Firearm Safety and Injury Prevention

Description

In America’s politically polarized environment there is little agreement on issues related to firearms. Yet few if any would disagree that decreasing the more than 30,000 firearms-related deaths that occur in the U.S. each year would be beneficial.\(^1\)\(^,\)\(^2\)\(^,\)\(^3\)\(^,\)\(^4\)\(^,\)\(^5\)\(^,\)\(^6\) The question that divides us, of course, is how to do it.

The unfortunate – and perhaps surprising – reality is that scientists don’t know enough about the causes of firearm injuries to have a very good idea of how reduce them.\(^7\)\(^,\)\(^8\)\(^,\)\(^9\)\(^,\)\(^10\)\(^,\)\(^11\) Usually, when the U.S. is faced with a public health epidemic, the government invests in data collection and research to understand its causes and implement effective strategies to mitigate them.\(^12\) But in 1996, after 10 years of “high-quality, peer-reviewed research into the underlying causes of firearm violence,”\(^13\) Congress imposed severe limitations on this federal research with the enactment of the Dickey Amendment and the simultaneous defunding of the Centers for Disease Control and Prevention’s (CDC) firearm violence prevention budget.\(^14\)\(^,\)\(^15\) Between 2004 and 2015 firearm violence received only 1.6% of the federal funding and produced just 4.5% of the number of publications one would expect, given its mortality rate, compared to funding allotted to the other top 30 leading causes of death.\(^16\)\(^,\)\(^17\)\(^,\)\(^18\)\(^,\)\(^19\) Malnutrition, asphyxia, and hernias each received more funding and produced more publications. Put into different terms, firearms and sepsis killed nearly the same number of people between 2004 and 2015 (350,139 firearm deaths vs. 391,635 sepsis deaths), yet federal funding for firearm violence was approximately 0.7% of what sepsis received and publication volume was approximately 4%.\(^20\)\(^,\)\(^21\)\(^,\)\(^22\) This problem has not been confined to prevention. There has also been almost no research into issues of importance to firearm owners, including the effects that firearm violence prevention measures could have on them.\(^23\)

That said, there are a few interventions that the limited robust research has consistently shown to be effective. The majority of firearm deaths are suicides (1.5 times more than the number of homicides in 2016), which is frequently an impulsive decision made during a period of crisis.\(^24\)\(^,\)\(^25\)\(^,\)\(^26\) Consequently, it can often be thwarted by reducing access to the means of carrying out the suicide until the crisis has passed.\(^27\)\(^,\)\(^28\)\(^,\)\(^29\)\(^,\)\(^30\)\(^,\)\(^31\)\(^,\)\(^32\) This is a particularly salient point in the case of suicide by firearm, which is more likely to be fatal than any other method.\(^33\)\(^,\)\(^34\) Many who are contemplating suicide do not substitute another method when the primary means becomes inaccessible;\(^35\) however, even in cases in which substitution occurs, the alternate means is nearly always less likely to be fatal than using a firearm. Therefore, screening for access to firearms and enacting safety measures to decrease the chances that a suicidal person will gain access to a firearm has been shown to be an effective means of reducing these firearm deaths.\(^36\)\(^,\)\(^37\)\(^,\)\(^38\) It is important for emergency nurses to know, however, that some firearm owners are concerned that the permanence and portability of electronic medical records could constitute a record of firearm ownership that might be used against them in the future.\(^39\)\(^,\)\(^40\)\(^,\)\(^41\) Emergency nurses, as professional, non-judgmental parties who are concerned for the safety of their patients and who want their patients to feel comfortable sharing with them, should be explicit with patients about the degree to which they are required to document information related to firearm ownership in the medical record.

Safely storing firearms – that is, locked in a firearm safe and/or with a trigger lock or cable lock that passes through the firearm’s chamber or barrel – has consistently been shown to decrease not only deaths from accidental discharge among children, but also suicide among both adolescents and adults.\(^42\)\(^,\)\(^43\)\(^,\)\(^44\)\(^,\)\(^45\)\(^,\)\(^46\) In 2016 suicides accounted for 37.3% of all firearm deaths of individuals aged 10 to 19 years of age,\(^47\) and at least one study found that the majority of firearms used by minors to commit suicide were owned by a family member.\(^48\) Perhaps more importantly, safely storing firearms is an intervention that has been embraced by both firearm advocacy and violence prevention groups.\(^49\)\(^,\)\(^50\)\(^,\)\(^51\)\(^,\)\(^52\)\(^,\)\(^53\)\(^,\)\(^54\)\(^,\)\(^55\)\(^,\)\(^56\)\(^,\)\(^57\) Studies have shown that clinicians can play an effective role in educating people about safe storage practices (although those interventions appear to be more effective when a free lock is provided).\(^58\)\(^,\)\(^59\)\(^,\)\(^60\) Child access prevention laws – which presume the safe storage of firearms – have also been shown to reduce these firearm injuries.
and deaths in children and young adults.\textsuperscript{61}

