"The Gun Violence Epidemic: A Public Health Crisis"

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Introduction

Chair Durbin, Ranking Member Graham, and Members of the Committee, thank you for the invitation to participate in this hearing. And thank you for conducting this hearing, thereby recognizing gun violence as a public health problem.

I am a board-certified emergency physician and dean of the Yale School of Public Health. I have spent nearly 20 years working as an emergency medicine physician in a Level I Trauma Center. Because of that experience, I have also spent much of the last 15 years working as a public health practitioner to confront the growing epidemic of firearm injury in America.

Since the beginning of my career, I have seen deaths from firearms in the United States eclipse deaths from breast cancer. I have seen firearms overtake motor vehicle crashes as the leading cause of death for American children. And I have seen firearm injuries inexorably change the lives of American adults and children.

Across our great country, every day more than 100 people die and more than 300 are injured from a gunshot wound.[1,2] Firearm injury meets the definition of an epidemic – and must be treated as such, using a public health approach to reduce health harms.[3,4]

This public health approach is, by definition, collaborative, and must involve both gun owners and non-owners to achieve change. We are, together, committed to creating change through the public health approach.

I provide this testimony to advance that work. I will focus on four key elements:

1. My personal experiences as an emergency physician and public health practitioner.
2. The health impacts of firearm injury and the scope of the problem in the US.
3. The public health approach to the epidemic of firearm injury – and how this approach can reduce firearm injuries, deaths, and their ripple effects, particularly in the most affected communities.
4. And, finally, how Congress can act to make progress, faster.

1. My Experience as an Emergency Physician and Public Health Practitioner

In the United States, treating firearm injuries is a routine part of emergency medicine.

During our training as residents in emergency medicine, we learn how to be experts at saving the lives of those shot by a gun. We complete a certification in the Advanced Trauma Life Support system. We are taught how to crack the chest wall and clamp the aorta, the body's main artery, to try to keep the heart beating until we can stop other blood vessels from bleeding out. We learn which gunshot wounds must go directly to the operating room. We learn how to initiate damage-control resuscitation.

While I was in training, though, we rarely, if ever, asked what could be done to avert the gunshot wound in the first place.

That changed, for me, about 15 years ago, after I cared for a young man – the son of a law enforcement officer - who had shot himself with his parent's firearm. He was the first patient I'd cared for who had intentionally shot himself. His injury was heartbreaking, as were others I'd seen from gunshots, and was life-ending.

That young man changed my perspective on gun violence in three ways.

His death drove me to learn more about firearm suicide – and to realize that we did not see firearm suicide attempts in the emergency department, not because they were rare, but because they were so often fatal. I questioned why we had not learned in medical school or residency about the tremendous danger of letting someone with depression have access to a gun.

His death led me to question why we didn't think about gunshot wounds the same way we think about drunk driving or heart disease. Much of my training was dedicated to learning how to screen for and intervene to reduce the future risk of these disorders (as well as many others). Why did we ignore risk reduction for firearm injury?

Most disturbingly, I noticed the stark difference in how my colleagues responded to the firearm suicide, compared to the everyday toll of community gun violence. I couldn't help but wonder whether we were accepting community violence, simply because we expected it; or whether we were accepting it, because most of the victims were Black youth.

Since that case, I have cared for every type of firearm injury victim: the drive by, the bystander, the domestic violence victim, the person who unintentionally shot themself or someone else, the attempted suicides (and one more suicide death), and, of course, the patients who were shot by someone due to a community conflict. I have saved the lives of some patients, but not all. I have

informed countless families of the loss of their loved ones; have sat with bereft mothers, daughters, fathers, and brothers in the worst moment of their own lives; and have calmed the emergency department waiting room as it erupted in sadness and anger after an unexpected loss.

And most of all, for nearly 15 years, I have worked to define and implement a public health approach to firearm injury – one in which we define and capture the opportunities for prevention, just as we do for heart disease, car crashes, and so many other causes of suffering and death.

