In 2016 alone, 3,143 American youth under the age of 20 died from firearms, making firearms the second leading cause of death among this age group.\(^1\) Of the deaths related to firearms, 59 percent were from homicide, 35 percent were from suicide, 4 percent were from accidental causes, and 2 percent had undetermined intent. Between 2013 and 2016, firearm-related deaths increased by 28 percent.

Compared to other high-income countries, youth in the United States (US) were 35 times more likely to die by firearm at a rate of 4.02 per 100,000 youth.\(^2\) In 2010, the US was responsible for 91 percent of the global firearm mortality rate of children under 14.\(^3\) In addition, over 8,000 youth under the age of 18 arrive in emergency departments for firearm-related injuries every year, resulting in $270 million of emergency department and inpatient costs.\(^4\)

Firearm-related mortality disproportionately affects older male youth, African American youth in homicides, and Caucasian youth and American Indian youth in suicides.\(^5\) Urban youth are 2.3 times more likely to die from firearm homicide than rural youth; conversely, rural youth are 2.1 times more likely to die from firearm suicide than urban youth.\(^2\)

Recent High Profile Mass Shootings in Schools

<table>
<thead>
<tr>
<th>Date</th>
<th>Location</th>
<th>Casualties</th>
</tr>
</thead>
<tbody>
<tr>
<td>May 7, 2019</td>
<td>STEM School Highlands Ranch, Colorado</td>
<td>1 dead, 8 injured.</td>
</tr>
<tr>
<td>May 18, 2018</td>
<td>Santa Fe High School, Texas</td>
<td>10 dead, 13 injured.</td>
</tr>
<tr>
<td>Feb 14, 2018</td>
<td>Marjory Stoneman Douglas High School, Florida</td>
<td>17 dead, 17 injured.</td>
</tr>
<tr>
<td>Nov 14, 2017</td>
<td>Rancho Tehama Elementary School, California</td>
<td>6 dead, 18 injured.</td>
</tr>
</tbody>
</table>

Although mass shootings garner media attention, they account for a small percentage of total firearm-related deaths; the percentage differs according to how the source defines mass shooting as there is no broadly accepted definition of the term.
Effects of Firearm Violence on Youth

Youth exposed to firearm violence are at a high risk of suffering from short and long-term physical, emotional and psychological conditions. Between 1995 and 2002, nearly 46 percent of the children who arrived in the emergency department for a firearm-related injury left the hospital with some disability. Seven percent of the children suffered from a long-term disability due to nerve damage.

Beyond the physical conditions, youth can experience symptoms such as anxiety, nightmares, insomnia, depression, fear, lack of safety, grief, and guilt which can lead to Acute Stress Disorder, Post-Traumatic Stress Disorder, and substance abuse. These conditions can affect school performance, absenteeism, well-being, and quality of life. For instance, one study found that elementary students who went to school in an area with a relatively higher concentration of gunshots had standardized test scores that were 50 percent lower than elementary school students in areas with fewer gunshots.

One year after the 2018 mass shooting at Marjory Stoneman Douglas High School in Florida, two students who survived the shooting committed suicide. Furthermore, the portrayal of mass shootings in the media can still have a negative effect on the mental health of students who have not directly been exposed to firearm violence.

Factors Associated with Firearm Mortality

Age: Adolescents (13-17 years) are 12 times more likely to die from firearm-related causes than younger children (0-12 years). Among younger children, firearm homicides were more likely to involve intimate partner violence or family relationship problems. Among older children, firearm homicides were more likely to be due to gang violence or drug involvement.

Gender: The firearm-related mortality for male youth is five times higher than that of female youth.

Race: African American youth are 14 times more likely to die from firearm-related causes and 10 times more likely to be hospitalized for firearm-related causes than their Caucasian counterparts.

Mental Health Conditions: More than one in four youth disclosed their intent to die before committing suicide with firearms; 34 percent of youth that committed suicide by firearms had depression and 26 percent had a mental health condition that was clinically diagnosed.

Poverty: Gun violence is heavily concentrated in disadvantaged communities with high rates of poverty.

Access to Firearms: As household firearm ownership increases, the chance that a young person successfully commits suicide increases by a factor of 3-4.
Approaches to Addressing Firearm Violence in Youth

There are multiple court-based, school-based, and hospital-based prevention and intervention programs throughout the country to address the complex dynamics of firearm violence, especially in inner-cities where firearm violence has become the norm.\textsuperscript{13,14} Prevention programs are designed to change the behavior of youth and parents. These programs include a national anonymous hotline for youth to report threats, an education program that facilitates communication between physicians and parents about safe storage of firearms, and a community-based, after-school program to reduce youth exposure to violence at home.\textsuperscript{13} Numerous outcomes-based studies indicate that such prevention programs did not have any significant effects.

Community planning and implementation of comprehensive intervention programs, on the other hand, have shown improvements. The Cure Violence program was started in 2000 in a community with one of the highest firearm violence rates in Chicago. Through an approach that included detecting and interrupting planned violence and working to change the culture of the community and the behavior of at-risk youth, the program reduced firearm mortality by 41 to 73 percent in the neighborhood.\textsuperscript{14} Similarly, Operation Ceasefire, a program started in Boston, Massachusetts in 1996, reduced firearm homicide in youth by 63 percent by focusing on high criminal activity of a small number of gang-involved youth.\textsuperscript{15}

Firearm Safety Legislation

The debate around firearm regulation is contentious as opponents of such regulations argue that the limitations are infringing upon their Second Amendment rights to bear arms. Firearm safety legislation, however, is a key strategy to decreasing firearm-related injuries and deaths.\textsuperscript{16} The following are evidence-based firearm safety policies suggested by public health experts to be enacted at the federal level:

- The requirement of universal background checks no matter where the firearm is sold
- The requirement of mandatory training and licensing to purchase a gun
- The institution of waiting periods for those who wish to purchase a gun
- The institution of Extreme Risk Laws that allow family members and law enforcement to petition judges to remove firearms from at-risk individuals
- The institution of child access prevention laws that ensure safe storage of firearms in households to reduce unsupervised access by minors
- The reinstitution of a ban on assault weapons
- The provision of mandatory mental health services in schools for youth who have been exposed to firearm violence and economic development investments in disadvantaged areas with high crime

Currently, some states have much less stringent regulations than others. Shared national policies may help to create better minimum standards for safety regulations.\textsuperscript{16,17,18}
Caring for Our Youth

Rather than taking active measures to prevent the acquisition of firearms by those who may misuse them or placing pressure on firearm manufacturers to develop better firearm safety technology, our society puts our youth through active shooter drills that teach them how to respond to being attacked. These drills can cause emotional distress. Our youth need access to mental and emotional health care, strategies to help them cope with stressful situations and trauma, and environments where they can confide in adults and peers about their exposure to firearm and firearm violence. Researchers, physicians, and lawmakers agree that more work needs to be done to understand and address the effects of firearm violence on our youth.

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