# THE TRUTH ABOUT SUICIDE & GUNS

Brady Center
To Prevent Gun Violence

# CONTENTS

# FOREWORD

There are 20,000 gun suicides in the United States every year, more than 50 every single day. That's more than half of all suicides and two-thirds of all gun deaths. These tragedies rarely make the news, or prompt action from our lawmakers, but they add up to a national tragedy of staggering proportions.

Fortunately, there are real actions we can take to dramatically reduce the number of gun suicides in our nation. One of the most significant things we can do is to stop making it so easy for so many people to take their own lives. This means not just thinking about the *why* people take their own lives, but also thinking about the *way*, which far too often is easy access to a gun.

The fact is, even more than depression or substance abuse, the strongest predictor of how likely a person is to die from suicide is a gun in the home. Research shows a gun in the home makes a suicide three times more likely. Every day too many parents, spouses, and others who make the decision to bring a gun into the home learn how tragic the consequences of that decision can be.

There are a few reasons why the presence of a gun in the home makes a suicide so much more likely. First is the surprising impulsivity of many suicide attempts. Too often we hear grieving family members talk about how they saw no warning signs, about a teenage son who took his own life after breaking up with his girlfriend or getting a bad grade, about a father who recently lost his job, about a life that was cut tragically short because a gun was available in a completely unforeseen moment of crisis.

Guns are also so much more lethal than other methods used in suicide attempts. Most people who survive a suicide attempt do not go on to die by suicide, but only one in 10 people who attempt suicide by gun get that second chance. Limiting easy access to a gun for someone who considers or even attempts suicide can literally be the difference between life and death.

I have met so many people whose lives have been torn apart by the tragedy of suicide, too many because they didn't understand the risks of keeping a gun in their homes. It is my sincere hope, by presenting the real facts and data around firearm suicide, this report will help show how we can all play a meaningful role in preventing future tragedies and keeping our loved ones safe.

Sincerely,

Dan Gross
President
Brady Center & Campaign to Prevent Gun Violence

“Every day too many parents... who make the decision to bring a gun into the home learn how tragic the consequences of that decision can be.”

# INTRODUCTION

Nearly two-thirds of the 32,000 gun deaths in the United States are suicides, according to the latest data from the Centers for Disease Control and Prevention (CDC). Firearm suicides outnumber firearm homicides nearly two to one. Indeed, far more Americans die by turning a gun on themselves than at the hands of others.

Firearms are the leading method of suicide, accounting for half of all suicide deaths. The reason is that guns are more lethal than other suicide methods. About 85 percent of suicide attempts with a gun are fatal, whereas only 2 percent of overdoses, the most widely used method in suicide attempts, end in death. Clearly, suicide method is a crucial factor in determining whether a suicide attempt will be fatal.

> "Cayman was a really, really happy kid. He wasn't being bullied at school. He had no real girl problems. He had a happy family. There were absolutely no warning signs. He got an e-mail about a homework assignment and probably 20 to 30 minutes later, my 13-year-old son took his life with a gun I hadn't thought about in years." —FARID, CAYMAN'S FATHER

Suicide attempts are often impulsive and triggered by an immediate crisis, such as the loss of a job or the breakup of a relationship. While most suicidal impulses are intense, they typically last only a short period of time. Intervention during this time of acute risk is critical. The vast majority—90 percent—of people who attempt suicide and survive do not go on to die by suicide. Suicide attempts with a gun, however, rarely afford a second chance. In addition to being highly lethal, firearms leave little opportunity for rescue or to halt mid-attempt. Limiting access to firearms increases the amount of time between a crisis and an individual's suicide attempt, giving the impulse an opportunity to pass.

Research shows there is a clear connection between firearms in the home and an increased risk of suicide. People who live in a home with a gun are three times more likely to die by suicide than those without access. Within the United States, suicide rates, both overall and by firearm, are higher in places where household firearm ownership is more common.

Firearms and suicide are inextricably linked, yet the two are rarely discussed in relation to each other. This report is an attempt to bridge that gap. It includes a synthesis of data and research from the CDC, academic journals, and a variety of other sources. A brief overview of the problem is given, followed by an examination of the relationship between firearm availability and suicide, a look at lethal means reduction as a strategy for suicide prevention, and finally, a discussion of several opportunities for prevention and promising practices.

The goals of the report are the following:

- Focusing much-needed attention on the problem of firearm suicide in the United States
- Increasing understanding of the strong link between firearms and suicide
- Heightening awareness of the increased risk for suicide associated with having a firearm in the home
- Raising awareness that suicide can be prevented
- Increasing awareness that limiting access to lethal suicide means, such as firearms and medications, can save lives

We hope our report provides an important first step forward in bringing these two issues together and improving understanding of how we can work together to solve them.

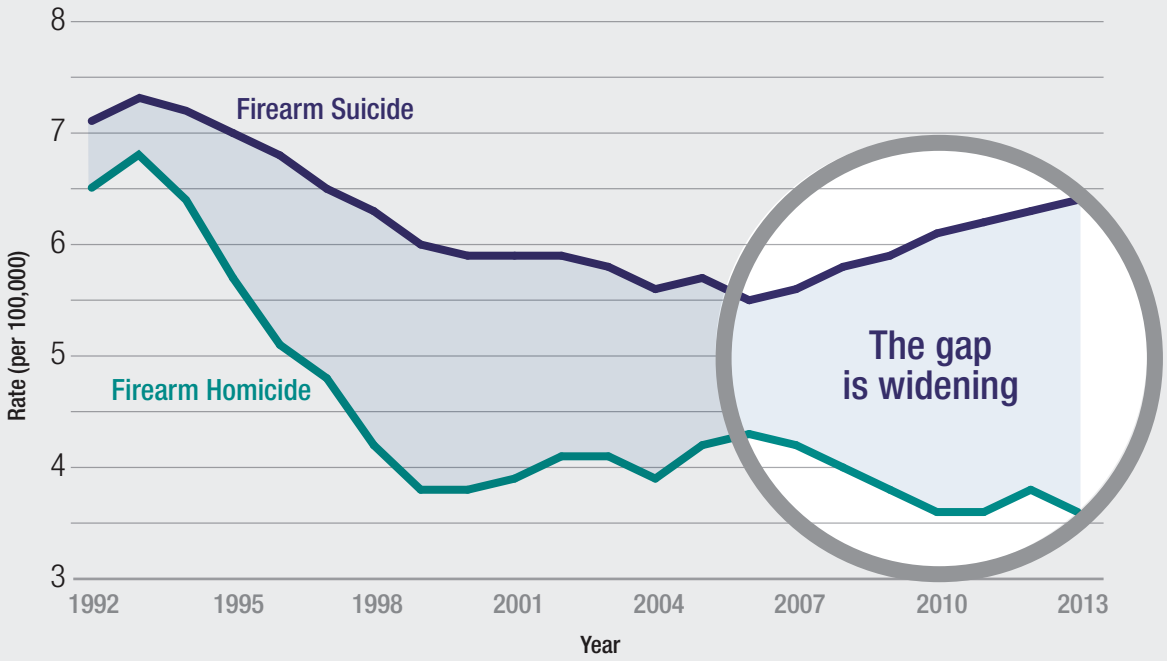
# GUN VIOLENCE IN THE UNITED STATES

Although our nation is making great strides on leading issues such as access to affordable health care, marriage equality, and fair wages, progress on reducing gun violence has been woefully inadequate. Firearm-related deaths and injuries continue at an intolerably high level. More than 32,000 Americans die from guns every year, a burden that has remained relatively unchanged for over a decade; that's nearly 90 people a day killed in homicides, suicides, and unintentional shootings.[1]

A closer examination of the causes of these deaths reveals some important trends. Over the past decade, the rate of firearm homicide has continued a steady decline. At the same time, the firearm suicide rate has begun rising, increasing more than 13 percent between 2007 and 2013. The combination of these two trends is keeping the overall gun death rate essentially stagnant.[2]

The number of suicides by firearm has exceeded the number of firearm homicides for at least the past 30 years. However, as illustrated in Figure 1, the gap is now widening. In 2006, 55 percent of firearm-related deaths were suicides; by 2013, suicides accounted for about two of every three gun deaths, the highest share since at least 1981.[3]

**Figure 1: Trends in Firearm-Related Death Rates 1992–2013***




*age-adjusted

Despite suicide being the leading cause of firearm-related death in the United States,[4] the subject has been largely absent from the national conversation on gun violence. This is hardly surprising given that high-profile tragedies like mass killings and school shootings tend to fuel public perceptions of gun violence. However, if we want to dramatically reduce the number of deaths caused by guns, we need to put as much focus on preventing firearm suicides as we do on firearm homicides.

**2013 is the most recent year for which data are available. Data were obtained from the CDC Web-based Injury Statistics Query and Reporting System, which lags two years behind the current year.*

# FIREARM SUICIDE IN THE UNITED STATES

Suicide is the 10th leading cause of death in the United States and second among adolescents and young adults aged 10 to 24 years. Each year, more than 39,000 people die by suicide in the United States, half (51 percent) by using a firearm.[5]

The risk of firearm suicide varies greatly by age, sex, and race. Rates increase significantly with age and are highest among adults age 70 and older; 74 percent of suicides among this age group involve firearms. However, nearly two-thirds (62 percent) of firearm suicide deaths are among people ages 55 and younger. Notably, although adolescents and young adults ages 10 to 24 years do not have the highest rates of suicide, the impact is high relative to other causes of death.[6] More young people die each year from suicide than from cancer, heart disease, AIDS, birth defects, strokes, pneumonia and influenza, and chronic lung diseases combined.[7] The majority of young people who die by suicide use a firearm (44 percent).[8]

Regardless of age or race, men have the highest rates of firearm suicide (Figure 2). Men account for 87 percent of all firearm suicide deaths and have a rate nearly seven times higher than that of women (11.21 and 1.61 per 100,000, respectively). As shown in Figure 2, gender difference is highest among the oldest age group, with men ages 65 and older 15 times more likely than their female counterparts to die by firearm suicide (24 and 1.6 per 100,000, respectively).[9]

Overall, whites have the highest rates of firearm suicide, followed by American Indians and Alaska Natives (7.03 and 4.37 per 100,000, respectively). However, some important exceptions exist. Among 15- to 19-year-olds and 20- to 24-year-olds, American Indians and Alaska Natives have the highest rates of firearm suicide. Even so, whites account for 93 percent of all firearm suicide deaths.[10]

