



# A CONVERSATION CAN SAVE A LIFE: Strategies to Reduce Firearm Suicides

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## Executive Summary

Firearm-related suicides account for over half of all suicides in the United States, making them the most common method of suicide. Simultaneously, rising rates of firearm-related suicides, particularly among youth and vulnerable populations, highlight the urgent need for targeted prevention efforts in Roanoke. The Gun Violence Prevention Commission (GVPC), despite being a volunteer-based organization with limited resources, can play a critical role in addressing this issue by advocating for firearm suicide prevention policies, promoting education on lethal means counseling and safe firearm storage, and leveraging partnerships to integrate suicide prevention into broader gun violence reduction efforts. As firearm-related suicides continue to rise, addressing this crisis is essential to public health and community safety. **Too many people in Roanoke City, Virginia, are dying from firearm-related suicide, resulting in social and emotional damage, community insecurity, loss of life, and economic costs.**

Existing research on firearm suicide prevention highlights the effectiveness of community-based education campaigns, expanded mental health resources, and policies that reduce access to firearms in moments of crisis. Public awareness efforts can help educate residents about the warning signs of suicide and the importance of secure firearm storage; at the same time, increased access to mental health care ensures that individuals in distress receive timely support. Additionally, strategies such as lethal means counseling and safe firearm storage practices have been shown to reduce suicide risk by limiting access to firearms during high-risk periods.

As a result, this report will evaluate three possible alternatives:

1. Lethal Means Counseling
2. Safe Storage Firearm Maps
3. Lobby for CAP Laws

These alternatives were evaluated based on: a) political feasibility, b) Cost-effectiveness, c) administrative feasibility, and d) under-18 focus and engagement. After running each alternative through this criterion, Lethal Means Counseling is recommended due to its political and administrative feasibility. Safe Storage Firearm Maps performed reasonably well but failed to improve under 18 suicide rates, and both feasibility studies only ranked moderately. CAP Laws have great potential but are currently not politically or administratively feasible for the GVPC. At the end of this report, I will provide the next steps, timeline, and funding sources for LMC implementation.

## Introduction

Firearm-related suicides are a growing public health crisis in the United States, accounting for over half of all suicides nationwide. In Roanoke, the increasing prevalence of firearm suicides highlights the urgent need for targeted prevention efforts. Despite the Roanoke Gun Violence Prevention Commission's (GVPC) work to address firearm-related violence, the current initiatives do not explicitly focus on firearm suicides. Given the devastating impact of these tragedies on individuals, families, and communities, it is essential to integrate firearm suicide prevention into broader gun violence reduction strategies.

Existing research highlights the effectiveness of community-based education interventions, expanded mental health resources, and policies that limit access to firearms in moments of crisis. Among these approaches, Lethal Means Counseling (LMC) emerged as a promising strategy to reduce firearm suicides by equipping professionals with the skills to discuss safe firearm storage and crisis intervention with individuals at risk. By addressing firearm-related suicides with evidence-based solutions, Roanoke has the opportunity to save lives, strengthen community safety, and create a future where fewer families experience the devastating impact of suicide.

## Problem Definition

As of 2023, Roanoke City has one of the highest suicide rates in Virginia, with 22 suicides per 100,000 residents (County Health Rankings & Roadmaps, 2023). This rate is substantially higher than the state average of 13 per 100,000 residents (County Health Rankings & Roadmaps, 2023). Notably, 55% of all suicides in the United States involve the use of a firearm (Centers for Disease Control and Prevention, n.d.). In 2021, 80% of suicides in Roanoke City involved the use of a firearm (CDC Wonder, 2024). According to the National Violent Death Reporting System, firearm-related suicides cost Virginia 7.18 billion dollars in 2022, when accounting for medical costs and the value of statistical life (Centers for Disease Control, 2022). ***Too many people in Roanoke City are dying from firearm-related suicide, resulting in social and emotional damage, community insecurity, loss of life, and economic costs.***

## Roanoke Gun Violence Prevention Commission

The Roanoke Gun Violence Prevention Commission (or GVPC) was created in 2021 by the Roanoke City Council to address gun violence within Roanoke City. The GVPC primarily focuses on firearms concerning homicide and violent crimes. As a result, they have no programs or community services for firearm-related suicide prevention. The GVPC reports to the Roanoke City Council and works to prevent gun-related dangers. Due to this, the council and GVPC are in a position to create policies and programs to avoid firearm-related suicides within the city. The GVPC is entirely comprised of volunteer staff, so they are time-limited. This research into firearm-related suicides will enable the GVPC to focus on a critical area without draining resources.

## The Causes of Gun Suicide

Gun suicide is a complex social, psychological, and personal issue. As such, the causes of suicide differ widely and depend on the individual situation. For researchers, it has been challenging to differentiate between the causes of suicide and factors that compound thoughts of suicide (Lorant, Kapadia, & Perelman, 2020). Despite this, there are some causes researchers have directly acknowledged that can be linked to gun suicide. The most common causes of suicide include mental illness, substance use disorders, unemployment, violence, poverty, and social isolation (Marcotte & Hansen, 2023; CDC, n.d.-a). However, more than one of these causes often occurs simultaneously. Generally, combined conditions lead to suicide, making it hard to distinguish a single root cause (Bilsen, 2018). As a result, researchers usually focus on “risk factors” rather than any one cause (Bilsen, 2018). For example, social isolation has been linked to increased suicide rates but also tends to occur as a result of a root mental health illness (Näher, Rummel-Kluge, & Hegerl, 2020). Overall, the root causes of suicide are broad and differ situationally.

Mental illness is one of the most widely researched causes of gun suicide (Näher, Rummel-Kluge, & Hegerl, 2020; Marcotte & Hansen, 2023; CDC, n.d.-a; Bilsen, 2018). A meta-analysis of over 250 international studies ranging from 1950 to 2018 identified a correlation between suicide and disorders such as major depression, anxiety neurosis, obsessive-compulsive disorder, substance use disorder, psychiatric/psychosis disorder, and panic/anxiety disorder (Sivaraman & Naumann, 2020). These mental health disorders can cause an individual to attempt or consider suicide.

Some surprising factors have also been attributed to increased suicidal thoughts. Research shows that sleep and time of day contribute to increased suicides. For example, most suicides and suicidal thoughts occur between midnight and 2 a.m. (American Academy of Sleep Medicine, 2024). Another time-related cause of suicide is impulsivity; 87% of individuals thought about suicide for less than 8 hours before acting. Meanwhile, 70% of individuals attempted suicide within one hour of making their decision (Simon et al., 2005). Each of these factors can be correlated with suicide, but due to the finality and individualized nature of suicide, they may only occur in some cases.

Similarly, gun suicides and easy access to firearms increase suicide risks. Gun suicides are often a result of easy access to firearms, which are particularly deadly in suicide attempts (Marcotte & Hansen, 2023; Bilsen, 2018). The United States is the only country in which firearms are the most common method of suicide (Ajdacic-Gross, Weiss, et al., 2008). As a result, culture and firearm access are important factors leading to gun suicide. The causes of suicide are personal, individual, and unique. There is no single reason pushing individuals to take their own lives, but there are risk factors and recurring elements, such as experiencing mental health problems and access to firearms.



## Demographics of Suicide in the United States

To understand the scope of firearm suicide in Roanoke City, it is important to examine national demographics and patterns of suicide across the United States. These factors, like gender, race, and age, provide context to the populations most at risk, across the country and in Roanoke City. This next section will identify broader trends and risk factors that may be present at the local level, while bringing attention to areas requiring policy intervention.

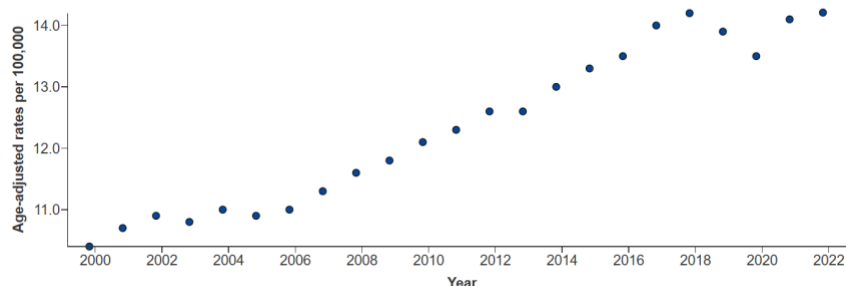
### *Suicide Trends*

Suicide and its intersection with gun accessibility are a high-priority social concern. In 2021, 48,000 Americans took their own life, ranking suicide as the 11th leading cause of death in the United States (Pew Charitable Trusts, 2023). Suicide rates have concerningly continued to rise, increasing by 30% in the last 20 years (Pew Charitable Trusts, 2023). The current rate of suicide across the U.S. has been labeled suicide as a public health crisis. The increasing national suicide rate over the last 20 years can be seen in Figure 1.

