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Addressing domestic violence deaths from gun violence: the role of state level policy in reducing  
mortality in mass shootings and beyond

A dissertation submitted in partial satisfaction of the  
requirements for the degree Doctor of Philosophy in  
Health Policy and Management

by

Wilson Hyer Hammett

2024

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## ABSTRACT OF THE DISSERTATION

Addressing domestic violence deaths from gun violence: the role of state level policy in reducing mortality in mass shootings and beyond

by

Wilson Hyer Hammett

Doctor of Philosophy in Health Policy and Management

University of California, Los Angeles, 2024

Professor Sally J. Heymann, Chair

Mass shootings are often defined in a way that excludes events that are domestic violence (DV) related and/or events that occur in the home. However, over 50% of mass shooting deaths occur in DV-related events. First, this dissertation determines the proportion of mass shooting fatalities that occurred in the home and in DV-related events and uses descriptive methods to stratify these fatalities by age and gender. Second, this dissertation uses comparative policy methods to identify six gaps in federal DV-related firearm policy and examine state-level criminal and civil code for all 50 US states and the District of Columbia. Third, this dissertation examines whether any state-level DV-related firearm policies requiring removal of firearms from perpetrators may be associated with reduced mortality from DV-related mass shooting events. The results of this dissertation show that mass shootings that occur in the home and/or are DV-related account for over 50% of mass shooting fatalities and that women and children are highly represented in these types of events. It also shows that DV-related state-level laws addressing gaps in federal policy

have been passed in every Census region and across political environments. However, seven states have not closed any identified gaps in federal DV firearm policy and disparities were identified in the extent to which these laws require removal of firearms from perpetrators. Finally, results of this dissertation show that firearm laws that require removal of firearms from perpetrators show promise as potential areas for policy intervention to reduce fatality from DV-related mass shootings.

This dissertation of Wilson Hyer Hammett is approved.

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2024

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Fabian KE, Muanido A, Cumbe V, Mukunta C, Manaca N, Dorsey S, **Hammett WH**, Wagenaar BH. Integrating a transdiagnostic psychological intervention into routine HIV care: a mixed-methods evaluation of the Common Elements Treatment Approach in Mozambique (CETA-MZ). *JAIDS*, March 2022.

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## Chapter 1: Introduction

### I. Background

#### Domestic violence

In this dissertation, the term “domestic violence” is used as a term to broadly encompass both intimate partner violence and familial violence, following the United Nations and United States Department of Justice definitions and use of the term by prior literature in the firearm policy field.<sup>1-5</sup> “Domestic violence” is defined by the United Nations as “physical, sexual, emotional, economic or psychological actions or threats of actions that influence another person” in any relationship, including spousal relationships, unmarried intimate relationships, familial relationships, or other household relationships.<sup>1</sup>

Domestic violence (DV) and specifically intimate partner violence (IPV, violence in which the victim is a current or former romantic partner of the perpetrator) incidents are responsible for one in five homicides in the US and over half of homicides with female victims.<sup>6</sup> Although people of all genders and sexual orientations can experience IPV, women with male partners are the predominant group affected by IPV and constitute between 78-84% of intimate partner homicides (IPH).<sup>7,8</sup> The biggest risk factor for being killed by a partner is prior IPV perpetrated by that partner,<sup>8</sup> and IPV incidents that involve a firearm are 12 times more likely to result in death of the victim than those that do not.<sup>9</sup> Those with a history of perpetrating DV also are shown to be more likely to commit acts of violence outside their family, and many mass shooting perpetrators have a history of DV.<sup>3,10</sup> A longitudinal study following gun owners in California also found that gun owners with a history of perpetrating IPV were at increased risk of arrest for any violent crime (including but not limited to IPV crime).<sup>11</sup>

Children are also highly susceptible to firearm injury and death and are particularly vulnerable to DV-related shootings and/or shootings that occur in the home. Gunshot wound is now the

leading cause of death for those under 19 in the United States.<sup>12</sup> A 2019 study found that 85% of firearm fatalities of younger children (ages 0-12) have been found to occur in a home, while older children were about equally likely to be killed by firearms in the home as outside the home.<sup>13</sup> This same study found that about half of firearm homicides of younger children (0-12 years of age) occurred in events with multiple victims, many of which may be family annihilation events.<sup>13</sup>

### **DV-related firearm policy**

Federal law: Although federal legislation prohibits those convicted of a DV felony, misdemeanor DV convictions, and non-temporary DV restraining orders (DVROs) from possessing or purchasing a firearm or ammunition,<sup>14,12,13</sup> the federal definitions of DV in these cases is restricted to current and former spouses and those who have cohabitated with the victim, excluding other dating partners.<sup>15</sup> This federal law was also challenged by the 5<sup>th</sup> Circuit Court of Appeals in February 2023, a ruling that deems those under DVROs to have a right to bear arms protected by the Second Amendment and any federal law restricting possession of a firearm by those under such restraining orders to be unconstitutional. While the Supreme Court overturned this ruling in 2024, the case sets precedent for challenges to federal DV-related firearm laws in lower courts.

State law: Many states have enacted legislation that mirrors these federal restrictions, while other states have made strides to close this “boyfriend loophole” and more liberally define relationships that may be subject to DVROs (as does the 2022 Bipartisan Gun Bill).<sup>15</sup> Some states have also expanded restrictions to apply to *ex parte* DVROs (18 states), or those that are in effect before a hearing occurs, removing firearms in the particularly risky period right after law enforcement has become involved.<sup>15</sup> Prior analyses have found statistically significant evidence

of protective associations between expanded state DV legislation and intimate partner homicides.<sup>16,17</sup>

While the content of state DV and IPV-related firearm policies varies widely, all 50 states and the District of Columbia have some form of firearm purchase prohibition for those convicted of a domestic violence misdemeanor, while only 17 require relinquishment of firearms for domestic violence misdemeanors. While 28 states and the District of Columbia have DVRO firearm purchase prohibitions, 14 of those states have authorized such a restriction but either do not require it or have outlined certain conditions under which it is not required.<sup>18</sup>

Prior studies of effectiveness of DV-related gun policies have primarily focused on determining the effectiveness of DVRO firearm prohibitions. Some studies have examined overall rates of intimate partner homicide (IPH) using national cross sectional data in either time series or trend analyses,<sup>17,19</sup> while others have assessed change over time in IPH rates in states that have implemented DVRO firearm prohibitions and compared with those in states that have not implemented such policies.<sup>16,20</sup> Evidence from prior literature suggests that DVRO firearm prohibitions overall may be associated with 8% lower rates of overall IPH and 9% lower rates of firearm IPH, and those that include both purchase and possession restrictions may be associated with 10% lower rates of overall IPH and 14% lower rates of firearm-associated IPH.<sup>16,17</sup>

