

Gun Violence in Children: A Public Health Crisis and an Upstream Approach to Our Response

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For the past 6 decades, motor vehicle crashes have been the leading cause of death for American children and adolescents.¹ However, in 2020, guns overtook motor vehicles as the leading cause of death for all American youth.² We are now living in an age where guns kill more children than cancer or infection; we are living in a country where a child dies by a gun, on average, every 3.5 hours.³ Every week, we lose 2 classrooms full of American children due to gun violence.

These dire statistics are also true for kids in Wisconsin: as of 2020, guns are the leading cause of death for Wisconsin children. From 2020 through 2022, guns claimed the lives of 130 Wisconsin children aged 0 to 17 years and 96 young adults aged 18 to 19 years.⁴ As a comparison, these deaths represent a respective 23% and 99% increase from the years 2015 through 2018.⁴ At Children's Wisconsin, we have seen a 3-fold increase in firearm injuries

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at our level I pediatric trauma center compared to prepandemic numbers: during 2016-2019, we treated 40 to 50 children per year for gunshot wounds, while in 2023, we saw more than 140 kids with gun shot wounds. We also have seen a sharp increase in firearm-related mor-

tality at our hospital, peaking at 12 pediatric deaths in 2022.⁵

As we formulate our response to this national public health crisis, it is important to consider how guns impact children differently based on socioeconomic status, gender, age, and race. For example, children living in poverty are more likely to die from firearm injuries than their wealthier peers, and boys represent 85% of all pediatric gun deaths.² In children under 11 years of age, a significant percentage of firearm-related deaths are due to unintentional discharge (19%), while among adolescents, suicide represents an increased burden of firearm-related deaths (31%).³ Across all ages, however, gun assaults remain the leading cause of firearm-related deaths, representing over two-thirds of all children who die by gun violence.³

Pediatric gun violence rates also vary widely—and tragically—by race, with Black children by far being the most affected: Black children are 6 times more likely to die by gun violence than White children.⁶ Black children comprise just 14% of the US pediatric popu-

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lation, yet account for a staggering 48% of firearm-related pediatric deaths.⁶ Gun violence has risen among other racial groups as well: from 2018 through 2022, Hispanic youth experienced a 73% increase in firearm deaths, and rates among American Indian and Alaska Native children nearly doubled.³ White children, meanwhile, are disproportionately affected by gun suicide: in 2021, 78.4% of all pediatric firearm suicides were White children.²

The impact of gun violence continues far beyond hospital walls. Families, communities, health care workers, first responders, and educators carry long-lasting psychological burdens when a child is a victim of gun violence. Children who are injured by firearms have an increased risk of inpatient hospitalization, emergency department visits, mental health

Legislation	Parameters	Evidence
Child access prevention	Holds a gun owner liable if a child accesses a firearm. Degree of criminal liability varies based on state law.	The strictest child access prevention laws are associated with decreased pediatric firearm mortality. ¹⁵
Universal background checks	Federal and local law enforcement checks of an individual purchasing a firearm.	In a 5-year analysis of gun laws and pediatric mortality rates, universal background checks were associated with lower firearm mortality rates in children. ¹⁵
Extreme risk protection, aka “Red Flag Laws”	Through a court order an individual who may be at imminent risk of injuring themselves or someone else may have their firearms temporarily removed and may be temporarily prohibited from purchasing a firearm.	Analyses following the implementation of Indiana and Connecticut Extreme Risk Protection Orders have shown decreases in suicide deaths in their states. ^{15,16}
Buyer regulations	Examples of buyer regulations include increasing the minimum age for purchasing certain types of firearms, requiring permits or licenses, and mandatory waiting periods. ¹⁵	The mandatory 48 hour waiting period for purchasing a handgun in the state of Wisconsin was repealed in 2015. This repeal has been associated with increased suicide rates in the state. ¹⁷

care utilization, substance use treatment, and health care costs in the year following their injury.^{7,8} Research has shown that youth who simply witness gun violence, without being directly victimized, experience posttraumatic stress disorder, anxiety, and poor school performance.^{3,9} Exposure to gun violence also affects first responders and health care providers: multiple studies have shown increasing rates of posttraumatic stress disorder among these groups specifically.^{10,11} As the ripple effects of gun violence continue to traumatize so many Americans, we must enact change.