**FIGURE 1:**  
**U.S. SUICIDE RATES (2000 TO 2022)**

#### Suicide rates

Suicide rates increased 37% between 2000-2018 and decreased 5% between 2018-2020. However, rates returned to their peak in 2022.



Source: (Centers for Disease Control, n.d.-c)

### *Suicide and Gender*

Gender and sexual orientation are important factors concerning suicide. Men have been disproportionately impacted, making up 80% of all suicides as of 2022 (Centers for Disease Control and Prevention, n.d.-c). Women, however, attempt suicide 1.2 times more often than men (American Foundation for Suicide Prevention, n.d.). This stark contrast in attempted suicide and suicide completion is primarily due to the more lethal and violent methods used by men, such as firearms. As of 2021, nearly 60% of all male suicides were completed with the use of a gun, versus the female rate of 35% (Statista, n.d.). According to the Trevor Project, “LGBTQ+ young people are more than four times as likely to attempt suicide as their peers” (The Trevor Project, n.d.). The Trevor Project (n.d.) attributes the relationship between LGBTQ+ and suicide to discrimination, rejection, bullying, and minority stress.

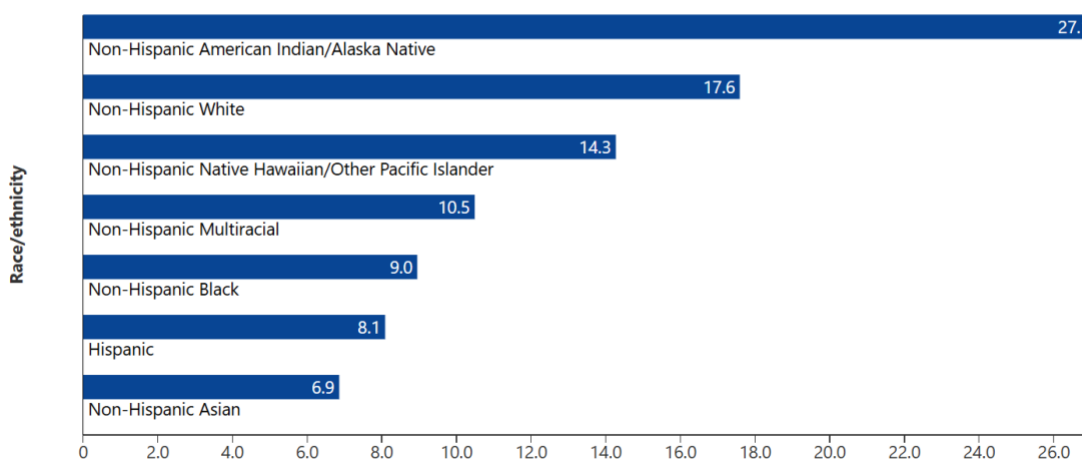


### *Suicide and Race*

Each racial and ethnic identity is impacted by suicide, but some face disproportionate levels. American Indians and Alaskan Natives were among those most affected by the increasing suicide rates (Pew Charitable Trusts, 2023). American Indians/Alaskan Natives, Whites, and Pacific Islanders are the racial and ethnic identities most impacted by suicide, in that respective order (Centers for Disease Control and Prevention, n.d.-c). In Roanoke City, 57.5% of residents are White, 29% are Black, and 8.6% are Hispanic or Latino (U.S. Census Bureau, n.d.). The racial breakdown of suicide in the United States is highlighted in Figure 3.

**FIGURE 3:**  
**U.S. SUICIDE RATE BY RACE**

The racial/ethnic groups with the highest rates in 2022 were non-Hispanic American Indian and Alaska Native people and non-Hispanic White people.



Source: (Centers for Disease Control, n.d.-c)

### *Suicide and Age*

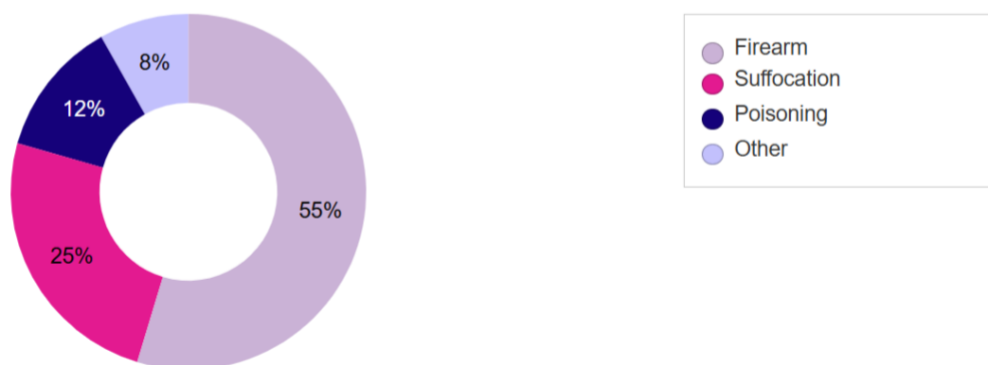
Age and socioeconomic status are also relevant suicide factors. Sadly, there is limited research on the relationship between socioeconomic status and suicide, but some researchers have reported a relationship between poverty and increased suicide rates (Patton et al., 2016). Age, on the other hand, has been heavily researched. Evidence shows that individuals over the age of 75 are the most at risk of committing suicide, with those over 85 having the highest suicide rate (Centers for Disease Control and Prevention, n.d.-c). Although those over the age of 75 have the highest suicide rate, suicide is the second leading cause of death for children aged 10-14 (Centers for Disease Control and Prevention, n.d.-a). Even more notably, the suicide rate among 10 to 24-year-olds increased by 62% in the last 15 years (Hedegaard & Garnett, 2023). This growing suicide trend among children and teens has caused concern among public health leaders, contributing to the declaration of a National State of Emergency in Children's Mental Health by the American Academy of Pediatrics (King et al., 2024). In Roanoke City, 22.6% of the population is individuals under 18, and 17.5% are 65 years and older (U.S. Census Bureau, n.d.). The alarming rise in youth suicide rates underscores the urgent need to address this growing crisis across the United States.

### *Suicide and Firearms*

Over half of all suicides in the U.S. were committed using a firearm, making guns the most commonly utilized means of suicide (Centers for Disease Control and Prevention, n.d.-c). A graphic depicting the rates of suicide by method in the United States can be seen below in Figure 4. Men have a significantly higher suicide rate than women and are also more likely to end their lives with the use of a firearm, 55% and 30%, respectively (National Center for Biotechnology Information, n.d.). Similarly, as of 2020, firearms were used in 51% of suicides among those aged 10 to 24 (King et al., 2024). Alarming, firearm-related suicides have continued to increase in prevalence since 2019 (Centers for Disease Control and Prevention, n.d.-b). The rate of firearm-related suicide is a public health crisis and should be given attention.

**FIGURE 4:**  
**U.S. SUICIDE BY METHOD**

Firearms are the most common method used in suicides. Firearms were used in more than 50% of suicides in 2022.



Source: (Centers for Disease Control, n.d.-c)

These patterns, demographics, and contributing factors highlight the growing public health concerns surrounding firearm suicides, especially among disproportionately impacted groups. The link between firearm access and suicide risk highlights the urgency to address this issue through evidence-based interventions. Understanding who is most at risk and how firearm access contributes to suicide concerns provides a necessary background for evaluating existing prevention efforts and identifying the most appropriate policy solutions for Roanoke City.

### **Decreasing Gun Suicides: Existing Evidence**

Researchers have been analyzing firearm-related suicides for decades. There have been successful interventions across fields and international spaces. In the following, I will outline the most promising scholarship on decreasing gun suicide rates. Overall, the research suggests that gun access, mental health resources, and education are the most effective solutions to firearm-related suicides.

### *Reduce Gun Access*

Firearms are the most utilized method of suicide in the United States; therefore, limiting gun access is one of the most reliable methods to decrease gun suicide rates. Firearm-related suicides are more likely with easy access to guns, which are particularly deadly in suicide attempts (Marcotte & Hansen, 2023; Bilsen, 2018). It is important to note that the United States is the only country in which firearms are the most common method of suicide (Ajdacic-Gross, Weiss, et al., 2008). This could be attributed to many factors, but gun access has been the most heavily researched.

For example, Switzerland has one of the highest gun ownership rates in Europe and has conducted a large body of gun access research due to low homicide and gun suicide rates (Balestra, 2018; Henn, Barber, & Hemenway, 2019). Although gun ownership rates in Switzerland are relatively high, firearm ownership and access are more closely regulated in Switzerland (Balestra, 2018; AOAV, 2024). For example, individuals with guns in Switzerland must store barrels and pistols in separate locations, and ammunition access is limited to permit holders (Kirby, 2013). Permits are obtained by a background check, which is no different from receiving a gun permit in Switzerland. Balestra (2018) assessed a gun access reform in Switzerland and found that a reduction in 1,000 privately owned guns per 100,000 residents led to a 9% decrease in the gun suicide rate. Moreover, many researchers have identified a significant relationship between the overall suicide rate and firearm access (Balestra, 2018; Mann & Michel, 2016). This gun reduction primarily impacted men and military members as it was the result of a policy change that previously enabled retired military members to keep their guns after service. This is an important finding, as men, especially retired military, are highly at risk of firearm suicides. As a result, researchers argue that limiting gun access will greatly decrease the firearm and overall suicide rates.