However, these protective effects were only found in states with robust criminal records used in conducting background checks.<sup>21</sup> One study reported that protective associations were only found when DVRO firearm prohibition laws included dating partners and provisions for the relinquishment of firearms.<sup>17</sup> None of these prior studies found evidence of an association between a state-level firearm prohibition for those convicted of non-violent domestic violence misdemeanors (MCDV) and a reduction in IPH.<sup>16,17,19,20</sup> One study also found that violent

misdemeanor firearm prohibition was statistically significantly associated with lower firearm-related and overall IPH rates, and that prohibitions for stalking misdemeanants were statistically significantly associated with lower overall IPH rates.<sup>17</sup>

Few studies have examined the effectiveness of laws requiring the removal of firearms from the scene of a DV incident at reducing intimate partner homicide.<sup>16,17,19,22</sup> These prior studies have not found statistically significant evidence of effectiveness of these laws at reducing intimate partner homicide or overall homicide. It is important to note that these studies have not differentiated between removal laws in which removal is up to law enforcement discretion, removal is required in all circumstances, or if removal of *all* firearms is required.

### **Mass shootings**

While mass shootings account for about 1% of firearm deaths each year,<sup>23</sup> they make up a large part of the cultural and political discourse around gun violence in the United States. The potential public health impacts of mass shooting events on the health of the wider United States population also extend far beyond fatalities. Physical and mental health effects can be felt by those injured, witnesses, and family members of those killed or injured in mass shooting events, both immediately following and long after the event itself.<sup>24-26</sup> Repeated exposure to media coverage of mass shooting events has also been found to be associated with short term emotional outcomes.<sup>25-29</sup>

There is no one legal definition of “mass shooting” in the United States and definitions vary widely in the media and political discourse, as well as in the scholarly research community. This complicates research and policymaking by leading to inconsistency in inclusion criteria and data sources across studies, and there is a growing call among researchers for a consistent, more comprehensive definition of mass shootings.<sup>24,30</sup> When defined as four or more killed by a



firearm (excluding the perpetrator) in any location with any motivation, a 2021 study found that 59% of mass shootings 2014-2019 were DV-related (A partner, ex-partner, or family member of the perpetrator is among the victims) and that 68% of mass shootings were related to DV and/or were events in which the perpetrator had a history of perpetrating DV.<sup>3</sup> While over 50% of mass shooting events occur in the home or workplace,<sup>31</sup> as much as 34% of “public” mass shootings have also been found to be gender-motivated against women (either a specific woman known to the perpetrator or targeting women in general).<sup>32</sup> While a relationship between DV and mass shootings has been made clear in recent years,<sup>3</sup> prior studies have not examined the way state-level DV-related firearm policy environments may play into that relationship.

## **II. Gaps in the literature and objective**

### **Gaps in the literature**

The public health literature surrounding mass shootings is limited, and definitions of “mass shooting” vary widely. No prior studies have investigated the difference between mass shootings that occur in the home and mass shootings that are DV-related. The United States experienced surges in overall firearm homicide rates and firearm fatality rates among children in the pandemic years,<sup>12,33</sup> and it is important to examine mass shooting fatality demographics, event locations, and event relationships to DV within the current context of our gun violence crisis in the United States. Prior studies have also not yet identified what gender and age groups are most affected by mass shootings when events occurring in the home and DV-related events are included in the definition of “mass shooting”.

DV-related firearm policy is also an area with limited prior analysis. While a recent study does examine the distribution of state-level firearm policies that remove firearms from those who have perpetrated DV,<sup>34</sup> there is no current academic analysis of the full DV-related state firearm policy

landscape that captures all laws addressing gaps in federal policy and identifies both temporal and geographic policy trends through 2023. [Paper 2](#) identifies major gaps in federal DV-related firearm policy, determine how states have attempted to address these gaps, and explores geographic and temporal trends in this state policy area. A detailed understanding of the salient details and trends in DV-related firearm policy can provide insight into what gaps exist at the federal level, how states vary in approaches to addressing those gaps, what details might indicate relative strength of policy provisions, and what policy provisions might have appeal across political party lines.

A few causal studies examine the relationship between DV-related firearm policy and mass shooting outcomes.<sup>5,35,36</sup> However, these prior studies focus on the presence of firearm possession prohibitions, failing to examine the relationship between actual removal of firearm(s) from perpetrators and mass shooting outcomes. An understanding of potential relationships between the presence of state policy provisions that require removal of firearms from perpetrators and mass shooting fatalities would provide an important basis for future causal research determining whether the relationship between policy and outcome is strengthened by “stronger” policy provisions.<sup>34</sup>

## **Objective**

This dissertation seeks to address these gaps in the literature. A clear connection exists between DV and mass shootings,<sup>3</sup> yet not all definitions of mass shooting include DV-related shootings or those that occur in the home. By reframing mass shootings as a public health problem intimately connected to DV, I seek to provide a clearer understanding of the burden of mass shooting events when DV-related shootings and those that occur in the home are included, qualitatively analyze the current state of DV-related firearm policy in the United States, and determine whether certain

DV-related firearm policies may be possible interventions to reduce mass shooting fatality. This dissertation does not examine policy effectiveness, but instead provides an important basis for future causal studies that examine policy approaches to mass shootings.

### **III. Aims and approach**

#### **Aims**

**The first paper** aims to examine the burden of mass shooting fatalities that occur in mass shooting events in the home and mass shooting fatalities that occur in DV-related events. This paper determines the burden of mass shooting fatalities occurring in a home or residence and DV-related mass shootings, examines overlap and differences between these two categories of mass shooting events, and determines relative burden of fatality stratified by gender and age.

**The second paper** aims to characterize the gaps in federal DV-related firearm law and ways in which states attempt to close those gaps. This paper also examines both temporal and political trends in state-level adoption of DV-related firearm laws. **The third paper** aims to determine which state-level DV-related firearm laws that require removal of firearms from perpetrators, if any, show promise as potential avenues for intervention in reducing DV-related mass shooting mortality. To achieve this aim, the third paper determines whether a potential relationship exists between the presence of state-level DV-related firearm laws that require removal of firearms from perpetrators and fatalities from DV-related mass shooting events 2014-2023 and qualitatively examines in detail a potentially promising area of DV-related firearm policy- removal of firearms from those who have perpetrated abuse- that may have bipartisan support.

