



Suicide and Firearm Injury in Utah
Linking Data to Save Lives
Executive Summary

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Research Team

Catherine Barber, Deborah Azrael, John Berrigan, Matthew Miller, Morissa Sobelson, and David Hemenway (PI) of the Harvard T. H. Chan School of Public Health

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EXECUTIVE SUMMARY

Firearms are a valued part of the fabric of many homes in Utah. This report was assembled to provide legislators, firearm owners, suicide prevention and mental health advocates, health clinicians, and others with practical data on characteristics of incidents in which firearm use leads to death, particularly suicide. The purpose is to help stakeholders craft prevention strategies that are responsive to the local problem and that build on the strengths and values of the communities and individuals most affected by firearm suicides: gun owners and their families.

In 2016 the Utah State Legislature enacted HB 440, which instructs the Department of Human Services (DHS) to collect and analyze data for a Suicide Prevention and Gun Study. Utah had already established itself as a leader in bringing gun stakeholders into the conversation about suicide prevention and developing innovative outreach strategies. HB 440 has now established Utah as a leader in linking data from disparate data sources to best learn from yesterday's tragedies how to prevent tomorrow's.

Researchers at the Harvard T.H. Chan School of Public Health carried out the study under a contract with the DHS/s Division of Substance Abuse and Mental Health and with enormous assistance by a number of state agencies. The study linked data from Utah's Violent Death Reporting System to criminal background checks, concealed carry permit status, and hospital data to learn in greater depth about opportunities to prevent suicide overall and firearm suicide in particular. The study also examines BRFSS survey data on firearm ownership and storage in the state. All data provided to the study team were anonymous and contained no personal identifiers. Information about the datasets, data sharing agreements, and IRB approvals is in the Data Source section at the end. Main findings follow:

BASIC FATALITY DATA

- Suicides outnumber homicides 8-1 in Utah. Suicides have been rising since 2008.
- Suicide rates in Utah far exceed homicide rates in both metropolitan and rural counties. The homicide rate in the most *rural* counties is somewhat higher than in metro counties.
- 85% of firearm deaths in Utah were suicides 2006-2015.
- Firearms account for half of all suicides.
- Utah's suicide rate is higher than the nation's, but similar to its neighbors.
- Utah suicide rates were highest among white and American Indian males. Suicide rates were highest among middle-aged men and men over 75.
- The higher suicide rate in the most rural counties was driven by a higher firearm suicide rate among all ages and among youth.

FATAL AND NONFATAL SUICIDE ATTEMPTS

- Comparing suicide methods, firearms were the most lethal method of self-harm in Utah, with a Case Fatality Rate (CFR) of 87%. (CFR is the proportion of all acts—those treated in the hospital and those dying without hospital care—that are fatal.) Drug overdose and sharp instrument wounds were the least lethal, with a CFR of 2%.*

* We recommend that this be referred to simply as "low" and not by the actual number in media coverage and public forums. Separate research has indicated that people assume these methods are more lethal than they are; this miscalculation may in fact save some lives.

- The method-specific CFR varied by age and sex, with higher CFRs for any given method among males and older people. Even given differences by demographics, however, the largest difference in CFRs was by method.
- Method-specific CFRs were about the same in metropolitan and rural counties.
- Metropolitan counties had higher rates of suicide attempts. Rural counties had higher rates of suicide deaths. The higher rural death rate was driven by greater use of firearms in attempts, not by higher CFR or higher attempt rate.

Implications for Prevention

- Given the high CFR for firearms, if a proportion of Utahns who would otherwise attempt suicide with a firearm were prevented from using a gun, there would likely be fewer suicide deaths, *even* if those who attempted substituted another method. One way to achieve this is if loved ones of people at risk for suicide lock any household guns and hold onto the keys or store the guns away from home until the person recovers.