## Figure 2: Firearm Suicide Rates by Age Group and Sex (5 year)*

# THE LINK BETWEEN SUICIDE AND GUNS

There is overwhelming evidence linking firearm availability and suicide risk.[11,12,13,14] More than a dozen U.S. case control studies, performed over the last 25 years, have examined this relationship. All of them reached the same conclusion: firearms in the home are associated with significantly higher rates of suicide.[15,16,17,18,19] Researchers retrospectively compared the presence of a firearm in the homes of suicide victims with that of demographically similar controls (individuals who did not die by suicide). They found that people who live in a home with a gun are much more likely to die by suicide than those without access.[20,21,22,23,24] A recent meta-analysis combined the results from 14 national and international studies, finding that access to firearms increases the risk of suicide more than three times.[25] An earlier review of the literature found that suicide risk increases between two- and tenfold for gun-owning households, depending on age and storage practices.[26]

> "When I arrived home from work that day, I found her in that big backyard. She looked like a pile of rags; she was wearing one shoe, her favorite jeans, and an old sweater. I remember the stillness and the smell of the blood. I called 911, but I knew it was too late. When they told me she had shot herself I could not believe it, there had to be a mistake. She did not know how to use a gun; it was locked away."
>
> —DENISE, EMILY'S MOTHER

These reviews revealed several other findings worth noting. First, the increased suicide risk was found to be present for all members of gun-owning households[27] and especially high for youth and individuals with no known psychiatric disorder.[28] Second, the higher rates of suicide among gun owners and their families cannot be explained by differences in mental illness or suicidality; gun owning households are no more likely to experience mental health problems than non-gun owning households.[29] Third, the presence of a gun in the home increases the likelihood of suicide, regardless of method of storage, type of gun, or number of guns in the home.[30] Finally, if a gun is not available in the home, it is rarely used as the method of suicide.[31]

Studies examining firearm ownership and suicide rates at the national, state, and regional levels provide further evidence of the firearm-suicide connection. They show that suicide rates, both overall and by firearm, are higher in areas where gun ownership is more widespread.[32,33,34] One study investigated the association between firearm prevalence and suicide at the state level using firearm ownership data from the Behavioral Risk Factor Surveillance System. The study found that states with the highest firearm prevalence had 1.9 times more suicide deaths and 3.8 times more firearm suicide deaths than states with the lowest firearm prevalence. This relationship persisted even after taking into account other factors that could influence suicide rates, such as mental illness, alcohol dependence or abuse, illicit substance dependence or abuse, unemployment, and poverty rates.[35]

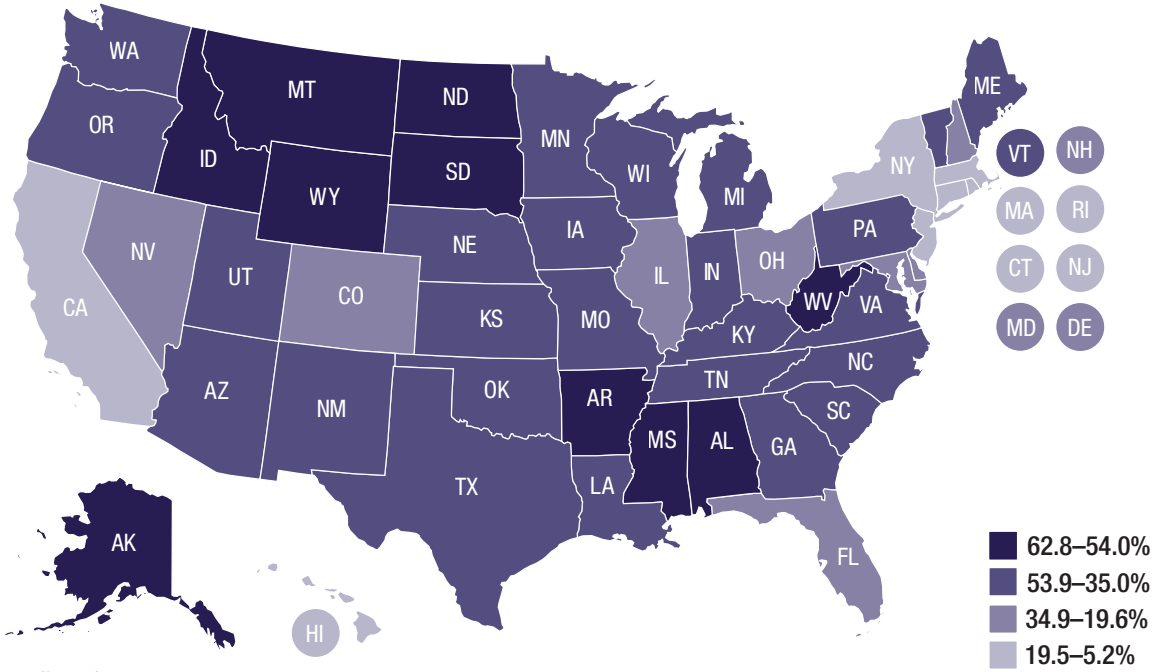
Looking at a map of the United States (Figure 3), we can see clear evidence of this relationship. Overall, states with high levels of firearm ownership tend to have high levels of suicide. ▶

Notably, the five states with the highest rates of firearm suicide all have adult firearm ownership rates 12 to 30 percentage points higher than the national average (32.6 percent).[36] Conversely, states that have the lowest firearm suicide rates report below-average adult firearm ownership.[37]

* * *

Three factors are at the root of the effect guns have on suicide deaths. First, the wide availability of firearms in the United States increases the likelihood that a suicide attempt will occur. Second is the high lethality of firearms, which means a suicidal person has less opportunity for survival and is less likely to be interrupted while attempting suicide. Finally, because most suicides are highly impulsive, the quick, easy, and destructive nature of firearm injury means those who decide to attempt suicide with a firearm in the midst of a crisis are less able to fully consider their decision and change their mind. ▶

## Figure 3: Statewide Gun Ownership and Firearm Suicide Rates*




*age-adjusted

### Highest Rates (5 year)

| | |
|---|---|
| Wyoming | 15.01 |
| Alaska | 13.94 |
| Montana | 13.87 |
| Idaho | 11.50 |
| Oklahoma | 10.56 |

### Lowest Rates (5 year)

| | |
|---|---|
| Connecticut | 2.73 |
| Hawaii | 2.54 |
| New York | 2.27 |
| New Jersey | 1.88 |
| Massachusetts | 1.72 |

## AVAILABILITY

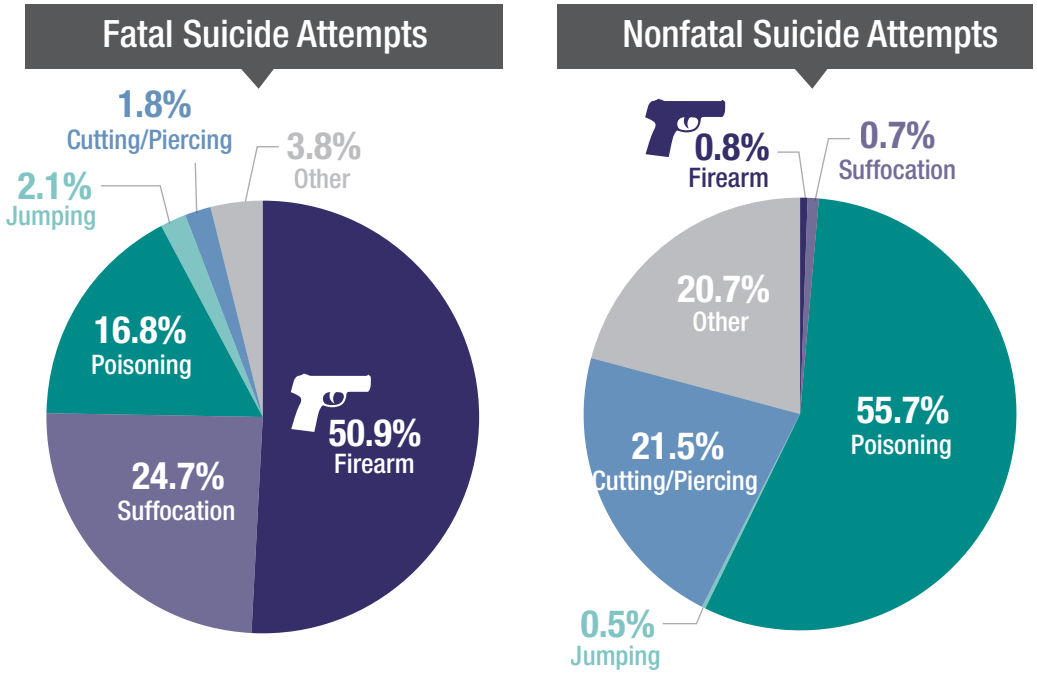
A number of factors can influence an individual's choice of suicide method. However, the ready availability of and the individual's familiarity with a suicide method have been shown to be particularly important factors in the decision.[38] In the United States, where guns are widely available, firearms are the most common suicide method.[39]

Firearm ownership is more prevalent in the United States than in any other country;[40] the number of privately owned firearms is estimated to be between 270 million and 310 million.[41] While there is no definitive data source because the government does not track gun ownership, social science surveys and numerous scholarly studies have added to our understanding of America's gun culture. By many measures, about one-third of American households own a firearm,[42,43,44] with gun ownership just as common in households with children as those without.[45,46] Twenty-two percent of adults report personally owning a gun;[47] the vast majority are white, male, and over the age of 50.[48]

Gun ownership differs substantially by region. Rates are high in the Midwest (27 percent) and South (29 percent), and relatively low in the Northeast (17 percent) and West (21 percent). Across the country, people living in rural areas are twice as likely to own guns as those in urban areas (39 percent and 18 percent, respectively).[49]

Surveys have found that storage practices vary among gun owners. A national study showed that fewer than half (39 percent) of households with children store their guns unloaded and locked, with ammunition stored separately.[50] A separate study estimated that nearly two million children live in homes that have unlocked and loaded firearms.[51] ▶