#### **Methodological approach**

This dissertation uses descriptive methods. The literature examining mass shootings is limited, particularly regarding the relationship between DV and mass shootings. To build a scholarly

basis for future causal studies of the relationship between DV-related policy approaches and mass shooting fatalities from DV-related shootings, I use quantitative measures of association to describe the burden of mass shootings and identify potential policy approaches, and qualitative methods to describe the DV-related firearm policy landscape. The descriptive analyses included in this dissertation identifies factors in both the circumstances of mass shooting events and in DV-related firearm policy that may be worth investigating in future causal studies. Results from this dissertation may also influence future work that evaluates effectiveness of certain policy approaches to reducing mass shooting fatalities.

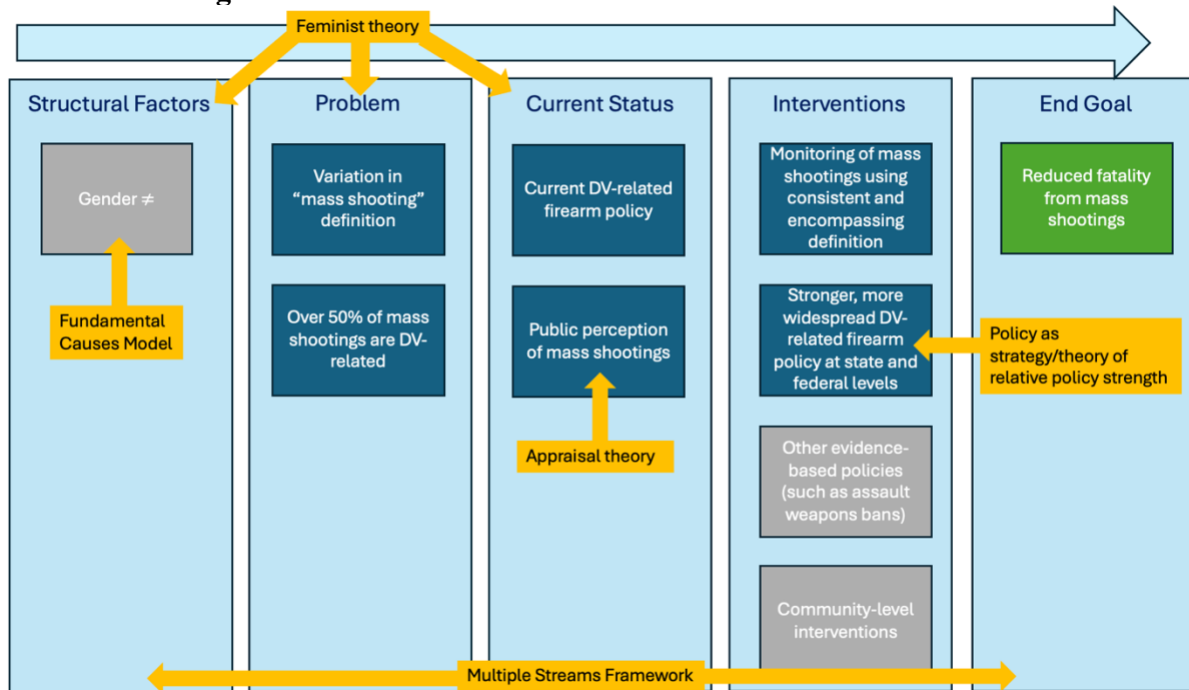
All aims of this study were exempt from regulations for research with human subjects as they did not meet the definition of human subject research.

#### **IV. Conceptual model and theoretical frameworks**

Academic studies of mass shootings do not often include discussions of theory or mention of theoretical frameworks.<sup>37</sup> No one theoretical framework guides this dissertation as a whole, but rather several existing frameworks inform this conceptual model and individual chapters.

## Conceptual model

**Figure 1.1. Conceptual model outlining topics critiqued and examined and theories and frameworks that guide this dissertation**



The conceptual model above (**Figure 1.1**) details interconnected factors both discussed and not discussed in this dissertation and the theories and frameworks that inform this work. Informed by the Multiple Streams Framework, I identify two “problems” that can be addressed by policy.<sup>38</sup>

The central problems around which this dissertation is organized are 1) variation in the definition of “mass shooting” and 2) the previously established connection between DV and mass shootings when all events are included, regardless of location and circumstance. By framing mass shootings as a DV issue and focusing on these two identified problems, I then seek to determine whether DV-related firearm policy should be investigated as just one potential intervention to reduce mass shooting fatality.

In the conceptual model above the problems, current social and policy factors, and possible interventions that are discussed and/or examined in detail in this dissertation are shown in blue, while the factors that are not discussed are shown in grey. The overarching goal of this and other

mass shooting research is to reduce fatality from mass shootings, shown in green. The theories and frameworks that guide this dissertation are shown in yellow, with arrows indicating the part of the model to which they are relevant.

While not discussed in these analyses, I hypothesize and use feminist theories to argue that gender inequality is a contributing structural factor to these two central problems. I argue that gender inequality influences both the strong connection between DV and mass shooting events and the fact that DV-related events and events that occur in a home or residence are often left out of definitions and thus public discourse about mass shootings. I also argue that gender inequality is a potential fundamental cause of mass shooting events but is overlooked due to the exclusionary definitions used. While the current status of DV-related firearm policy is discussed in both **Paper 2** and **Paper 3**, the current public perception of mass shootings and personal risk is discussed in **Paper 1**, guided by appraisal theory. I argue that the widespread use of conservative definitions of mass shooting limited to public, random events and subsequent media coverage influences individual conception of risk and policy conversations. Possible interventions for achieving the desired outcome of reduced fatality that are discussed in this dissertation are monitoring of mass shootings using a clear, consistent, and inclusive definition, and stronger, more widespread DV-related firearm policy. Policy interventions included in this dissertation are informed by both the theory of policy as strategy and Oliphant and Zeoli's theory of relative policy strength.<sup>34</sup> Included theory is outlined below. I argue that when mass shootings are reframed as a gender and DV issue, DV-related firearm policy change emerges as just one potential avenue for intervention and shows potential due to widespread support at the state level.