In the United States, many state-level gun policies exemplify the positive impact of gun access laws on suicide rates. For example, safe storage laws are one of the most effective gun access regulations shown to decrease suicide rates (Mueller, Lovelady, & Ranney, 2023). Safe storage laws provide guidelines for gun ownership within the home, such as guns being locked away and unloaded, which was correlated with a decrease in suicides (Mueller, Lovelady, & Ranney, 2023). These laws allow charges to be brought against an adult who allows children access to firearms due to careless storage strategies (RAND Corporation, n.d.). However, these adults generally are not charged until after a firearm-related incident has occurred, which is a downside to this policy. Despite implementation concerns, a meta-analysis of eleven child firearm access prevention studies found an association between child access prevention (CAP) laws, such as safe storage, and a decrease in suicides among those aged 14-17 (RAND Corporation, n.d.). Among the eleven studies, six were identified as high quality and met all of RAND's quality assessment criteria, such as causal identification and large sample size. Of these six studies, four found a statistically significant relationship between CAP laws and reduced suicides among youth, one found a significant relationship between CAP laws for youth and young adults (14-20), and one found an association between CAP laws and decreased suicide rates for all ages (RAND Corporation, n.d.). Overall, CAP laws provide reasonably strong evidence for reducing

the suicide rate among children, but there is not enough evidence of their effectiveness for all ages.

### *Limitations*

Despite evidence in support of gun access laws, there is not enough current research to support the impact on adult Americans. Due to differences in culture, international practices, such as gun regulations in Switzerland, may not achieve the same results on gun suicide in America. Political push-back would also make these laws difficult in the United States. Similarly, the CAP laws are directed toward youth suicide rates, and research has been limited on the impact of CAP laws on individuals over the age of 24.

### *Increase Mental Health Resources*

Research points to the expansion of various mental health resources, such as crisis hotlines, online counseling, and health insurance coverage expansion, as possible strategies to decrease the suicide rate. Mental health illnesses are one of the root causes of suicide; therefore, treating mood disorders and addiction problems likely decreases the gun suicide rate (Swanson, 2018). Professional counseling, like talk therapy, has been shown to reduce future suicide attempts for at least 20 years after treatment (Erlangsen, Nordentoft, & Bukstein, 2015). Researchers in Denmark studied over 5,600 psychosocial therapy patients who had previously completed an act of self-harm. They compared them to over 17,000 individuals who received no psychosocial therapy after an act of self-harm. This research found that professional counseling lowered the risk of self-harm, suicide, and general mortality in the short and long term (Erlangsen, Nordentoft, & Bukstein, 2015). Most researchers agree on the importance of therapy in suicide prevention efforts (Hawkins, 2019; Johns Hopkins Bloomberg School of Public Health, 2014). Online counseling and health insurance coverage are two promising, yet under-researched areas of mental health support believed by researchers to reduce gun suicides (Marcotte & Hansen, 2023). If these sectors were expanded and improved, more individuals in need of mental health support would have access to crucial resources. Professional, accessible, and affordable counseling should be provided for all individuals facing suicidal thoughts.

Professional counseling is in high demand, resulting in delayed support during immediate crises. Moreover, since guns are particularly lethal and suicide attempts often occur quickly in a moment of crisis, immediate support is necessary (Marcotte & Hansen, 2023). Research has moved toward the benefits of crisis hotlines as a mental health resource. Gould et al. (2007) researched the effectiveness of crisis hotlines since the early 2000s, finding a significant decrease in suicidality during the call and decreased hopelessness and psychological turmoil over the subsequent weeks (Gould et al., 2007).

Crisis hotlines are the first resource for individuals considering suicide and help connect callers with counselors and send emergency services as necessary (Marcotte & Hansen, 2023). In 2020, Congress passed the National Suicide Designation Act, which established the National Guidelines for Behavioral Health (NAMI) (National Alliance on Mental Illness, n.d.). Two years following this legislation, the Substance Abuse and Mental Health Services Administration

(SAMHSA) launched the 988 Suicide and Crisis Lifeline, a free national crisis hotline. However, upon its creation, the crisis hotline boasted an average wait time of 2 minutes and 39 seconds (Simmons-Duffin, 2023). Although wait times have since improved, SAMHSA hopes for more mental health workers to meet the growing need for suicide support in the United States.

The National Guidelines for Behavioral Health identified crisis call centers as the first step to reducing suicide, followed by the creation of local mobile crisis teams of mental health workers to replace law enforcement response to mental health episodes (National Alliance on Mental Illness, n.d.). Mobile crisis response teams (MCTs) have not been implemented in many locations. However, researchers have studied successful teams like the one created in Orland Park, Illinois (Council of State Governments Justice Center, 2021). Mobile crisis response teams are available 24/7 and can treat mental health emergencies quickly by providing medication and preventing unnecessary hospitalizations or arrests (Council of State Governments Justice Center, 2021). MCT research reported cost savings and reduced hospital reliance (Kim & Kim, 2017). Overall, crisis response hotlines and crisis response teams can be utilized to decrease suicide rates and improve access to mental health resources.

### *Limitations*

Mental health resources are necessary to prevent gun suicides. However, they have some limitations. Most of the research on suicide and mental health is conducted following a suicide attempt or act of self-harm. Based on this, mental health solutions may not apply to individuals who suffer silently and do not seek support. Mobile crisis response teams have not been implemented in enough locations to observe their external validity.

### *Community-Based Education*

Education is one broad area of research within gun suicide studies. Many professionals within the gun violence and suicide space believe education is the best method to decrease gun suicides. Many researchers view gun suicides as a public health crisis; therefore, they argue that the solutions should be public health-centered (Mueller, Lovelady, & Ranney, 2023; BulletPoints Project, n.d.; South, Hemenway, & Webster, 2022). The Bullet Points Project, a research organization based out of UC Davis, is at the forefront of these campaigns. In their research on gun suicides, they discovered that only 3% of suicidal patients in emergency rooms were asked to document firearm access (BulletPoints Project, n.d.). Moreover, only 27% of psychiatrists reported a consistent routine for asking patients about gun ownership. Without fully understanding suicidal patients' gun ownership, it is impossible to educate and prepare for future harmful actions.

Safe storage messaging and lethal means counseling are effective gun suicide prevention educational campaigns. Safe firearm storage, such as safes, locks, and storing firearms unloaded, is primarily up to the gun owner; therefore, it is vital to inform gun owners of the risks (Anestis, Bond, & Bandel, 2022). Safe firearm storage maps are one attribute of this education campaign. Six states, such as Mississippi and Maryland, have developed safe firearm storage maps to help

citizens identify locations for secure firearm storage outside of the home (Anestis, Bond, & Bandel, 2022). Gun ranges, law enforcement offices, and gun stores generally partner with localities to serve as secure firearm locations. These maps are valuable resources when gun owners or household members experience suicidal thoughts.

Similar to safe storage messaging, lethal means counseling has become a salient topic for gun suicide researchers. Lethal means counseling occurs when healthcare providers educate gun owners on safe storage practices, particularly in emergencies (Anestis, Bond, & Bandel, 2022; Mueller, Lovelady, & Ranney, 2023; Runyan, Brown, & Brooks-Russell, 2015). Research on lethal means counseling observed significant changes in firearm storage (Anestis, Bond, & Bandel, 2022). However, researchers claim lethal means counseling should be expanded outside healthcare to other community sectors (Anestis, Bond, & Bandel, 2022). To read an example of lethal means counseling, see Figure 5 below.

**FIGURE 5: HARVARD LMC -- A PRACTICAL TOOL FOR PREVENTING SUICIDE (N.D.)**

**Scenario without Lethal Means Counseling:**

A 20-year-old moves in with his parents after a breakup with his girlfriend. After he stops attending classes, his parents reach out to a mental health center. They recommend he see a counselor, but he refuses. After a fight with his ex-girlfriend, he feels desperate. When he finds his father's loaded gun, he takes his own life, dying within seconds.

**Scenario with Lethal Means Counseling:**

A 20-year-old moves in with his parents after a breakup with his girlfriend. After he stopped attending classes, his parents reached out to a mental health center. The mental health center provides the parents with lethal means counseling, recommending they remove all guns from the home until their son receives support. They recommend he see a counselor, but he refuses. After a fight with his ex-girlfriend, he feels desperate. After unsuccessfully looking for his father's gun, he uses a razor to self-harm. His parents find him quickly and take him to a hospital where he agrees to treatment.