### Figure 4: Fatal and Nonfatal Suicide Attempts by Method (5 year)

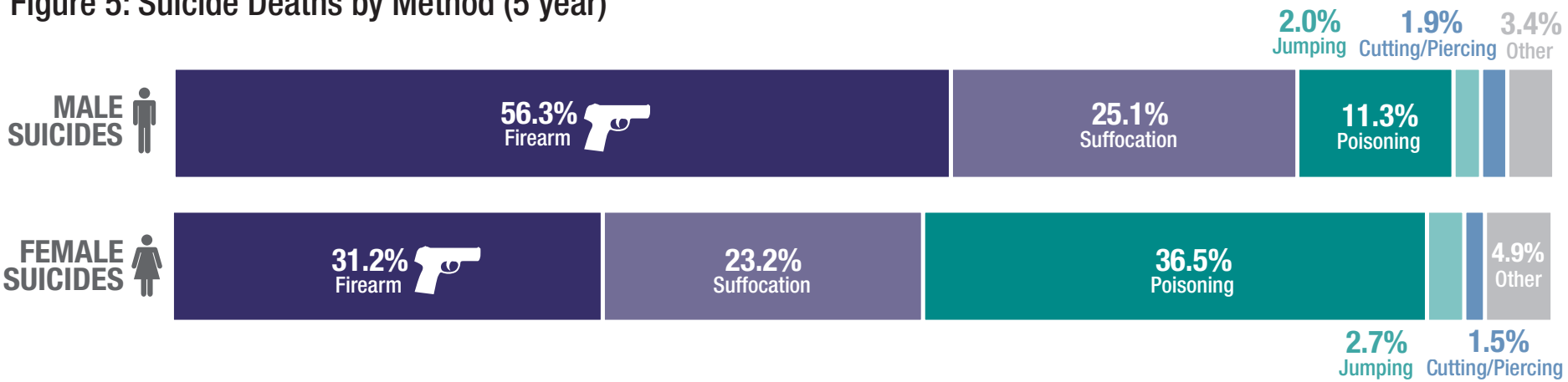


## LETHALITY

Compared with the other most commonly used suicide methods, firearm suicides are the most fatal. Firearms make death a much more likely result for a suicide attempt: 85 to 91 percent of firearm suicide attempts are fatal compared with 3 percent or less for some of the other most commonly used methods, such as overdosing and wrist cutting.[52,53] As presented in Figure 4, firearms are used in more than half of all suicides.[54] Suicide attempts involving guns are over 45 times more fatal than attempts involving overdosing, around 30 times more fatal than those involving cutting or stabbing, and almost three times more fatal than suicide attempts by jumping.[55] Moreover, unlike other methods, suicide with a firearm is easy and requires little planning. Individuals attempting suicide by this method do not have an opportunity to reconsider or halt mid-attempt.

Women attempt suicide up to three times more often than men[56] but have significantly lower rates of suicide death. Men are four times more likely than women to die by suicide. As Figure 5 shows, this result is obtained because guns are the suicide method of choice for men. In comparison, women are more likely to choose less lethal methods, such as pills.[57] ▶

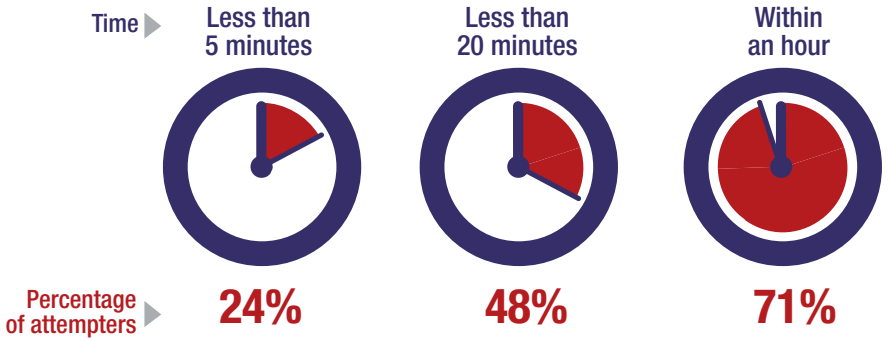
### Figure 5: Suicide Deaths by Method (5 year)



## IMPULSIVITY

Although some suicide attempts are carefully planned, many are impulsive. Various studies of survivors of suicide have calculated that as many as two-thirds of those who reported suicidal behavior did not plan their attempt.[58,59,60,61] Interviews with survivors of near-lethal suicide attempts revealed that a quarter made the attempt less than five minutes after making the decision. About half of those did so within 20 minutes, and three-quarters of suicide attempts occurred within an hour (Figure 6).[62] In a separate study, survivor interviews found that many made their attempt within 24 hours of a crisis,[63] particularly interpersonal crises[64] and physical fights.[65]

### Figure 6: Time Elapsed between Decision and Suicide Attempt



# LIMITING ACCESS TO LETHAL MEANS

The research presented thus far convincingly demonstrates that ready availability of a firearm increases the likelihood of suicide.[66,67,68] Given this stark connection, making firearms less available would seem to be a logical strategy for prevention. Since many suicides are impulsive, separating someone from the means to self-harm takes away their ability to act on what otherwise might have been a fleeting impulse.[69,70,71,72] Suicidal crises are often triggered by an immediate stressor, such as the loss of a job or the breakup of a relationship.[73,74,75] However, the urge to act is fairly short-lived, typically lasting a few minutes to a few hours.[76] That's why delaying access to a gun is critical; it allows time for the suicidal impulse to pass without being realized.

> "People have told us that if Arlyn had not taken the gun, she could have killed herself another way. That's possible. It's also possible that the delay as she looked for another way would have given her mind time to move out of the suicidal trance she was in at the moment. That lost opportunity took away our chance to help and save her."
>
> —KARYL, ARLYN'S MOTHER

Intervention during this time of acute risk is key to saving lives. Most people who attempt suicide don't really want to die, they are just so overwhelmed by their emotions they feel unable to cope.[77] Indeed, the vast majority of people who make it through a suicidal crisis do not go on to die by suicide. A systematic review of 70 studies following patients after a non-fatal attempt found that, on average, only 7 percent (range: 5 to 11 percent) eventually died by suicide, whereas 70 percent did not attempt again.[78]

A common misconception is that people who want to die will find a way to kill themselves, with or without a gun. However, studies suggest that the risk of method substitution is low. If a person's preferred suicide method is unavailable, it is unlikely they will switch to a different one.[79] Even if another method is used it is likely to be less lethal, thus increasing the odds of survival.[80]

**90%**

of people who attempt suicide and survive do not go on to die by suicide.

Reducing access to the methods people use to kill themselves can save lives. Research shows that making lethal suicide means less available or less deadly, leads to decreases in suicide rates by that method and, in some cases, lowers overall suicide rates as well.[81,82] Studies have documented substantial decreases in method-specific suicide rates following firearm regulation, detoxification of domestic gas, construction of barriers at jumping sites, mandatory use of catalytic converters in vehicles, modifications in drug packaging and toxicity, and restrictions on pesticides.[83] In fact, suicide rates have been shown to decrease by as much as 30 to 50 percent. Means reduction is more likely to impact overall ▶

suicide rates if the method is highly lethal and makes up a substantial portion of suicide deaths.[84]

One of the earliest examples comes from the detoxification of domestic gas in England and Wales in the 1960s and early 1970s. Researchers found that reductions in the carbon monoxide content of domestic gas were followed by dramatic decreases in suicides by that method, while overall suicide rates decreased by approximately one-third.[85,86]

In a systematic review of suicide interventions, an international panel of experts found that means reduction was one of only two approaches with proven effectiveness.[87] In the United States, the potential impact of means reduction is greatest for strategies involving firearms, which are the leading cause of suicide death.[88] Means reduction encompasses a broad range of interventions that can occur on a population or on an individual level. Population-based approaches include policies designed to regulate the distribution and safe storage of firearms. At the individual-level, means reduction is targeted at specific groups or individuals. Strategies can include health education and promotion in the form of mass media campaigns and individual counseling by healthcare providers.

Research has shown that reducing firearm availability can lead to reductions in firearm suicide rates.[89,90,91,92] In one study, researchers measured the impact of changes in household firearm ownership on suicide rates in the United States between 1981 and 2002. They found that each 10 percent reduction in firearm prevalence was associated with significant declines in rates of firearm suicide (4.2 percent) and overall suicide (2.5 percent). The effect was even greater among children ages 0 to 19.[93] A more recent study of suicide on college and university campuses between 2004 and 2009 revealed substantially lower suicide rates for students compared to all 20- to 24-year-olds. These differences were attributed to the ninefold decrease in firearm availability on campuses versus homes.[94]

Much of the available research on means reduction initiatives targeting firearms has focused on legislation. In 1976, legislation was passed regulating the purchase, sale, and possession of handguns in Washington,

## RISK FACTORS FOR SUICIDE

- Family history of suicide
- Family history of child maltreatment
- Previous suicide attempt(s)
- History of mental disorders, particularly clinical depression
- History of alcohol and substance abuse
- Feelings of hopelessness
- Impulsive or aggressive tendencies
- Cultural and religious beliefs
- Local epidemics of suicide
- Isolation, a feeling of being cut off from other people
- Barriers to accessing mental health treatment
- Loss (relational, social, work, or financial)
- Physical illness
- Easy access to lethal methods
- Unwillingness to seek help because of stigma

*Source:* U.S. Centers for Disease Control and Prevention, http://www.cdc.gov/violenceprevention/suicide/riskprotectivefactors.html

DC. Adoption of the law was associated with a prompt 23 percent decline in firearm suicide rates, with no corresponding changes in rates of non-firearm suicide. Moreover, no declines were seen in adjacent areas of Maryland or Virginia, where legislation had not been passed.[95] A decrease in suicide rates among persons 55 and older was seen following passage of the Brady Handgun Violence Prevention Act, which required purchasers to undergo a background check and, for a few years, specified a five-day waiting period for firearm purchases.[96] In a recently published study, researchers found lower rates of suicide by firearm, as well as lower overall suicide rates, in states with restrictive firearm laws (e.g., background checks on all gun sales, mandatory waiting periods, safe storage requirements) compared to those with few restrictions. Although this study yielded some preliminary findings, the analysis may be flawed because it only partially accounted for potential confounders.[97]

Limiting access to firearms has been shown to reduce suicide rates in many countries outside the U.S., including Australia,[98] Canada,[99] Israel,[100] and New Zealand.[101] A study of the Israeli Defense Forces found that a change in policy, requiring firearms to be stored on base while soldiers took their weekend leave, resulted in a 40 percent decrease in suicide. Much of this decrease could be attributed to the policy change since the weekday suicide rate did not change significantly.[102] Following a 1996 firearm massacre in which 35 people were killed, additional regulations were passed that made gun laws stronger and more uniform across Australia. The reforms included a ban on semi-automatic and pump-action rifles and shotguns, a national gun buyback program, registration of all guns, and background checks on all gun sales. Researchers found that the new gun laws accelerated the rate of decline for suicide by firearm, doubling it from 3 percent to 7.4 percent per year.[103]

Suicide is a complicated issue that requires a comprehensive approach. Most suicide prevention efforts focus on identifying those at risk and treating the underlying issues that lead to suicidal thoughts and behavior. However, the enormity of the problem and the complex interplay between risk factors make it difficult to predict who will actually attempt suicide and when. That's why it is so important that suicide prevention efforts focus not only on *why* people take their own lives, but the *ways* in which they attempt suicide as well.