PREVIOUS HOSPITAL VISITS

- About half of people who took their lives were treated in a Utah hospital in the year before their death.
- Fewer of those decedents who used a gun vs. a non-gun method had a hospital visit at which a behavioral health problem was diagnosed (25% vs. 42%).
- 10% of decedents were treated for a suicide attempt or other intentional self-harm in the year before their death.
- People who died by guns were least likely (6%), and those by drugs were most likely (17%), to have been treated for self-harm in the year prior to their suicide death.
- Most (78%) previous self-harm was with drugs or sharp instruments, regardless of the method used in the fatal incident.

Implications for Prevention

- Hospitals are an important venue for prevention. However, focusing only on those in the hospital for a suicide attempt will miss 90% of suicides.
- Focusing on those who visit the hospital with a mental health or substance abuse issue could reach a third of would-be suicides. A message to convey is the potential safety advantage of storing guns away from home or otherwise inaccessibly to the patient until he or she recovers.
- With half of suicide decedents never seen in the hospital in the year before death, other healthcare organizations, places of worship, and community-based groups could extend this message outside the hospital.

TOXICOLOGIC FINDINGS & SUICIDE CIRCUMSTANCES (NVDRS)

- Alcohol was the drug that most frequently tested positive among people who died by suicide.
- Alcohol test positives were low among the oldest and youngest victims and 36% among those ages 20-59.
- Antidepressants (52%), opioids (48%), and benzodiazepines (40%) were the most common test positives for people who died by drug overdose.
- After mental health/substance abuse problems, relationship problems like break-ups were the most common circumstance preceding suicides by firearm and by suffocation (hanging, ligature, plastic bag).

- Arguments were noted as playing a precipitating role in a quarter of suicides. Among these, those involving a gun had a unique trait: one-in-three took place in the midst of the argument.
- People dying by firearms were less likely than those dying by other methods to have attempted suicide before but as likely to have disclosed their suicidal thoughts to someone.

Implications for Prevention

- Many decedents were not known to be in mental health care. Given the prominence of life crises preceding suicide, religious leaders, social services staff, divorce and defense attorneys, and others could educate those in crisis about 1) strategies for safely handling suicidal thoughts if they emerge and 2) advantages of storing guns away from home or inaccessibly until things improve.
- Suicides that occur during an argument indicate not all suicides are planned; lethal means counseling could occur with people at risk, not only with people who disclose suicide plans.
- 40% of decedents were reported to have been in behavioral healthcare. Care systems potentially could develop ways to flag those whose distress is not improving and find alternate strategies.
- Locking abuse-prone medicines (like opioids and benzodiazepines) and limiting other medications accessible at home to non-toxic quantities may help reduce harm from overdose.
- Resources to support and evaluate this work would need to be identified.

BACKGROUND CHECKS

- Most suicide decedents (about 87%) could have passed a background check for firearm possession on their day of death.
- 13% of suicide decedents—and 8% of those using a gun—would have been prohibited from possessing a firearm.
- Decedents who used a gun were more likely than those who used other methods to have been able to pass a background check at the time of their suicide.
- Most people who took their lives with a gun could have passed a background check, even if they had a drug or alcohol problem, criminal problem, or previous suicide attempts.

Implications for Prevention

- The implications of the public safety data for prevention are probably best discussed by a diverse group of policy makers, gun owners, suicide prevention experts, public safety personnel, suicide survivors, clinicians and others to think outside the box and find strategies that work reasonably for all stakeholders.
- Since most people who kill themselves would be able to pass a background check, friends and family play an important role in urging loved ones in crisis to store their guns away from home or otherwise inaccessibly until the situation improves.
- 23% of men who kill themselves with a gun were CFP holders. Utah recently began including a suicide module in CFP classes. Evaluating such efforts is important. If effective, expanding to other community venues – like gun shows, gun shops, PTA meetings, sportsmen clubs, etc., might help change social norms regarding keeping a gun from a loved one who is struggling in the same way the “friends don’t let friends drive drunk” has had some impact on drunk driving.

CONCEALED CARRY PERMIT STATUS

- One in four Utah men who took their lives with a firearm had a current or lapsed permit to carry a concealed firearm.
- Overall, Utahns with and without a current permit to carry a concealed firearm had similar suicide rates.
- Among males, 84% of decedents who were ever permit holders used a gun in their suicide.