A Multifaceted Public Health Approach

An upstream, evidence-based public health approach to gun violence prevention is crucial to save the lives of children. We can look to successful public health injury prevention techniques in history for guidance: one particularly effective public health success story is decreasing injury and death due to motor vehicle crashes (MVC). Over the past 60 years, there have been steady financial, cultural, technological, and structural investments in our country to make automobiles safer, eventually leading to a 40% decrease in MVC-related injuries since 2000.¹ Seatbelts, airbags, and blind spot alerts represent examples of technological advancements that have made our cars safer, while drunk driving laws, driver’s license age limits, and roadway reconfigurations are examples of legislative and environmental advancements that have made driving safer in general. There is also a federal

agency that specifically oversees the safety of motor vehicles: the National Highway Traffic Safety Administration (NHTSA).¹ For decades, the NHTSA has maintained a database of the surrounding details for all MVC-related injuries and deaths, which has invaluable informed and shaped legislation, medical research, and publicly available data on automobile safety ratings in our country.

Now let’s apply the lessons learned from this public health success story to guns: although guns are now the leading cause of death for American children, guns currently are not regulated by any federal agency. There is no federal database of gun shot wounds or firearm-related deaths. Gun manufacturers are exempt from civil prosecution,¹² and until 2019, medical research on gun violence prevention was restricted by federal law.¹³ Meanwhile, the lethality of bullets, capacity of magazines, and firing rate of firearms all have increased dramatically during a time when legislation to address gun access and safety has relaxed nationwide.

A public health approach to preventing firearm injuries and deaths requires significant investment across public and private sectors. We need to prevent gun violence before it occurs with secure storage, evidence-based policy and legislation, and gun safety education. We need to mitigate the lethality of guns with industry regulations and technological advancements, and we need to improve outcomes for gun violence victims after an injury has occurred. Finally, it is essential we understand the etiology and disparities of gun vio-

lence with evidence-based research to target specific interventions and education at each level of care. Examples of a multifaceted upstream approach to gun violence include secure storage, community- and hospital-based violence intervention programs, and legislative measures and are detailed below.

Secure Storage

Secure firearm storage is a life-saving measure that can prevent deaths due to both suicide and unintentional shootings. The American Academy of Pediatrics (AAP) defines the secure storage of a firearm as unloaded, locked, with ammunition locked and stored separately from the firearm. Approximately 4.6 million children in the US live in a house with an improperly stored gun.¹⁴ Notably, 85% of gun-related deaths in children under 12 occur at home.¹⁵ The AAP emphasizes the need for pediatricians to provide anticipatory guidance on safe storage practices during all well child checks; ideally, this should be done for patients of any age to prevent gun-related suicides and homicides. There are a wide variety of secure storage devices that range in cost, from trigger locks to biometric safes; guidance on which device to choose should be tailored to each family’s needs and locally available resources.

Community and Hospital Investments

Community violence intervention (CVI) programs and hospital-based violence intervention programs (+HVIP) are essential elements

of a comprehensive approach to gun violence. CVI programs focus on community level in fostering collaboration between hospital systems, trusted community members, community-based organizations, and government entities to reduce gun violence. This approach has been utilized in many major metropolitan areas with successful reductions in homicides. HVIPs identify youth who have experienced violent injuries and connect them with victim advocates. These advocates provide support throughout the healing process, with the goal of promoting recovery and reducing the risk of future violence. HVIPs have shown significant success in breaking cycles of violence and reinjury.¹⁵ Investing in these programs is essential, as their preventive impact reduces both violence and the overall disease burden. Clinicians and health care systems must continue to invest in these lifesaving initiatives to ensure their long-term effectiveness.

Legislative Approaches

As health care providers, an understanding of how effective legislation at both the state and federal levels can save the lives of children is also essential. Child firearm access prevention laws, universal background checks, and extreme risk protection orders are all examples of legislation that work to prevent gun deaths and injuries.^{15,16,18,19} The Table demonstrates examples of these type of evidence-based legislative solutions.

Conclusions

Guns are the leading cause of death for children across the US, including Wisconsin. Gun violence in youth is a public health crisis that requires a multifaceted upstream approach to overcome its current catastrophic trajectory. Approaching the crisis with such evidence-based public health methods as secure storage counseling, CVI and HVIP investments, and legislative action will mitigate gun deaths and injuries in children. We pediatricians are used to advocating for children's safety, from bike helmets to swimming lessons; it is now time for all health care providers, across the age spectrum, to advocate for gun violence prevention. It is time for us to look upstream and protect our country's and our state's children.

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