# OPPORTUNITIES FOR PREVENTION

A broad consensus exists among leading public health experts that means reduction is an essential component of any comprehensive suicide prevention strategy. According to the World Health Organization's global report on suicide prevention, "Restriction of access to means plays an important role in suicide prevention, particularly in the case of suicides that are impulsive."[104] In the 2012 *National Strategy for Suicide Prevention*, a joint report issued by the U.S. Surgeon General and the National Action Alliance for Suicide Prevention, one of the 11 goals outlined was to "promote efforts to reduce access to lethal means of suicide among individuals with identified suicide risk."[105]

> "Almost 50 years ago, my father took his life by putting a gun to his head, leaving my mother to raise five children between 5 and 15 years of age. I was just 8 years old and, on that day, the world immediately became less safe to me. While he fought in Burma in World War II, my father didn't own a gun—that is, until he bought one for the purpose of ending his life."
>
> —DOROTHY, EDWIN'S DAUGHTER

Unfortunately, despite the potential of means reduction for saving lives and lowering suicide rates, it has been largely overlooked. The research literature has, however, identified several promising opportunities for intervention. Each of the following opportunities represents a unique avenue by which means reduction can have an immediate effect.

## PARENTS OF ADOLESCENTS AND YOUNG ADULTS

Suicide is the second leading cause of death for adolescents and young adults 10 to 24 years of age in the United States.[106] Firearms, used in 44 percent of cases, are the most common method of suicide for this age group.[107] Studies show that young people often have easy access to the guns they use to kill themselves.[108] In fact, compared to households with younger children, households with adolescents are more likely to store a firearm loaded and unlocked.[109] Most parents of adolescents believe their children are old enough to behave responsibly and to exercise good judgment around guns.[110] However, the vast majority (82 percent) of firearm suicides among adolescents involve a gun belonging to a family member; roughly 75 percent use a parent's gun.[111]

**82%**

of adolescent firearm suicides involve a gun belonging to a family member.

Considerable evidence links the presence of a firearm in the home with increased risk of adolescent suicide.[112,113,114,115] A review of data from case-control studies reveals that adolescents who died by suicide were four to five times more likely to have a gun in the home, even after adjusting for potentially confounding variables, such as previous mental health problems.[116] Although suicide and mental illness can be closely related, 40 percent of suicide completers under the age of 16 were found to have no known ▶

psychiatric disorder.[117] For young people without mental illness, a loaded gun in the home was found to increase suicide risk 32 times.[118] These data show that for many young people the availability of a gun in the home is the most significant predictor of suicide.[119]

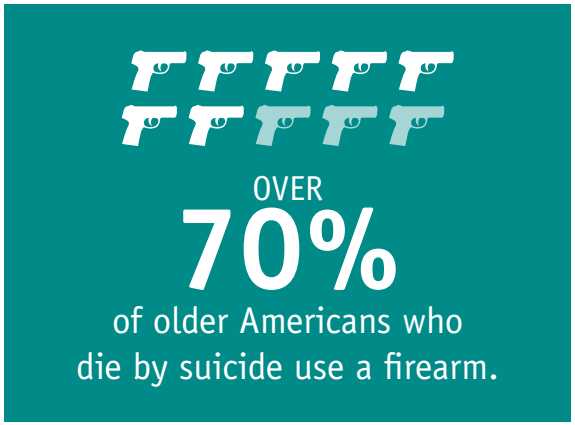
Educating parents about lethal means reduction should be an important part of any effort to prevent adolescent suicide. Many parents are unaware of the risks of having a gun in the home, particularly for older adolescents. Therefore, parents should be encouraged to store household firearms safely (locked and unloaded, with ammunition stored separately) or to remove them altogether. In one study, keeping guns locked and unloaded was found to have a protective effect, reducing odds of death by 73 percent and 70 percent, respectively.[120] However, removing firearms from the home is the most reliable and most effective way to prevent youth suicide.

Brady's Suicide-Proof Your Home campaign provides simple, practical steps that all parents can take to reduce a child's risk of suicide at home, such as removing or locking up firearms and medications. It builds on the familiar concept of childproofing, with the goal of showing parents that much as locking a cabinet can keep curious toddlers safe from harmful chemicals, locking a gun and securing ammunition separately can keep a troubled teen from making a deadly mistake.

Suicide-Proof Your Home was created through an innovative partnership with the Rhode Island Department of Health with funding from the Substance Abuse and Mental Health Services Administration's Garrett Lee Smith Youth Suicide Prevention and Early Intervention Program. An evaluation of the program's first two years revealed that 97 percent of parents believed the program's message was important. More than half of parents had already made changes or planned to make changes to suicide-proof their homes.[121]

## ELDERLY ADULTS AND THEIR CAREGIVERS

Americans 65 and older make up one of the largest percentage of firearm owners in the United States. Twenty-seven percent of Americans in this age group personally own a firearm[122] and more than 37 percent live in a home where firearms are present.[123] The high prevalence of gun ownership is of particular concern for older Americans since they are at increased risk for suicide and most likely to use a firearm to kill themselves. Over 70 percent of all older Americans who die by suicide use a firearm.[124]




Many older adults struggle with chronic health conditions that affect their quality of life. Decreased health and physical condition often leads to feelings of hopelessness, which can trigger suicidal behavior. Older Americans are much more likely than their younger counterparts to attempt suicide following the development of a physical health condition. However, those who die by firearm suicide ▶

are less likely to have attempted previously and are less likely to have a mental illness at the time of their death. This suggests that traditional mental health risk factors may play less of a role in suicides among older adults.[125]

Firearms pose a particular risk to older Americans whose mental clarity is often affected by the side effects of medication or dementia. In particular, Americans with dementia often experience confusion, anxiety, aggressiveness, and paranoia. Of those experiencing dementia, 40 to 60 percent live in a home with a firearm. These firearms are also less likely to be stored safely.[126,127]

Caregivers for older adults with dementia and chronic physical illness have a responsibility to ensure that they remain safe and should be aware of the risks posed by a firearm in the home. Impaired, gun owning seniors pose a risk to themselves and others in much the same way that elderly motorists do when they become unfit to drive. Just as concerned relatives often try to limit older adults' ability to drive, so should these caregivers discuss removing or safely storing firearms.[128] As the population of Americans over 65 grows, suicide among older adults will likely continue to be a serious concern.[129]

## HEALTH CARE PROVIDERS

Health care providers are in a unique position to reach people in crisis, particularly those at risk for suicide. Nearly half (45 percent) of people who died by suicide had contact with a primary care provider in the month before their death, and 77 percent had contact within a year.[130] Many people in crisis also seek care in hospital emergency departments. In fact, suicide attempts represent a growing proportion of emergency department visits.[131] In addition, a large number of patients who visit emergency rooms for reasons unrelated to mental health also suffer depression and have suicidal thoughts.[132]

However, emergency departments are often underused in suicide prevention. In a study of emergency nurses in Illinois, 80 percent reported a recent experience with a suicidal adolescent, yet only 28 percent had educated parents on limiting access to lethal means.[133]

**77%**

of people who die by suicide had contact with a primary care provider in the year before their death.

The fact that few emergency room providers counsel patients on lethal means reduction is undoubtedly related to the misconceptions many have about suicide. A survey of emergency room providers found that less than half believed suicide was preventable. Although over half of providers agreed that emergency room staff have a responsibility to counsel patients on reducing access to lethal means, only 81 percent of physicians and 67 percent of nurses reported they would counsel a patient on lethal means in cases where the patient had a suicide plan involving a firearm.[134]

Visits with health care providers represent critical opportunities to intervene before a suicide attempt. The 2012 *National Strategy for Suicide Prevention* recommends that ▶

providers routinely ask about the presence of lethal means (including firearms and medications) in the home and educate about ways to minimize associated risks.[135] Studies have shown that parents of at-risk youth seen in an emergency department were more likely to lock up firearms if they received counseling from a health care provider.[136,137]

## FIREARMS DEALERS AND FIRING RANGE OWNERS

Research has shown that the time immediately following a firearm purchase is a particularly high-risk period for suicide.[138] A study of handgun sales in California found that suicide was the leading cause of death for handgun purchasers in the year following purchase. In the first week after purchase, the firearm suicide rate among purchasers was 57 times higher than that of the general population.[139] This statistic plainly shows that some firearms are bought for the purpose of carrying out a suicide.

By intervening in sales where customers show signs of distress or crisis, firearms dealers and firing range owners can play a crucial role in preventing suicide. Recent purchases of handguns account for 10 percent of all suicides by firearm.[140] However, this figure does not take into account the full impact of a handgun purchase, which has been shown to nearly double the suicide risk for other members of the household.[141] Gun shops are in a unique position to educate gun owners on the risks of keeping guns in the home and the steps they can take to mitigate them.

A good example of this strategy is the Gun Shop Project, which works to engage gun retailers, range owners, and firearms instructors on the role they can play in preventing suicide. This includes providing guidelines for employees on how to avoid sales to a suicidal customer. Retailers are also encouraged to display suicide prevention materials that educate customers on how to make firearms inaccessible if a friend or family member is in crisis.

The work is guided by the New Hampshire Firearm Safety Coalition and has inspired similar efforts in a number of states, including California, Nevada, Tennessee, and Vermont. An evaluation of the project found that nearly half (48 percent) of gun retailers had at least one campaign product on display six months after materials were distributed.[142]

# CONCLUSION

Nearly 20,000 of the 30,000 firearm deaths each year in the United States are suicides. Half of all suicides use a gun. The national firearm suicide rate has climbed by 13 percent since 2007 and suicide is the second leading cause of death for adolescents and young adults. Now, more than ever, we have an opportunity to come together and confront the widespread and pervasive gun violence that is destroying families and communities across the country. However, we cannot make meaningful progress in reducing gun violence if suicide is not a significant focus of prevention efforts and if the link between guns and suicide is not addressed.