## **Theoretical frameworks**

Appraisal theory: This dissertation critiques the widespread use of definitions of mass shooting that are limited to public shootings perpetrated at random by strangers. This critique draws upon appraisal theory, which argues that “appraisals” are “processes that assess the significance of the environment for well-being”.<sup>39</sup> When applied to mass shootings, appraisal theory can explain the way that emotions such as fear arise based on a subjective interpretation of a mass shooting event formed by information gleaned from media coverage.<sup>39,40</sup> Selective coverage of mass shooting events lends more weight to mass shootings widely perceived random and unexpected.<sup>41</sup> Using appraisal theory, this media coverage may influence individual assessment of personal risk of mass shootings and encourage the assumption that mass shooting events do not occur in private locations, such as a home or residence, and are not perpetrated by family members or current or former partners of the victims. Drawing on this theoretical framework, I argue that using conservative definitions of mass shootings in public, political, and media discourse may contribute to a lack of public understanding of who is at risk of experiencing a mass shooting event, which may in turn limit the development of effective policy interventions.

Elements of feminist and gender theory: The argument that the domestic firearm violence, and specifically mass shootings, can be approached as a symptom of sociocultural and political factors that can and should be addressed through policy aligns with the classic feminist model.<sup>42</sup> Catherine MacKinnon’s theory of male dominance—popular with scholars of gender and policy—argues that gender inequality in our society forms a hierarchy in which male dominance is institutionalized, and that we perceive this dominance as natural and rational.<sup>43</sup> This theory informs this dissertation’s claim that the experiences of women are often overlooked in the dominant narratives of mass shootings and thus in policy approaches to reducing fatality from

mass shootings, and that by using conservative definitions of mass shooting, we are overlooking victims of DV and thus mischaracterizing the burden of mass shootings in public discourse and overlooking potential avenues for intervention.

The theory of aggrieved entitlement also informs this work. This theory states that some men may feel entitled to certain social privileges and respond with frustration and hatred, sometimes in the form of physical violence, when these expected privileges are not enjoyed and/or when they feel their social position is threatened.<sup>44</sup>

While this dissertation focuses on downstream policy interventions, it argues that addressing the upstream factor of DV may be a potential area for reducing the downstream factor of mass shooting fatality and argues that other upstream factors such as gender inequality and cultural conceptions of masculinity that may be related to rates of DV should be explored as potential influences on mass shooting fatality. Current data availability limits the ability of researchers to include socioeconomic and demographic variables such as race, ethnicity, class, disability, sexual orientation, etc., however it is crucial for the field to improve data sources and include these sources to better understand the impact of mass shootings and apply an intersectional feminist perspective to this public health issue.

Fundamental Cause Model: The Fundamental Cause Model is central to the discipline of population health, stressing that larger social and economic factors are fundamental causes of disease and that changes in these structures can then create downstream changes in health outcomes. This model differentiates between “basic” or “distal” causes—the most upstream factors—and “surface” or “proximal” causes—those factors more proximal to the outcome, and recognizes that changes in surface causes may not result in significant or long-term change in outcome because other surface causes may then lead to the same outcome.<sup>45</sup> However,



addressing the basic causes may be a more sustainable and effective approach to changing the outcome of interest.<sup>45</sup> This model also maintains that basic or distal causes can influence health outcomes through a variety of pathways and can affect a variety of health outcomes. As shown in the conceptual model above, this dissertation does not directly use the Fundamental Cause Model in its analytical approaches, but instead focuses on the proximal causes of mass shootings.

However, by examining the intersection between domestic violence and mass shootings, it seeks to identify associations that may in turn lead to a more robust understanding of distal causes of mass shooting fatality in future studies.

Policy frameworks: This dissertation draws upon several frameworks for understanding policy as intervention. The Multiple Streams Framework, which argues that many different solutions may exist for one “problem”, informs the overarching objectives of this dissertation.<sup>38</sup> By highlighting the established connection between DV and mass shootings, I define this relationship as a “problem” with potential policy solutions. By conceptualizing mass shootings as a DV issue, I investigate DV-related policy as just one of many possible solutions to this problem. Seeking to determine whether state-level DV-related firearm policy may be an area to explore as an area of intervention to reduce mass shooting fatality, I also frame policy as a “strategy to use” in order to achieve certain outcomes.<sup>46</sup> I also draw upon Oliphant and Zeoli’s framework for examining the relative strength of DV-related firearm laws.<sup>47</sup> This framework considers those DV-related firearm policies that require relinquishment or removal of firearms from perpetrators to be “stronger” than those that do not, and considers those policies that include specificity in the legal text to ensure that law enforcement and the courts have a protocol to follow in removing firearms to have additional “strength” by providing a system of accountability.

## **Chapter 2: Characterizing the burden of mass shootings that occur in the home and domestic violence-related mass shootings (Study 1)**

### **I. Introduction**

While mass shootings account for a small percentage of deaths by firearm each year,<sup>23</sup> they make up a large part of the cultural and political discourse around gun violence in the United States.<sup>41,48</sup> The public health impacts of mass shooting events on the health of the wider United States population also extend far beyond the number of fatalities. Those injured in mass shooting events, witnesses, community members, and family members of those killed or injured may also experience physical and mental health effects in the immediate aftermath or long after the event.<sup>24,25,49</sup> Members of the public who live in a community that experienced a mass shooting or who are exposed repeatedly to media coverage of mass shooting events may also experience short-term emotional outcomes.<sup>25-29</sup> Despite the public health importance of such events, there is no single definition of what constitutes a mass shooting. This lack of definition limits understanding of the short- and long-term health consequences of these events, as well as efforts to prevent future mass shootings. This article seeks to characterize the burden of mass shooting events that occur in the home and/or are related to domestic violence (DV) and critique both the lack of a consistent definition of “mass shooting” and commonly used definitions that exclude one or both of those categories of event. By doing so, this paper develops a more expansive definition of mass shooting and identifies the important and relatively underappreciated contribution of DV to mass shooting events in the US.

