

## Viewpoint |

### ONLINE FIRST

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On December 14, a 20-year-old Connecticut man shot and killed his mother in the home they shared. Then, armed with 3 of his mother's guns, he shot his way into a nearby school, where he killed 6 additional adults and 20 first-grade children. Most of those who died were shot repeatedly at close range. Soon thereafter, the killer shot himself. This ended the carnage but greatly diminished the prospects that anyone will ever know why he chose to commit such horrible acts.

In body count, this incident in Newtown ranks second among US mass shootings. It follows recent mass shootings in a shopping mall in Oregon, a movie theater in Colorado, a Sikh temple in Wisconsin, and a business in Minnesota. These join a growing list of mass killings in such varied places as a high school, a college campus, a congressional constituent meeting, a day trader's offices, and a military base. But because this time the killer's target was an elementary school, and many of his victims were young children, this incident shook a nation some thought was inured to gun violence.

As shock and grief give way to anger, the urge to act is powerful. But beyond helping the survivors deal with their grief and consequences of this horror, what can the medical and public health community do? What actions can the nation take to prevent more such acts from happening, or at least limit their severity? More broadly, what can be done to reduce the number of US residents who die each year from firearms, currently more than 31 000 annually?<sup>1</sup>

The answers are undoubtedly complex and at this point, only partly known. For gun violence, particularly mass killings such as that in Newtown, to occur, intent and means must converge at a particular time and place. Decades of research have been devoted to understanding the factors that lead some people to commit violence against themselves or others. Substantially less has been done to understand how easy access to firearms mitigates or amplifies both the likelihood and consequences of these acts.

For example, background checks have an effect on inappropriate procurement of guns from licensed dealers, but private gun sales require no background check. Laws mandating a minimum age for gun ownership reduce gun fatalities, but firearms still pass easily from legal owners to juveniles and other legally proscribed individuals, such as felons or persons with mental illness. Because ready access to guns in the home increases, rather than reduces, a family's risk of homicide in the home, safe storage of guns might save lives.<sup>2</sup> Nevertheless, many gun owners, including gun-owning parents, still keep at least one firearm loaded and readily available for self-defense.<sup>3</sup>

The nation might be in a better position to act if medical and public health researchers had continued to study these issues as diligently as some of us did between 1985 and 1997. But in 1996, pro-gun members of Congress mounted an all-out effort to eliminate the National Center for Injury Prevention and Control at the Centers for Disease Control and Prevention (CDC). Although they failed to defund the center, the House of

Representatives removed \$2.6 million from the CDC's budget—precisely the amount the agency had spent on firearm injury research the previous year. Funding was restored in joint conference committee, but the money was earmarked for traumatic brain injury. The effect was sharply reduced support for firearm injury research.

To ensure that the CDC and its grantees got the message, the following language was added to the final appropriation: “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.”<sup>4</sup>

Precisely what was or was not permitted under the clause was unclear. But no federal employee was willing to risk his or her career or the agency's funding to find out. Extramural support for firearm injury prevention research quickly dried up. Even today, 17 years after this legislative action, the CDC's website lacks specific links to information about preventing firearm-related violence.

When other agencies funded high-quality research, similar action was taken. In 2009, Branas et al<sup>5</sup> published the results of a case-control study that examined whether carrying a gun increases or decreases the risk of firearm assault. In contrast to earlier research, this particular study was funded by the National Institute on Alcohol Abuse and Alcoholism. Two years later, Congress extended the restrictive language it had previously applied to the CDC to all Department of Health and Human Services agencies, including the National Institutes of Health.<sup>6</sup>

These are not the only efforts to keep important health information from the public and patients. For example, in 1997, Cummings et al<sup>7</sup> used state-level data from Washington to study the association between purchase of a handgun and the subsequent risk of homicide or suicide. Similar studies could not be conducted today because Washington State's firearm registration files are no longer accessible.<sup>8</sup>

In 2011, Florida's legislature passed and Governor Scott signed HB 155, which subjects the state's health care practitioners to possible sanctions, including loss of license, if they discuss or record information about firearm safety that a medical board later determines was not “relevant” or was “unnecessarily harassing.” A US district judge has since issued a preliminary injunction to block enforcement of this law, but the matter is still in litigation. Similar bills have been proposed in 7 other states.

The US military is grappling with an increase in suicides within its ranks. Earlier this month, an article by 2 retired generals—a former chief and a vice chief of staff of the US Army— asked Congress to lift a little-noticed provision in the 2011 National Defense Authorization Act that prevents military commanders and noncommissioned officers from being able to talk to service members about their private weapons, even in cases in which a leader believes that a service member may be suicidal.<sup>9</sup>

Health researchers are ethically bound to conduct, analyze, and report studies as objectively as possible and communicate the findings in a transparent manner. Policy makers, health care practitioners, and the public have the final decision regarding whether they will accept, much less act on, those data. Criticizing research is fair game; suppressing research by targeting its sources of funding is not.

Efforts to place legal restrictions on what physicians and other health care practitioners can and cannot say to their patients crosses an even more important line. Yet this is precisely what Florida and some other states are seeking to do. Physicians may disagree on many issues, including the pros and cons of gun control, but are united in opposing government efforts to undermine the sanctity of the patient-physician relationship, as

defined by the Hippocratic oath. While it is reasonable to acknowledge and accept the Supreme Court's recent decision regarding the meaning of the Second Amendment, it is just as important to uphold physicians' First Amendment rights.

Injury prevention research can have real and lasting effects. Over the last 20 years, the number of Americans dying in motor vehicle crashes has decreased by 31%.<sup>1</sup> Deaths from fires and drowning have been reduced even more, by 38% and 52%, respectively.<sup>1</sup> This progress was achieved without banning automobiles, swimming pools, or matches. Instead, it came from translating research findings into effective interventions.

Given the chance, could researchers achieve similar progress with firearm violence? It will not be possible to find out unless Congress rescinds its moratorium on firearm injury prevention research. Since Congress took this action in 1997, at least 427 000 people have died of gunshot wounds in the United States, including more than 165 000 who were victims of homicide.<sup>1</sup> To put these numbers in context, during the same time period, 4586 Americans lost their lives in combat in Iraq and Afghanistan.<sup>10</sup>

The United States has long relied on public health science to improve the safety, health, and lives of its citizens. Perhaps the same straightforward, problem-solving approach that worked well in other circumstances can help the nation meet the challenge of firearm violence. Otherwise, the heartache that the nation and perhaps the world is feeling over the senseless gun violence in Newtown will likely be repeated, again and again.

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