I have done so in partnership with very different communities across the United States, with gun owners and non-gun-owners alike at the table. It was in partnership that I co-founded AFFIRM at the Aspen Institute, a non-profit dedicated to bringing together different perspectives to drive public health solutions to this intractable epidemic, in 2017. It was in partnership that I and nearly 40,000 other physicians, nurses, other health care workers, and public health professionals declared in 2018 that, regarding gun violence, "This Is Our Lane."[5,6] And it is in partnership that I have worked with grassroots community-based violence intervention leaders, hospital social workers, faith leaders, law enforcement officers, and survivors, towards one common goal: to attempt to staunch the tide of preventable firearm deaths in the United States.

We are joined together in a belief that if we wait until a patient gets to the emergency department with a gunshot wound, it is too late. We have failed them and their community.

2. The Scope of the Problem in the United States

To be clear: firearm injury is a health crisis in the United States. Here is how we know this.

2a. Firearm Deaths

In 2021, 48,830 Americans died from gun-related injuries – the highest total since the Centers for Disease Control and Prevention (CDC) began collecting data in 1968.[2] The per capita firearm death rate in 2021 (adjusting for population size) was the highest since the mid-1990s, at 14.6 deaths per 100,000 people.[2] In both 2020 and 2021, firearm injury surpassed car crashes to become the leading cause of death of U.S. children (age 1-19).[1]

Despite loud media coverage of public mass shootings, these horrific events comprise a sliver of total firearm deaths in the United States.

The leading type of gun death, for decades, has been suicide by firearm. On average over the last decade, 60% of gun deaths were suicides; in 2021, 54% of all gun-related deaths were suicides and 43% were homicide (including intimate partner violence).[3] Firearm suicide death rates have been rising since 2006.[4] Firearm homicide rates have been increasing since 2014.[7] Even though

2022 provisional data suggests that firearm homicide deaths decreased slightly compared to the prior year, they remain elevated compared with 2019.[4]

Firearm deaths are distributed across rural, suburban, and urban areas. In general, though, firearm suicide and homicide rates are highest in communities with social and economic vulnerability, communities affected by racial inequities, and communities with higher rates of firearm ownership.[8] In 2021, the highest firearm mortality rates were observed in Mississippi (33.9 per 100,000), Louisiana (29.1), and New Mexico (27.8).[4]

Differences in risk are observed by demographic groups. Firearm suicide rates are highest among males, older adults, and non-Hispanic Whites; middle-aged American Indian/Alaska Native persons are also at disproportionately high risk.[2] Firearm homicide rates are highest among young Black Americans.[2] In 2021, Black people in all age groups were 14 times more likely to die by gun homicide than their White counterparts,[9] and Black children from 0-19 years of age had a firearm homicide death rate 11 times higher than White children.[10] American Indian/Alaska Native children had the highest rates of firearm suicide in children (2.0 per 100,000 persons) in 2021.[10]

Men account for 86% of firearm deaths and 87% of injuries,[2,7] but women are at elevated risk of one type of firearm death: partner violence. More than half of intimate partner homicides are with firearms, and most of these deaths are women.[11] Black and American Indian/Alaska Native women are at a disproportionately higher risk of intimate partner homicide when compared to other races and ethnicities.[12,13]

Each of these deaths represents a mother, father, brother, sister, and neighbor whose life is lost.