There is no official legal definition of “mass shooting” in the United States and definitions vary widely in the media and political discourse, as well as in the scholarly research community. This complicates research and policymaking by leading to inconsistency in inclusion criteria and data sources across studies and may obscure important risk factors.<sup>24</sup> Public and political conversation

around mass shootings often uses a definition that restricts mass shootings to “public mass shootings”, excluding those that may happen in the home. For example, a 2013 report from the Congressional Research Service detailing the scope of mass shootings in the United States defined “public mass shootings” as “incidents occurring in relatively public places, involving four or more deaths—not including the shooter(s)—and gunmen who select victims somewhat indiscriminately”.<sup>50</sup> The Federal Bureau of Investigation (FBI) does not track mass shootings but instead tracks “active shooter” incidents, which it defines as one or more people attempting to kill or killing people in a “populated area”, excluding incidents deemed to be related to gang violence or domestic violence (DV).<sup>51</sup> Although “active shooter” incidents and mass shootings are not synonymous, this FBI database is the closest to a database of mass shooting events that currently exists at the federal level.<sup>24</sup> In crime statistics, the FBI has historically defined “mass murder” as four or more individuals killed in a single attack in any location.<sup>24,52</sup> This threshold was changed to three individuals killed in 2012.<sup>53</sup> Many researchers and several publicly available databases of mass shooting events rely on a threshold of four fatalities and limit inclusion criteria to events that occur in public, populated areas.<sup>24,32,54,55</sup>

The widespread use of the FBI or Congressional Research Service parameters to define “mass shooting” may lead to public assumptions that risk of injury or death from a mass shooting is highest in public mass shootings perpetrated randomly by strangers. The media coverage of mass shooting events perpetuates this narrative: public mass shootings with high numbers of fatalities perpetrated by strangers tend to get the most media coverage,<sup>56</sup> and events that occur in personal residences have been found to be less likely to garner media coverage.<sup>41</sup> While understanding the motivations behind public mass shootings is important to addressing and reducing the public health impacts of those types of mass shootings, this uneven coverage encourages members of

the public to perceive their own risk as highest in public places. Parents and guardians may also be led to believe that their children are most at risk of experiencing a mass shooting in a school setting, rather than at home.

Parental fear of gun violence is not unwarranted, as gunshot wound is now the leading cause of death for those under 19 in the United States.<sup>12</sup> However, child fatalities from gun violence more commonly occur in the home than in school.<sup>13</sup> A 2019 study found that 85% of firearm fatalities of younger children (ages 0-12) have been found to occur in a home or residence while older children were about equally likely to be killed by firearms in the home as on the streets.<sup>13</sup> This same study found that about half of firearm homicides of younger children were found to have occurred in events with multiple victims.<sup>13</sup>

In some definitions of mass shooting, “happened in the home” is used as a proxy for “DV-related”, allowing researchers and policymakers to exclude those that are assumed to be DV-related.<sup>24</sup> Several prior studies investigate the relative burden of “public” and “private” mass shootings,<sup>57-59</sup> but definitions of “public” and “private” tend to vary across studies. Despite attempts to exclude DV-related mass shootings by excluding those that happen in the home, some mass shooting events that occurred in public places like schools and workplaces have also been found to be related to DV.<sup>56</sup> Prior studies have also found that when events that occurred in a home or residence and DV-related events are both included in analyses, over half of mass shootings are DV-related.<sup>3,31</sup> While both mass shootings that happened in the home and DV-related mass shootings have been examined separately in the literature, no prior studies have determined the extent to which the categories “happened in the home” and “related to DV” overlap. Without examining these two characteristics together, we cannot fully understand whether these terms are adequate proxies for one another. Without one official legal definition of

“mass shooting”, it is important to know exactly what is meant by these terms and who is most affected by both types of mass shooting event. DV-related shootings can happen in public places and depending on socioeconomic factors and circumstances of the victims and/or perpetrator, a shooting that occurred in a car, street, or other location could also be considered to have happened in a home. Understanding how these terms are defined and who is excluded is important to determining adequate public health and policy interventions for reducing mass shooting fatality.

Most studies of gender and mass shootings examine the experience of survivors,<sup>60,61</sup> or the perpetration of such events by female shooters.<sup>37,62</sup> Most studies of children and mass shootings focus on the mental health effects of mass shooting survival among children or analyze and identify pathways to prevention of school shootings.<sup>63-66</sup> However, no prior studies have identified what gender and age groups are most affected by mass shootings when events occurring in the home and DV-related events are included in the definition of “mass shooting”.

The literature shows that when events occurring in the home and DV-related events are included in analyses, over half of mass shootings events are DV-related,<sup>3</sup> and that women constitute between 78-84% of intimate partner homicides (IPH).<sup>7,8</sup> Similarly, the literature shows that most firearm homicides of young children happen in a home or residence.<sup>33</sup> Building upon this evidence, women and children fatalities might be hypothesized to be highly represented in mass shootings occurring in the home and DV-related mass shootings. Quantifying fatalities in these categories of events—stratified by gender and age—is necessary to determine validity of this hypothesis and understand what demographics of fatality are excluded when these categories are excluded from definitions of “mass shooting”. This knowledge is important to inform choices in

definition made in future research studies and in designing targeted intervention approaches for reducing mass shooting fatality.

While several studies have linked DV and mass shootings, prior peer-reviewed analyses have been conducted at the event level, rather than fatality level.<sup>3,31</sup> A report by Everytown for Gun Safety determined that 25% of all mass shooting fatalities and 40% of fatalities from DV-related mass shootings were children, but did not provide the same proportions for mass shootings occurring in a home or residence.<sup>31</sup> No prior studies have stratified mass shooting fatalities that occurred in a home or residence or DV-related mass shootings by gender, and no prior studies have compared the proportion of fatalities that occurred in these two categories of event.

Conducting analyses at the fatality level allows comparison between the proportion of fatalities and the proportion of events that occurred in a home or residence and/or were DV-related. This provides a better understanding of the actual public health effects of these types of mass shooting events, rather than incidence of the events themselves. Conducting analyses at the fatality level also allows for stratification of fatalities by both age and gender, providing important knowledge about what demographics are most affected by these types of events. This knowledge can subsequently guide future intervention and policy development.

This study contributes to a growing body of literature characterizing the burden of mass shooting events and builds upon the call from scholars for a consistent, more comprehensive definition of mass shootings.<sup>24,30</sup> This study further interrogates the consequences of excluding shootings that happen in the home and/or are related to DV from the definitions of “mass shooting” used in political, cultural, and academic discourse. Critiquing the widespread use of definitions of mass shooting that are limited to public shootings perpetrated at random by strangers, this study argues that selective media coverage lending more weight to “public” events may influence individual

assessment of personal risk of mass shootings.<sup>41</sup> This critique draws upon appraisal theory, which argues that emotions such as fear arise based on a subjective interpretation of one’s environment—such as public discourse of mass shooting events—and influence one’s understanding of one’s own well-being.<sup>39,40</sup>

By determining the proportion of mass shooting fatalities that occurred in a home or residence and the proportion of mass shooting fatalities that occurred in DV-related events and stratifying by gender and age, this paper aims to provide a clearer understanding of what demographics may be underrepresented in discussions of mass shooting events when these types of events are excluded. Using publicly available data compiled by Gun Violence Archive (GVA) and news articles about mass shooting events, this is the first paper to investigate the overlap between “occurred in the home” and “DV-related” as characteristics of mass shooting fatalities and determine whether a potential relationship exists between these mass shooting characteristics and gender and age of fatalities.

