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Invited Commentary

Invited Commentary: Concealed Carrying of Firearms, Public Policy, and Opportunities for Mitigating Harm

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In the last 30 years, 25 US states have relaxed laws regulating the concealed carrying of firearms (concealed-carry weapons (CCW) laws). These changes may have substantial impacts on violent crime. In a recent study, Doucette et al. (*Am J Epidemiol.* 2023;192(3):342–355) used a synthetic control approach to assess the effects of shifting from more restrictive “may/no-issue” CCW laws to less restrictive “shall-issue” CCW laws on homicides, aggravated assaults, and robberies involving a gun or committed by other means. The study adds to the evidence that more permissive CCW laws have probably increased rates of firearm assault in states adopting these laws. Importantly, this study is the first to identify that specific provisions of shall-issue CCW laws—including denying permits to persons with violent misdemeanor convictions, a history of dangerous behavior, or “questionable character” and live-fire training requirements—may help mitigate harms associated with shall-issue CCW laws. These findings are timely and salient given the recent Supreme Court ruling striking down a defining element of may-issue laws. This thorough study offers actionable results and provides a methodological model for state firearm policy evaluations. Its limitations reflect the needs of the field more broadly: greater focus on racial/ethnic equity and within-state variation, plus strengthening the data infrastructure on firearm violence and crime.

crime; firearms; public policy; violence

Abbreviations: ASCM, augmented synthetic control methods; CCW, concealed-carry weapons; COVID-19, coronavirus disease 2019; NAACP, National Association for the Advancement of Colored People; SCM, synthetic control methods.

Editor’s note: *The opinions expressed in this article are those of the authors and do not necessarily reflect the views of the American Journal of Epidemiology. A response to this commentary appears on page 1064.*

Interpersonal gun violence in the United States remains a major and worsening public health concern, accounting for nearly 20,000 deaths each year (1). In the first year of the coronavirus disease 2019 (COVID-19) pandemic, gun homicide rates rose an alarming 37%, reaching the highest levels seen in more than 20 years (2). In the context of these alarming changes, researchers, policy-makers, and the public have once again renewed attention to the causes of violent firearm crime and policy levers that may help prevent it. In their timely and important study, Doucette et al. (3) sought to evaluate the impacts of one of the most prominent

and widely debated firearm policy levers: changes to state laws that regulate the concealed carrying of weapons (known as concealed-carry weapons (CCW) laws).

HEALTH AND POLICY IMPLICATIONS OF CCW LAWS AND THEIR PROVISIONS

CCW laws take 3 main forms: “permitless” carry laws, in which civilians can carry a concealed firearm outside the home without obtaining a permit, as long as they are not prohibited from possessing firearms; “shall-issue” laws, in which issuing agencies are required to grant a permit as long as the applicant is legally allowed to possess a firearm and meets any additional requirements established by the state; and “may-issue” laws, in which issuing agencies have additional discretion to issue or deny permits (e.g., based on demonstrated need to carry a firearm, often referred to as

“proper cause”). Shall-issue laws vary considerably: Some require only a background check, while others include additional requirements such as firearm safety training, making them similar to may-issue laws. Thirty years ago, 33 states had the equivalent of a may-issue law or one that was more restrictive; in 2021, only 8 states had may-issue laws (3). The impacts of these changes on violent crime may be substantial and are not fully understood. With the Supreme Court’s recent decision in *New York State Rifle and Pistol Association v. Bruen*, the defining element of many may-issue laws, a requirement to demonstrate “proper cause” for firearm-carrying beyond the general need for self-protection, was deemed unconstitutional (4). This far-reaching ruling sets precedent for striking down other discretionary aspects of CCW laws in other states and cities that come under scrutiny, likely leading to further deregulation. The ruling has also prompted executive orders from governors in may-issue states (e.g., Maryland) to suspend proper-cause standards, effectively converting these states to de facto shall-issue states (5).

In this context, Doucette et al. conducted synthetic control analyses to estimate the effects of adopting shall-issue CCW permitting laws on rates of homicide, aggravated assault, and robbery involving a gun or committed by other means. Their main finding, consistent with other recent studies (6–8), was that shifting from a may- or no-issue CCW law to a shall-issue CCW law was associated with an average 9.5% increase in firearm assaults over the 10 years following adoption (3).