To expand lethal means counseling and informing gun owners on safe storage practices, researchers argue that gun owners opinions should be a focus. For example, Henn, Barber, and Hemenway (2019) argue that lethal means counseling will be most effective if led by community members. Including gun owners and stakeholders in community-based suicide prevention efforts and discussions normalizes safe firearm storage practices and reduces gun suicide opportunities (Henn, Barber, Hemenway, 2019). Anestis, Bond, and Bandel (2022) sampled over 6,000 firearm owners across New Jersey, Mississippi, and Minnesota on reliable suicide prevention- firearm

storage messengers. These gun owners ranked service members, military veterans, and police officers as the most credible educators of safe firearm storage. Utilizing reliable community members, such as EMS and police officers, in place of health care providers will appeal to gun owners, leading to the most significant reduction in gun suicides.

### *Limitations*

Lethal means counseling and safe storage messaging are highly recommended research approaches for gun suicides. However, this research is primarily qualitative. Therefore, it is difficult to observe the statistical impact of these methods on gun suicide rates. Anecdotally, lethal means counseling and safe storage messaging appear as the best community approaches, but there is not enough research or quantitative data to ensure the impact on gun suicides. This lack of evidence introduces limitations to the generalizability of these methods.

## Political Barriers to Firearm Policy Reform

Despite growing public concerns surrounding firearm suicides, efforts to pass meaningful gun legislation at the state and federal levels often face significant political resistance. For example, in 2022, the first federal gun legislation in 30 years, the Bipartisan Safer Communities Act, was passed into law. This act was passed after numerous high-profile mass shootings took place across the United States, sparking bipartisan public outrage and media coverage, even among pro-gun legislators. The Bipartisan Safer Communities Act enhanced background checks for buyers under 21, expanding the review period to 10 days for juveniles and requiring mental health records (Nguyen, 2022). The bill also encouraged state Red Flag laws by providing \$750 million to support crisis intervention programs that allow for the temporary removal of firearms from at-risk individuals. The BSCA also closed the boyfriend loophole, excluding all people convicted of domestic violence, even those in dating relationships, from purchasing firearms. Finally, the BSCA invested in mental health services for schools and communities (Nguyen, 2022). The BSCA made strides for gun safety across the United States, but overall, this act only made small changes to gun ownership and took decades to become law.

In Virginia, Substantial Risk Orders, also known as Red Flag Laws, were proposed as early as 2015 to the Virginia General Assembly. After 5 years of failed introduction, the Substantial Risk Order Law was passed into law in July of 2020 (Virginia Department of Criminal Justice, n.d). In Virginia, Substantial Risk Orders occur after an individual demonstrates a substantial risk of injuring themselves or others. These threats have to be imminent, and there is a heavy burden of proof placed on the State when making this claim to the circuit court (Legal Clarity, 2024). If the claims are upheld by the Circuit Court, law enforcement officers can remove all firearms from the individual's possession. While this law directly addresses concerns about firearm suicide, the bureaucratic process can last up to 14 days, which is often too slow to effectively respond to the urgent nature surrounding suicide risk. The polarizing nature of firearm legislation leads to political pushback and resistance, and even when a law is passed after years of gridlock, it is frequently weakened to the point of ineffectiveness.



## Criteria

### *Political Feasibility*

Due to the politicized culture surrounding firearms, political feasibility is a critical criterion. My client, the Roanoke Gun Violence Prevention Commission, works directly with the city council. Their unique position to recommend policy makes the political feasibility of my alternatives necessary. Political feasibility assesses the likelihood of an alternative's successful implementation. For an alternative to be worthwhile, particularly on a partisan issue, a measure of political feasibility is necessary to understand whether a policy would receive support. Due to these factors, this alternative will be weighted at 30%.

This alternative would be ranked on a scale from three to six. The rubric for this ranking can be found below. Third, the recommendation has strong political support with minimal opposition from key decision-makers, such as Roanoke City Council Members and/or local healthcare leaders. Six would mean substantial political opposition among stakeholders, and overcoming these roadblocks would require extensive advocacy and resources. To find this information, I will examine key local stakeholders, current Roanoke City Council actions, local medical leaders, and Roanoke public opinion in similar contexts.

<b>Political Feasibility Rubric</b>			
Dimension	1 Point	1.1-1.9 Points	2 Points
Stakeholder Support	All major stakeholders (city council, healthcare leaders, law enforcement) support or are neutral.	Some major stakeholders oppose the policy, but coalition-building would help.	Strong opposition from all key stakeholders, making success unlikely without major advocacy efforts
Public Acceptance	Strong or neutral public support	Public opinion is mixed, with some vocal opposition	Broad public opposition or a highly polarizing issue in Roanoke
Legal Barriers	No legal barriers exist at the city, state, or federal level	Some legal hurdles exist, but could potentially be worked around	Major legal barriers that would require significant changes to state or federal law

### *Cost-effectiveness*

My client values cost-effectiveness. They do not want to implement a solution that costs a considerable amount but has a negligible impact on firearm suicides. Cost-effectiveness measures the effectiveness of an alternative per dollar spent on implementation. The relationship between the cost of implementing a solution and the following reduction in suicide is cost-effectiveness.

Cost-effectiveness is an important factor, but none of the alternatives in this report are out of reach due to costs. As a result, this alternative will be weighted at 20%. This will be measured by calculating the cost-effectiveness ratio (total cost divided by the units of effectiveness). First, I would find the program's total cost, such as wages to individuals and material costs. Next, I would determine the effectiveness of the program by finding the share of suicides that are prevented by a given program. The unit of effectiveness would rely on prior research. The main goal of implementing any of these alternatives is to reduce firearm suicides. This criterion would measure the percentage change in suicides by utilizing results from literature and other areas that have implemented similar mechanisms. For example, I will use the implementation costs of Safe Firearm Storage Maps in Mississippi or Maryland. Then, I will look for their research on the map's impact on suicide rates. If I cannot find a share of suicides decreased by the maps, I will look for towns that implemented this program and compare their suicide rates before and after implementation (while acknowledging possible bias). I will use these findings to calculate the cost-effectiveness ratio.

### *Under 18 Focus and Engagement*

Suicide disproportionately impacts teens and is the third leading cause of death for individuals between the ages of fifteen and nineteen (Statista, 2022). As a result, the suggested alternatives should ideally reach this group. This criterion will assess how balanced each alternative is at preventing suicide among children under 19. This criterion will be weighted at 20%. It is important due to the inequalities of firearm suicides. However, this is likely less important than other criteria, such as political feasibility and cost-effectiveness. I will rank the focus and engagement as a one if it has high reach (i.e. more than 60% of the population impacted by an alternative are under eighteen, has high levels of engagement, likely due to intentional design or high participation), a two if it has moderate reach (i.e. between 30% to 60% of the population impacted by the alternative are under eighteen, moderate success in reaching children through policy efforts or educational campaigns), or a three if an alternative has low reach (i.e. less than 30% of the population impacted by the alternative are under eighteen, minimal intentional impact on the target group, potentially due to limited program scope or low participation rates).

### *Administrative Feasibility*

Administrative feasibility is significant as the GVPC comprises volunteer staff; therefore, some alternatives may require more time, effort, or resources, which could prevent the effective implementation of each alternative. Administrative feasibility assesses the ease or difficulty of an alternative's implementation. Therefore, I will weigh this alternative at 30%.

This criterion will be scored ranging from a three to a six, receiving a three if it can be implemented within the administration's current capacity, using available resources, with little to no complications, and only requiring a few simple or short steps (such as creating a handout and posting it on social media). An alternative would receive a six if it is complex and resource-intensive, stretching organizational capacity, and requiring many steps before implementation, particularly steps that could substantially push back implementation over a long period (such as building coalitions from scratch). The lower the score, the better the alternative's administrative feasibility. A rubric outlining the scoring for administrative feasibility can be found below.

<b>Administrative Feasibility Rubric</b>			
Dimension	1 Point	1.1-1.9 Points	2 Points
Capacity of GVPC	The GVPC has the necessary expertise, staffing, and structure to implement the policy effectively.	Some gaps exist in expertise, staffing, or structure, but they could be addressed with moderate effort.	The agency lacks the necessary capacity, requiring major restructuring or external support.
Administrative Complexity	The policy involves simple steps with little to no complications (e.g., creating and distributing materials, and updating existing procedures)	The policy requires multiple steps that may delay implementation (e.g., holding meetings, securing administrative approval)	The policy is complex, requiring major bureaucratic navigation, interagency cooperation, or lengthy approval processes.
Monitoring & Enforcement	The policy can be easily monitored and enforced with existing resources and structures.	Some additional monitoring, updating, or enforcement mechanisms are needed, but they are feasible.	Effective enforcement requires major investments in oversight, personnel, or regulatory adjustments.

## Alternatives

### Alternative 1: Lethal Means Counseling

Lethal means counseling (LMC) occurs when healthcare providers educate gun owners on safe storage practices, particularly in emergencies (Anestis, Bond, & Bandel, 2022; Mueller, Lovelady, & Ranney, 2023; Runyan, Brown, & Brooks-Russell, 2015).