Implications for Prevention

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YOUTH FIREARM SUICIDES

- 91% of firearm suicides among youth under 18 occurred at home.
- Most of the guns used in youth suicides belonged to the family (68%) or the youth (19%).
- Rifles and shotguns accounted for 62% of rural youths’ firearm suicides.
- Utah’s youth suicide rate is similar to its neighbors but significantly higher than the nation’s.

Implications for Prevention

- With parents/guardians having legal authority over nearly 9 out of 10 of the firearms used in suicides of youth under 18, parents are key to prevention.
- Urging parents to lock their guns may not entirely address the youth firearm suicide issue if their teenagers know where the keys are or indeed own a gun and control the keys. A more useful message may be to lock all guns and ensure children and teens don’t have access to the keys or combination. When a youth is struggling with a mental health or substance abuse problem or life crisis, storing guns away from home may be prudent.
- Parents may be unaware that youth can use long guns to take their lives.
- Some parents who do lock their guns may be unaware their child can defeat the lock.
- Clinicians, gun owners, and others could work together to develop messaging and storage options that are sensitive to local values and realities.

FIREARM OWNERSHIP & STORAGE (BRFSS)

- Nearly half of Utah households have firearms, with ownership highest in rural counties and in Tooele County, according to the BRFSS survey of Utah adults.
- 13% of households in the most rural counties have an unlocked and loaded firearm at home compared with 6% statewide.
- Heavier drinkers were more likely than others in Utah to report having guns at home. People with poorer mental health were about as likely as others to report having guns.
- Among married people with guns at home, a higher proportion of men (20%) than women (6%) report that at least one gun was both unlocked and loaded—suggesting that wives may not always know how their husbands actually store their guns.

Implications for Prevention

- Higher rates of unlocked, loaded guns in rural counties may help explain their higher suicide rates. Unlocked guns may also explain the higher % of gun suicides that occur in the midst of an argument.
- Utahns with poor mental health and those with potential drinking issues do not appear to be hearing the message—whether from loved ones, places of worship, clinicians, or firearm stakeholders—to store guns locked or away from home. Utahns from a variety of perspectives may consider working together to develop and evaluate strategies to convey this message.
- Clinicians who advise parents to store guns locked should be aware that if they're speaking with the non-gun owning parent, that parent might not actually know how the guns are stored.
- BRFSS data on gun storage patterns is a useful way to track changes in household ownership and storage over time and to measure whether changes are associated with changes in injury outcomes. Repeating this module every 3-5 years would assist in evaluating the impact of interventions.

HOMICIDE-SUICIDES

- On average, a homicide-suicide incident occurred every other month in Utah.
- Homicide-suicide victims were usually the intimate partner or family member of the perpetrator. There were no cases of a stranger-perpetrated homicide-suicide over the ten-year period studied (2006-2015).

HOMICIDES

- Homicides by strangers were infrequent in Utah, accounting for 6% of all homicides.
- Over three-quarters of child homicide victims (2011-2015) were killed by a family member, most often the parent or mother's boyfriend. No child homicides were listed as perpetrated by a stranger.
- Two-thirds of women under 65 were killed by a current or former intimate partner; 2% were killed by a stranger.
- When men were killed by a stranger or a person of undetermined relationship, typically the decedent was either criminally involved (e.g., drug dealer killed by customer), killed in a justifiable homicide, or killed during an escalating argument, often at a bar or party.
- Random attacks by a stranger or robbery homicides of non-criminally-involved people whether at home, at a place of business, or in public, occurred an estimated 3-4 times a year.

Implications for Prevention

- Homicides by a stranger are rare in Utah. When they do occur they are often precipitated in part by the victim's own criminal activity or by an escalating, mutual argument. Still, homicides of non-criminally involved victims, for example during a home invasion or store robbery, do occur an estimated 3-4 times a year.
- The relevance of homicide data to suicide prevention is that Utahns can use Utah data as they weigh the relative threat of stranger violence, domestic violence, and suicide with respect to their own family's safety and their own household's acquisition and storage of firearms.