<b>Unknown</b>	X	8	6	X	X
<b>Total</b>	708	716	710	763	723
<b>% of total who were veterans</b>	17.9%	18.3%	18.9%	22.0%	16.6%

An X indicates a number less than 5 and is used to protect the privacy of the individuals.

Table 15. Suicides, by method used, Wisconsin 2007-2011.

	Year									
	2007		2008		2009		2010		2011	
	Number	%	Number	%	Number	%	Number	%	Number	%
<b>Firearm</b>	327	46.2	333	46.5	329	46.3	311	40.8	343	47.4
<b>Sharp instrument</b>	13	1.8	24	3.4	11	1.5	17	2.2	11	1.5
<b>Poisoning</b>	148	20.9	158	22.1	149	21.0	126	16.5	124	17.2
<b>Hanging / Strangulation / Suffocation</b>	185	26.1	170	23.7	181	25.5	169	22.1	198	27.4
<b>Fall</b>	12	1.7	12	1.7	10	1.4	11	1.4	15	2.1
<b>Drowning</b>	11	1.6	5	0.7	11	1.5	11	1.4	8	1.1
<b>Fire or burns</b>	X	0.1	X	0.6	X	0.3	X	0.4	0	0.0
<b>Motor vehicle</b>	6	0.8	X	0.6	6	0.8	7	0.9	X	0.6
<b>Other transport vehicle</b>	X	0.4	X	0.4	X	0.3	5	0.7	14	1.9
<b>Other*</b>	X	0.3	X	0.4	0	0.0	X	0.1	X	0.6
<b>Unknown</b>	0	0.0	0	0.0	9	1.3	102	13.4	X	0.3
<b>Total</b>	708		716		710		763		723	

\*Other includes non-powder gun, explosive, and blunt instrument, and additional methods that do not fall within the categories outlined by WVDRS. An X indicates a number less than 5 and is used to protect the privacy of the individuals.

Table 16. Suicides, by sex and method used, Wisconsin 2007-2011.

	Year					
	2007-2011					
	Males		Females		Overall	
	Number	Percent	Number	Percent	Number	Percent
<b>Firearm</b>	1459	51.4%	184	23.6%	1643	45.4%
<b>Sharp instrument</b>	59	2.1%	17	2.2%	76	2.1%
<b>Poisoning</b>	382	13.4%	323	41.4%	705	19.5%
<b>Hanging / Strangulation / Suffocation</b>	712	25.1%	191	24.5%	903	24.9%
<b>Fall</b>	45	1.6%	15	1.9%	60	1.7%
<b>Drowning</b>	31	1.1%	15	1.9%	46	1.3%
<b>Fire or burns</b>	8	0.3%	X	0.3%	10	0.3%
<b>Motor vehicle</b>	23	0.8%	X	0.5%	27	0.7%
<b>Other transport vehicle</b>	19	0.7%	8	1.0%	27	0.7%
<b>Other*</b>	9	0.3%	X	0.1%	10	0.3%
<b>Missing</b>	93	3.3%	20	2.6%	113	3.1%
<b>Total</b>	2840		780		3620	100.0%

An X indicates a number less than 5 and is used to protect the privacy of the individuals.

Table 17. Inpatient hospitalizations for self-inflicted injury, by sex and method used, Wisconsin 2007-2011.

	Year			
	2007-2011			
	Males		Females	
	Number	Percent	Number	Percent
Firearm	161	1.6%	30	0.2%
Sharp instrument	1759	16.9%	2732	15.9%
Poisoning	7304	70.4%	13453	78.2%
Hanging / Strangulation / Suffocation	256	2.5%	129	0.7%
Fall	74	0.7%	33	0.2%
Drowning	6	0.1%	6	0.0%
Fire or burns	66	0.6%	112	0.7%
Motor vehicle	47	0.5%	19	0.1%
Other / Unspecified	706	6.8%	689	4.0%
<b>Total</b>	10379		17203	

Table 18. Emergency department visits for self-inflicted injury, by sex and method used, Wisconsin 2007-2011.

	Year			
	2007-2011			
	Males		Females	
	Number	Percent	Number	Percent
Firearm	20	0.4%	X	0.0%
Sharp instrument	1474	27.9%	2802	36.0%
Poisoning	2292	43.4%	4232	54.4%
Hanging / Strangulation / Suffocation	167	3.2%	65	0.8%
Fall	34	0.6%	19	0.2%
Drowning	X	0.0%	X	0.0%
Fire or burns	37	0.7%	40	0.5%
Motor vehicle	11	0.2%	X	0.1%
Other / Unspecified	1242	23.5%	609	7.8%
<b>Total</b>	5278		7775	

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Table 19. Suicides, by age and method used, Wisconsin 2007-2011.