#### *Political Feasibility*

According to research on Lethal Means Counseling, healthcare professionals, EMS workers, and the VA have no opposition to discussing firearm safety with patients as long as they have received training on how to approach these conversations (Khazanov et al., 2022; Psychological Health Center for Excellence, 2020). Opposition from firearm owners is not likely, mainly when LMC is approached by community leaders (Khazanov et al., 2022; Henn, Barber, and Hemenway, 2019). The only concern will be law enforcement participation in this program; however, evidence suggests police officers do not oppose LMC or safe storage (U.S. Department of Justice, n.d.). There are no legal barriers to LMC implementation in health care or emergency response. LMC receives a three for political feasibility as there are no legal barriers and key stakeholders/public are neutral.

LMC Political Feasibility Rubric			
Dimension	1 Point	1.1-1.9 Points	2 Points
Stakeholder Support  1pt	All major stakeholders (city council, healthcare leaders, law enforcement) support or are neutral.	Some major stakeholders oppose the policy, but coalition-building would help.	Strong opposition from all key stakeholders makes success unlikely without major advocacy efforts.
Public Acceptance  1pt	Strong or neutral public support  <i>Neutral support even among gun owners.</i>	Public opinion is mixed, with some vocal opposition.	Broad public opposition or a highly polarizing issue in Roanoke.
Legal Barriers  1pt	No legal barriers exist at the city, state, or federal level.	Some legal hurdles exist, but could potentially be worked around.	Major legal barriers that would require significant changes to state or federal law.

### *Cost-Effectiveness*

CALM (Counseling on Access to Lethal Means) is one of the country's most reputable Lethal Means training programs. This organization hosts virtual training programs called "CALM Clinical Workshops" (Harvard, n.d.). According to Kruesi et al. (1999), LMC is associated with a 59.5% increase, or a 30.52 percentage point increase in safe storage (Appendix 1). This was a statistically significant finding with a  $p=0.04$  at a 95% confidence interval. Relatedly, according to a simulation study, safe storage reduces suicides anywhere from 6.4 to 32 percent. To be conservative in our analysis, I will use the midpoint of the simulation findings and assume safe storage decreases youth suicide rates by 19%. (Monuteaux et al., 2019). This finding was statistically significant at a 95% confidence level. It is important to note that this research focused on the effects of safe storage for individuals under 19. Based on these findings, LMC is expected to decrease the suicide rate anywhere from 3.35 to 19.04 percent. Using the midpoint estimation, we expect LMC to decrease the suicide rate by 11.305 percent. According to research on safe storage practices and suicide rates (Appendix 1), LMC is expected to decrease the suicide rate by 11.3%. As Roanoke has a yearly suicide rate of 22 per 100,000 residents, LMC is expected to reduce the suicide rate by about 2.5 suicides per 100,000 residents (Appendix 1).

The GVPC should invite local mental health offices, specifically Carilion Clinic, Lewis Gale, the local Veterans Affairs hospital, the Roanoke City Police Department, and the Roanoke City Fire Department, to send the most relevant representatives to a CALM online training module. I recommend twelve mental health professionals: four from Carilion, four from Lewis Gale, four from the VA, eight RCPD representatives, and four RCFD representatives. These individuals would receive a CALM certificate and be trained to provide LMC. This program should be continuously implemented over the next five years. Lethal Means Counseling has a present value cost of \$39,586.70 when accounting for training and lost opportunity costs for participants over the next 5 years, with a discount rate of 3% (Appendix 2). Overall, Lethal Means Counseling has a cost-effectiveness of \$3,179.65 per one-unit suicide decrease (Appendix 3).

### *Under 18 Focus and Engagement*

LMC has shown benefits across all age groups and genders, but it is most effective for teens and parents of teens (Ramchand, 2022). Research indicates that LMC impacts individuals under 18 more than any other age group. However, this successful youth engagement is not the focus of the program. LMC receives a two for under 18 focus and engagement as the program has moderate success in reaching children; however, it lacks intentional design and focus for this age group.

### *Administrative Feasibility*

This alternative is simple for the GVPC to implement but will require additional support outside their current capacity. The GVPC cannot provide training for LMC but must rely on other groups, such as the CALM organization. Simultaneously, the GVPC must organize training dates and set expectations across different parties, which can be time-consuming. They will need to contact their current partners from Carilion, Lewis Gale, the VA, the RCPD, and Roanoke Fire and EMS, many of whom are already involved in the GVPC in some capacity, which will save time and resources. The GVPC should follow up with participants during and after training to ensure LMC is implemented within each organization. Due to these steps, this alternative receives a 4 for administrative feasibility.



LMC Administrative Feasibility Rubric			
Dimension	1 Point	1.1-1.9 Points	2 Points
Capacity of GVPC  1pts	The GVPC has the necessary expertise, staffing, and structure to implement the policy effectively.	Some gaps exist in expertise, staffing, or structure, but they could be addressed with moderate effort.	The agency lacks the necessary capacity, requiring major restructuring or external support.
Administrative Complexity  1.5pts	The policy involves simple steps with little to no complications.	<p>The policy requires multiple steps that may delay implementation</p> <p><i>The GVPC will need to coordinate across organizations, which can cause delays. This coordination will not be complicated, as the GVPC has prior relationships with each participant.</i></p>	The policy is complex, requiring major bureaucratic navigation, interagency cooperation, or lengthy approval processes.
Monitoring & Enforcement  1.5pts	The policy can be easily monitored and enforced with existing resources and structures.	<p>Some additional monitoring, updating, or enforcement mechanisms are needed, but they are feasible.</p> <p><i>The GVPC should monitor training participation. After CALM, the GVPC should follow up with participants to ensure LMC is implemented within each organization.</i></p>	Effective enforcement requires major investments in oversight, personnel, or regulatory adjustments.

## Alternative 2: Safe Storage Firearm Maps

Safe firearm storage maps are a compiled list of all local gun storage locations for gun owners. Law enforcement offices and gun stores partner with localities to serve as secure firearm storage locations during crises or travel (Anestis, Bond, & Bandel, 2022). These maps are handy resources when gun owners or household members experience suicidal thoughts. In this alternative, the GVPC will be responsible for creating and publishing safe storage firearm maps for Roanoke City residents.

### *Political Feasibility*

Safe firearm storage maps are an uncontroversial alternative. Law enforcement and gun shop owners support safe storage options and agree that they are the most trusted sources (Bongiorno et al., 2021). Despite this, legal barriers to secure storage, such as background check requirements upon pickup, have made some locations unwilling to participate in safe storage map programs (Bongiorno et al., 2021; Brooks-Russell, 2019). Due to participation concerns, this alternative is likely to require GVPC to build rapport and work with gun shop owners to assuage fears about participation in safe storage. There is no evidence of public opposition to safe storage maps. This alternative will receive a 3.7, as many gun shops will likely feel uncomfortable participating in this program due to legal concerns.

Safe Storage Maps Political Feasibility Rubric			
Dimension	1 Point	1.1-1.9 Points	2 Points
Stakeholder Support 1.5pts	All major stakeholders (gun shop owners and law enforcement) support or are neutral.	Some major stakeholders oppose the policy, but coalition-building would help.  <i>Gun shops (half of the key stakeholders in this program) support secure storage but may oppose the policy due to legal concerns with background check implementation.</i>	Strong opposition from all key stakeholders makes success unlikely without major advocacy efforts.
Public Acceptance 1pt	Strong or neutral public support.	Public opinion is mixed, with some vocal opposition.	Broad public opposition or a highly polarizing issue in Roanoke.
Legal Barriers 1.2pts	No legal barriers exist at the city, state, or federal level.	Some legal hurdles exist, but could potentially be worked around.  <i>The background check requirement upon pickup is a legal hurdle for the safe storage locations, but this does not prevent the implementation of safe storage maps.</i>	Major legal barriers that would require significant changes to state or federal law.

### *Cost-Effectiveness*

The impact of safe firearm storage maps on safe storage practices has not been heavily researched. No outside-the-home safe storage average for Roanoke, Virginia, or the United States has been published. However, research on Colorado and Washington, two states with safe storage maps, found that 27.3% of respondents stored their firearms outside the home in the 5 years since they were introduced. This safe storage practice is not directly associated with safe storage maps, as only 24.4% of firearm owners were aware of the safe storage maps (Barnard et al., 2023). Based on these findings, safe storage maps roughly increase the likelihood of safe storage by 6.6% (Appendix 4). Simultaneously, safe storage reduces suicides anywhere from 6 to 32% (Monuteaux et al., 2019). For our analysis, we will assume that suicide has decreased by the midpoint of 19% (Appendix 1). This finding was statistically significant at a 95% confidence level. This research was focused on the effects of safe storage for individuals under the age of 19. Based on safe firearm storage maps research, this alternative could be expected to decrease the suicide rate by 0.286 per 100k residents (Appendix 4).

