State Firearm Laws and Firearm-Related Mortality and Morbidity

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Supplemental content

Gun violence has long been a preventable cause of death and injury in the United States and one that has been increasing in recent years. In 2020, there were more than 45,000 gun deaths in the US, a 14% increase from the year before and a 25% increase from 5 years earlier. However, firearm violence has proven to be a particularly vexing issue in US policy making. After a mass shooting in May 2022 in Uvalde, Texas, that resulted in the death of 19 children and 2 adults, President Biden signed into law the first federal gun legislation in 30 years. That bill, which gained bipartisan support, included efforts to limit gun ownership by persons who were deemed dangerous and expanded background checks on persons between the ages of 18 and 21 years. Even these modest measures were opposed by gun advocacy organizations. Further reflecting the national impasse on the issue, this legislation was signed just days after the US Supreme Court reaffirmed the right of gun owners to carry handguns in public for self-defense, striking down a New York State law that restricted concealed carriage of guns.

The State Response to Gun-Related Harms

It is against this backdrop of limited national action that firearm-related mortality has continued to increase in the US. Perhaps predictably, given the federal system of government, states are at the front lines of efforts to limit firearm-related harms. Implementation of such efforts has been tremendously heterogenous, and as a consequence, firearm-related harms vary by state. In 2020, Massachusetts, the contiguous US state with the lowest rate of firearm-related deaths, had 3.7 deaths per 100,000 persons. This was more than 7 times the lowest rate of firearm-related deaths, had 3.7 deaths per 100,000 persons. Even these modest measures were opposed by gun advocacy organizations. Further reflecting the national impasse on the issue, this legislation was signed just days after the US Supreme Court reaffirmed the right of gun owners to carry handguns in public for self-defense, striking down a New York State law that restricted concealed carriage of guns.

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limit firearm-related harms. Implementation of such efforts has been tremendously heterogenous, and as a consequence, firearm-related harms vary by state. In 2020, Massachusetts, the contiguous US state with the lowest rate of firearm-related deaths, had 3.7 deaths per 100,000 persons. This was more than 7 times lower than Mississippi, the state with the highest rate of firearm-related deaths in the same year (28.6 deaths per 100,000).

Given the political opposition to efforts to limit access and availability of guns, no single state has enacted any individual piece of legislation that has been singularly effective at reducing gun-related harms. However, the states that have lower rates of gun-related deaths and injuries have implemented a number of legislative efforts that together have contributed to reduced gun violence. For example, over the decades, Massachusetts implemented laws to regulate firearms such as a robust licensing system with restrictions beyond the federal standard, safe storage laws, and red flag laws among other legislations, including several sentinel pieces of legislation that were passed with strong bipartisan support. Therefore, it is likely that a comprehensive set of legislative actions has created protection against gun violence in the states with lower levels of gun-related morbidity and mortality.12

As public awareness about the severity of the gun violence problem in the US increases, a central question becomes more salient: what state-specific efforts may be most effective at reducing firearm-related morbidity and mortality? This question could point the way to advocacy for the most effective approaches to reducing gun violence, particularly in states where there has been a reluctance to embrace any efforts to do so. However, the answer to this question remains elusive, in large part because of the limitations on funding of research and data collection. The 2020 fiscal budget included $25 million for the Centers for Disease Control and Prevention and the National Institutes of Health to fund research in this area for the first time in almost a quarter century. This means that systematic efforts to empirically document the most effective approaches to mitigate gun violence lag by decades, falling short on the availability of data and on rigorous studies. By way of illustration of this problem, while there has been substantial public support for constraints on civilian ownership of assault weapons, there is scant evidence of efficacy of the state programs that have implemented such measures.

With this caveat in hand, there is scholarship that points to state-specific efforts that are likely effective in reducing firearm-related morbidity and mortality (eTable in the Supplement). This summary is not intended to be comprehensive but rather highlights key findings from recent relevant scholarship.2,9 Other systematic reviews provide more comprehensive summaries of the literature. In addition, the RAND Gun Policy Research Review has systematically evaluated the strength of the evidence on the relationship between gun policies and health outcomes.10

State Laws That Reduce Gun-Related Harms

The available evidence does provide insights about particular state-specific laws and approaches that can
reduce gun-related harms. Primarily, these include 3 areas: limiting access to guns by children, efforts to introduce checks to the process of gun ownership, and efforts to limit access to guns by persons who have otherwise been demonstrated to be at risk of firearm-related injury to themselves or others.

First, efforts to limit access to guns by children have been found to be effective in reducing unintentional harm in multiple analyses. In a systematic review, Santaella-Tenorio et al reported that safe storage laws were associated with lower rates of firearm-related unintentional deaths in children. Similarly, Schell et al found that child access prevention laws were associated with the greatest reduction of firearms-related deaths compared with 2 other laws (stand your ground and right to carry, both of which are not specifically focused on limiting access to at-risk people). Raifman et al found that restricting the sale of handguns to persons aged 21 years or older was associated with fewer suicides among adolescents aged 18 to 20.

Second, the literature shows that creating systematic barriers to ready gun availability limits both the risk of and gun-related harm. The RAND review of the literature summarizes some evidence that waiting periods may reduce firearms-related mortality. In particular, Luca et al found that establishing a waiting period of 2 to 7 days was associated with reduced gun homicides among adults. A systematic review by Lee et al found that permit-to-purchase laws and strengthened background checks were associated with fewer firearms homicide rates. Similarly, Siegel et al reported that universal background checks were associated with lower overall and firearms-related homicide. In an analysis of laws in 4 states, McCourt et al found that comprehensive background checks were only consistently associated with lower firearms mortality when coupled with purchaser licensing laws.

Third, some analyses documented that laws limiting gun ownership among persons who have demonstrable history of violence or plausible threat thereof can be effective in reducing gun-related harms. Specifically, the RAND review and Santaella-Tenorio et al reported some evidence that prohibitions on firearm ownership by persons with a history of domestic violence were associated with reductions in intimate partner homicides.

### State Laws That Increase Gun-Related Harms

The converse of the empirical evidence for state actions that mitigate gun-related harms have been studies that have shown that state-related laws and actions have been associated with increased gun-related mortality and morbidity. In particular, the evidence suggests that stand-your-ground laws and, to a lesser extent, right-to-carry laws are associated with increased risk of gun-related harms. Crifasi et al reported that right-to-carry and stand-your-ground laws were associated with increases in firearm homicide rates in urban counties. Moreover, Degli Esposti et al reported that while the rates varied by state, stand-your-ground laws were associated with significant increases in firearm homicide rates.

### The Future of State Efforts to Mitigate Firearm Mortality and Morbidity

In the context of increasing firearm-related deaths and injuries and a paucity of federal action aimed at mitigating these harms, it has fallen to states to implement laws and policies that address the problem. States have taken divergent approaches to this challenge, which has, perhaps not surprisingly, resulted in a range of state-specific gun-related harms. However, a long-standing restriction on federal funding for firearm-related research has substantially limited the empirical evidence that can point to effective state-specific actions to mitigate the harms of gun violence. The best available evidence suggests that laws preventing children from accessing firearms and better screening of prospective firearm purchasers can be effective at reducing gun-related harms, and conversely that broader permission to carrying guns freely is more likely associated with greater such harms. Importantly, experience from the states with the lowest gun-related fatality and injury rates suggest that it is some combination of these laws that can most effectively reduce gun-related harms. As the national political picture remains polarized around the issue, it shall fall increasingly to the states in the future to mitigate gun-related harms and to document the most effective laws to infer other states considering similar action.

**ARTICLE INFORMATION**

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**REFERENCES**