Finally, there is some evidence that restricting access to firearms by individuals who have domestic violence restraining orders against them and by those who have been convicted of domestic violence misdemeanors can reduce intimate partner violence (IPV) homicides.\textsuperscript{62} Homicide is a leading cause of death for American women less than 45 years old, and nearly half of them are killed by a current or former intimate partner.\textsuperscript{63,64,65,66} Evidence suggests that these laws are associated with fewer firearm homicides in general and with fewer IPV and family homicides in particular.\textsuperscript{67,68,69}

**ENA Position**

It is the position of the Emergency Nurses Association that:

1. The Dickey Amendment’s effective ban on firearm research and Congress’s annual decision to restrict funding for firearm research over the past 22 years has greatly hindered our nation’s ability to understand not only firearm violence and evidence-based public health interventions for it, but also issues of importance to firearm owners and the firearm industry.

2. It is possible to conduct scientific research into the prevention of firearm injuries and deaths, and to implement firearm violence prevention strategies, without encroaching on the Second Amendment rights of legitimate firearm owners.

3. Federal funding for data collection and research on public health questions related to firearm violence and injury prevention is necessary.

4. Emergency nurses support the use of screening tools that will assist in the identification of individuals at high risk for death or injury from firearms and their ability to access them.

5. Emergency nurses promote a multidisciplinary approach to firearm injury prevention based on the best practices and expertise of public health practitioners, healthcare providers, and community collaborators.

6. Emergency nurses serve as healthcare consumer advocates, educating the public about firearm safety measures and supporting evidence-based programs that target the prevention of firearm injuries.

7. Emergency nurses, regardless of their opinions about firearms or firearm policy, recognize their ability to effect positive change in the realm of firearm violence, and treat this issue in the exercise of their professional duties in the same non-judgmental way that they would any other polarizing or divisive topic on which people have strong opinions.

**Background**

More than 30,000 Americans have been killed each year in firearms-related incidents since 2005 (and more than 38,000 in 2016, the last year for which data are available).\textsuperscript{70} Suicides account for the majority of those deaths (approximately 60% in 2016), homicides for less than 40%, and unintentional causes for just over 1%.\textsuperscript{71} Approximately 30 to 100 deaths each year between 2000 and 2016 have been due to mass shootings.\textsuperscript{72,73,74,75} One can begin to appreciate some of the complexities of firearm violence – as well as the fact that firearm violence is not one monolithic problem, but many very different problems – by scratching the surface of these numbers. The vast majority of white firearms deaths are suicides (83%),
but suicide accounts for less than 2% of non-white firearms deaths. Homicide as a category accounts for a smaller percentage of overall firearms deaths, but it accounts for the majority of non-white firearms deaths (80%) and only 15% of white firearm deaths. More than half of the mass shootings between 2009 and 2016 (here defined as four or more dead, not including the shooter) were related to domestic violence.

A poor understanding of the causative and contributory factors of firearm violence lies at the heart of America’s perpetual inability to address this problem. This lack of knowledge has been driven primarily by Congressional action. The so-called Dickey Amendment, passed in 1996, stated that “none of the funds made available for injury prevention and control at the Centers for Disease Control and Prevention may be used to advocate or promote gun control.” Although the language of the amendment does not explicitly prohibit all research into firearm violence, historical context and Congressional defunding of the CDC’s firearm violence prevention budget has effectively shut down CDC research into firearm violence for more than two decades. It also sent a clear message to researchers that studying firearm violence could imperil their careers. In 2011 Congress expanded the Dickey Amendment’s prohibitions to apply to the National Institutes of Health as well. In 2013 President Obama directed the CDC to develop a research agenda for firearm-related violence and requested $10 million each year between 2014 and 2017 for firearm violence prevention. That funding was denied (As a point of reference, the government allocated $240 million to traffic safety and $331 million to studying the effects of tobacco in 2015.) In 2018 Democrats and Republicans reached a compromise agreement to explicitly state that the CDC “has the authority to conduct research on the causes of firearm violence” in the 2018 Consolidated Appropriations Act, but that research still has not been funded. Notably, Jay Dickey, the Republican Congressman who proposed the Dickey Amendments, has since argued strongly for the need for publicly-funded research on firearm injuries.