2b. Firearm Injury

Injury from firearms is also common, although it is difficult for us to know exactly how common it is. In fact, the CDC removed firearm injury data from its website in recent years due to concerns about the accuracy of their estimates.[14]

The best current estimates of firearm injury derive from academic papers (e.g., Kaufman et al, 2021), non-profit datasets (e.g., the Gun Violence Archive, which collates data from media sources), and city-specific datasets (e.g., Philadelphia's gun violence dashboard).[15–17] To the best of our knowledge, ~70% of non-fatal firearm injuries are assault, ~20% are unintentional or "accidental", and the minority are self-harm (reflecting the high fatality rate of suicide attempts with firearms).[18]

To the best of our knowledge, similar patterns of demographic, geographic, and socioeconomic risk are observed for firearm injury, as for death. In addition to demographics and firearm access, factors such as a history of domestic violence, substance use, suicidal thoughts, and prior violence are well-established markers of risk for future injury.[19]

In other words, the risk of injury and death is influenced by some individual and community characteristics, but no one is immune. A recent survey by a nonprofit research organization, KFF, reports that 54% of adult Americans say that they or an immediate family member has been shot at, been killed, has used a gun defensively, or has been present at a shooting.[20]

2c. Costs and Long-Term Impact of Firearm Injury

The health impact of this crisis extends beyond immediate injury and death. Firearm injury is economically costly and has long-term health effects.

The United States Government Accountability Office estimates that medical treatment for firearm injuries costs the U.S. more than $1 billion per year, accounting only for the initial injury-related costs.[21] Nearly two-thirds of this cost is borne by Medicaid, e.g., by the government.[21] However, this figure is a significant underestimate. It does not account for the criminal justice and economic effects of violence. Relevant to the public health crisis, this figure also leaves out the long-term medical costs for the victim, health effects on family and community members, and other long-term ripple effects of the injury.

One paper found that in the six months after a nonfatal firearm injury, medical spending for survivors increased by 3 to 20 times compared with the six months prior to the injury.[22] Another study found that child and adolescent survivors of firearm injury had an average increase of $34,884 in medical spending in the 12 months post-injury.[23]

Multiple studies have identified increases in mental illness in the months and years after a gunshot wound – not just for firearm injury survivors, but also for family and community members.[23,24] For child and adolescent firearm injury victims under the age of 19, their fathers had a 5.3-fold increase in treatment for psychiatric disorders in the year after the death; mothers had a 3.6-fold increase; and surviving siblings had a 2.3-fold increase.[23] These mental health effects may be lifelong.[24]

2d. A note on mental health

The relationship between mental health or mental illness, and firearm injury, is complex.

Studies have shown that people with serious mental illness are more likely to be victims of violence than perpetrators of violence.[25,26] Although data on mass shooters are scant, analyses by The Violence Project suggest that although almost all mass shooters had a recent "crisis," and many were suicidal, the prevalence of psychosis was only slightly above that of the general population.[27] Firearm homicide, in general, is predicted better by a prior history of violence (particularly domestic violence) or by substance use disorder than by mental illness, per se.[27, 28]

There are, however, two places where firearm injury and mental illness are clearly linked.

The first is the risk for suicide; this is why we encourage physicians and other health care providers to screen all people with depression or suicidal thoughts for firearm access and to counsel on removing access to lethal means.[19,29] Increasing access to mental health treatment is also important, but alone cannot stem the tide of firearm suicides[30]; removing guns from the environment of people who are at risk is a necessary strategy for saving lives.

The second clear link is between exposure to firearm injury, and later mental health problems. This relationship holds particularly true for children, including children who live proximate to a shooting (even if they themselves have not been shot).[31,32, 36] Community members living close to a mass shooting, people with media exposure to firearm injury, and exposure to certain types of school shooting drills, may also increase anxiety, post-traumatic stress, and other types of mental illness.[33–36]

Links also exist between exposure to firearm injury, and mental health problems among first responders, emergency physicians and nurses, trauma surgeons, and more.[37,38] Workplace violence and the threat of firearm injury in the hospital also contribute to this problem. I personally know multiple physicians who have left the practice of medicine due to trauma from caring for victims of gunshot wounds.

3. The Public Health Approach to the Epidemic of Firearm Injury – and Examples of Real Impact in the Most Affected Communities

3a. What is the public health approach?

In the face of this massive health problem, what can we do?

