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SPECIAL ARTICLE

Firearm-Related Injury and Death in the United States: A Call to Action From the Nation's Leading Physician and Public Health Professional Organizations

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Shortly after the November 2018 publication of the American College of Physicians' policy position paper on reducing firearm injury and death (1), the National Rifle Association tweeted:

> Someone should tell self-important anti-gun doctors to stay in their lane. Half of the articles in Annals of Internal Medicine are pushing for gun control. Most upsetting, however, the medical community seems to have consulted NO ONE but themselves.

Within hours, thousands of physicians responded, many using the hashtags #ThisIsOurLane and #ThisIsMyLane, and shared the many reasons why firearm injury and death is most certainly in our lane. Across the United States, physicians have daily, firsthand experience with the devastating consequences of firearm-related injury, disability, and death. We witness the impact of these events not only on our patients, but also on their families and communities. As physicians, we have a special responsibility and obligation to our patients to speak out on prevention of firearm-related injuries and deaths, just as we have spoken out on other critical public health issues. As a country, we must all work together to develop practical solutions to prevent injuries and save lives.

In 2015, several of our organizations joined the American Bar Association in a call to action to address firearm injury as a public health threat. This effort was subsequently endorsed by 52 organizations representing clinicians, consumers, families of firearm injury victims, researchers, public health professionals, and other health advocates (2). Four years later, firearm-related injury remains a problem of epidemic proportions in the United States, demanding immediate and sustained intervention. Since the 2015 call to action, there have been 18 firearm-related mass murders with 4 or more deaths in the United States, claiming a total of 288 lives and injuring 703 more (3).

With nearly 40 000 firearm-related deaths in 2017, the United States has reached a 20-year high according to the Centers for Disease Control and Prevention (CDC) (4). We, the leadership of 6 of the nation's largest physician professional societies, whose memberships include 731 000 U.S. physicians, reiterate our commitment to finding solutions and call for policies to reduce firearm injuries and deaths. The authors represent the American Academy of Family Physicians, American Academy of Pediatrics, American College of Physicians, American College of Surgeons, American Medical Association, and American Psychiatric Association. The American Public Health Association, which is committed to improving the health of the population, joins these 6 physician organizations to articulate the principles and recommendations summarized herein. These recommendations stem largely from the individual positions previously approved by our organizations and ongoing collaborative discussion among our leaders (1, 5–10).

Background

In 2017, a total of 39 773 people died in the United States as a result of firearm-related injury—23 854 (59.98%) were suicides, 14 542 (36.56%) were homicides, 553 (1.39%) were the result of legal intervention, 486 (1.22%) were subsequent to unintentional discharge of a firearm, and 338 (0.85%) were of undetermined origin. The population-adjusted rates of these deaths are among the highest worldwide and are by far the highest among high-income countries (11, 12). Firearm-related deaths now exceed motor vehicle–related deaths in the United States (13, 14). Further, estimates show that the number of nonfatal firearm injuries treated in emergency departments is almost double the number of deaths (15). Firearm-related injury and death also present substantial economic costs to our nation, with total societal cost estimated to be $229 billion in 2015 (16).

While mass shootings account for a small proportion of the nearly 109 firearm-related deaths that occur daily in the United States (11), the escalating frequency of mass shootings and their toll on individuals, families, communities, and society make them a hot spot in this public health crisis. Mass shootings create a sense of vulnerability for everyone, that nowhere—no place of worship, no school, no store, no home, no public gathering place, no place of employment—is safe from becoming the venue of a mass shooting. Mass shootings have mental health consequences not only for victims, but for all in affected communities (17), including emergency responders. Studies also show that mass shootings are associated with increased fear and decreased perceptions of safety in indirectly exposed populations (18, 19). Preventing the toll of mass firearm violence on the well-being of people in U.S. cities and towns demands the full resources of our health care community and our governments.