## **II. Methods**

### **Aims**

The overall aim of this article is to determine the mortality burden of mass shooting events that occur in the home and mass shooting events that are related to DV (perpetrated by a family member or current or former partner of one of the victims), quantify the overlap between mass shooting fatalities that occur in the home and fatalities that occur in DV-related events, and characterize the demographics most represented in these types of events. This analysis takes four approaches to this aim:

- First, this paper aims to characterize the burden of mass shooting mortality in events that occurred in a home or residence vs. events that occurred in other locations from 2014-2023.
- Second, this paper aims to characterize the burden of mass shooting mortality in events that were DV-related (in which the perpetrator was a family member or a current or former partner of at least one victim) vs. non-DV-related events from 2014-2023.
- Third, this paper aims to determine whether “occurring in the home” is an adequate proxy for “DV-related” in characterizing mass shooting events by examining the proportions of mass shooting fatalities that occurred in a home or residence and of fatalities that occurred in a DV-related shooting.
- And fourth, this paper aims to determine whether a relationship exists between gender, age group and A) whether a mass shooting fatality occurred in a home or residence and B) whether a mass shooting fatality occurred in a DV-related mass shooting.

### **Study design and data sources**

This study is an observational, retrospective cross-sectional analysis. This study uses Gun Violence Archive (GVA)’s mass shooting database for the years 2014-2023. GVA maintains a database of mass shootings beginning in 2014 which includes date, time, geographic location, number killed, and number injured for each event. Although this database has its own limitations, GVA is widely considered as suitable for epidemiological research and the most comprehensive available data source on mass shooting events.<sup>67,68</sup> GVA has also been used in prior studies of the relationship between DV and mass shootings.<sup>3,4</sup> The GVA database is generated using automated queries and manual analysis of local and state police data, media sources, data aggregates, and government sources. Each entry is double coded and provides source links.<sup>69</sup> This database



includes mass shootings often excluded from other lists of mass shooting events, such as those considered “gang-related” or “drug-related”, those that occurred in the home or workplace, and those in which the perpetrator is considered an injury or death (through self-inflicted gunshot wound or being shot by law enforcement). In GVA’s analysis of each included mass shooting event, the database includes age (or age group if exact age is unknown), gender, and role (perpetrator or non-perpetrator) of fatality. These variables were extracted and included in the dataset used for this analysis.

For each event included in this study sample, publicly available news articles were analyzed to determine the circumstances of shooting (i.e., whether the shooting was DV-related), location of shooting, and generate (or confirm, if included in GVA) gender of perpetrator(s), age of fatality, gender of fatality, and role (perpetrator vs. non-perpetrator).

This study was exempt from regulations for research with human subjects as it does not meet the definition of human subject research.

### **Definitions**

GVA defines a mass shooting as any shooting in which four or more individuals were injured or killed (not including the shooter), regardless of circumstances.<sup>69</sup> Scholarly literature often defines a mass shooting as a shooting event in which four or more individuals are killed by a firearm, excluding the perpetrator.<sup>4,24</sup> This study expands this definition to include the perpetrator, if the perpetrator died by suicide or was killed by law enforcement. The decision to include the perpetrator in this study was made to better capture murder-suicide events and capture an often-overlooked characteristic of some victims of many DV-related shootings. While defining mass shootings by the number of injuries rather than deaths (like GVA’s definition) would have allowed for a larger sample size and the inclusion of injuries (another group often

excluded from analyses of mass shootings), this analysis relied on news coverage to provide key variables, a resource not widely available for events with fewer than four deaths.

Mass shootings events were considered to have occurred in a home or residence if the only location in which the shooting occurred was an apartment or house (i.e., excluding spree shootings that occurred in multiple locations, including a residence), regardless of whether the residence belonged to one or more of the fatalities. Including both “occurred in a home or residence” and “DV-related” as separate variables in this analysis allows examination of how these categories of events may overlap or differ, when they have often been conflated in political discourse and prior research.<sup>33</sup>

Mass shooting events were considered “DV-related” for this analysis if any family member or current, or former romantic partner was among the victims. This includes events in which victims were children of the perpetrator and several events in which victims were siblings or parents of the perpetrator. GVA does not include family members in its own definition of “domestic violence”, so news articles about each event were used to determine whether a shooting fit this study’s definition of “DV-related”. Including events in which children, parents, or siblings of the perpetrator were killed again captures fatalities that may be excluded from prior analyses of mass shooting events and DV.

### **Study sample**

A new sample of mass shootings that occurred between January 1, 2014, and December 31, 2023 was generated for this study. Events that met the chosen definition of “mass shooting” and occurred between January 1, 2014, and December 31, 2023, in any US state or the District of Columbia were included. Events with more than one shooter and unsolved events were also included. 308 mass shooting events met inclusion criteria. These events included 1756 total

fatalities. Using GVA's event descriptions and publicly available news articles found through internet searches, each event was coded for the following variables: gender of shooter(s) (categorical, possible multiple codes), number of shooters (ordinal), location of event (categorical), and whether the event was DV-related (binary).

Of the mass shooting events included in this analysis, 17 were unsolved and thus had no available information about the perpetrator or whether the event was DV-related. From analysis of news coverage of all included shootings, many of these unsolved or indeterminant events are thought by law enforcement to be drug or gang related. While it is not possible to determine for sure whether these unsolved events were DV-related in nature, drug or possible gang involvement does not preclude an event from being DV-related. The decision was made to conduct main analyses including fatalities from unsolved events as a separate category of fatality.

## **Analysis**

Aim 1: Aim 1 used fatality as the unit of analysis. The number of mass shooting fatalities that occurred across the study period (2014-2023) were calculated by location of event and the proportion of fatalities that occurred in each type of location were calculated. Fatalities that occurred in unsolved shootings were included in these analyses. Fatalities that were perpetrators of a mass shooting event but died by suicide or were killed by law enforcement were also included. It was not possible to determine where each fatality occurred in all spree shootings (shootings that took place in multiple locations), so while some fatalities in spree shootings may have occurred in a home or residence, they were coded as "multiple locations".

Aim 2: Aim 2 used both fatality and event as units of analysis. The number of mass shooting fatalities that occurred across the study period (2014-2023) were calculated by type of event (DV-related, non-DV-related, or unsolved) and the proportion of fatalities that occurred in each

type of event were calculated. Fatalities that occurred in unsolved shootings were included in these analyses. Fatalities that were perpetrators of a mass shooting event but died by suicide or were killed by law enforcement were also included.