As Dr. Marian (Emmy) Betz and I recently outlined, in a paper for the Aspen Health Strategy Group led by former U.S. Senator William Frist and former Secretary of Health and Human Services (HHS) Kathleen Sebelius,[8] we can and must apply the public health approach to firearm injury – just as we do for any other injury or illness:

"Just as medicine has standardized algorithms to diagnose and treat common medical complaints, the field of public health has a systematic approach for responding to epidemics. By conceiving of firearm injury as an epidemic we can apply this well-defined and historically successful process and hopefully break the logjam that frequently removes hope and agency around this topic.

This public health framework uses a repeating cycle of four interrelated steps.

> *1. Identification and measurement: using data to define the scope of the problem, including analyzing epidemiologic patterns regarding injury type, trends over time, and populations most at risk;*
>
> *2. Definition of risk and protective factors: identifying which factors increase or decrease the likelihood of injury or death, disaggregated by specific populations;*
>
> *3. Intervention development: designing and testing interventions to reduce risk or increase protective factors in specific populations;*
>
> *4. Dissemination: scaling up effective interventions by implementing them in different and larger settings."*

Inherent to the public health approach – although not confined to these four steps – is a commitment to the concept of **harm reduction**, in which we try to minimize rather than eliminate human illness or injury. The harm reduction approach is based on the acknowledgement that any reduction in human harm from an epidemic is worthwhile, while also acknowledging that eliminating the causes of an epidemic may not be possible.[39]

A strength of applying the public health approach to the epidemic of firearm injury is that it focuses both analysis and solutions, on minimizing **human health harms**, instead of focusing on a criminal justice problem. A slew of potential solutions become possible with this lens.

3b. An example of the public health approach, applied to another injury epidemic: car crashes

Our country's success in decreasing car crash deaths serves as a useful example of how this standardized four-step public health approach, combined with the concept of harm reduction, can work.

Since the 1970s, the rate of car crash deaths (adjusted for population) has decreased by more than 70%, despite there being more cars on the road than ever before.[40] To achieve this success, our country used the four-step public health approach: defining the huge scope of the problem, by creating datasets and developing programs like the National Highway Traffic Safety Administration; reliably identifying risk factors for car crash deaths such as drunk driving, and

protective factors such as seatbelts; developing and testing interventions (like car seats, speed limits, and drunk driving educational campaigns) to reduce risk and mitigate harm; and then, most importantly, scaling what worked.

We did all of this, of course, together with other disciplines, such as engineering, law enforcement, and more. But the public health approach was the foundation of the work to reduce immediate and long-term health impacts of what was, at that time, a devastating epidemic.

Importantly, we applied the public health framework in a way that did not abrogate rights or freedoms.

Consistent with the principles of harm reduction, the public health approach did not eliminate *all* deaths from car crashes. But it drastically reduced the burden and provided a roadmap and a focus that decreased human health harms.[41] In recent years, we have seen deaths tick back up, largely due to cell phone use, and are returning to this approach to address the new challenge.[42]

3c. If the public health approach is so great, why are firearm injuries and deaths increasing?

I am frequently asked, "If the public health approach is so great, why are firearm injuries and deaths increasing?" The answer is simple: To date, this public health approach has not been systematically applied to firearm injury prevention. The reasons are four-fold:

- *Lack of funding*

From 1996, when U.S. Representative Jay Dickey's eponymous "Dickey Amendment"[43] was passed forbidding the CDC from using funds "to advocate or promote gun control",[44] until 2020, Congress appropriated no funding for firearm injury prevention research.

As a result, total federal funding for firearm injury prevention research was approximately 0.7% of federal funding for sepsis research from 2004-2015 – despite similar mortality burdens for the two health conditions.[45] Only $12 million of federal funds were granted for pediatric and adolescent firearm injury prevention research from 2008-2017 ($537 per death), compared to $335 million for pediatric cancer – despite firearm injury being (at that time) the second leading cause of death for U.S. children, and cancer being the third.[46]

In parallel – likely due to the lack of funding to support researchers, data collection, analysis, and implementation – the number of researchers working on this issue, and the number of publications related to firearm injury, dropped precipitously.[47]

(In fact, in the mid-2000s, mentors specifically told me to *not* study or work on this issue, because there was seemingly no way to do so, successfully.)