The good news is there are clear steps we can take to significantly improve the above statistics. Progress made on other public health issues has required sustained, comprehensive efforts. Like the reduction of smoking, motor vehicle deaths, and unintentional poisoning, we can have a dramatic effect on firearm suicide by employing a multifaceted approach in collaboration with diverse, committed partners. Applying this same focus and determination to reducing deaths caused by guns is critical and possible. We recommend the following steps:

## EXPAND EFFORTS TO EDUCATE THE PUBLIC

Americans believe a gun in the home makes them safer. This belief is contrary to evidence that demonstrates a gun in the home is more likely to harm a member of the household than be used to stop or prevent a crime. Education efforts focused on overcoming the established myth by providing credible information to families could dramatically improve safety.

## IMPROVE DATA AND GROW EVIDENCE BASE

Our ability to effectively prevent gun violence depends on our understanding of how and why it occurs, as well as what interventions work, for whom, and in what circumstances. Well-designed interventions can make a difference in reducing gun violence. However, we need to base our policy efforts on the best available evidence to achieve large-scale and lasting change.

Although available research clearly demonstrates access to a gun increases risk for suicide, researchers are hampered by significant limitations on how gun-related information is collected and analyzed. A critical need exists for timely, accurate data about firearm deaths and injuries.

## BUILD INNOVATIVE PARTNERSHIPS

Firearm-related suicide is too big a problem to be left to public health experts alone. Instead, it requires collaborating strategically across a wide range of public and private fields and aligning prevention of firearm suicide with a broader agenda. Schools, law enforcement personnel, and primary care providers are all potential partners in preventing firearm suicides, among many others.

We must bring a sense of focus and renewed urgency to this issue. Long-term commitments to supply the necessary support and resources are imperative to bringing about real change and dramatically reducing gun deaths and injuries.

* * *

The challenges facing us are not insurmountable. Suicide must be included in the gun violence prevention discourse, as must education on the tripartite roles of impulsivity, lethality, and availability in suicide. We owe it to current and future Americans to urgently address—and ultimately reverse—the current upward trend in suicide deaths. The best news is that this is achievable, and the above are our marching orders.

# APPENDIX

## Firearm Suicide Deaths and Rates, 2009–2013, with Percent of Adults with Household Firearm Ownership

| State | Percent of Adults with Household Firearm | Number of Firearm Suicide Deaths | Age-Adjusted Rate (per 100,000 population) | Percent of Firearm Deaths Due to Suicide |
|---|---|---|---|---|
| Alabama | 57.2 | 2,389 | 9.52 | 58.4 |
| Alaska | 60.6 | 503 | 13.94 | 77.4 |
| Arizona | 36.2 | 3,217 | 9.68 | 69.4 |
| Arkansas | 58.3 | 1,479 | 9.89 | 63.3 |
| California | 19.5 | 7,695 | 4.01 | 50.9 |
| Colorado | 34.5 | 2,346 | 8.88 | 78.1 |
| Connecticut | 16.2 | 517 | 2.73 | 52.8 |
| Delaware | 26.7 | 233 | 4.92 | 53.3 |
| District of Columbia | 5.2 | 41 | 1.29 | 9.4 |
| Florida | 26.0 | 7,532 | 7.04 | 63.4 |
| Georgia | 41.0 | 3,700 | 7.53 | 59.2 |
| Hawaii | 9.7 | 186 | 2.54 | 80.9 |
| Idaho | 56.8 | 901 | 11.50 | 88.3 |
| Illinois | 19.7 | 2,291 | 3.42 | 41.4 |
| Indiana | 39.0 | 2,360 | 7.07 | 63.1 |
| Iowa | 44.0 | 918 | 5.83 | 83.8 |
| Kansas | 43.7 | 1,181 | 8.07 | 72.0 |
| Kentucky | 48.0 | 2,182 | 9.63 | 72.5 |
| Louisiana | 45.6 | 1,873 | 8.14 | 43.9 |
| Maine | 41.1 | 563 | 7.72 | 85.4 |
| Maryland | 22.1 | 1,245 | 4.07 | 43.9 |
| Massachusetts | 12.8 | 606 | 1.72 | 51.5 |
| Michigan | 40.3 | 3,092 | 5.98 | 53.9 |
| Minnesota | 44.7 | 1,532 | 5.55 | 80.4 |
| Mississippi | 54.3 | 1,368 | 9.15 | 53.6 |
| Missouri | 45.4 | 2,575 | 8.25 | 60.1 |
| Montana | 61.4 | 729 | 13.87 | 86.8 |
| Nebraska | 42.1 | 536 | 5.73 | 68.7 |
| Nevada | 31.5 | 1,422 | 10.12 | 73.6 |
| New Hampshire | 30.5 | 438 | 6.00 | 86.1 |
| New Jersey | 11.3 | 895 | 1.88 | 38.9 |
| New Mexico | 39.6 | 1,069 | 10.11 | 68.7 |
| New York | 18.1 | 2,367 | 2.27 | 49.3 |
| North Carolina | 40.8 | 3,593 | 7.16 | 62.1 |
| North Dakota | 54.3 | 296 | 8.48 | 86.0 |
| Ohio | 32.1 | 3,624 | 5.98 | 61.2 |
| Oklahoma | 44.6 | 2,023 | 10.56 | 68.6 |
| Oregon | 39.8 | 1,820 | 8.82 | 82.7 |
| Pennsylvania | 36.5 | 4,207 | 6.14 | 60.1 |
| Rhode Island | 13.3 | 150 | 2.78 | 63.6 |
| South Carolina | 45.0 | 2,098 | 8.51 | 60.4 |
| South Dakota | 59.9 | 333 | 8.05 | 86.5 |
| Tennessee | 46.4 | 3,052 | 9.10 | 62.7 |
| Texas | 35.9 | 8,493 | 6.79 | 62.8 |
| Utah | 45.3 | 1,338 | 10.42 | 86.6 |
| Vermont | 45.5 | 304 | 8.93 | 92.4 |
| Virginia | 35.9 | 2,895 | 6.89 | 67.6 |
| Washington | 36.2 | 2,441 | 6.88 | 77.0 |
| West Virginia | 57.9 | 1,011 | 10.23 | 74.3 |
| Wisconsin | 44.3 | 1,859 | 6.25 | 75.7 |
| Wyoming | 62.8 | 440 | 15.01 | 87.5 |

# ENDNOTES


[1] Centers for Disease Control and Prevention. (2015). National Centers for Injury Prevention and Control, Web-based Injury Statistics Query and Reporting System (WISQARS). Retrieved from http://www.cdc.gov/injury/wisqars/index.html

[2] Centers for Disease Control and Prevention. (2015). National Centers for Injury Prevention and Control, Web-based Injury Statistics Query and Reporting System (WISQARS). Retrieved from http://www.cdc.gov/injury/wisqars/index.html

[3] Centers for Disease Control and Prevention. (2015). National Centers for Injury Prevention and Control, Web-based Injury Statistics Query and Reporting System (WISQARS). Retrieved from http://www.cdc.gov/injury/wisqars/index.html

[4] Centers for Disease Control and Prevention. (2015). National Centers for Injury Prevention and Control, Web-based Injury Statistics Query and Reporting System (WISQARS). Retrieved from http://www.cdc.gov/injury/wisqars/index.html

[5] Centers for Disease Control and Prevention. (2015). National Centers for Injury Prevention and Control, Web-based Injury Statistics Query and Reporting System (WISQARS). Retrieved from http://www.cdc.gov/injury/wisqars/index.html

[6] Centers for Disease Control and Prevention. (2015). National Centers for Injury Prevention and Control, Web-based Injury Statistics Query and Reporting System (WISQARS). Retrieved from http://www.cdc.gov/injury/wisqars/index.html

[7] Centers for Disease Control and Prevention. (2015). National Centers for Injury Prevention and Control, Web-based Injury Statistics Query and Reporting System (WISQARS). Retrieved from http://www.cdc.gov/injury/wisqars/index.html

[8] Centers for Disease Control and Prevention. (2015). National Centers for Injury Prevention and Control, Web-based Injury Statistics Query and Reporting System (WISQARS). Retrieved from http://www.cdc.gov/injury/wisqars/index.html

[9] Centers for Disease Control and Prevention. (2015). National Centers for Injury Prevention and Control, Web-based Injury Statistics Query and Reporting System (WISQARS). Retrieved from http://www.cdc.gov/injury/wisqars/index.html

[10] Centers for Disease Control and Prevention. (2015). National Centers for Injury Prevention and Control, Web-based Injury Statistics Query and Reporting System (WISQARS). Retrieved from *http://www.cdc.gov/injury/wisqars/index.html*

[11] Brent, D. A., & Bridge, J. (2003). Firearms availability and suicide: Evidence, interventions, and future directions. *The American Behavioral Scientist*, *46*(9), 1192–1210.

[12] Miller, M., & Hemenway, D. (1999). The relationship between firearms and suicide: A review of the literature. *Aggression and Violent Behavior*, *4*(1), 59–75.

[13] Miller, M., Azrael, D., & Barber, C. (2012). Suicide mortality in the United States: The importance of attending to method in understanding population-level disparities in the burden of suicide. *The Annual Review of Public Health*, *33*(1), 393–408.

[14] Anglemyer, A., Horvath, T., & Rutherford, G. (2014). The accessibility of firearms and risk for suicide and homicide victimization among household members: A systematic review and meta-analysis. *Annals of Internal Medicine*, *160*(2), 101–110.

[15] Brent, D. A., & Bridge, J. (2003). Firearms availability and suicide: Evidence, interventions, and future directions. *The American Behavioral Scientist*, *46*(9), 1192–1210.

[16] Miller, M., & Hemenway, D. (1999). The relationship between firearms and suicide: A review of the literature. *Aggression and Violent Behavior*, *4*(1), 59–75.

[17] Miller, M., & Hemenway, D. (2008). Guns and suicide in the United States. *New England Journal of Medicine*, *359*(10), 989–991.

[18] Miller, M., Azrael, D., & Barber, C. (2012). Suicide mortality in the United States: The importance of attending to method in understanding population-level disparities in the burden of suicide. *The Annual Review of Public Health*, *33*(1), 393–408.

[19] Anglemyer, A., Horvath, T., & Rutherford, G. (2014). The accessibility of firearms and risk for suicide and homicide victimization among household members: A systematic review and meta-analysis. *Annals of Internal Medicine*, *160*(2), 101–110.