The study’s most important contribution is the evaluation of specific provisions of shall-issue CCW laws that may reduce the risks associated with concealed gun-carrying. Doucette et al. considered provisions prohibiting violent misdemeanants from receiving a permit; allowing officials to deny applicants a permit based on a history of dangerous behavior or because they are deemed to be of “questionable character”; and requiring firearm safety training with live-fire elements. To our knowledge, no prior study has considered these important differences between types of shall-issue laws. The authors found that the harms associated with shall-issue laws appeared to be mitigated as the number of permitting provisions increased from no provisions to at least 2 provisions (3). Increases in firearm assaults associated with shall-issue law implementation were notably more pronounced among states allowing violent misdemeanants to obtain CCW permits and states lacking suitability provisions or live-fire training requirements, suggesting that such requirements may be critical to protecting public safety. Given past and expected future expansions of shall-issue CCW laws, this study provides specific guidance on provisions that should be adopted to mitigate any associated increases in firearm assault. Violent misdemeanor prohibitions show particular promise, not only for CCW laws but also for other firearm restrictions such as purchase prohibitions (9).

METHODOLOGICAL STRENGTHS AND LESSONS

Beyond the actionable implications of this study’s findings, several aspects of Doucette et al.’s methodology are

notable and serve as a model for future research. First, the authors prioritized accurate policy measurement by conducting an original review of each state’s code and each statute’s legislative history, and they compared their measures of policy types and effective dates with prior research (3). The quality of policy measurement is sometimes overlooked or treated as straightforward. In fact, conducting high-quality legal epidemiologic research is challenging and time- and resource-intensive, despite a growing body of guidance and tools for conducting such work (10–12). Additionally, careful articulation of how particular laws were defined is critical for generating actionable results. In prior research on comprehensive background checks, for example, differences in policy coding have led to discrepant findings and public confusion (13, 14). Further, studies of state firearm policies rarely consider specific provisions of laws, yet, as Doucette et al. demonstrate, such variations can lead to critical differences in the estimated impacts of policies and resulting policy implications. Failure to examine specific provisions may also explain inconsistent findings in prior research.

Second, the combination of synthetic controls plus meta-analysis sheds light on the estimated effects of shall-issue CCW implementation both for each state separately and as an overall average. Whereas researchers in many studies of firearm policies report only a combined measure of effect, this approach allows us to understand variation in estimated policy impacts across states. Doucette et al.’s results reveal moderate-to-high heterogeneity in estimated effects for all outcomes except assault and robbery with a knife (3). This observation emphasizes the importance of considering state-specific variation. The impacts of shall-issue CCW laws probably depend on both a state’s composition (e.g., the proportion of the population living in communities subject to historical and ongoing disinvestment (15)) and context (e.g., the presence of other firearm restrictions such as comprehensive background checks, stand-your-ground laws, and permit-to-purchase laws). Doucette et al.’s study provides a platform for investigating the causes of heterogeneity in future research.

Third, the synthetic control methods (SCM) applied by the authors have several advantages. SCM can help control for unmeasured confounders and allow estimated policy effects to vary over time since adoption (which is likely for firearm policies (16)). Augmented synthetic control methods (ASCM) are new, and applications are rare. Doucette et al.’s study illustrates the potential advantages of ASCM: Model performance, as measured by the alignment in the prepolicy outcome trends between the synthetic control and the treated state, was high despite a candidate control pool of only 8 states. Using a careful comparison of 4 different model specifications (SCM, SCM with fixed effects, ASCM, and ASCM with fixed effects), the authors found that ASCM with fixed effects performed better than the other 3 models (3). This insight is not trivial: Small pools of control states are a chronic challenge to the internal validity and statistical precision of studies of state firearm policies, and identifying statistical methods that are more robust to these challenges is essential.

DATA-LIMITATION CONSTRAINTS ON RESEARCH PROGRESS

Most public health research on firearm violence faces major challenges due to limitations in the quality and comprehensiveness of available outcome data (17). Doucette et al.'s study respects existing data constraints while pushing the envelope. For example, understanding substate (e.g., county-level) variation in the effects of shall-issue laws would be valuable. Some cities have adopted may-issue CCW laws, but evidence on these local policies is sparse. Studies drilling down to the local level (city, county, neighborhood), including both within-state variation in the impacts of state policies and the impacts of local policies, could better indicate which prevention efforts work best and where (18). However, Doucette et al.'s nonfatal outcomes were derived from the Federal Bureau of Investigation's Uniform Crime Reporting Program. The Uniform Crime Reporting Program is a voluntary reporting system with recognized nonrandom missingness (19). Even with available imputations to address differential reporting practices across law enforcement agencies and time, use of these data at substate levels (e.g., county) is strongly cautioned against (19), limiting researchers' ability to explore substate variation in policy effects.