This alternative is based on Maryland's Safe Firearm Storage Map project (Bongiorno et al., 2021). According to their research, the GVPC should expect to lose approximately 19 hours on map creation and associated costs related to printing and distribution (Appendix 5). After accounting for lost opportunity and material costs, this project will cost \$566.64 in the first year, (Appendix 6). Over the next four years, the maps will cost around \$220 for maintenance. Safe firearm storage maps are associated with a cost-effectiveness of \$946.90 per one-unit suicide decrease (Appendix 7). These maps are a very cheap alternative for the GVPC to pursue, but they have a limited impact on suicide rates.

### *Under 18 Focus and Engagement*

Safe storage firearm maps were developed for gun owners (individuals over 18) for out-of-home gun storage during emergencies (Bongiorno et al., 2021). Among safe storage map research, there is no evidence for a focus on the suicide rate for individuals under 18, with less than 30% population reach (Barnard et al., 2023). This alternative receives a three for under 18 focus and engagement, as this alternative has a minimal intentional impact on youth suicides and a limited program scope.

### *Administrative Feasibility*

Safe storage firearm maps will take time and outreach on behalf of the GVPC, but this work is within the capabilities of the commission. Developing safe firearm storage maps can be a lengthy process. For Maryland, the Marylanders to Prevent Gun Violence organization spent three months on map development across the entire state (Bongiorno et al., 2021). In the GVPC's case, this timeline will be substantially shorter as it will be for the City of Roanoke, not the state of Virginia. The GVPC would only have to contact the Roanoke City Police Department and twelve gun shops across Roanoke City. It took, on average, an hour and forty-five minutes per contacted safe firearm location. Based on the research of previous safe storage mapping projects, this task will take at least 19 hours to complete (See Appendix 5). During this time, the GVPC must call every local gun shop and police station to identify which locations are willing to participate (Betz et al., 2023; Bongiorno et al., 2021). Following these conversations, the GVPC can map these locations using a free Google Maps feature. This alternative will receive a 4.3 for administrative feasibility based on the steps required, such as connecting with other community members, which could create complications for the GVPC and slow program implementation.

Safe Storage Maps Administrative Feasibility Rubric			
Dimension	1 Point	1.1-1.9 Points	2 Points
Capacity of GVPC  1pt	The GVPC has the necessary expertise, staffing, and structure to implement the policy effectively.	Some gaps exist in expertise, staffing, or structure, but they could be addressed with moderate effort.	The agency lacks the necessary capacity, requiring major restructuring or external support.
Administrative Complexity  1.8pts	The policy involves simple steps with little to no complications.	<p>The policy requires multiple steps that may delay implementation.</p> <p><i>Safe Firearm Storage maps require the GVPC to coordinate participation across 12 gun shop owners in Roanoke. The map could not be created until the contacts were completed.</i></p>	The policy is complex, requiring major bureaucratic navigation, interagency cooperation, or lengthy approval processes.
Monitoring & Enforcement  1.5pts	The policy can be easily monitored and enforced with existing resources and structures.	<p>Some additional monitoring, updating, or enforcement mechanisms are needed, but they are feasible.</p> <p><i>The GVPC will update the map if a gun shop asks to be removed or added. This will be simple, but a GVPC member should be designated to follow up with safe storage locations.</i></p>	Effective enforcement requires major investments in oversight, personnel, or regulatory adjustments.

### Alternative 3: Lobby for Child Access Prevention Laws

Safe storage laws provide guidelines for gun ownership within the home, such as guns being locked away and unloaded, which was correlated with a decrease in suicides (Mueller, Lovelady, & Ranney, 2023). Among safe storage laws across the U.S., Child Access Prevention (CAP) laws have been the most effective at reducing suicide rates. Virginia is one of 40 states in the U.S. with state firearm pre-emption laws (Every Town, n.d.-a). This prevents local governments from creating local regulations on firearms, such as CAP or safe storage laws. Furthermore, Virginia is one of 17 states with punitive preemption laws, making safe storage laws in Roanoke unattainable (Every Town, n.d.-b).

#### *Political Feasibility*

Lobbying for CAP laws in Virginia will require extensive advocacy and will hit numerous roadblocks. Virginia has very weak Child Access Prevention Laws, as the opposition lobbying efforts, on behalf of organizations like the NRA-ILA, have prevented further action on this alternative for many years (Every Town for Gun Safety, n.d.-a; NRA-ILA, 2025; Every Town, n.d.-c). However, Roanoke City leans liberal, with a Democrat mayor and only one Republican on the city council (Roanoke Rambler, 2024). Despite this, there is still an active gun-rights Republican group in Roanoke (Gendreau, 2024). According to the Pew Research Center, 86% of Democrats support stricter gun laws, as opposed to only 28% of Republican voters (Nadeem, 2023). Based on extensive political opposition and legal barriers in Virginia, lobbying for CAP laws receives a 5.2 for political feasibility.



Lobby for CAP Laws Political Feasibility Rubric			
Dimension	1 Point	1.1-1.9 Points	2 Points
Stakeholder Support 1.8pts	All major stakeholders (city council, state representatives, advocacy groups) support or are neutral.	Some major stakeholders oppose the policy, but coalition-building would help.  <i>The city council is majority Democrat and would likely support CAP laws, however, state representatives and advocacy groups across Roanoke and Virginia have historically been opposed to CAP laws.</i>	Strong opposition from all key stakeholders makes success unlikely without major advocacy efforts.
Public Acceptance 1.4pts	Strong or neutral public support	Public opinion is mixed, with some vocal opposition  <i>A majority of Roanoke residents are liberal. However, some active anti-gun control groups in Roanoke City would not support GVPC CAPs lobbying</i>	Broad public opposition or a highly polarizing issue in Roanoke.
Legal Barriers 2pts	No legal barriers exist at the city, state, or federal level.	Some legal hurdles exist, but could potentially be worked around.	Major legal barriers that would require significant changes to state or federal law  <i>This alternative would require new state legislation. Roanoke City cannot enact local gun laws due to Virginia's State Firearm Preemption Law.</i>

### *Cost-Effectiveness*

Assuming state preemption laws are loosened or removed, the GVPC should partner with the Roanoke City Council to introduce strict Child Access Prevention (CAP) laws. According to RAND, CAP laws have a statistically significant effect on total suicides for individuals between the ages of 14 and 20 at a 95% confidence level (Morral et al., 2018). Based on these findings, CAP laws reduced the total suicide rate by 8.3 percent for individuals between the ages of 14 and 17. If the GVPC designates one commissioner to lobby for 3 hours a week from May 1st, 2025 until January 1st, 2026, this will have an opportunity cost of \$2,578.80 (Appendix 8). Based on the lobbying costs, this alternative has a cost-effectiveness of \$1,412.27 per one-unit suicide decrease (Appendix 9).

### *Under 18 Focus and Engagement*

CAP laws are specifically created for children and teens (Morral et al., 2018). Over 60% of the population impacted by CAP laws are under 18 (Morral et al., 2018). According to research, CAP laws decrease the under-18 firearm suicide rate by 10.8%, and this finding was statistically significant at a 95% confidence level (Webster et al., 2004). This alternative receives a one for under 18 focus and engagement, as CAP laws were intentionally designed to decrease youth firearm deaths, and implementation has reached this audience.

### *Administrative Feasibility*

Lobbying for CAP laws is outside of the scope of the GVPC. However, coalition building and connecting with officials in southwest Virginia are well within the administration's current capacity. Although this alternative would push the bounds of the GVPC, this organization holds a key position as a leader of gun policy in the region, and it would serve an important role in joining forces for CAP laws. Due to this, the GVPC, in partnership with the Roanoke City Council, should lobby Virginia for the Removal of State Firearm preemption laws and the addition of stricter CAP laws. Many states have effectively lobbied to remove state firearm preemption laws, such as Connecticut, Illinois, Massachusetts, and New Jersey (Every Town, n.d.-a).

The GVPC and Roanoke City Council should engage in grassroots lobbying by directly appealing to state representatives, like Delegate Rasoul, who are likely to support gun-control legislation (Sam for Virginia, n.d.). Meanwhile, forming alliances with non-governmental organizations that already lobby for gun-control legislation, such as Giffords or The Brady Campaign to Prevent Gun Violence, are ideal partners. This lobbying would not be in the hands of the GVPC or City Council but would require time and effort on behalf of these individuals. This alternative receives a five for administrative feasibility as it stretches organizational capacity, and requires many steps that could substantially push back implementation over a long period.