Representative Dickey himself stated before his death that firearm injury prevention research could and should be funded.[48] Funding was finally restored in 2020, under a Health and Human Services budget overseen by Secretary Alex Azar, after a years-long campaign by physicians, nurses, social workers, public health researchers, and survivors.[49] Congress appropriated $12.5 million to the NIH and $12.5 million to the CDC in 2020, 2021, and 2022, respectively.[50]

Even this relatively limited funding (in the context of the funding appropriated for similarly prevalent diseases) has been threatened in the House's 2023 appropriations.[51]

- *Lack of data*

The second reason we have not succeeded in systematically using a public health approach to gun violence is a lack of reliable data. Many of the statistics cited in this testimony derive from the Web-based Injury Statistics Query and Reporting System (WISQARS), Wide-ranging Online Data for Epidemiologic Research (WONDER), and the National Violent Death Reporting System, all housed in the CDC.[2,52,53] But the majority of these are death data – which represent only part of the epidemic.

Across the United States, we lack basic data on firearm injury rates and demographics.[54] Medical and billing codes for firearm injuries are often insufficient.[55–57] We lack accurate counts of defensive gun use and near-misses.[58,59] We lack data on long-term health effects of a gunshot not just on the patient, but on society.

Even when data is available, it is slow. For instance, as I write this testimony, the most comprehensive published death data is from 2021. The CDC is trying to address this lag through novel initiatives, such as its recent Firearm Injury Surveillance Through Emergency Rooms (FASTER) grants. But without recent data, we cannot act in real-time to address emerging hot spots of firearm suicide or homicide. We also cannot evaluate whether programs are working, to decrease injury and death.

Data on risk factors and protective factors (including firearm access or lack thereof) is also minimal. This deficit reflects legislation which suppresses data.[60,61] It also reflects lack of interoperability between datasets that might be related (for example, it is surprisingly difficult to join hospital data, law enforcement data, and mental health agency data in a given state, city, or county, in order to accurately identify numbers and patterns of shootings and deaths). This is only ostensibly due to privacy concerns; we successfully connect data for other illnesses and injuries, and do so in ways that are not individually identifiable.

Without the ability to comprehensively measure risk or protective factors, it is harder to tailor or target prevention programs appropriately – or to evaluate their success.

- *Lack of training*

As reflected by my own experience as an emergency physician, health care workers – such as physicians, nurses, psychologists, and others – receive little standardized training about how to assess risk for firearm injury, or how to mitigate or reduce risk. In 2016, I led a systematic review that found that a minority of pediatric, psychiatric, and family medicine residencies provided training on how to identify or intervene with patients at the highest risk of firearm injury, such as those with suicidal intention.[62] Psychiatric nursing and physician assistant programs also infrequently reported offering firearm safety training to their students.[62] This is despite evidence that patients and families are largely accepting of screening and brief interventions.[62]

Additionally, few public health professionals receive systematic training on how to approach or research this topic.[63,64]

Over the past few years, a group of researchers worked with the Association of American Medical Colleges to develop a set of learning objectives for firearm injury prevention in health care training.[65] Numerous pilot projects for health care students and trainees have been developed, some of which have promising results.[63] The Association of Schools and Programs in Public Health has developed a framework for education on firearm injury prevention.[64]

However, even today, only 14% of Americans report that a physician has talked to them about firearm safety,[20] and only a handful of academic research and educational centers are dedicated to this topic.[66]

We cannot begin to develop, much less apply, a rigorous public health approach if health care providers and public health professionals have not been taught the basics.