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Our organizations support a multifaceted public health approach to prevention of firearm injury and death similar to approaches that have successfully reduced the ill effects of tobacco use, motor vehicle accidents, and unintentional poisoning. While we recognize the significant political and philosophical differences about firearm ownership and regulation in the United States, we are committed to reaching out to bridge these differences to improve the health and safety of our patients, their families, and communities, while respecting the U.S. Constitution.

A public health approach will enable the United States to address culture, firearm safety, and reasonable regulation consistent with the U.S. Constitution. Efforts to reduce firearm-related injury and death should focus on identifying individuals at heightened risk for violent acts against themselves or others (20). All health professionals should be trained to assess and respond to those individuals who may be at heightened risk of harming themselves or others.

Screening, diagnosis, and access to treatment for individuals with mental health and substance use disorders is critical, along with efforts to reduce the stigma of seeking this mental health care. While most individuals with mental health disorders do not pose a risk for harm to themselves or others (21), improved identification and access to care for persons with mental health disorders may reduce the risk for suicide and violence involving firearms for persons with tendencies toward those behaviors.

In February 2019, 44 major medical and injury prevention organizations and the American Bar Association participated in a Medical Summit on Firearm Injury Prevention. This meeting focused on building consensus on the public health approach to this issue, highlighting the need for research, and developing injury prevention initiatives that the medical community could implement (22). Here we highlight specific policy recommendations that our 7 organizations believe can reduce firearm-related injury and death in the United States.

Background Checks for Firearm Purchases

Comprehensive criminal background checks for all firearm purchases, including sales by gun dealers, sales at gun shows, private sales, and transfers between individuals with limited exceptions should be required.

Current federal laws require background checks for purchases from retail firearm sellers (Federal Firearms License [FFL] holders); however, purchases from private sellers and transfer of firearms between private individuals do not require background checks. Approximately 40% of firearm transfers take place through means other than a licensed dealer; as a result, an estimated 6.6 million firearms are sold or transferred annually with no background checks (23). This loophole must be closed. In 2017, of the 25 million individuals who submitted to a background check to purchase or transfer possession of a firearm, 103 985 were prohibited purchasers and were blocked from making a purchase (24). While it is clear that background checks help to keep firearms out of the hands of individuals at risk of using them to harm themselves or others, the only way to ensure that all prohibited purchasers are prevented from legally acquiring firearms is to make background checks a universal requirement for all firearm purchases or transfers of ownership.

Need for Research on Firearm Injury and Death

Research to help us better understand the causes and consequences of firearm-related injury and death and to identify, test, and implement strategies to reduce these events is important.

Research to understand health-related conditions underpins the modern practice of medicine. In brief, medical research saves lives and improves health. Yet, despite bipartisan agreement that there are no prohibitions on the CDC's ability to fund such research, research that would inform efforts to reduce firearm-related injury and death has atrophied over the last 2 decades. Consequently, we lack high-quality nationwide data on the incidence and severity of nonfatal firearm injuries (25). It is critical that the United States adequately fund research to help us understand the causes and effects of intentional and unintentional firearm-related injury and death in order to develop evidence-based interventions and make firearm ownership as safe as possible. Research should be nonpartisan and free of data restrictions to enable robust studies that identify robust solutions. Many of our organizations have affiliated with the American Foundation for Firearm Injury Reduction in Medicine (AFFIRM), a nonprofit organization of health care professionals and researchers working to provide private funding for research related to firearm injury and its prevention. Both private and public funding are key to building a powerful evidence base on this important issue. Research for firearm injury and its prevention should be federally funded at a level commensurate with its health burden without restriction. To move from atrophy to strength requires not just allowing research, but also naming, appropriating, and directing funding for it and for the establishment of comprehensive data collection platforms to document the epidemiology of this growing public health crisis.