Lobby for CAP Laws Administrative Feasibility Rubric			
Dimension	1 Point	1.1-1.9 Points	2 Points
Capacity of GVPC  2pts	The GVPC has the necessary expertise, staffing, and structure to implement the policy effectively.	Some gaps exist in expertise, staffing, or structure, but they could be addressed with moderate effort.	The agency lacks the necessary capacity, requiring major restructuring or external support.  <i>The GVPC would need to rely on external organizations and advocacy groups to lead a CAP lobbying campaign.</i>
Administrative Complexity  2pts	The policy involves simple steps with little to no complications.	The policy requires multiple steps that may delay implementation.	The policy is complex, requiring major bureaucratic navigation, interagency cooperation, or lengthy approval processes.  <i>The GVPC has to receive approval from the city council to participate in this alternative.</i>
Monitoring & Enforcement  1pt	The policy can be easily monitored and enforced with existing resources and structures.  <i>Once CAP laws are implemented, the GVPC will not be responsible for policy enforcement.</i>	Some additional monitoring, updating, or enforcement mechanisms are needed, but they are feasible.	Effective enforcement requires major investments in oversight, personnel, or regulatory adjustments,

## Outcomes Matrix

	Political Feasibility (.30)	Cost-Effectiveness (.20)	Administrative Feasibility (.30)	Under 18 Focus and Engagement (.20)
<i>Alternative 1: Lethal Means Counseling</i>	<i>3</i>	<i>\$3,179.65 per the number of suicides decreased per 100k residents</i>	<i>4</i>	<i>2</i>
<b>Alternative 2: Safe Storage Firearm Maps</b>	3.7	\$946.90 per the number of suicides decreased per 100k residents	4.3	3
<b>Alternative 3: Lobby for CAP Laws</b>	5.2	\$1,412.27 per the number of suicides decreased per 100k residents	5	1

After evaluating the political feasibility, cost-effectiveness, administrative feasibility, and under-18 focus and engagement, **Lethal Means Counseling (LMC)** is the best alternative to reduce suicide rates in Roanoke City (Appendix 10). Despite being the least cost-effective, LMC is affordable for the GVPC to pursue and has the most sizable impact on suicide rates, preventing twelve suicides in Roanoke City over the next five years.

## Next Steps

Lethal Means Counseling (LMC) will be successfully integrated into Roanoke City's suicide prevention efforts through the GVPC's coordination, training, and engagement across key community partners. The primary steps involve securing partnerships, organizing training sessions, and establishing a sustainable framework for ongoing implementation. The GVPC should conduct a local stakeholder survey to engage healthcare providers, the Roanoke City Police Department, and the Roanoke City Fire Department on LMC CALM training, ensuring willing participation. Many of these organizations already collaborate with the GVPC, simplifying outreach and coordination. The GVPC should designate one commissioner to manage communication and logistical planning with stakeholders. This conversation could occur during the GVPC monthly meeting attended by many of these organizations, or through email correspondence.

Next, GVPC will facilitate participation in CALM Clinical Workshops, a one-day, four-hour, virtual training program provided by the Counseling on Access to Lethal Means (CALM) organization. The selected 28 professionals (12 mental health providers, eight police officers, and four fire department representatives) will coordinate training dates with the GVPC. After correspondence with CALM workshop leaders, they recommend organizing one date for workshop training with CALM and the Roanoke participants. This workshop will only include Roanoke professionals, which can help CALM tailor the training. CALM provides multiple open training opportunities for all members this is not possible for all members. The open dates can be utilized if any individuals cannot attend the training date selected by the GVPC. These options provide flexibility for participants.

After discussing with CALM workshop leaders, they have recognized that the police and firefighters may be better served if they attend a separate workshop from the mental health workers. In their experience, these two professions require different training methods and sample exercises. Moreover, police officers are historically timid in CALM workshop training with mental health professionals previously equipped with mental health language and expertise. Due to this recommendation, the GVPC should coordinate two training dates for mental health workers and police/EMS. Separating these professions will make schedule alignment easier for the GVPC and will improve relevant stakeholders the learning experience.

The GVPC should coordinate and oversee training selection to ensure participation. GVPC should request a copy of the CALM certification to track LMC training completion. Following training, LMC should be incorporated into existing patient care and crisis intervention protocols within participating organizations. Healthcare professionals will integrate LMC discussions into routine mental health screenings, while RCPD and RCFD can use LMC principles when engaging with at-risk individuals.

Although LMC is not explicitly designed for youth, the GVPC can enhance its impact by promoting firearm safety messaging among parents and guardians. Depending on the success of CALM training and LMC implementation, the GVPC should consider partnering with schools,

youth organizations, and community centers to help extend LMC reach to households with children. Similarly, after evaluating the initial trial period, LMC training should be expanded to include more than 28 community professionals with opportunities to reiterate or evolve the program based on participant feedback.

In the worst-case scenario, CALM trainees will not apply lethal counseling means in their workplace. After orchestrating these sessions, the GVPC has no control over implementation or follow-up with individuals who may receive LMC from CALM trainees after this program. As a result, the GVPC is placing much confidence in the participants. To address these concerns, in the months following CALM training, the GVPC should assess LMC's implementation with participants to document LMC discussions and outcomes. Collecting feedback from professionals will provide the GVPC with insights into the benefits of this program. This follow-up contact would be best through an anonymous survey designed by the GVPC to ask LMC-trained individuals how they felt about the program and if they have implemented their training or shared LMC training with coworkers. This can be completed for free using Google Sheets and shared with participants six months and a year after completing the CALM training. Additionally, suicide rate trends in Roanoke should be monitored to evaluate long-term impacts. Depending on the success of this program, the GVPC may consider providing CALM training for the foreseeable future.

To ensure long-term success, the GVPC should request that the Roanoke City Council approve funding for LMC training in the city budget. This would provide a stable financial foundation for continued implementation in future years and allow for potential program expansion. Alternatively, the GVPC could seek external funding through grants from state and federal agencies focused on mental health and suicide prevention. While grants could offer short-term funding, securing a dedicated budget line from the city would be the most sustainable plan for annual LMC training in Roanoke. By embedding LMC training into the city's suicide prevention efforts with dedicated municipal funding, Roanoke can institutionalize this program, making it a long-term investment in mental health and public safety.

## Timeline

The full implementation of Lethal Means Counseling (LMC) within Roanoke City's suicide prevention efforts is expected to take three months from initial coordination to the completion of CALM training Sessions.

### **Month 1-** Stakeholder Engagement and Coordination:

1. Conduct a local stakeholder survey to confirm participation
2. Designate a GVPC commissioner to manage communication
3. Finalize a list of 28 professionals for training
4. Schedule training dates with CALM workshop leaders

### **Month 2-** Training Implementations:

1. Conduct two separate training sessions-- one for mental health professionals and another for police/EMS, tailored to learning experiences
2. Track completion by requesting CALM certification from participants

### **Month 3-** Initial Integration and Follow-up Planning:

1. Ensure LMC principles are incorporated into patient care and crisis intervention protocols
2. Develop an anonymous survey to be distributed to participants six months post-training to assess implementation and effectiveness

### **Ongoing Assessment** (6+ Months Post-Training):

1. Distribute follow-up surveys at six months and one year to gauge impact and collect feedback
2. Monitor suicide rate trends in Roanoke to evaluate the long-term effectiveness of LMC integration

## Conclusion

Firearm-related suicides present a growing crisis in Roanoke, demanding targeted and effective prevention strategies. While several approaches exist, this report identifies Lethal Means Counseling (LMC) as the most viable solution based on political feasibility, cost-effectiveness, under-18 engagement, and administrative feasibility. By integrating LMC into Roanoke's gun violence prevention efforts, the GVPC can take meaningful steps toward reducing firearm suicides while working within its current capacity.

Although Safe storage firearm maps and child access prevention laws offer potential benefits, they are either less effective for youth suicide prevention or face significant political and administrative challenges. Given these findings, the GVPC should adopt this evidence-based strategy to enhance community safety, provide life-saving interventions, and contribute to broader firearm suicide prevention efforts.



## Alternative's Appendix

### Appendix 1: Lethal Means Counseling Effectiveness on Suicide Rate.

Kruesi et al. (1999) followed 103 adults who received LMC after their child was hospitalized with a mental health crisis. Kruesi et al.'s (1999) multiple logistics regression model found an adjusted odds ratio of 3.6 with a 95% confidence interval ( $p=.04$ ). This model ran restricting/not restricting lethal means as the dependent variable and received/did not receive LMC as the predictor variable after controlling for age, gender, ethnicity, suicidal ideation, and time from hospital visit to follow-up. This study found that the control group had a 29% probability of restricting lethal means without receiving LMC. Using this probability and the 3.6 odds ratio, the new probability of restricting lethal means after receiving LMC is 59.52% (0.5952). The percentage point increase in safe storage of lethal means after LMC is 30.52 percentage points.