	Year																	
	2007-2011																	
	10-14		15-24		25-34		35-44		45-54		55-64		65-74		75-84		85+	
N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	
<b>Firearm</b>	9	37.5	192	41.2	227	41.3	279	43.1	348	40.0	279	49.4	151	64.8	118	65.9	40	54.1
<b>Sharp instrument</b>	0	0.0	6	1.3	14	2.6	13	2.0	21	2.4	14	2.5	X	1.3	X	1.7	X	2.7
<b>Poisoning</b>	X	4.2	38	8.2	80	14.6	142	21.9	245	28.2	130	23.0	38	16.3	22	12.3	9	12.2
<b>Hanging / Strangulation / Suffocation</b>	12	50.0	192	41.2	189	34.4	169	26.1	182	20.9	96	17.0	26	11.2	21	11.7	16	21.6
<b>Fall</b>	X	4.2	13	2.8	10	1.8	10	1.5	16	1.8	7	1.2	X	0.4	X	0.6	X	1.4
<b>Drowning</b>	0	0.0	5	1.1	5	0.9	8	1.2	10	1.1	7	1.2	5	2.1	X	2.2	X	2.7
<b>Fire or burns</b>	0	0.0	X	0.9	X	0.4	0	0.0	X	0.5	0	0.0	0	0.0	0	0.0	0	0.0
<b>Motor vehicle</b>	0	0.0	8	1.7	X	0.5	X	0.6	6	0.7	X	0.5	X	0.9	X	0.6	0	0.0
<b>Other transport vehicle</b>	0	0.0	7	1.5	X	0.7	6	0.9	7	0.8	X	0.5	0	0.0	0	0.0	0	0.0
<b>Other / Unspecified</b>	X	4.2	13	2.8	15	2.7	17	2.6	31	3.6	26	4.6	7	3.0	9	5.0	X	5.4
<b>Total</b>	24		478		549		648		870		565		233		179		74	

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Table 20. Inpatient hospitalizations for self-inflicted injury, by age and method used, Wisconsin 2007-2011.

	Year																	
	2007-2011																	
	10-14		15-24		25-34		35-44		45-54		55-64		65-74		75-84		85+	
<b>Firearm</b>	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
	X	0.2	28	0.3	43	0.8	30	0.5	43	0.9	20	1.2	15	3.3	7	3.0	X	3.4
<b>Sharp instrument</b>	344	32.1	1859	22.5	895	15.8	672	12.2	468	10.1	140	8.7	62	13.7	35	14.9	13	14.9
<b>Poisoning</b>	592	55.2	5663	68.5	4305	75.8	4440	80.8	3852	82.9	1346	83.2	338	74.8	162	68.9	53	60.9
<b>Hanging / Strangulation / Suffocation</b>	33	3.1	126	1.5	80	1.4	67	1.2	40	0.9	16	1.0	9	2.0	7	3.0	X	4.6
<b>Fall</b>	X	0.2	29	0.4	25	0.4	26	0.5	15	0.3	X	0.2	X	0.4	X	1.3	X	1.1
<b>Drowning</b>	0	0.0	X	0.0	X	0.1	X	0.0	X	0.0	0	0.0	X	0.4	0	0.0	0	0.0
<b>Fire or burns</b>	8	0.7	49	0.6	44	0.8	41	0.7	34	0.7	X	0.2	0	0.0	0	0.0	0	0.0
<b>Motor vehicle</b>	0	0.0	21	0.3	19	0.3	13	0.2	11	0.2	X	0.1	0	0.0	0	0.0	X	1.1
<b>Other / Unspecified</b>	91	8.5	490	5.9	266	4.7	207	3.8	184	4.0	88	5.4	24	5.3	21	8.9	12	13.8
<b>Total</b>	1072		8269		5681		5497		4648		1618		452		235		87	

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Table 21. Emergency department visits for self-inflicted injury, by age and method used, Wisconsin 2007-2011.