- *Lack of partnerships*

Most of all, it is critically important for the four-step public health approach to be applied in partnership with community members and community groups – those who are personally affected by the problem and by the proposed solutions. These partners can ground data collection, intervention development, and intervention scaling in their own lives.

This work has started in some communities, showing that the barriers to making progress are not insurmountable.

For example, projects have been launched as collaborations between public health professionals and gun shop owners, firearm instructors, the Department of Defense, and the Department of Veterans Affairs to reduce the common, but preventable, risk of firearm suicide (e.g., the Gun Shop Projects initiated in New Hampshire; Project Safe Guard with the National Guard; Gun Storage Maps initiated by the University of Colorado; and a national partnership between the American Foundation for Suicide Prevention, the Department of Veterans Affairs, and the National Shooting Sports Foundation).[67–74]

Other projects have developed partnerships between public health or health care professionals and community members in urban areas to reduce the risk of community violence (e.g., through the Hospital Alliance for Violence Intervention, the Create Real Economic Destiny or "CRED" Program in Chicago, and the Baltimore Peace Movement, among many others).[75–77]

Personally, I am conducting research, funded by the CDC, in partnership with the national youth network 4-H, to increase awareness about markers of firearm injury risk, as well as the ability to take action when risk is perceived, among youth enrolled in 4-H Shooting Sports.[78] (This work is still under evaluation.)

However, these examples remain the exception rather than the rule. Too often, firearm owners and non-owners have difficulty engaging with each other, much less developing solutions in partnership.

A true investment in, and commitment to, working hand-in-hand with those who are most affected by firearm injury, is needed.

3d. Evidence of Success.

Due to the lack of funding, lack of data, lack of training, and lack of partnership, evidence for "what works" to stem the growing tide of gun violence, remains sparse.

Promising programs do exist, though. These are amply detailed elsewhere,[60,79–81] including in the upcoming Aspen Health Strategy Group publications,[8,82–84] but briefly, they include:

- Safer storage: The majority of youth suicides and school shootings are committed using a friend's or family member's gun.[15,55] Numerous projects are underway to decrease the likelihood of firearms' misuse by children or other unintended users such as those experiencing a crisis. These range from lockbox distribution in health care facilities,[85,86] to incorporating "means safety" training into firearm training and retail,[70] to social marketing campaigns such as Means Matter and End Family Fire.[87,88] Preliminary data shows that

these programs improve knowledge about the importance of safer storage, and change self-reported storage behaviors.[72,89,90]

- Suicide lethal means counseling: Recognizing that firearm suicide is both disturbingly common and that it is largely preventable, a number of programs are expanding access to variations of lethal means counseling. For example, Counseling on Access to Lethal Means, or CALM, is an evidence-based online training that educates health care providers on how to talk with firearm owners about firearm access in the home.[56] Originally designed for mental health outpatient care, it has been adapted to other health care settings such as emergency departments and primary care.[57,58] Similarly, Project Safe Guard, a collaboration with the National Guard, has expanded access to both lethal means counseling and safer storage in Mississippi and beyond, with positive results.[68]

- Community and hospital violence intervention programs: A wide variety of violence intervention programs, with variable data behind them, are being implemented across the United States. Community violence interruption programs, which train community members to interrupt the highest risk situations, have decreased shootings in multiple urban areas.[91,92] The Advance Peace initiative has decreased gun deaths in Sacramento and Richmond, CA through intensive fellowships for high-risk young men.[93] Hospital-based initiatives such as the "Life Outside of Violence" program, based in St. Louis, Missouri, assign case workers to victims of violence, helping them receive resources and support for many months after hospital discharge. Some of these programs report significant decreases in re-injury rates amongst patients enrolled in the program.[94] Recent data from researchers at Northwestern shows that the CRED Program, which provides life skills training and mental health support as well as community mentorship to at-risk youth in Chicago, correlates with decreased arrests for violent crime among participants; youth involved with the CRED program may also be less likely to be shot.[95,96]