Converting Adjusted Odds Ratio to percentage points

$$.29/1-.29 = .29/.71 = .408$$

$$.408 \times 3.6 = 1.47$$

$$1.47/1+1.47 = 1.47/2.47 = .5952$$

$$.5952-.29 = .3052$$

Mueller et al. (2020) followed 215 patients hospitalized for a mental health crisis, of which 166 received CALM LMC. Researchers asked patients about their safe storage plans before and after receiving LMC and found that 75% of patients created a storage plan for their lethal means after receiving CALM LMC. This finding is statistically significant with a 95% confidence interval (CI 0.64-0.83). Mueller et al. (2020) acknowledged that this study was limited as most patients who received this CALM LMC were over 27, male, and had a history of mental health issues. Based on this research, Krusei et al. had a stronger causal analysis as they included controls and, unlike Mueller et al. (2020), did not report a selection bias. As a result, I utilized Krusei et al.'s (1999) analysis in the CEA.

Monuteaux et al. (2019) completed a Monte Carlo simulation on the association between safe firearm storage practices and youth firearm suicides. Firearm owners practiced safe storage, such as gun locks, in their hypothetical intervention. The simulation suggests that safe storage practices could have a statistically significant reduction in youth firearm suicides and unintentional deaths. Based on this study, each additional 10% increase in locked storage further reduced the incidence rate ratio (IRR) by approximately 5%, with the highest simulated increase (50%) reducing the IRR to 0.75. The estimated preventable deaths ranged from 50 (6.4%) at a 10% storage increase to 251 (32.1%) at a 50% increase. Monuteaux et al. (2019) acknowledge multiple limitations to this study, as the data are based on youth suicide demographics from 2004, and non-fatal incidences were also included in this analysis.

Literature on the impact of safe storage on suicides is limited. Monuteaux et al. (2019) is the only study quantifying the impact of safe storage on suicide. The study is strong, but the quality of these findings is limited for our effectiveness analysis. Based on Monuteaux et al.'s (2019) potential overestimation of effectiveness from 15-year-old data and the assumption that storage practices will have the same protective effect on all types of firearm injuries, including non-fatal ones, the 32% is likely a high estimate. To be conservative in our analysis, I will use the midpoint of the simulation findings and assume safe storage decreases youth suicide rates by 19%. I will then provide a sensitivity analysis based on the 6-32% range.

The possible range of the effect of LMC on suicide:

$$0.595 \times 0.06 = 0.0357$$

$$0.595 \times 0.19 = .11305$$

$$0.595 \times .32 = .1904$$

Decrease in suicides per 100,000 residents a year:

$$22 \times 0.11322 = 2.49$$

## Appendix 2: Costs for Lethal Means Counseling

This costing will assume this program is implemented over the next 5 years.

The median hourly pay for police officers in Roanoke, VA, is \$29 (Salary, n.d.).

$$\$29 \times 4 = \$116 \text{ per police officer present}$$

Mental Health Professional Representatives: VA's average mental health therapist makes \$45.83 /hour (U.S. Bureau of Labor Statistics, 2024-a).

$$\$45.83 \times 4 \text{ hours} = \$183.32 \text{ per mental health therapist present}$$

Roanoke City Fire Department/EMS Representatives: The average Firefighter in Roanoke City makes \$28 an hour (ZipRecruiter, n.d.-a).

$$\$28 \times 4 \text{ hours} = \$112 \text{ per firefighter present}$$

Event space costs \$230.79 per individual present and allows up to 24 people per training session.  
 $(\$230.79 \times 24) = \$5,538.96$

Assuming there are two CALM mental health professionals, and we include twelve mental health professionals, eight police officers, and four firefighters to receive the training:

$$14 (\$183.32) + 8 (\$116) + 4(\$112) = \$2,566.48 + \$928 + \$448 = \$3,962.48$$

Total cost for the event and lost opportunity costs per training session:

$$\$3,104 + \$5,538.96 = \$8,642.96$$

The present value costs over the next 5 years using a 3% discount rate:

$$PV = \sum_{t=1}^5 (8,642.96) / (1.03)^t$$

$$PV = 8,642.96 / 1.03^1 + 8,642.96 / 1.03^2 + 8,642.96 / 1.03^3 + 8,642.96 / 1.03^4 + 8,642.96 / 1.03^5$$

Year	Total Costs (\$)	Discounted Cost (\$)
1	8,642.96	8,392.19
2	8,642.96	8,148.73
3	8,642.96	7,911.41
4	8,642.96	7,680.00
5	8,642.96	7,454.37

$$PV = 39,586.70$$

### Appendix 3: Cost-effectiveness Calculations for LMC

$$2.49 \times 5 = 12.45 \text{ suicides averted over 5 years}$$

$$CER = \$39,586.70 / 12.45 = \$3,179.65 \text{ per number of suicides decreased per 100K}$$

### Appendix 4: Safe Storage Firearm Maps Effectiveness on Suicide Rate

Assuming 24.4% of the 27.3% of respondents who practiced safe storage did so due to safe storage maps:

$$0.244 \times 0.273 = 0.066$$

$$0.066 \times 100 = 6.66\%$$

The possible range of the effect of safe storage maps on suicide:  $0.066 \times 0.06 = 0.004$

$0.066 \times 0.19 = 0.013$

$0.066 \times 0.32 = 0.211$

Decrease in suicides per 100,000 residents a year:

$22 \times 0.013 = 0.286$

#### Appendix 5: Time Calculations for Safe Storage Firearm Maps

Maryland's researchers spent 64 working days on this project between January and April, researching and contacting the 215 firearm dealers and 133 law enforcement agencies in Maryland; we can assume that the GVPC could complete this task in much less time. As a result, the GVPC should take about 19 hours to complete this research. Community and social workers in Roanoke City make a mean hourly pay of \$24.56 (U.S. Bureau of Labor, 2024-b).

Time spent:

$64(8)/348 = 1.471$

$13(1.471) = 19.13$

#### Appendix 6: Cost for Safe Storage of Firearm Maps

Most Safe Firearm Storage Maps have been developed at no cost using Google Maps. Besides being freely shared online and on social media, the GVPC should print copies for healthcare facilities and gun shops across Roanoke. These copies can be distributed during the monthly GVPC meeting. Prints in color at a print shop, such as Staples, cost \$0.50 a page (Staples, n.d.). I recommend making 200 copies, which will cost roughly \$100. These copies will need to be remade once every year during the 5 years of the program.

Safe storage firearm maps will cost roughly \$566.64 to develop and share.

$19(\$24.56) = \$466.64$

$200(\$0.5) = \$100$

$\$100 + \$466.64 = \$566.64$

Assuming this program is continued for five years, there is a one-time fixed cost of \$466.64 in year one (initial contacts, map development). All five years have variable costs associated with distribution and printing (\$100). After year one, the GVPC will only need to update the map as gun shops request to be added or removed. This should not require more than five hours a year, with a fixed cost of \$122.80.

*Fixed costs calculation:*

$$5(\$24.56)=122.80$$

$$\$122.80+\$100=\$222.80$$

The present value costs over the next 5 years using a 3% discount rate:

$$PV=5\sum_{t=1}^5(566.64)/(1.03)^t$$

$$PV=566.64/1.03^1 + 124.56/1.03^2 + 124.56/1.03^3 + 124.56/1.03^4 + 124.56/1.03^5$$

Year	Total Costs (\$)	Discounted Cost (\$)
1	566.64	550.14
2	222.80	209.99
3	222.80	203.84
4	222.80	197.87
5	222.80	192.23

$$PV = \$1,354.07$$

#### Appendix 7: Cost Effectiveness for Safe Storage Firearm Maps

$$0.286 \times 5 = 1.43 \text{ suicides averted over 5 years}$$

$$CER = \$1,354.07 / 1.43 = \$946.90 \text{ per the number of suicides decreased per 100K}$$

#### Appendix 8: Lobbying Cost Calculations

Coalition building is already commonplace among the GVPC commissioners, but this would likely require a few hours per week until the 2026 January regular session begins for coalition building with organizations and politicians. This costing assumes the GVPC will designate 3 hours a week from May 1st, 2025, until January 1st, 2026, to lobby against State Preemption laws.

$$3 \text{ hours (35 weeks)} = 105 \text{ hours}$$

$$105 (\$24.56 \text{ hr. wage}) = \$2,578.80 \text{ (U.S. Bureau of Labor, 2024).}$$

#### Appendix 9: Cost Effectiveness of CAP Laws on the Total Suicide Rate

Morrall et al. (2018) found CAP laws reduced the total suicide rate by 8.3 percent for individuals between the ages of 14 and 17.

Decrease in suicides per 100,000 residents a year:

$$22 \times 0.083 = 1.826$$

$$\text{CEA} = \$2,578.80 / 1.826 = \$1,412.27 \text{ per the number of suicides decreased per 100K}$$

## Outcome Matrix Appendix

### Appendix 10: Outcome Matrix

Lethal Means Counseling

$$(.30)(3) + (.20)(3) + (.30)(4) + (.20)(2) = 3.9$$

Safe Storage Firearm Maps

$$(.30)(3.7) + (.20)(1) + (.30)(4.3) + (.20)(3) = 3.2$$

Lobby for CAP Laws

$$(.30)(5.2) + (.20)(2) + (.30)(5) + (.20)(1) = 3.66$$

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