



**Boston Children's Hospital**  
Until every child is well™



**HARVARD MEDICAL SCHOOL  
TEACHING HOSPITAL**

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**Chairman Morelle, Ranking Member Burgess and members of the House Rules Subcommittee on Legislative and Budget Process**, thank you for the opportunity to speak today.

I am Dr. Lois Lee, a pediatric emergency medicine physician at Boston Children's Hospital and Associate Professor of Pediatrics and Emergency Medicine at Harvard Medical School. I am also a health policy and firearm injury prevention researcher. I have been conducting research related to firearm injuries and deaths in kids since 2012. I am also a mother of two teenagers who have grown up in this age of increasing school and other mass shootings and the implementation of active shooter drills in schools.

As a pediatric emergency medicine physician, I have seen first-hand the devastating effects the death of a child has on their family and community. I have also seen the lifelong physical and emotional consequences of children who survive firearm injuries. This includes when a bullet goes through a child's spinal cord and causes lifelong paralysis. Or when a bullet goes through a child's abdomen and causes chronic gastrointestinal injuries and pain, affecting their digestion and growth. In addition to these visible physical injuries, I have seen the lifelong emotional and mental health consequences in the form of post-traumatic stress disorder (PTSD) and depression. This is both for victims of firearm violence as well as for those who have witnessed it in their friends, family, and community. These are wounds, which literally never heal.

I know that you know firearm injuries and deaths affect too many Americans and are a serious public health problem in the United States. What you may not know is firearms are now the number one cause of death in children and youth 1-19 years old in the United States.

Firearms cause more deaths in children and youth 1-19 years old than cancer, infections, or congenital causes. They are also one of the leading causes of death in adults and older Americans. For youth, about two thirds of firearm deaths are due to homicides. It is the opposite for adults, where about two thirds of firearm deaths are attributable to suicide.

In 2020 alone, there were 10,197 deaths from firearms among children and youth 0-24 years old. This averages to 28 children killed by firearms EVERY DAY in 2020.

Or one school bus full of children every 2 days.

There is no other cause of death that so frequently kills American children and youth. Compared to all other countries in the Organization for Economic Co-operation and Development (OECD), the U.S. has the highest firearm deaths rates by far. This is because we have the most civilian owned firearms

compared to our peer countries. But we don't actually know how many firearms there are in the U.S. as state laws are extremely inconsistent regarding licensing and registration for firearm ownership. So, for our country of about 330 million residents, it is estimated there are over 400 million firearms.

But what we do know is some of these deaths are preventable. As gun violence is a public health problem, we know that a multi-pronged public health approach is warranted.

What does a public health approach include? It includes the following principles of harm reduction.

- 1) Implementation of policies reducing the product-related danger
- 2) Promoting the manufacture and appropriate use of safe products

We know these strategies work as we have successfully applied a multi-pronged public health strategy to decreasing motor vehicle crash injuries and deaths in the United States. These principles have also been successfully applied to decreasing deaths related to cigarette smoking and lung cancer and poisonings from medications or other toxic substances.

Motor vehicle safety has a system designed for continuous improvements to decrease injuries and deaths. This includes establishment of the National Highway Traffic Safety Administration (NHTSA), the federal agency whose mission is to save lives and prevent injuries caused by road traffic crashes. In contrast, we do not have similar systems for firearms. There is no federal agency tasked with promoting safety and injury prevention related to firearms. As you know the Bureau of Alcohol, Tobacco, Firearms, and Explosives is a law enforcement agency—not a safety agency.

One of NHTSA's important roles is to maintain databases on fatal and non-fatal road traffic crashes. The availability of this data to researchers and policy makers proved essential in developing and implementing policies to make cars and roads safer—and the evaluation of these policies. Robust research funding has been dedicated to studying motor vehicle traffic crashes, which has and continues to be essential to advancing the field of motor vehicle safety. The opposite situation exists for firearms where limited data and research funding are available.

The motor vehicle and insurance industry also have incentives for designing safer cars to promote injury prevention for motor vehicles. However, for firearms there are no manufacturer or insurance company incentives to design safer guns.

The technology for safer guns is currently available in the form of personalized “smart” guns. Smart guns use technology to identify the authorized user so only that individual can fire the gun. This can include the use of a biometric fingerprint to identify the gun owner—just like your cell phone. Or using Radio-Frequency Identification (RFID) that works when the gun owner wears something (like a ring) and when that hand is near the gun, allows the owner to fire the gun. This personalized “smart” gun technology prevents curious toddlers and children or suicidal youth and adults from finding a gun to shoot someone

else or themselves. The technology is here. But it is not being sold in the United States. So while this solution is already available—it is not available to Americans.

For motor vehicles there are also state-level requirements for the registration of vehicles, and the licensing and insuring of drivers. For firearms, we have no uniform state-level requirements for licensing and registration of guns -much less, proof of insurance for owning a gun.

So why don't we treat guns more like cars? Perhaps we should look to the motor vehicle safety system to adopt some of these public health approaches for gun violence prevention.

For firearm injury prevention, a public health approach should include, but are not limited to, the following 3 actions:

- 1) Increasing funding for gun violence prevention research
- 2) Enacting universal background check laws
- 3) Enacting comprehensive extreme risk protection order (ERPO) (or “red flag”) laws.