- Environmental interventions: A brilliant body of work from colleagues at the University of Pennsylvania and Columbia University shows that the simple act of putting a garden in a formerly vacant lot, or rehabbing a formerly vacant building, decreases gunshots (as well as depression and other types of violence) in the surrounding neighborhood.[97]

- Extreme risk protection orders: These laws, which allow law enforcement, family, and (in some states) health care practitioners to petition for temporary removal of firearms from a person at high risk of hurting themself or others, now exist in 21 states plus the District of Columbia. Although they are variably applied, data shows that their presence decreases the number of gun suicides; case studies also suggest that they have successfully averted public mass shootings.[98–102]

These small success stories are just the tip of the iceberg of what is possible applying the public health approach.

More successful interventions are needed to protect those who are most likely to be injured and reduce firearm access for those at risk. More data is needed to better identify what can be done. And – most of all – it is time to scale (and enforce) the programs that work, in partnership with families and communities across America.

This is where Congress can make a difference.

4. What is needed from Congress

4a. Improve Access to Accurate, Comprehensive Data on Firearm Injury

Accurate, comprehensive, real-time data on the scope of the issue, its antecedents, and its consequences are key to resolving a public health challenge.

Better data would allow for better analysis of causes, evaluation of programmatic success, and quick identification of problem areas. It would facilitate the precision direction of resources to the place where they will make the most difference. Programs such as Chicago's Rapid Employment and Development Initiative, also known as the READI Initiative,[103] which unifies city data in order to deliver precision interventions, and University of California-Davis' Violence Prevention Research Program,[104] which unifies state data to identify best policies, should be the rule rather than the exception.

Congress can assist by funding the CDC's Data Modernization Initiative, which would expand real-time monitoring of injuries (as well as illness) across the United States.[105] Passing bills such as the "*Improving DATA in Public Health Act*" (introduced by Representatives Underwood, Bera, Castor, and DeLauro) are essential.[106] Congress could incentivize those involved in public and population health – including State, Tribal, Local, and Territorial agencies – to join together existing databases (such as hospital data, educational data, and crime data), to allow pinpointing of causes and direction of resources. Congress can further assist by removing outdated blocks on privacy-respecting firearm injury prevention research, such as prohibitions on examining gun trace data or the source of a firearm after an injury or death.

We should not need to depend on nonprofits like the Gun Violence Archive for national-level data.[16] These steps would ensure that Americans understand and can make data-informed decisions about the scope of the problem.

4b. Funding to Develop Effective Public Health Solutions

Our country deserves not just a more accurate and detailed description of the problem, but also solutions that work. To create them, they require federal investment. Although philanthropy can fill some gaps, federal funding for firearm injury prevention research is a *sine qua non* for a high-quality, community-centered public health approach.

My colleagues and I have completed a preliminary (as-yet-unpublished) evaluation and, not surprisingly, found that increased federal funding for firearm injury prevention research strongly correlates with the quantity of relevant registered clinical trials and published research. It is also clear that continued funding is necessary to develop the next generation of firearm injury prevention researchers, in partnership with schools of public health, schools of medicine and nursing, and affected communities.[64,107,108]

There is so much we can and must learn about how to reduce firearm injuries and deaths.[109–114] Not just how often firearm injuries happen, and to whom, but also: How do we best identify who is at risk – and how do we best act on that risk? Are there social media markers of risk? What state-level policies are most effective, and how do we best implement or educate about them? (For example, California's firearm injury rate changed from being amongst the highest in the nation through the mid-1990s to now being 30% lower than the rest of the United States.[99] Understanding the reasons for this change can lead us to solutions we can apply elsewhere.) What structural changes, ranging from streetlights to housing to community mentorship programs, decrease risk? How do we empower firearm-owning communities, whether urban or rural, to change norms around firearm training, storage, and use? How do we tailor risk reduction programs for the military, for law enforcement, for parents, for teachers, for physicians and nurses, and for faith leaders? How do we best stem the ripple effect of mental health problems that cascade from the daily shootings in our country?