Intimate Partner Violence

Offenders who have been adjudicated guilty of a crime of violence against a family member or intimate partner, including dating partners, cohabitants, stalkers, and those who victimize a family member other than a partner or child, should be reported to the National Instant Criminal Background Check System and be prohibited from purchasing or possessing firearms.

Currently, federal laws prohibiting domestic abusers from accessing firearms do not apply to dating partners, even though almost half of intimate partner cases

involved current dating partners (26). Federal law restricts firearm purchases by individuals who have been convicted of a domestic violence misdemeanor or have protective orders against them if they are a current or former spouse; a parent or guardian of the victim; a current or former cohabitant with the victim as a spouse, parent, or guardian; are similarly situated to a spouse, parent, or guardian of the victim; or have a child with the victim. It does not apply to dating partners, stalkers, or individuals who commit violence against another family member. This loophole in the background check system must be closed.

Safe Storage of Firearms

Safe storage is essential to reducing the risk for unintentional or intentional injuries or deaths from firearms, particularly in homes with children, adolescents, people with dementia, people with substance use disorders, and the small subset of people with serious mental illnesses that are associated with greater risk of harming themselves and/or others.

Keeping a firearm locked, keeping it unloaded, storing ammunition locked, and storing it in a separate location have all been associated with a protective effect (27-29). A 2018 study found that an estimated 4.6 million U.S. children are living in homes with at least 1 loaded and unlocked firearm (30). A large number of unintentional firearm fatalities occurred in states where firearm owners were more likely to store their firearms loaded, with the greatest risk in states where loaded firearms were more likely to be stored unlocked (31). Therefore, our organizations support child access prevention laws that hold accountable firearm owners who negligently store firearms under circumstances where minors could or do gain access to them. These laws are associated with a reduction of suicides and unintentional firearm injuries and fatalities among children (32, 33).

Mental Health

The organizations represented in this article support improved access to mental health care and caution against broadly including all individuals with a mental health or substance use disorder in a category of individuals prohibited from purchasing firearms.

The great majority of those with a mental illness or substance use disorder are not violent. However, screening, access, and treatment for mental health disorders play a critical role in reducing risk for self-harm and interpersonal violence. This is particularly of concern for adolescents, who are at high risk for suicide as a consequence of their often impulsive behavior. Access to mental health care is critical for all individuals who have a mental health or substance use disorder. This must include early identification, intervention, and treatment of mental health and substance use disorders, including appropriate follow-up. Those who receive adequate treatment from health professionals are less likely to commit acts of violence (34, 35) and individuals with mental illness are more likely to be victims rather than perpetrators of violence. Early identification, intervention, and access to treatment may reduce the risk for suicide and violence involving firearms for persons with tendencies toward those behaviors (8).

Extreme Risk Protection Orders

Extreme risk protection order (ERPO) laws, which allow families and law enforcement to petition a judge to temporarily remove firearms from individuals at imminent risk for using them to harm themselves or others, should be enacted in a manner consistent with due process.

Several states have enacted ERPO or ERPO-style laws, and numerous other states are considering them. We support the enactment of these laws as they enable family members and law enforcement agencies to intervene when there are warning signs that an individual is experiencing a temporary crisis that poses an imminent risk to themselves or others while providing due process protections.

Physician Counseling of Patients and "Gag Laws"

Physicians can and must be able to advise their patients on issues that affect their health, including counseling at-risk patients about mitigating the risks associated with firearms in the home and firearm safety.

Confidential conversations about firearm safety can occur during regular examinations when physicians have the opportunity to educate their patients and answer questions. Such conversations about mitigating health risks are a natural part of the patient–physician relationship. Because of this, our organizations oppose state and federal mandates that interfere with physicians' right to free speech and the patient–physician relationship, including laws that forbid physicians from discussing a patient's firearm ownership (36). Patient education using a public health approach will be required to lower the incidence of firearm injury in the United States. Our organizations are working on programs and strategies that engage firearm owners in devising scientifically sound and culturally competent patient counseling that clinicians can apply broadly.