At the same time, Doucette et al.'s findings highlight the importance of considering nonfatal firearm assault injuries—which are less often considered in firearm policy studies and occur nearly twice as often as firearm homicides (20)—because CCW laws and provisions were associated with nonfatal firearm assaults but not firearm homicide. The authors do not provide an explanation for this discrepancy. One possibility is that shall-issue laws do increase firearm homicide by a small but meaningful amount, but the study lacked the precision needed to detect this effect. Firearm homicides are rare, and imprecision plagues much of the literature on firearm policies (21–24). Alternatively, shall-issue laws may affect fatal and nonfatal injuries differently. Indeed, the authors' unexpected finding that shall-issue laws were associated with an 8.8% increase in nongun homicides—a finding they suggest may be explained by confounding (3)—underscores the need to explore differential impacts by outcome. Supported by detailed data, investigations into the mechanisms by which CCW laws and provisions influence distinct outcomes may yield further hypotheses.

The lack of timely, high-quality data on firearm violence and crime data for research is widely recognized (17). In particular, nonfatal incidents account for an enormous portion of firearm violence (20), yet few data sources on nonfatal firearm violence and crime are complete, representative, consistently measured across time, detailed in terms of context, victim, and perpetrator, released promptly, and reported at levels of geographic and temporal aggregation low enough (e.g., zip code, county, month) to be useful for conducting timely research on policy changes (17, 25). Nationwide nonfatal injury data lack precision because they are based on samples from emergency departments and hospitals rather than censuses (26). More comprehensive databases such as those available through the Healthcare Cost and Utilization

Project (27) do not cover all states or years, and data availability is typically several years behind the present. National data on fatal firearm injuries are more reliable and complete, but access requires significant time investments, and individual-level records are difficult to acquire. Specific guidance has been issued to improve the collection of injury data from hospital emergency departments and firearm-involved crime data from police departments to facilitate timely, high-quality research, but the recommendations have yet to be implemented (25).

THE NEED FOR GREATER FOCUS ON RACIAL EQUITY

Missing from Doucette et al.'s study, and from much of the literature on firearm policies, is consideration of impacts on racial/ethnic equity (28). Racial/ethnic inequities in firearm homicide victimization are disturbingly stark, and they became further exacerbated in the wake of the COVID-19 pandemic: In 2020, firearm homicide victimization was 12-fold higher among non-Hispanic Black people than among non-Hispanic Whites (1). Quantifying heterogeneity in the effects of firearm policies including CCW laws across distinct racial/ethnic population subgroups is critical to understanding whether a policy is likely to exacerbate or mitigate health inequities.

Future research on the impacts of the discretionary components of CCW laws on racial/ethnic inequities in criminalization will complement the current research and help complete our understanding of the intended and unintended consequences of these laws (28–30). Discretionary decision-making enters the process for determining eligibility to carry a firearm via the “good cause” or “moral character” provisions. These CCW provisions can lead to racial inequities in firearm-carrying and in criminal justice responses to illegal firearm-carrying. These harmful inequities must be weighed against the benefits of firearms restrictions that may lessen the inequitable distribution of firearm injury, which falls disproportionately on Black and Brown communities. For this reason, the NAACP Legal Defense and Educational Fund and the National Urban League note the importance of CCW restrictions for communities of color in their brief for the *Bruen* case (31).

CONCLUSIONS

Doucette et al. offered a thorough study with actionable results. The authors concluded that adopting shall-issue CCW laws probably increased rates of nonfatal violent firearm crime (3). Provisions of shall-issue CCW laws that show promise in limiting these harms, including violent misdemeanor prohibitions, suitability provisions, and live-fire training requirements, should be promoted in states with new or existing shall-issue CCW laws. A greater focus on racial/ethnic equity, within-state variation, and the mechanisms by which these provisions affect firearm violence would allow for further refinement of recommendations. More broadly, this study highlights that consistent rigorous measurement of policies and provisions, application of statistical methods that effectively minimize bias in settings with small sample sizes, and enhanced support for data

infrastructure would better support research to inform prevention. Given recent increases in firearm homicide and planned expansions of National Institutes of Health and Centers for Disease Control and Prevention funding earmarked for firearm violence research and prevention in 2023 (32), it is an especially relevant time to pursue this work.

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