Answering these questions is impossible without a sustained federal commitment to effective solutions. At a minimum, continuing the current levels of funding to the NIH and CDC is essential. Ideally, the funding would be scaled commensurate with the scope of the problem.

4c. Funding to Implement What Works

Congressional funding is also needed to implement the things that make a difference.

Here, it's not just about appropriations to NIH and CDC to gather data, discover risk and protective factors, and develop effective programming; it's also about appropriating funds to SAMHSA, DOJ, DOE, Medicaid, and beyond to allow us to scale effective solutions.

Imagine if we had stopped fighting HIV when NIH-funded researchers discovered a group of medications (highly active antiretroviral therapy, or HAART) that turned HIV from a death sentence into a chronic illness) – without funding the Ryan White HIV/AIDS Program or PEPFAR, which made the treatment broadly accessible, especially where it was most needed.[115,116] That would have been a waste of federal investments in research and would have resulted in preventable human suffering and death.

The same is true for firearm injury prevention.

Legislation contributes to these successes, and the Bipartisan Safer Communities Act's passage in 2022 has expanded nationally some policies that have been proven to reduce gun deaths in individual states.[117] Legislation that reduces access to firearms for those who are clearly at the highest risk of harming themselves or others, such as perpetrators of domestic violence, deserves to be enforced and scaled. Louisiana's recent passage of legislation providing liability protection to ranges or retailers that temporarily store guns, to help gun owners with a moment of crisis, may be a model for reducing firearm suicide.[118] Incentivizing safer storage of firearms, through legislation (such as *Ethan's Law*, sponsored by Senator Blumenthal and Representative DeLauro, and the *SECURE Firearm Storage Act*, sponsored by Senator Durbin and Representative Schneider) could also be influential in decreasing all types of firearm injury – especially if bills are accompanied by funding for implementation, in partnership with local community leadership and communication plans, just as has been done in the past for the issue of drunk driving.[119–123]

Indeed, legislation, while necessary, is never sufficient. The passage of laws must be accompanied by funding to allow them to be put in place.

And some of the most effective interventions may not require new laws at all.

Programs that enable community-level changes in norms and behaviors, whether through community conflict de-escalation, mentorship and programming like 4-H or Big Brothers Big Sisters, lethal means counseling, or environmental changes, could have a tremendous positive ripple effect. Hotlines to improve the ability of families and law enforcement to use ERPOs might avert tragedies like the Club Q bar shooting and the recent shooting in Lewiston, Maine. Any of the "successes" listed in **Section 3d**. have strong evidence behind them to be disseminated more widely.

The mission of the White House Gun Violence Prevention Office is to help accelerate this scaling of what works. But a Congressional commitment to funding is also needed.

4d. Support for bipartisan solutions

Finally, and most importantly, I implore Congress to have the courage to continue to act, together. The public health approach inherently builds coalitions.

Words matter on this topic, but actions matter, too.[124] Our country needs hope. At a time when 84% of American adults say that they've changed something in their lives due to fear of firearm injury, and when American youth list gun violence as one of their top concerns, the public health approach can provide a framework for action.[20,125]

As an emergency physician and public health practitioner, I have seen first-hand the failures of the existing approaches to firearm injury prevention. I have also seen the successes of systematic, well-funded, community-led applications of the public health approach.

It is possible to reduce the risk of a shooting, long before someone gets to the point of pulling the trigger, just as it is possible to reduce the risk of a car crash before someone gets behind the wheel. Through the public health approach – the combination of improved data, improved funding, improved scaling of what works, and most of all, improved collaboration – I am confident that our country can reduce firearm injury and death, for all.

I look forward to the Senate Judiciary Committee's partnership in this critical and urgent work.

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