	Year																	
	2007-2011																	
	10-14		15-24		25-34		35-44		45-54		55-64		65-74		75-84		85+	
N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%	
<b>Firearm</b>	X	0.1	5	0.1	X	0.1	X	0.2	X	0.3	X	1.0	0	0.0	X	3.2	X	6.7
<b>Sharp instrument</b>	344	37.5	1997	33.8	982	35.4	525	30.1	319	27.3	68	22.1	22	28.2	6	19.4	X	20.0
<b>Poisoning</b>	422	46.0	2873	48.6	1293	46.6	956	54.7	691	59.1	205	66.8	41	52.6	12	38.7	X	13.3
<b>Hanging / Strangulation / Suffocation</b>	17	1.9	115	1.9	49	1.8	32	1.8	13	1.1	X	1.0	X	1.3	0	0.0	0	0.0
<b>Fall</b>	X	0.2	16	0.3	18	0.6	9	0.5	X	0.2	0	0.0	0	0.0	0	0.0	0	0.0
<b>Drowning</b>	0	0.0	X	0.0	0	0.0	0	0.0	X	0.1	0	0.0	0	0.0	0	0.0	0	0.0
<b>Fire or burns</b>	X	0.1	34	0.6	14	0.5	16	0.9	10	0.9	X	0.7	0	0.0	0	0.0	0	0.0
<b>Motor vehicle</b>	0	0.0	10	0.2	X	0.1	0	0.0	X	0.1	0	0.0	0	0.0	0	0.0	0	0.0
<b>Other / Unspecified</b>	131	14.3	863	14.6	412	14.8	205	11.7	128	10.9	26	8.5	14	17.9	12	38.7	9	60.0
<b>Total</b>	918		5914		2776		1747		1169		307		78		31		15	

An X indicates a number less than 5 and is used to protect the privacy of the individuals.

Table 22. Toxicology testing and results associated with suicides, Wisconsin 2007-2011.

	Number	Percent
<b>Alcohol</b>		
Tested, with results	2286	63%
Alcohol present in those tested	846	37%
Not tested or unknown	1334	37%
<b>Antidepressant</b>		
Tested, with results	1898	52%
Antidepressants present in those tested	606	32%
Not tested or unknown	1722	48%
<b>Amphetamines</b>		
Tested, with results	2236	62%
Amphetamines present in those tested	66	3%
Not tested or unknown	1384	38%
<b>Cocaine</b>		
Tested, with results	2236	62%
Cocaine present in those tested	115	5%
Not tested or unknown	1384	38%
<b>Marijuana</b>		
Tested, with results	2211	61%
Marijuana present in those tested	173	8%
Not tested or unknown	1409	39%
<b>Opiates</b>		
Tested, with results	2244	62%
Opiates present in those tested	427	19%
Not tested or unknown	1376	38%
<b>Other drugs</b>		
Tested, with results	2264	63%
Other drugs present in those tested	1126	50%
Not tested or unknown	1356	37%

Table 23. Circumstances\* associated with suicides, Wisconsin 2007-2011.

<b>Mental Health/Substance Abuse</b>	<b>Number</b>	<b>Percent</b>
Current depressed mood	2026	59.4%
Current mental health problem	1737	50.9%
Current mental health treatment	1472	43.1%
Ever had mental health treatment	1789	52.4%
Ever had alcohol problem	886	26.0%
Other substance problem	458	13.4%
<b>Interpersonal</b>		
Intimate partner problem	1202	35.2%
Other relationship problem	552	16.2%
Recent suicide of friend / family	94	2.8%
Other death of friend / family	271	7.9%
Perpetrator of violence in past month	62	1.8%
Victim of violence in past month	7	0.2%
<b>Life Stressor</b>		
Crisis during previous two weeks	1302	38.2%
Physical health problem	791	23.2%
Job problem	724	21.2%
Recent criminal legal problem	388	11.4%
Non-criminal legal problem	196	5.7%
School problem	59	1.7%
Eviction/Loss of home**	76	3.7%
Financial problem**	412	20.3%
<b>Suicide Event</b>		
Left a suicide note	1383	40.5%
Disclosed intent	1155	33.9%
Had history of suicide attempt(s)	831	24.4%

\*More than one circumstance may be selected for each death; therefore, total circumstances will not add up to decedent count for which circumstances were known.

\*\* "Eviction/Loss of home" and "Financial problem" circumstances only included data from 2009-2011.



# THE BURDEN OF SUICIDE IN WISCONSIN

2007–2011 | Released 2014

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