[20] Brent, D. A., & Bridge, J. (2003). Firearms availability and suicide: Evidence, interventions, and future directions. *The American Behavioral Scientist*, *46*(9), 1192–1210.

[21] Miller, M., & Hemenway, D. (1999). The relationship between firearms and suicide: A review of the literature. *Aggression and Violent Behavior*, *4*(1), 59–75.

[22] Miller, M., & Hemenway, D. (2008). Guns and suicide in the United States. *New England Journal of Medicine*, *359*(10), 989–991.

[23] Anglemyer, A., Horvath, T., & Rutherford, G. (2014). The accessibility of firearms and risk for suicide and homicide victimization among household members: A systematic review and meta-analysis. *Annals of Internal Medicine*, *160*(2), 101–110.

[24] Miller, M., & Hemenway, D. (2008). Guns and suicide in the United States. *New England Journal of Medicine*, *359*(10), 989–991.

[25] Anglemyer, A., Horvath, T., & Rutherford, G. (2014). The accessibility of firearms and risk for suicide and homicide victimization among household members: A systematic review and meta-analysis. *Annals of Internal Medicine*, *160*(2), 101–110.

[26] Miller, M., & Hemenway, D. (2008). Guns and suicide in the United States. *New England Journal of Medicine*, *359*(10), 989–991.

[27] Miller, M., & Hemenway, D. (2008). Guns and suicide in the United States. *New England Journal of Medicine*, *359*(10), 989–991.

[28] Brent, D. A., & Bridge, J. (2003). Firearms availability and suicide: Evidence, interventions, and future directions. *The American Behavioral Scientist*, *46*(9), 1192–1210.

[29] Miller, M., & Hemenway, D. (2008). Guns and suicide in the United States. *New England Journal of Medicine*, *359*(10), 989–991.

[30] Miller, M., Azrael, D., & Barber, C. (2012). Suicide mortality in the United States: The importance of attending to method in understanding population-level disparities in the burden of suicide. *The Annual Review of Public Health*, *33*(1), 393–408.

[31] Brent, D. A., Perper, J. A., Moritz, G. M., Baugher, M., Schweers, J., & Roth, C. (1993). Firearms and adolescent suicide: A community case-control study. *The American Journal of Diseases of Children*, *147*(10), 1066–1071.

[32] Miller, M., & Hemenway, D. (1999). The relationship between firearms and suicide: A review of the literature. *Aggression and Violent Behavior*, *4*(1), 59–75.

[33] Miller, M., & Hemenway, D. (2008). Guns and suicide in the United States. *New England Journal of Medicine*, *359*(10), 989–991.

[34] Miller, M., Lippmann, S., Azrael, D., & Hemenway, D. (2007). Household firearm ownership and rates of suicide across the 50 United States. *The Journal of Trauma Injury, Infection and Critical Care*, *62*(4), 1029–1035.

[35] Miller, M., Lippmann, S., Azrael, D., & Hemenway, D. (2007). Household firearm ownership and rates of suicide across the 50 United States. *The Journal of Trauma Injury, Infection and Critical Care*, *62*(4), 1029–1035.

[36] Okoro, C. A., Nelson, D. E., Mercy, J. A., Balluz, L. S., Crosby, A. E., & Mokdad, A. H. (2002). Prevalence of household firearms and firearm-storage practices in the 50 states and the District of Columbia: Findings from the Behavioral Risk Factor Surveillance System, 2002. *Pediatrics*, *116*(3), e370–e376.

[37] Centers for Disease Control and Prevention. (2015). National Centers for Injury Prevention and Control, Web-based Injury Statistics Query and Reporting System (WISQARS). Retrieved from http://www.cdc.gov/injury/wisqars/index.html

[38] Sarchiapone, M., Mandelli, L., Iosue, M., Andrisano, C., & Roy, A. (2011). Controlling access to suicide means. *International Journal of Environmental Research and Public Health*, *8*(12), 4550–4562.

[39] Centers for Disease Control and Prevention. (2015). National Centers for Injury Prevention and Control, Web-based Injury Statistics Query and Reporting System (WISQARS). Retrieved from http://www.cdc.gov/injury/wisqars/index.html

[40] Karp, A. (2011). *Estimating civilian owned firearms* (No. 9) (pp. 1–4). Geneva: Graduate Institute of International and Development Studies.

[41] DeSilver, D. (2013). *A minority of Americans own guns, but just how many is unclear*. Washington D.C.: Pew Research Center. Retrieved from http://www.pewresearch.org/fact-tank/2013/06/04/a-minority-of-americans-own-guns-but-just-how-many-is-unclear/

[42] Pew Research Center for the People and the Press. (2013). *Why own a gun? Protection is now top reason: Perspectives of gun owners, non-owners.* (pp. 1–23). Washington D.C. Retrieved from http://www.people-press.org/files/legacy-pdf/03-12-13%20Gun%20Ownership%20Release.pdf

[43] Smith, T. W., & Son, J. (2015). *Trends in gun ownership in the United States, 1972-2014* (pp. 1–9). NORC at the University of Chicago. Retrieved from http://www.norc.org/PDFs/GSS%20Reports/GSS_Trends%20in%20Gun%20Ownership_US_1972-2014.pdf

[44] Okoro, C. A., Nelson, D. E., Mercy, J. A., Balluz, L. S., Crosby, A. E., & Mokdad, A. H. (2002). Prevalence of household firearms and firearm-storage practices in the 50 states and the District of Columbia: Findings from the Behavioral Risk Factor Surveillance System, 2002. *Pediatrics*, *116*(3), e370–e376.

[45] Pew Research Center for the People and the Press. (2013). *Why own a gun? Protection is now top reason: Perspectives of gun owners, non-owners.* (pp. 1–23). Washington D.C. Retrieved from http://www.people-press.org/files/legacy-pdf/03-12-13%20Gun%20Ownership%20Release.pdf

[46] Schuster, M. A., Franke, T., Bastian, A. M., Sor, S., & Halfon, N. (2000). Firearm storage patterns in US homes with children. *American Journal of Public Health*, *90*(4), 588–594.

[47] Smith, T. W., & Son, J. (2015). *Trends in gun ownership in the United States, 1972-2014* (pp. 1–9). NORC at the University of Chicago. Retrieved from http://www.norc.org/PDFs/GSS%20Reports/GSS_Trends%20in%20Gun%20Ownership_US_1972-2014.pdf

[48] Pew Research Center for the People and the Press. (2013). *Why own a gun? Protection is now top reason: Perspectives of gun owners, non-owners.* (pp. 1–23). Washington D.C. Retrieved from http://www.people-press.org/files/legacy-pdf/03-12-13%20Gun%20Ownership%20Release.pdf

[49] Pew Research Center for the People and the Press. (2013). *Why own a gun? Protection is now top reason: Perspectives of gun owners, non-owners.* (pp. 1–23). Washington D.C. Retrieved from http://www.people-press.org/files/legacy-pdf/03-12-13%20Gun%20Ownership%20Release.pdf

[50] Schuster, M. A., Franke, T., Bastian, A. M., Sor, S., & Halfon, N. (2000). Firearm storage patterns in US homes with children. *American Journal of Public Health*, *90*(4), 588–594.

[51] Okoro, C. A., Nelson, D. E., Mercy, J. A., Balluz, L. S., Crosby, A. E., & Mokdad, A. H. (2002). Prevalence of household firearms and firearm-storage practices in the 50 states and the District of Columbia: Findings from the Behavioral Risk Factor Surveillance System, 2002. *Pediatrics*, *116*(3), e370–e376.

[52] Miller, M., Azrael, D., & Hemenway, D. (2004). The epidemiology of case fatality rates for suicide in the Northeast. *Annals of Emergency Medicine*, *43*(6), 723–730.

[53] Vyrostek, S. B., Annest, J. L., & Ryan, G. W. (2004). Surveillance for fatal and nonfatal injuries—United States, 2001. *Morbidity and Mortality Weekly Report*, *53*(SS07), 1–57.

[54] Centers for Disease Control and Prevention. (2015). National Centers for Injury Prevention and Control, Web-based Injury Statistics Query and Reporting System (WISQARS). Retrieved from http://www.cdc.gov/injury/wisqars/index.html

[55] Miller, M., Azrael, D., & Hemenway, D. (2004). The epidemiology of case fatality rates for suicide in the Northeast. *Annals of Emergency Medicine*, *43*(6), 723–730.

[56] Moscicki, E. K. (1994). Gender differences in completed and attempted suicides. *Annals of Epidemiology*, *4*(2), 152–158.

[57] Centers for Disease Control and Prevention. (2015). National Centers for Injury Prevention and Control, Web-based Injury Statistics Query and Reporting System (WISQARS). Retrieved from http://www.cdc.gov/injury/wisqars/index.html

[58] Kessler, R. C., Berglund, P., Borges, G., Nock, M., & Wang, P. S. (2005). Trends in suicide ideation, plans, gestures, and attempts in the United States, 1990-1992 to 2001-2003. *JAMA*, *293*(20), 2487–2495.

[59] Drum, D. J., Brownson, C., Denmark, A. B., & Smith, S. E. (2009). New data on the nature of suicidal crises in college students: Shifting the paradigm. *Professional Psychology: Research and Practice*, *40*(3), 213–222.

[60] Jeon, H. J., Lee, J.Y., Lee, Y. M., Hong, J. P., Won, S.H., Cho, S.J., … Cho, M. J. (2010). Unplanned versus planned suicide attempters, precipitants, methods, and an association with mental disorders in a Korea-based community sample. *Journal of Affective Disorders*, *127*(1-3), 274–280.

[61] Simon, T. R., Swann, A. C., Powell, K. E., Potter, L. B., Kresnow, M., & O'Carroll, P. W. (2001). Characteristics of impulsive suicide attempts and attempters. *Suicide and Life-Threatening Behavior*, *32*(1 Suppl), 49–59.

[62] Harvard T.H. Chan School of Public Health. (2015). Means Matter. Retrieved from http://www.hsph.harvard.edu/means-matter/means-matter/impulsivity/

[63] Peterson, L. G., Peterson, M., O'Shanick, G. J., & Swann, A. (1985). Self-inflicted gunshot wounds: Lethality of method versus intent. *American Journal of Psychiatry*, *142*(2), 228–231.

