Background

I am a Pennsylvanian. I am a mother and wife. I am also a trauma surgeon at Temple Hospital in Philadelphia and a founding member of the Coalition of Trauma Centers for Firearm Injury Prevention, a statewide coalition focused on prevention of firearm injury. Thank you for the privilege of providing testimony for the Pennsylvania Senate Judiciary Committee this morning. I am here to provide some background about firearm injury in Pennsylvania and to contextualize firearm injury with respect to the health of our citizens. I would also like to present some evidence about the role that legislation has in reducing rates of firearm injury. I have no conflicts of interest.

Last year, our trauma center cared for 481 gunshot victims. Recently, while I was enjoying time out of the hospital with my family, including my 3-year-old daughter, my colleagues were handling 17 patients over the span of a holiday weekend presenting with gunshot wounds. The doctors, nurses, residents, medical students, techs, administrators, security personnel and maintenance staff, EVERYONE who comes to work at Temple day in and day out, bears witness to the impact of gun violence. We witness not just the physical suffering of our neighbors, but the depth of sorrow, the loss of innocence, the rippling impact of a patient's death and sometimes that of a patient's survival.

The Public Health Crisis in Pennsylvania

And it's not just at Temple. All across the Commonwealth, faculty and staff at trauma centers, some of whom who are here this morning, are caring for firearm injured patients on a daily basis. In fact, firearm death and injury rates are on the rise in Pennsylvania. In 2017 alone we saw 1636 people die from firearm related injuries and based on the estimates available, we have seen two to three times that number of people who were injured but survived (NEISS).

While firearm homicide is concentrated in urban areas including Philadelphia, Pittsburgh and Harrisburg, rates of firearm suicide are concentrated in Pennsylvania's rural counties, with Elk, Wayne, Carbon, Clarion, Schuylkill, Clearfield, Susquehanna, Huntington, Jefferson, Wyoming, Cambria, Bedford, Somerset, Lawrence, Crawford, Perry, Armstrong, Greene, Fayette, and Bradford having the highest age adjusted firearm suicide rates since 2011.

But this is not about statistics. And quite frankly, it's not even really about guns. It's about people. And when I think of firearm injury, it is my patients, those people, who I consider first. The young man who, speaking for the first time in nearly a month who asked with pain in his voice to see his children. The 2-year-old boy accidentally shot in the chest by his cousin who cried with same tone that my daughter does when she is hurt. Or the wail of my patient's wife after he was pronounced brain dead from a gunshot wound.

Public Health and Firearm Injury

The anguish of these moments is punctuated by the fact that nearly all of these injuries are preventable. As a healthcare community, we have tackled a number of public health crises – from educating the public on the dangers of tobacco, to preventing injury from car accidents thru collaboration with auto makers and legislators, to the still unresolved battle we are waging against the opioid epidemic. We have done this openly, with engaged dialogue and effort from a diverse coalition with a common goal. So why can't we tackle the public health crisis from firearm injury? The answer is that we CAN. And we MUST.

Because when you look at public health issues like motor vehicle collisions, where we have had this open dialogue with the health of our communities at its core, you can see that we have made a difference. When you compare deaths in 1985 to those in 2017 we have reduced deaths from car crashes by nearly 40% nationwide, with similar trends in PA. We did this by enforcing reasonable requirements to safeguard those riding in cars and those impacted by irresponsible use. We require test to confirm that people are safe drivers prior to being licensed to drive. We required people to buckle up. We required that children's risk be mitigated by the use of car and booster seats. We enforce speed limits and other safety measures.

Our Coalition firmly believes that we can accomplish similar reductions in rates of firearm-related injury and firearm-related death by following a similar path. Why is this so critical? Because as of 2014, more people in OUR Commonwealth die from firearm injury than die in motor vehicle collisions. In 2017, the number of firearm-related deaths was 1.4 times higher than the number of motor vehicle collision related deaths.