Not only are these three actions important parts of a public health approach to decreasing firearm related deaths—they also have bipartisan support in Congress and among the majority of Americans. One thing we critically need to prevent firearm injuries and deaths is a better understanding of the risk and protective factors around shootings. The CDC maintains a database, the National Violent Death Reporting System (NVDRS), which includes all violent deaths, including from firearms. In 2020 the CDC established a firearm injury surveillance system with a sampling of firearm injuries in emergency departments in 10 states (<https://www.cdc.gov/violenceprevention/firearms/funded-surveillance.html>). Thus, national data on real-time firearm injuries is very limited. We know even less about gun owners as background check data are destroyed within 24 hours. There are no comprehensive state or federal databases on registered gun owners in the U.S. as we have for cars.

In order to take a multi-pronged public health approach, in addition to data and technology strategies, we also need policy solutions.

We need increased research funding for gun violence research. In addition to the gap in data resources related to firearm deaths and injuries, we have had a long period of time without Congressionally appropriated funding for firearm injury prevention research to the CDC and NIH. After the Dickey amendment passed in 1996, the CDC's budget for firearm research was eliminated. The same happened for the NIH in 2011. This lack of funding resulted in the loss of research infrastructure, resources, and researchers for firearm violence. And that is why the firearm injury prevention research community is appreciative of the \$25 million dollars of research funding appropriated by Congress in 2019, with \$12.5 million to the NIH and \$12.5 million to the CDC. But this is not adequate. To put this into the context of grant funding for other health conditions, the National Heart, Lung, and Blood Institute of the National Institutes of Health (NIH) has a budget of \$3.8 billion to support research related to conditions like heart

disease and cancer. Although these are obviously important areas for research, these conditions are not impacting our children and youth to the same degree as firearms.

With the funding appropriated for firearm research in 2019, thus far the CDC has made 18 awards for two- and three-year projects to improve scientific understanding of firearm-related violence and to rigorously evaluate the effectiveness of prevention strategies. Several of these projects will conclude this year and provide insights on how to reduce suicide risk in U.S. Army soldiers and veterans, how to improve efforts to reduce urban firearm injuries, and how to teach children hunting, shooting and firearms safety, among other topics. The NIH is also funding research on the determinants of firearm injury, the identification of those at risk, and the evaluation of innovative interventions.

But this research funding has been level funded for the last three years, while gun deaths increased by nearly 30% from 2019-2020. These initial investments are important, but increased funding is still needed to overcome the decades-long lack of federal funding that set back our nation's response to the public health issue of firearm-related morbidity and mortality. The agencies have received many more proposals than they are able to fund, and additional funding can generate research into important issues, such as the best ways to prevent unintentional firearm injuries and deaths among women and children, the measures that can best prevent the next shooting at a school or public place, and numerous other vital public health questions.

A study commissioned by the Arnold Ventures and the Joyce Foundation estimated federal legislation to support a gun violence data infrastructure and research priorities would cost about \$600 million over a five-year federal budget window (fiscal years 2022-2026). This is \$120 million a year, which is significantly higher than the \$25 million which has been appropriated in the last three years - and double the \$60 million proposed in President Biden's budget for gun violence prevention research.

In addition to research, stronger federal and state-level policies will be essential for decreasing gun injuries and deaths. Universal background checks, which are supported by 88% of Americans, would make communities safer by ensuring those who are at-risk for gun violence can't purchase guns. In many states, background checks using a federal background check database are performed only at federally licensed gun dealers. Only in states with universal background check laws, do these licensed gun dealers have to access local law enforcement data as part of this background. Without a universal background check law, background checks are only performed using the national database. However, background checks are not required if guns are purchased at gun shows or auctions or by personal sale in many states.

Another important policy to prevent individuals at risk of harming themselves or others from possessing or purchasing a gun is the ERPO/red flag law. This law allows family members or law enforcement to petition a judge to temporarily remove firearms from an at-risk individual. So these laws, which are present in 19 states and the District of Columbia, are important in individuals at risk for suicide or for homicide in situations of domestic violence or even potentially mass shootings.

Given the magnitude—and growing problem—of gun violence in the United States we can not - we must not - be paralyzed by the politicization of firearms. We must make the public health and safety of our children, youth, and society at large a priority. We must ask ourselves what is the true cost of having our children and our nation bear witness to the daily news of firearm shootings and deaths around the country? We should not become a country who believes gun violence is inevitable—or acceptable. Especially when there are decisive actions Congress can take to prevent mass shootings, firearm suicides, and the daily firearm violence impacting our children and communities across our country.

In summary, I am here today in strong support of actions to promote firearm injury prevention in the United States, especially to keep our children and youth safe. I know this is a goal we all share.

In order to better protect Americans from firearm injuries and deaths I urge Congress to take the following actions:

- 1) Increase funding for gun violence prevention research
- 2) Enact universal background check laws
- 3) Enact comprehensive extreme risk protection order (ERPO) (or “red flag”) laws.

We must take these steps to start to reverse the trend of increasing gun deaths and injuries in the United States. These are things you can do as our leaders and policy makers. As a pediatrician, policy researcher, and parent, I urge you to take these actions to decrease gun violence in our country.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Lois K. Lee', with a long horizontal flourish extending to the right.

Lois K. Lee, MD, MPH