In the privacy of an examination room, physicians can intervene with patients who are at risk of injuring themselves or others due to firearm access. They can also provide factual information about firearms relevant to their health and the health of their loved ones, answer questions, and advise them on the best course of action to promote health and safety. Providing anticipatory guidance on preventing injuries is something physicians do every day, and it is no different for firearms than for other injury prevention topics. To do so, physicians must be allowed to speak freely to their patients without fear of liability or penalty. They must also be able to document these conversations in the medical record just as they are able and often required to do

with other discussions of behaviors that can affect health.

FIREARMS WITH FEATURES DESIGNED TO INCREASE THEIR RAPID AND EXTENDED KILLING CAPACITY

A common-sense approach to reducing casualties in mass shooting situations must effectively address high-capacity magazines and firearms with features designed to increase their rapid and extended killing capacity.

The need for reasonable laws and regulations compliant with the Second Amendment regarding high-capacity magazine-fed weapons that facilitate a rapid rate of fire is a point of active debate. Although handguns are the most common type of firearm implicated in firearm-related injury and death, the use of firearms with features designed to increase their rapid and extended killing capacity during mass violence is common. As such, these weapons systems should be the subject of special scrutiny and special regulation. There are various strategies to consider, and our organizations look forward to a greater engagement and partnership with responsible firearm owners to determine how best to achieve this goal (37).

CONCLUSION

Physicians are on the front lines of caring for patients affected by intentional or unintentional firearm-related injury. We care for those who experience a lifetime of physical and mental disability related to firearm injury and provide support for families affected by firearm-related injury and death. Physicians are the ones who inform families when their loved ones die as a result of firearm-related injury. Firearm violence directly impacts physicians, their colleagues, and their families. In a recent survey of trauma surgeons, one third of respondents had themselves been injured or had a family member or close friend(s) injured or killed by a firearm (38). As with other public health crises, firearm-related injury and death are preventable. The medical profession has an obligation to advocate for changes to reduce the burden of firearm-related injuries and death on our patients, their families, our communities, our colleagues, and our society. Our organizations are committed to working with all stakeholders to identify reasonable, evidence-based solutions to stem firearm-related injury and death and will continue to speak out on the need to address the public health threat of firearms.

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References

1. **Butkus R, Doherty R, Bornstein SS; Health and Public Policy Committee of the American College of Physicians.** Reducing firearm injuries and deaths in the United States: a position paper from the American College of Physicians. Ann Intern Med. 2018;169:704-7. [PMID: 30383132] doi:10.7326/M18-1530

2. **Weinberger SE, Hoyt DB, Lawrence HC 3rd, et al.** Firearm-related injury and death in the United States: a call to action from 8 health professional organizations and the American Bar Association. Ann Intern Med. 2015;162:513-6. [PMID: 25706470] doi:10.7326/M15-0337

3. **Miranda CA.** Recent mass shootings in the U.S.: a timeline. Los Angeles Times. 4 August 2019. Accessed at www.latimes.com/world-nation/story/2019-08-03/united-states-mass-shootings on 5 August 2019.

4. **Centers for Disease Control and Prevention.** Underlying cause of death, 1999–2017. WONDER Database. December 2018. Accessed at https://wonder.cdc.gov/controller/saved/D76/D48F344 on 6 March 2019.

5. **American Academy of Family Physicians.** Gun violence, prevention of (position paper). 2018. Accessed at www.aafp.org/about/policies/all/gun-violence.html on 9 July 2019.

6. **American Academy of Pediatrics.** Federal policies to keep children safe. 2019. Accessed at www.aap.org/en-us/advocacy-and-policy/federal-advocacy/Pages/AAPFederalGunViolencePreventionRecommendationstoWhiteHouse.aspx on 9 July 2019.

7. **American College of Surgeons.** Statement on Firearm Injuries. Chicago: American College of Surgeons; 2013. Accessed at www.facs.org/about-acs/statements/12-firearm-injuries on 9 July 2019.