Support for Legislative Action

I hope that with the background I have provided, you can see why trauma center docs, nurses, administrators and staff have been impassioned to act in the name of public health. The sheer number of patients and families across the commonwealth impacted by firearm injury has become a call to action for us as a healthcare community.
We have been further bolstered by the fact that the American Association for the Surgery of Trauma (AAST), the Eastern Association for the Surgery of Trauma (EAST), and the American College of Surgeons Committee on Trauma (ACS) all have updated firearm injury prevention statements in 2018 which rely on the guiding principle from the American Medical Association that physicians must advocate for the social, economic, educational, and political changes that ameliorate suffering and contribute to human well-being. (AMA, AAST/EAST/ACS COT Addendum)

If we prioritize the safety and health of our communities over all else, I firmly believe that the road forward will become clear to all – those that sit on both sides of the aisle and both sides of many issues. At the end of the day, I have to believe that if we refocus our attention where it belongs – on our families, our neighbors, our communities, your constituents, that legislative policy change for safe firearm ownership will follow. And the PA state legislature should be the engine for this change, fueled by your communities and your constituents, including me.

Though the evidence-based path forward is a bit uneven, owing in large part to the historical and longstanding underfunding of firearm injury research, there is evidence about factors that contribute to firearm injury and data to suggest that some things do work in its prevention, including universal background checks, child access prevention and safe storage laws and extreme risk protection order laws (ERPO). These are the three legislative areas that both respect personal liberty and prioritize the safety of our citizens on which I would like to offer my thoughts.

Universal Background Checks

The first is universal background checks. According to available data, the majority of firearms are obtained with a background check in the Commonwealth of Pennsylvania. However, the volume of legally acquired firearms without a background check is still unacceptably high. Nationwide, almost a quarter of all firearms are obtained without a background check and 50% of privately purchased firearms are obtained legally with no background

check (Miller 2017). Though many of the firearms utilized in mass shooting, a relatively rare event, are purchased legally, the same is not true of interpersonal gun violence, where the majority of firearms are thought to be obtained illegally or through legal transfer without background check (Fabio). Data suggests that universal background checks are associated with lower homicide and overall death rates (Kalesan, Lee). We strongly support closing the long gun loophole in Pennsylvania with universal background checks. The ACS, AAST and EAST specifically support universal background checks.

Safe Storage and Child Access Prevention

The safe storage of firearms and prevention of child access to firearms is effective in reduction of unintentional injury, pediatric suicide and self-injury and firearm theft. More broadly, there is strong evidence that it will reduce rates of unintentional injury among adults, since it is estimated that 28% of all adults who INCORRECTLY believe that a pistol with its magazine removed could not be shot actually live in a home with a firearm (Miller 2005, Vernick). Finally, it is estimated that 237,000 firearms were reported as stolen in 2016. Estimates are that up to 79% of all perpetrators of crime carry weapons which they do not legally own (Fabio). Conservative estimates are that 10% of firearms utilized in the conduct of a crime are stolen. A safely stored firearm is much more difficult to steal. Many firearm owners support these measures. Both the ACS and EAST specifically support mandating safe and controlled firearm storage, while the AAST strongly encourages education regarding the benefits of safe storage.

Extreme Risk Protection Orders

Lastly, Extreme Risk Protection Orders have been shown increase the likelihood of surviving a suicidal crisis by temporarily reducing access to firearms (Lee). 70% of people who attempt suicide once will never attempt again. 90% of suicide attempts with a firearm are fatal, compare to poisoning attempts which result in death in 0.5-2% of the time (Azareal). And this means that MEANS MATTER. No access to firearms during acute crisis has meant reduction in firearm suicide rate between 7.5 and 13.6% in states where it has been studied (Kivisto). And again, this type of legislation is most likely to positively impact rates of firearm injury and death in the rural communities of PA, where rates of suicide by firearm are the highest. The ACS, AAST/EAST recognize mental health contributors to suicide and the FAST working group from the American College of Surgeons specifically supports ERPO legislation.