[64] de Moore, G., Plew, J., Bray, K., & Snars, J. (1994). Survivors of self-inflicted firearm injury. *Medical Journal of Australia*, *160*(7), 421–425.

[65] Simon, T. R., Swann, A. C., Powell, K. E., Potter, L. B., Kresnow, M., & O'Carroll, P. W. (2001). Characteristics of impulsive suicide attempts and attempters. *Suicide and Life-Threatening Behavior*, *32*(1 Suppl), 49–59.

[66] Brent, D. A., & Bridge, J. (2003). Firearms availability and suicide: Evidence, interventions, and future directions. *The American Behavioral Scientist*, *46*(9), 1192–1210.

[67] Miller, M., & Hemenway, D. (1999). The relationship between firearms and suicide: A review of the literature. *Aggression and Violent Behavior*, *4*(1), 59–75.

[68] Anglemyer, A., Horvath, T., & Rutherford, G. (2014). The accessibility of firearms and risk for suicide and homicide victimization among household members: A systematic review and meta-analysis. *Annals of Internal Medicine*, *160*(2), 101–110.

[69] Kessler, R. C., Berglund, P., Borges, G., Nock, M., & Wang, P. S. (2005). Trends in suicide ideation, plans, gestures, and attempts in the United States, 1990-1992 to 2001-2003. *JAMA*, *293*(20), 2487–2495.

[70] Drum, D. J., Brownson, C., Denmark, A. B., & Smith, S. E. (2009). New data on the nature of suicidal crises in college students: Shifting the paradigm. *Professional Psychology: Research and Practice*, *40*(3), 213–222.

[71] Jeon, H. J., Lee, J.Y., Lee, Y. M., Hong, J. P., Won, S.H., Cho, S.J., … Cho, M. J. (2010). Unplanned versus planned suicide attempters, precipitants, methods, and an association with mental disorders in a Korea-based community sample. *Journal of Affective Disorders*, *127*(1-3), 274–280.

[72] Simon, T. R., Swann, A. C., Powell, K. E., Potter, L. B., Kresnow, M., & O'Carroll, P. W. (2001). Characteristics of impulsive suicide attempts and attempters. *Suicide and Life-Threatening Behavior*, *32*(1 Suppl), 49–59.

[73] Peterson, L. G., Peterson, M., O'Shanick, G. J., & Swann, A. (1985). Self-inflicted gunshot wounds: Lethality of method versus intent. *American Journal of Psychiatry*, *142*(2), 228–231.

[74] de Moore, G., Plew, J., Bray, K., & Snars, J. (1994). Survivors of self-inflicted firearm injury. *Medical Journal of Australia*, *160*(7), 421–425.

[75] Simon, T. R., Swann, A. C., Powell, K. E., Potter, L. B., Kresnow, M., & O'Carroll, P. W. (2001). Characteristics of impulsive suicide attempts and attempters. *Suicide and Life-Threatening Behavior*, *32*(1 Suppl), 49–59.

[76] Masterson, J. F., & Klein, R. (2013). *Psychotherapy of the disorders of the self*. Taylor & Francis.

[77] American Foundation for Suicide Prevention. (2013, September 6). American Foundation for Suicide Prevention. Retrieved from https://www.afsp.org/news-events/in-the-news/understanding-suicide-myth-vs.-fact

[78] Owens, D., Horrocks, J., & House, A. (2002). Fatal and non-fatal repetition of self-harm. Systematic review. *British Journal of Psychiatry*, *181*(3), 193–199.

[79] Daigle, M. S. (2005). Suicide prevention through means restriction: Assessing the risk of substitution. A critical review and synthesis. *Accident Analysis and Prevention*, *37*(4), 625–632.

[80] Vyrostek, S. B., Annest, J. L., & Ryan, G. W. (2004). Surveillance for fatal and nonfatal injuries—United States, 2001. *Morbidity and Mortality Weekly Report*, *53*(SS07), 1–57.

[81] Barber, C., & Miller, M. (2014). Reducing a suicidal persons access to lethal means of suicide: A research agenda. *American Journal of Preventative Medicine*, *47*(3S2), S264–S272.

[82] Johnson, R., & Coyne-Beasley, T. (2009). Lethal means reduction: What have we learned? *Current Opinion in Pediatrics*, *21*(5), 635–640.

[83] Mann, J. J., Apter, A., Bertolote, J., Beautrais, A., Currier, D., Haas, A., … Hendin, H. (2005). Suicide prevention strategies: A systematic review. *JAMA*, *294*(16), 2064–2074.

[84] Barber, C., & Miller, M. (2014). Reducing a suicidal persons access to lethal means of suicide: A research agenda. *American Journal of Preventative Medicine*, *47*(3S2), S264–S272.

[85] Lester, D. (1990). The effects of detoxification of domestic gas on suicide in the United States. *American Journal of Public Health*, *80*(1), 80–81.

[86] Clarke, R. C., & Mayhew, P. (1988). The British gas suicide story and its criminological implications. *Crime and Justice*, *10*, 79–116.

[87] Mann, J. J., Apter, A., Bertolote, J., Beautrais, A., Currier, D., Haas, A., … Hendin, H. (2005). Suicide prevention strategies: A systematic review. *JAMA*, *294*(16), 2064–2074.

[88] Centers for Disease Control and Prevention. (2015). National Centers for Injury Prevention and Control, Web-based Injury Statistics Query and Reporting System (WISQARS). Retrieved from http://www.cdc.gov/injury/wisqars/index.html

[89] Barber, C., & Miller, M. (2014). Reducing a suicidal persons access to lethal means of suicide: A research agenda. *American Journal of Preventative Medicine*, *47*(3S2), S264–S272.

[90] Johnson, R., & Coyne-Beasley, T. (2009). Lethal means reduction: What have we learned? *Current Opinion in Pediatrics*, *21*(5), 635–640.

[91] Mann, J. J., Apter, A., Bertolote, J., Beautrais, A., Currier, D., Haas, A., … Hendin, H. (2005). Suicide prevention strategies: A systematic review. *JAMA*, *294*(16), 2064–2074.

[92] Sarchiapone, M., Mandelli, L., Iosue, M., Andrisano, C., & Roy, A. (2011). Controlling access to suicide means. *International Journal of Environmental Research and Public Health*, *8*(12), 4550–4562.

[93] Miller, M., Azrael, D., Hemenway, D., & Lippmann, S. (2006). The association between changes in household firearm ownership and rates of suicide in the United States, 1981–2002. *Injury Prevention*, *12*(3), 178–182.

[94] Schwartz, A. (2011). Rate, relative risk, and method of suicide by students at 4-year colleges and universities in the United States, 2004-2005 through 2008-2009. *Suicide and Life-Threatening Behavior*, *41*(4), 353–371.

[95] Loftin, C., McDowall, D., Wiersema, B., & Cottey, T. J. (1991). Effects of restrictive licensing of handguns on homicide and suicide in the District of Columbia. *New England Journal of Medicine*, *325*(23), 1615–1620.

[96] Ludwig, J., & Cook, P. J. (2000). Homicide and suicide rates associated with implementation of the Brady Handgun Violence Prevention Act. *JAMA*, *284*(5), 585–591.

[97] Anestis, M. D., & Anestis, J. C. (2015). Suicide rates and state laws regulating access and exposure to handguns. *American Journal of Public Health*, *Advance online publication*, e1–e10. http://DOI.org/0.2105/AJPH.2015.302753

[98] Chapman, S., Alpers, P., Agho, K., & Jones, M. (2006). Australia's 1996 gun law reforms: Faster falls in firearm deaths, firearm suicides, and a decade without mass shootings. *Injury Prevention*, *12*(6), 365–372.

[99] Bridges, F. (2004). Gun control law (Bill C-17), suicide, and homicide in Canada. *Psychological Reports*, *94*(3 Pt 1), 819–826.

[100] Lubin, G., Werbeloff, N., Halperin, D., Shmushkevitch, M., Weiser, M., & Knobler, H. Y. (2010). Decrease in suicide rates after a change of policy reducing access to firearms in adolescents: A naturalistic epidemiological study. *Suicide and Life-Threatening Behavior*, *40*(5), 421–424.

[101] Beautrais, A., Fergusson, D., & Horwood, L. (2006). Firearms legislation and reductions in firearm-related suicide deaths in New Zealand. *Australia and New Zealand Journal of Psychiatry*, *40*(3), 253–259.

[102] Lubin, G., Werbeloff, N., Halperin, D., Shmushkevitch, M., Weiser, M., & Knobler, H. Y. (2010). Decrease in suicide rates after a change of policy reducing access to firearms in adolescents: A naturalistic epidemiological study. *Suicide and Life-Threatening Behavior*, *40*(5), 421–424.

[103] Chapman, S., Alpers, P., Agho, K., & Jones, M. (2006). Australia's 1996 gun law reforms: Faster falls in firearm deaths, firearm suicides, and a decade without mass shootings. *Injury Prevention*, *12*(6), 365–372.

[104] The World Health Organization. (2014). *Preventing suicide: A global imperative* (pp. 1–88). Geneva: The World Health Organization.

[105] U.S. Department of Health and Human Services (HHS) Office of the Surgeon General and National Action Alliance for Suicide Prevention. (2012). *2012 National Strategy for Suicide Prevention: Goals and objectives for prevention*. Washington D.C.: HHS.

[106] Centers for Disease Control and Prevention. (2015). National Centers for Injury Prevention and Control, Web-based Injury Statistics Query and Reporting System (WISQARS). Retrieved from http://www.cdc.gov/injury/wisqars/index.html

[107] Centers for Disease Control and Prevention. (2015). National Centers for Injury Prevention and Control, Web-based Injury Statistics Query and Reporting System (WISQARS). Retrieved from http://www.cdc.gov/injury/wisqars/index.html

[108] Johnson, R., Barber, C., Azrael, D., Clark, D. E., & Hemenway, D. (2010). Who are the owners of firearms used in adolescent suicide? *Suicide and Life-Threatening Behavior*, *40*(6), 609–611.

[109] Johnson, R., Miller, M., Vriniotis, M., Azrael, D., & Hemenway, D. (2006). Are household firearms stored less safely in homes with adolescents?: Analysis of a national random sample of parents. *Archives of Pediatric Adolescent Medicine*, *160*(8), 788–792.

[110] Connor, S. M., & Wesolowski, K. L. (2003). "They're too smart for that": Predicting what children would do in the presence of guns. *Pediatrics*, *111*(2), e109–e114.