Aim 3: Aim 3 used fatality as the unit of analysis. The proportion of fatalities that occurred in a DV-related event that also occurred in a home or residence was calculated, as well as the proportion of fatalities that occurred in a home or residence that also were coded as having occurred in a DV-related event. Fatalities that occurred in unsolved shootings were included in these analyses. Fatalities that were perpetrators of a mass shooting event but died by suicide or were killed by law enforcement were also included. Chi-squared tests of independence were then performed to determine whether evidence of a relationship exists between whether a fatality occurred in a DV-related event and whether a fatality occurred in a home or residence. P values less than 0.05 were considered statistically significant.

Aim 4: Aim 4 used fatality as the unit of analysis. The number of mass shooting fatalities of each gender (male, female), age group (<10, 10-17, 18+), gender and age group (female and/or <18, male and 18+), and type of event (DV-related, non-DV-related, or unsolved) were all stratified by location of event (residence or non-residence) and type of event (DV-related, non-DV-related, and unsolved). Fatalities with unknown gender and/or age were excluded from analyses and there were no fatalities with unknown event location. Fatalities that occurred in unsolved shootings were included in these analyses. Fatalities that were perpetrators of a mass shooting event but died by suicide or were killed by law enforcement were also included. Chi-squared tests of independence were then performed for each fatality characteristic to evaluate whether a potential relationship exists between that characteristic of fatality and whether a

fatality occurred in a home or residence and whether a fatality occurred in a DV-related event. P values less than 0.05 were considered statistically significant.

### **Sensitivity tests**

To test the sensitivity of the results of Chi-squared analyses conducted in Aims 3 and 4, a power analysis was conducted for each Chi-squared test, using actual sample sizes. This was conducted to test whether each Chi-squared test used in this study had sufficient statistical power. This analysis was conducted with two separate constructions of the age group variable: categorical (<10, 10-17, 18+), and binary (<18, 18+) to see if power of Chi-squared tests changed between these two variations in variable construction.

## **III. Results**

### **Characteristics of included fatalities**

Among all fatalities included in this sample, 58% were male (n=1020), 42% were female (n=733), and 0.2% (n=3) were of unknown gender. While most included fatalities were adults over the age of 18 (78%), 20% were under the age of 18. When gender and age were combined into one composite variable, 51% (n=900) of included fatalities were under the age of 18 and/or female. Perpetrators who died by suicide or were killed by law enforcement made up 9% (n=153) of included fatalities. **Table 2.1** displays distribution of gender, age, and role in event among included fatalities.

### **Distribution of fatalities by location and type of event**

Home or residence was the most common location for a mass shooting fatality found in this analysis (53%), followed by business (10%). Spree shootings that occurred over multiple types of location were considered a separate location category and made up 11% of included fatalities. Distribution was even of fatalities across DV-related (48%) and non-DV-related events (48%),

and 4% (n=75) of included fatalities occurred in unsolved events, in which relationship to DV was unknown. **Table 2.2** displays the distribution of fatalities that occurred across location of event and type of event (DV-related, non-DV-related, unsolved).

### **Comparing “occurred in a home or residence” to “DV-related”**

Most fatalities that occurred in a home or residence also occurred in a DV-related mass shooting event (74%, n=685), and 20% (n=162) of fatalities occurred outside a home or residence occurred in a DV-related mass shooting. However, 22% (n=201) of fatalities that occurred in a home or residence were found to have occurred in a non-DV-related mass shooting (**Table 2.3**). When these calculations were reversed, 81% (n=685) of fatalities that occurred in a DV-related event were found to have also occurred in a home or residence, and 24% (n=201) of fatalities that occurred in a non-DV-related shooting also occurred in a home or residence. However, 19% (n=162) of fatalities that occurred in a DV-related shooting occurred outside a home or residence (**Table 2.3**).

### **Demographic trends of fatalities occurring in a home or residence**

A higher proportion of female fatalities (57%, n=420) occurred in events that occurred in a home or residence than male fatalities (49%, n=503), and gender was statistically significantly associated with whether a fatality occurred in a home or residence ( $p=0.001$ ) (**Table 2.4**). More fatalities under the age of 10 occurred in mass shootings in a home or residence than other age groups (89%, n=140). A higher proportion of fatalities of adolescents ages 10-17 (64%) occurred in a home or residence than adult fatalities 18 or older (47%). Age was statistically significantly associated with whether a mass shooting fatality occurred in a home or residence ( $p<0.001$ ).

When gender and age were combined to create a binary composite variable, 61% of fatalities that were female and/or under the age of 18 occurred in a home or residence, while 44% of fatalities

that were male and over the age of 18 occurred in a home or residence. This composite variable was also statistically significantly associated with whether a fatality occurred in a home or residence ( $p < 0.001$ ).

### **Demographic trends of fatalities occurring in DV-related events**

A higher proportion of female fatalities (57%,  $n=416$ ) occurred in events that were known to be DV-related than male fatalities (42%,  $n=428$ ), and gender was statistically significantly associated with whether a fatality occurred in a DV-related event ( $p < 0.001$ ) (**Table 2.5**). More fatalities under the age of 10 occurred in DV-related mass shooting events than other age groups (87%,  $n=137$ ). A higher proportion of adolescents ages 10-17 (60%) occurred in DV-related events than adult fatalities 18 or older (42%). Age was statistically significantly associated with whether a fatality occurred in a DV-related event ( $p = 0.001$ ). When gender and age were combined to create a binary composite variable, 59% of fatalities that were female and/or under the age of 18 occurred in DV-related events, while 36% of fatalities that were male and over the age of 18 occurred in DV-related events. This composite variable was also statistically significantly associated with whether a fatality occurred in a DV-related event ( $p < 0.001$ ).

### **Sensitivity analyses**

**Table 2.6** presents the power calculation results, demonstrating an achieved power of 90% or above for all Chi-squared tests across Aim 3 and 4, under specified effect sizes calculated using Cohen's  $W$  and a significance level of 0.05. The lowest power results were found for both outcomes (whether a fatality occurred in a DV-related event and whether a fatality occurred in a home or residence) for the categorical construction of age (<10, 10-17, or 18+). This power was again calculated for both outcomes with the binary construction of age (<18, 18+), resulting in a power of 98% or above for both outcome variables. Chi-squared tests of association with age as

the independent variable were then conducted a second time for both outcomes using this binary construction of the age variable, resulting in statistically significant evidence of a relationship between age and whether a fatality occurred in a DV-related event ( $p < 0.001$ ) and whether a fatality occurred in a home or residence ( $p < 0.001$ ) (**Table 2.7**). These sensitivity analyses confirm that each Chi-squared test of association used in this study has sufficient statistical power.