8. **American Psychiatric Association.** Position statement on firearm access, acts of violence and the relationship to mental illness and mental health services. APA Official Actions. 2018. Accessed at www.psychiatry.org/File%20Library/About-APA/Organization-Documents-Policies/Policies/Position-Firearm-Access-Acts-of-Violence-and-the-Relationship-to-Mental-Health.pdf on 9 July 2019.

9. **American Public Health Association.** Handgun Injury Reduction. Washington, DC: American Public Health Association; 1998. Accessed at www.apha.org/policies-and-advocacy/public-health-policy-statements/policy-database/2014/07/29/14/37/handgun-injury-reduction on 9 July 2019.

10. **American Medical Association.** Policy finder: firearms. 2019. Accessed at https://policysearch.ama-assn.org/policyfinder/search/*/relevant/1/PolicyTopic:%22Firearms%22 on 6 February 2019.

11. **Centers for Disease Control and Prevention.** Underlying cause of death, 1999-2017. WONDER database. December 2018. Accessed at https://wonder.cdc.gov/controller/saved/D76/D48F344 on 6 March 2019.
12. **Grinshteyn E, Hemenway D.** Violent death rates: the US compared with other high-income OECD countries, 2010. Am J Med. 2016;129:266-73. [PMID: 26551975] doi:10.1016/j.amjmed.2015.10.025
13. **Centers for Disease Control and Prevention.** Injury Prevention & Control: Data & Statistics (WISQARS). Atlanta: Centers for Disease Control and Prevention; 2014. Accessed at www.cdc.gov/injury/wisqars/index.html on 6 March 2019.
14. **Centers for Disease Control and Prevention.** Deaths: Final Data for 2016. Atlanta: Centers for Disease Control and Prevention; 2018. Accessed at www.cdc.gov/nchs/data/nvsr/nvsr67/nvsr67_05.pdf on 8 January 2019.
15. **United States Department of Health and Human Services; Centers for Disease Control and Prevention; National Center for Injury Prevention and Control.** Firearm Injury Surveillance Study, 1993-2014. National Electronic Injury Surveillance System (NEISS) series. 2018. Accessed at www.icpsr.umich.edu/icpsrweb/NACJD/studies/37121/datadocumentation# on 30 January 2019.
16. **Follman M, Lurie J, Lee J, West J.** The true cost of gun violence in America. Mother Jones. 15 April 2015. Accessed at www.motherjones.com/politics/2015/04/true-cost-of-gun-violence-in-america on 6 March 2019.
17. **Lowe SR, Galea S.** The mental health consequences of mass shootings. Trauma Violence Abuse. 2017;18:62-82. [PMID: 26084284]
18. **Addington LA.** Students' fear after Columbine: findings from a randomized experiment. J Quant Criminol. 2003;19:367-87.
19. **Brener ND, Simon TR, Anderson M, et al.** Effect of the incident at Columbine on students' violence- and suicide-related behaviors. Am J Prev Med. 2002;22:146-50. [PMID: 11897457]
20. **Wintemute GJ, Betz ME, Ranney ML.** Yes, you can: physicians, patients, and firearms. Ann Intern Med. 2016;165:205-13. [PMID: 27183181] doi:10.7326/M15-2905
21. **Pulay AJ, Dawson DA, Hasin DS, et al.** Violent behavior and DSM-IV psychiatric disorders: results from the national epidemiologic survey on alcohol and related conditions. J Clin Psychiatry. 2008;69:12-22. [PMID: 18312033]
22. **Bulger EM, Kuhls DA, Campbell BT, et al.** Proceedings from the Medical Summit on Firearm Injury Prevention: a public health approach to reduce death and disability in the US. J Am Coll Surg. 2019. [PMID: 31108194] doi:10.1016/j.jamcollsurg.2019.05.018