Root Causes of Firearm Injury

While legislative measures like those mentioned will move the needle on rates of firearm injury, identifying and addressing root causes of firearm injury is even more critical to ultimately eliminating the disease burden. As stated in the AAST statement on firearm injury, "the root of the problem (of firearm injury) is a complex interaction of firearm access, behavioral health, and a culture tolerant of aggression, and represents an unacceptable public health problem" (AAST - addendum). Complexity is the key here. What is evident from the existing literature, is that we have an incomplete understanding of the root causes of firearm injury and gun violence (Yu). Much of the public discourse surrounding firearm injury prevention has focused on the relationship between mental illness and firearm injury. This has been fueled by disproportionate media coverage erroneously implicating mental illness as the cause of gun violence (McGinty). I would like to separately address the relationship between suicide, mass shootings, and homicide and mental illness.

Mental Illness and Self Harm/Suicide

Regarding the relationship between suicide and mental illness – there is no doubt that individuals with a known mental illness, such as depression, are at higher risk for suicide. However, according to the Centers for Disease Control, only 46% of people who die by suicide carry a mental health diagnosis (CDC). It is important to consider that firearm suicides are often impulsive acts, spurred on by acute crisis, and do not necessarily represent an undiagnosed mental illness. People without underlying mental illness are more likely to die by firearm suicide that those who carry a mental health diagnosis for this very reason (CDC). And though mental illness substantially increases one's risk of suicide, household firearm access is an even stronger independent risk factor (Miller 2013).

Mental Illness and Mass Shootings

Historical reports have suggested that up to 60% of perpetrators of mass shootings display symptoms of mental illness (Metzl, Follman). However, the ability to establish causation, and therefore offer highly effective preventative measures, is limited by the relatively small number of mass shootings in our history (Botswick). I believe that we should focus on mass shootings as part of the greater context of firearm injury prevention. As the American Psychological Society state in their response to the recent Texas and Ohio mass shootings: "The rates of

mental illness are roughly the same around the world, yet other countries are not experiencing these traumatic events as often as we face them." Mental illness is not the sole contributor.

Mental Illness and Interpersonal Intentional Firearm Injury/Homicide

Regarding interpersonal violence and homicide, there is no causal relationship between mental illness and firearm violence. Less than 5% of US crimes involve people with mental illness and those people are statistically less likely to commit a crime involving a gun than people without mental illness (Applebaum, Ahonen). I would like to caution the legislature against "scapegoating" the mentally ill for firearm injury, but to also remind us all that improving diagnosis and access to treatment for mental illness will be an important part of the complex work that needs to be done to solve this crisis.

Social-Ecological Model for Prevention

I would like to shift from mental health to mention of some other factors which undoubtedly contribute to the public health crisis. In Philadelphia, the most pressing root causes of firearm injury are those that contribute to interpersonal firearm violence and homicide. Prevention strategies at the community level will be critical to addressing this and should focus on the reduction of "social isolation, on improving economic and housing opportunities in neighborhoods, as well as the climate, processes, and policies within school and workplace settings" (CDC). Addressing society level factors include social and cultural norms that support violence as a means of conflict resolution will be important. Other large societal factors which must be addressed include the health, economic, educational and social policies that help to maintain economic or social inequalities between groups in society, also known as structural violence (Dahlberg). Until our society recognizes and addresses the critical role that these social determinants of health have in the communities disproportionately impacted by firearm injury, and firearm homicide specifically, we will fail to reverse the cyclical nature of this public health crisis.

Conclusion

Our coalition will continue to work relentlessly to save the lives of those injured by firearms, but it is also our duty as advocates to work to prevent those injuries. To move toward a safer world for all, we believe that legislation aimed at reducing rates of firearm injury is necessary in the Commonwealth of Pennsylvania. As a motivated group

of trauma centers, we support universal background checks, safe storage and child access prevention and extreme risk protection order legislation. These are simple, effective solutions. They are among the first steps necessary in the long march toward solving this complex public health crisis.

I would like to present Senator Baker and other members of the Senate Judiciary Committee with letters signed by many of our membership. These letters represent a diverse cohort of individuals from across the state, rural and urban, republican and democrat, east, west and in-between – a unified and diverse representation of the Commonwealth– each of whom works in the care of the injured patient. The letters communicate our unified belief that the path toward reduction of firearm injury should include legislative action in the three areas on which I have commented, including universal background checks, safe storage and child access prevention and extreme risk protection orders. These letters represent those people who could not be here today – because they are going about the important, but preventable, business of caring for the commonwealth's firearm injured patients.

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