[111] Johnson, R., Barber, C., Azrael, D., Clark, D. E., & Hemenway, D. (2010). Who are the owners of firearms used in adolescent suicide? *Suicide and Life-Threatening Behavior*, *40*(6), 609–611.

[112] Brent, D. A., Perper, J. A., Allman, C. J., Moritz, G. M., Wartella, M. E., & Zelenak, J. P. (1991). The presence and accessibility of firearms in the homes of adolescent suicides: A case-control study. *JAMA*, *266*(21), 2989–2995.

[113] Brent, D. A., Perper, J. A., Moritz, G. M., Baugher, M., Schweers, J., & Roth, C. (1993). Firearms and adolescent suicide: A community case-control study. *The American Journal of Diseases of Children*, *147*(10), 1066–1071.

[114] Brent, D. A., Baugher, M., Bridge, J., Chen, T., & Chiappetta, L. (1999). Age- and sex-related risk factors for adolescent suicide. *Journal of the American Academy of Child Adolescent Psychiatry*, *38*(12), 1497–1505.

[115] Shah, S., Hoffman, R., Wake, L., & Marine, W. (2000). Adolescent suicide and household access to firearms in Colorado: Results of a case-control study. *Journal of Adolescent Health*, *26*(3), 157–163.

[116] Brent, D. A., & Bridge, J. (2003). Firearms availability and suicide: Evidence, interventions, and future directions. *The American Behavioral Scientist*, *46*(9), 1192–1210.

[117] Brent, D. A., Baugher, M., Bridge, J., Chen, T., & Chiappetta, L. (1999). Age- and sex-related risk factors for adolescent suicide. *Journal of the American Academy of Child Adolescent Psychiatry*, *38*(12), 1497–1505.

[118] Brent, D. A. (2001). Firearms and suicide. *Annals New York Academy of Sciences*, *932*(1), 225–240.

[119] Brent, D. A., Perper, J. A., Moritz, G. M., Baugher, M., Schweers, J., & Roth, C. (1993). Firearms and adolescent suicide: A community case-control study. *The American Journal of Diseases of Children*, *147*(10), 1066–1071.

[120] Grossman, D. C., Mueller, B. A., Riedy, C., Dowd, M. D., Villaveces, A., Prodzinski, J., … Harruff, R. (2005). Gun storage practices and risk of youth suicide and unintentional firearm injuries. *JAMA*, *293*(6), 707–714.

[121] Cote, D., Lintz, J., Perez, B., & Pearlman, D. (2012). *Suicide proofing your home: Lessons learned from Rhode Island means restriction media campaign*. Rhode Island Department of Health, Division of Community, Family Health, and Equity, Violence and Injury Prevention.

[122] Hepburn, L., Miller, M., & Hemenway, D. (2007). The US gun stock: Results from the 2004 national firearms survey. *Injury Prevention*, *13*(1), 15–19.

[123] Smith, T. W. (2001). *National Gun Policy Survey of the National Opinion Research Center: Research findings*. Chicago, IL: University of Chicago, National Opinion Research Center. Retrieved from http://www.norc.org/PDFs/publications/ SmithT_Nat_Gun_Policy_2001.pdf.

[124] Centers for Disease Control and Prevention. (2015). National Centers for Injury Prevention and Control, Web-based Injury Statistics Query and Reporting System (WISQARS). Retrieved from http://www.cdc.gov/injury/wisqars/index.html

[125] Mertens, B., & Sorenson, S. B. (2012). Current considerations about the elderly and firearms. *American Journal of Public Health*, *102*(3), 396–400.

[126] Greene, E., Bornstein, B., & Dietrich, H. (2007). Granny, (don't) get your gun: Competency issues in gun ownership by older adults. *Behavioral Sciences and the Law*, *25*(3), 405–423.

[127] Pinholt, E. M., Mitchell, J. D., Butler, J. H., & Kumar, H. (2014). "Is there a gun in the home?" Assessing the risks of gun ownership in older adults. *Journal of the American Geriatrics Society*, *62*(6), 1142–1146.

[128] Greene, E., Bornstein, B., & Dietrich, H. (2007). Granny, (don't) get your gun: Competency issues in gun ownership by older adults. *Behavioral Sciences and the Law*, *25*(3), 405–423.

[129] Mertens, B., & Sorenson, S. B. (2012). Current considerations about the elderly and firearms. *American Journal of Public Health*, *102*(3), 396–400.

[130] Luoma, J. B., Martin, C., & Pearson, J. L. (2002). Contact with mental health and primary care providers before suicide: A review of the evidence. *American Journal of Psychiatry*, *159*(6), 909–916.

[131] Ting, S. A., Sullivan, A. F., Boudreaux, E. D., Miller, I., & Camargo, C. A. (2012). Trends in US emergency department visits for attempted suicide and self-inflicted injury, 1993–2008. *General Hospital Psychiatry*, *34*(5), 557–565.

[132] Caterino, J. M., Sullivan, A. F., Betz, M. E., Espinola, J. A., Miller, I., Camargo, C. A., & Boudreaux, E. D. (2013). Evaluating current patterns of assessment for self-harm in emergency departments: A multicenter study. *Academy of Emergency Medicine*, *20*(8), 807–815.

[133] Grossman, J., Dontes, A., Kruesi, M. J. P., Pennington, J., & Fendrich, M. (2003). Emergency nurses' responses to a survey about means restriction: An adolescent suicide prevention strategy. *Journal of the American Psychiatric Nurses Association*, *9*(3), 77–85.

[134] Betz, M. E., Miller, M., Barber, C., Miller, I., Sullivan, A. F., Camargo, C. A., … ED-SAFE Investigators. (2013). Lethal means restriction for suicide prevention: Beliefs and behaviors of emergency department providers. *Depression and Anxiety*, *30*(10), 1013–1020.

[135] U.S. Department of Health and Human Services (HHS) Office of the Surgeon General and National Action Alliance for Suicide Prevention. (2012). *2012 National Strategy for Suicide Prevention: Goals and objectives for prevention*. Washington D.C.: HHS.

[136] McManus, B. L. (1997). Child and adolescent suicide attempts: an opportunity for emergency departments to provide injury prevention education. *American Journal of Emergency Medicine*, *15*(4), 357–360.

[137] Kruesi, M. J. P., Grossman, J., Pennington, J., Woodward, P. J., Duda, D., & Hirsch, J. G. (1999). Suicide and violence prevention: Parent education in the emergency department. *Journal of the American Academy of Child Adolescent Psychiatry*, *38*(3), 250–255.

[138] Wintemute, G. J., Parham, C., Beaumont, J. J., Wright, M., & Drake, C. (1999). Mortality among recent purchasers of handguns. *The New England Journal of Medicine*, *341*(21), 1583–1589.

[139] Wintemute, G. J., Parham, C., Beaumont, J. J., Wright, M., & Drake, C. (1999). Mortality among recent purchasers of handguns. *The New England Journal of Medicine*, *341*(21), 1583–1589.

[140] Wintemute, G. J., Parham, C., Beaumont, J. J., Wright, M., & Drake, C. (1999). Mortality among recent purchasers of handguns. *The New England Journal of Medicine*, *341*(21), 1583–1589.

[141] Cummings, P., Koepsell, T., Grossman, D. C., & Savarino, J. (1997). The association between the purchase of a hangun and homicide or suicide. *American Journal of Public Health*, *87*(6), 974–978.

[142] Vriniotis, M., Barber, C., Frank, E., & Demicco, F. (2015). A suicide prevention campaign for firearm dealers in New Hampshire. *Suicide and Life-Threatening Behavior*, *45*(2), 157–163.

## Endnotes for Figures

**Figure 1: "Trends in Firearm Related Death Rates 1992-2013"**

Centers for Disease Control and Prevention. (2015). National Centers for Injury Prevention and Control, Web-based Injury Statistics Query and Reporting System (WISQARS). Retrieved from http://www.cdc.gov/injury/wisqars/index.html

**Figure 2: "Firearm Suicide Rates* by Age Group and Sex, (5 year)"**

Centers for Disease Control and Prevention. (2015). National Centers for Injury Prevention and Control, Web-based Injury Statistics Query and Reporting System (WISQARS). Retrieved from http://www.cdc.gov/injury/wisqars/index.

**Figure 3: "State-wide Gun Ownership and Firearm Suicide"**

Okoro, C. A., Nelson, D. E., Mercy, J. A., Balluz, L. S., Crosby, A. E., & Mokdad, A. H. (2002). Prevalence of household firearms and firearm-storage practices in the 50 states and the District of Columbia: Findings from the Behavioral Risk Factor Surveillance System, 2002. *Pediatrics*, *116*(3), e370–e376.

Centers for Disease Control and Prevention. (2015). National Centers for Injury Prevention and Control, Web-based Injury Statistics Query and Reporting System (WISQARS). Retrieved from http://www.cdc.gov/injury/wisqars/index.html

**Figure 4: "Fatal and Nonfatal Suicide Attempts by Method, (5 year)"**

Centers for Disease Control and Prevention. (2015). National Centers for Injury Prevention and Control, Web-based Injury Statistics Query and Reporting System (WISQARS). Retrieved from http://www.cdc.gov/injury/wisqars/index.html

**Figure 5: "Suicide Deaths by Method and Sex, (5 year)"**

Centers for Disease Control and Prevention. (2015). National Centers for Injury Prevention and Control, Web-based Injury Statistics Query and Reporting System (WISQARS). Retrieved from http://www.cdc.gov/injury/wisqars/index.html

**Figure 6: "Time Elapsed between Decision and Suicide Attempt"**

Harvard TH Chan School of Public Health. (2015). Means Matter. Retrieved from http://www.hsph.harvard.edu/means-matter/means-matter/impulsivity/

## Endnotes for Appendix

Okoro, C. A., Nelson, D. E., Mercy, J. A., Balluz, L. S., Crosby, A. E., & Mokdad, A. H. (2002). Prevalence of household firearms and firearm-storage practices in the 50 states and the District of Columbia: Findings from the Behavioral Risk Factor Surveillance System, 2002. *Pediatrics*, *116*(3), e370–e376.

Centers for Disease Control and Prevention. (2015). National Centers for Injury Prevention and Control, Web-based Injury Statistics Query and Reporting System (WISQARS). Retrieved from http://www.cdc.gov/injury/wisqars/index.html

Brady Center

To Prevent Gun Violence

840 First Street, NE, Suite 400
Washington, DC 20002
www.bradycampaign.org
(202) 370-8100