U.S. scientists do not have the rudimentary data needed to answer some of the most basic questions about firearm violence. As of 2018 there is still not a national database of shootings, let alone one that tracks contextual data like gun type, ammunition type, and whether or not the shooter was a felon, had a restraining order against him/her, was attempting to stop a crime, etc. One database – the National Violent Death Reporting System (NVDRS) was created in 2002 to provide some of this data for firearm deaths, but as of 2018 still does not collect or report data from all 50 states, due to lack of Congressional funding. No database exists to track firearm injuries (as opposed to deaths). The Bureau of Alcohol, Tobacco, Firearms, and Explosives’ (ATF) traces all guns found at crime scenes, but federal law prohibits it from using a computer or creating any kind of searchable database (even handwritten). Scientists can no longer effectively study many questions related to firearms and crime (e.g., where do criminals get their guns? How do states’ gun laws influence gun trafficking between states?) as a result of prohibitions included in the Tiahrt Amendments. Causative factors and interventions are well understood for all other forms of violent death in the U.S. For instance, Americans can generally explain factors that led to a runner being hit by a car in the pre-dawn darkness when they learn that she was not wearing reflectors or lights, that the intersection was uncontrolled, and the crosswalk lines were worn to near-invisibility. The same goes for an unrestrained child involved in a freeway-speed vehicle collision who was not in a rear-facing car seat, an intoxicated, speeding, helmetless motorcyclist and every other form of violent death, because publicly-funded data collection and research has allowed us to understand the contributing factors and effective mitigation strategies.

Funding research into issues of importance to firearm owners is also necessary. For example, self-protection is self-reported as a reason for firearm ownership among 67% of firearm owners; however, rigorous studies of the effects that firearm violence mitigation strategies would have on self-protection have rarely been conducted. An estimated 42% to 47% of American households own a firearm. Half of all firearm owners say that owning a gun is important to their overall identity and 74% say that owning a firearm is tied to their personal freedom. In 2016, 11.5 million Americans 16
years or older went hunting, and together they spent $26.2 billion preparing for it or doing it.\textsuperscript{135} Effectively implementing firearm violence mitigation strategies requires understanding the ways that such strategies might impact the more than 97 million law-abiding gun owners in the U.S.

Studies over the past 30 years have consistently shown that households with firearms have higher firearm suicide rates, although the data problem highlighted above has hidden the precise cause(s).\textsuperscript{136,137,138} Some conclusions about impulsivity in suicide have been mixed, in large part due to a lack of consistent definition of “impulsivity” in suicide research,\textsuperscript{139} but it is clear that many suicide decisions occur suddenly after a trigger event, with little planning.\textsuperscript{140,141,142} Delaying access to firearms or making firearm access difficult for people in a suicidal crisis can decrease the number of firearms-related deaths. This so-called “means restriction” has been shown to be effective both with firearms in other parts of the world and with other suicide means: carbon monoxide asphyxiation in Great Britain, Taiwan, and Hong Kong; pesticide poisonings in Asia and South America; and firearm suicides in Israel and Switzerland.\textsuperscript{143,144,145,146,147,148} That said, ED providers generally report confidence in screening for suicide but gaps in further assessment, counseling, and referral skills.\textsuperscript{149} As many as 85% of suicidal patients in one study did not have chart documentation of having been screened for firearm access.\textsuperscript{150,151} Laws limiting or prohibiting healthcare professionals from asking about firearm access and safe storage practices have been enacted in Florida, Missouri, Montana, and Minnesota, but the 11th Circuit Court of Appeals ruled in 2017 that such questions fall within clinicians’ First Amendment right to free speech.\textsuperscript{152}

While firearm prohibitions for those under domestic violence restraining orders (DVRO) have been shown to significantly reduce rates of intimate partner homicide, firearm access is associated with increased severity of intimate partner homicide.\textsuperscript{153} Congress enacted the Violent Crime Control and Law Enforcement Act in 1994\textsuperscript{154} and the Lautenberg Amendment to the Firearm Control Act of 1968 in 1996,\textsuperscript{155} which together prohibit the possession of a firearm by anybody who has a restraining order that protects an intimate partner or his/her child, as well as by anybody who has been convicted of a misdemeanor crime of domestic violence.\textsuperscript{156} Some individual states also have additional laws that protect people from intimate partner homicide. Research has shown that laws that prohibit people who have been adjudicated to be of danger to an intimate partner from owning a firearm may reduce homicide rates.\textsuperscript{157}

Firearms constitute the 14\textsuperscript{th} leading cause of death for Americans and the second highest cause of violent death after motor vehicle accidents. Emergency nurses can play an active role in educating the public about firearm safety and injury prevention, screening suicidal patients for access to firearms and enacting safety measures to limit the likelihood of suicide by firearm and promoting the need for more research.

**Resources**


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