23. **Cook PJ, Ludwig J.** Guns in America: National Survey on Private Ownership and Use of Firearms. National Institute of Justice Research in Brief. 7 May 1997. Accessed at www.ncjrs.gov/pdffiles/165476.pdf on 9 July 2019.
24. **Federal Bureau of Investigation.** National Instant Criminal Background Check System (NICS) operations. 2017. Accessed at www.fbi.gov/file-repository/2017-nics-operations-report.pdf/view on 9 January 2019.
25. **Hink AB, Bonne S, Levy M, et al; American College of Surgeons Committee on Trauma.** Firearm injury research and epidemiology: a review of the data, their limitations and how trauma centers can improve firearm injury research. J Trauma Acute Care Surg. 2019. [PMID: 31033891] doi:10.1097/TA.0000000000002330
26. **Bureau of Justice Statistics.** Homicide trends in the U.S.: intimate homicide. 2007. Accessed at www.lb7.uscourts.gov/documents/08-37701.pdf on 14 September 2018.
27. **Betz ME, Knoepke CE, Siry B, et al.** 'Lock to live': development of a firearm storage decision aid to enhance lethal means counselling and prevent suicide. Inj Prev. 2018. [PMID: 30317220] doi:10.1136/injuryprev-2018-042944
28. **Betz ME, McCourt AD, Vernick JS, et al.** Firearms and dementia. Ann Intern Med. 2018;169:740. [PMID: 30452572] doi:10.7326/L18-0523
29. **Grossman DC, Mueller BA, Riedy C, et al.** Gun storage practices and risk of youth suicide and unintentional firearm injuries. JAMA. 2005;293:707-14. [PMID: 15701912]
30. **Azrael D, Cohen J, Salhi C, et al.** Firearm storage in gun-owning households with children: results of a 2015 national survey. J Urban Health. 2018;95:295-304. [PMID: 29748766] doi:10.1007/s11524-018-0261-7
31. **Miller M, Azrael D, Hemenway D, et al.** Firearm storage practices and rates of unintentional firearm deaths in the United States. Accid Anal Prev. 2005;37:661-7. [PMID: 15949457]
32. **Cummings P, Grossman DC, Rivara FP, et al.** State gun safe storage laws and child mortality due to firearms. JAMA. 1997;278:1084-6. [PMID: 9315767]
33. **Webster DW, Vernick JS, Zeoli AM, et al.** Association between youth-focused firearm laws and youth suicides. JAMA. 2004;292:594-601. [PMID: 15292085]
34. **Treatment Advocacy Center.** Treatment Advocacy Center Briefing Paper: Law Enforcement and People with Several Mental Illness. Arlington, VA: Treatment Advocacy Center; 2005. Accessed at https://popcenter.asu.edu/sites/default/files/problems/mental_illness/PDFs/TAC_2005a.pdf on 9 February 2015.
35. **Friedman RA.** Violence and mental illness—how strong is the link? N Engl J Med. 2006;355:2064-6. [PMID: 17108340]
36. **Weinberger SE, Lawrence HC 3rd, Henley DE, et al.** Legislative interference with the patient-physician relationship. N Engl J Med. 2012;367:1557-9. [PMID: 23075183] doi:10.1056/NEJMsb1209858
37. **Talley CL, Campbell BT, Jenkins DH, et al.** Recommendations from the American College of Surgeons Committee on Trauma's Firearm Strategy Team (FAST) Workgroup: Chicago consensus I. J Am Coll Surg. 2019;228:198-206. [PMID: 30447396] doi:10.1016/j.jamcollsurg.2018.11.002
38. **Kuhls DA, Campbell BT, Burke PA, et al; American College of Surgeons Committee on Trauma.** Survey of American College of Surgeons Committee on Trauma members on firearm injury: consensus and opportunities. J Trauma Acute Care Surg. 2017;82:877-86. [PMID: 28240673] doi:10.1097/TA.0000000000001405

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