#### **IV. Discussion**

This study aimed to determine the burden of mass shooting fatalities in events that occur in the home and DV-related (events in which one or more victims is a family member or current or former partner of the perpetrator), quantify the overlap between mass shooting fatalities that occur in the home and fatalities that occur in DV-related events, and characterize the demographics most represented in these types of mass shooting events.

An almost equal proportion of fatalities in this sample occurred in DV-related mass shootings (48%) as non-DV-related mass shootings (48%), but over half of fatalities (53%) occurred in a home or residence. The second most common location was business or workplace, which accounted for only 10% of fatalities. This finding is notable as it demonstrates that mass shooting fatalities were significantly more common in a home or residence than in any other type of location. These results also indicate that when scholars use a definition of “mass shooting” that excludes events that occurred in the home and DV-related events, over half of the fatalities examined here are not included in any subsequent characterizations of the burden of mass shooting fatalities. Using event as the unit of analysis, 57% of solved events were found to be DV-related and 63% of solved events were found to have occurred in a home or residence. These findings are consistent with prior analyses of DV-related mass shooting events.<sup>3,31</sup> Studies of



mass shootings that exclude these types of events fail to examine up to two thirds of the events included in this analysis and do not fully represent the scope and scale of mass shootings as a public health issue. These results lend legitimacy to the argument that focusing on public mass shootings in research, media coverage, and political discourse may lead to mischaracterization among members of the public of individual risk of experiencing a mass shooting.

The examination of both mass shootings that occurred in a home or residence and DV-related mass shootings separates this study from prior studies that have combined these categories or focused on one without taking the other into account. The results of this study's comparison of these categories of mass shooting events further indicate that while a great deal of overlap exists, they are not interchangeable. While 74% of fatalities that occurred in a residence were found to have also occurred in a DV-related event, 22% of fatalities that occurred in a residence were not attributable to a DV-related shooting. Similarly, while 81% of fatalities from DV-related mass shooting events occurred in a home or residence, 19% occurred in other locations. When mass shootings occurring in the home are excluded, analyses exclude both the DV-related shootings that occurred in the home but also may arbitrarily exclude some shootings that occurred in a home or residence but are not motivated by DV (such as a home invasion, drug or financial disputes that turn to violence, or other non-DV-related circumstances). When DV-related mass shootings are excluded, analyses exclude both the events that occurred in the home and were DV-related but also public mass shootings that may have been motivated by DV. Public mass shootings that are DV-related may also include victims chosen at random by the perpetrator but may be excluded from analyses that exclude DV-related mass shootings. These results support the argument that these ways of categorizing mass shootings should not be used interchangeably

and support the call for a more consistent, comprehensive definition of mass shooting that includes both types of events.

This study found that less than half of all fatalities from mass shootings 2014-2023 were female and less than a quarter were under the age of 18, but 51% were either female and/or under the age of 18. Perpetrator fatalities made up 9% of total fatalities in this analysis and 99% of perpetrator fatalities were over the age of 18. Both female and child fatalities were found to be overrepresented in mass shootings that occurred in a home or residence and DV-related mass shootings. Most female fatalities (57%), fatalities under 10 years of age (89%), and fatalities ages 10-17 (64%) were found to have occurred in mass shootings in a home or residence. In DV-related events, 57% of fatalities were female while less than half were male (42%). Similarly, 87% of fatalities under 10 years of age and 60% of fatalities ages 10-17 were found to have occurred in DV-related events. When gender and age were combined, 59% of fatalities that were female and/or under the age of 18 occurred in DV-related events, while 36% of adult male fatalities occurred in this type of event. The findings that much higher proportions of female and child mass shooting fatalities occurred in the home or in DV-related shootings indicate that when these types of events are excluded from definitions of mass shooting, these demographic groups may be excluded from or underrepresented in subsequent analysis and discourse. The impact of mass shooting events on these demographic groups is likely underestimated in analyses excluding these types of mass shooting events, mischaracterizing the public health effects of mass shootings on these groups.

School shootings make up a large part of the public discourse around child and adolescent fatality from mass shootings. While profound and preventable tragedies deserving of public and political attention, school shootings accounted for 0.4% of fatalities under the age of 10, 2.6% of

fatalities ages 10-17, and 1.9% of fatalities ages 18+ in this sample. When fatalities occurring in the home and fatalities from DV-related mass shootings are included in analyses, an oft-overlooked risk to children and adolescents from mass shootings is revealed.

### **Limitations**

A limitation of this study is the reliance on GVA's mass shooting database to generate the study sample, which may have resulted in exclusion of some mass shootings that technically meet study inclusion criteria. Due to differing inclusion criteria between the study sample and GVA, mass shootings in which a perpetrator killed three others and themselves yet did not injure any additional people would be excluded from GVA and thus are not included in this analysis despite meeting chosen inclusion criteria. We anticipate that the number of mass shootings excluded due to this difference in inclusion criteria is likely small and may not have changed the results of analysis.

GVA also does not include race, ethnicity, or other demographic information about fatalities, and this information was not consistently available in much of the news coverage analyzed to determine event circumstances and location. Prior studies have found that census tracts with a mass shooting event have had higher proportions of Black and Hispanic residents and typically have a higher percentage of residents in poverty than census tracts that have not had a mass shooting event.<sup>70</sup> Using GVA's definition of "mass shooting" (four or more victims injured or killed, excluding the perpetrator), people of color have been found to make up a higher percentage of mass shooting victims, yet this study was unable to provide additional context to how race, ethnicity, or socioeconomic variables may vary across location (residence or non-residence) and type (DV-related or non-DV-related) of mass shooting event. Further studies

should include a wider set of demographic variables to better understand who is most affected by these types of mass shooting events.

### **Implications**

Although fatalities from mass shooting events make up a small proportion of gun deaths,<sup>23</sup> incidence of public mass shootings has increased in recent years,<sup>71</sup> and increased media coverage has led to wider public awareness of this type of gun violence.<sup>72</sup> Survival of a mass shooting event or even living in a community that has experienced a mass shooting can lead to adverse health physical and mental health outcomes.<sup>49</sup>

This study provides valuable insight into the distribution of the burden of mass shootings across gender and age groups and a clearer understanding of the proportion of mass shootings that occur in the home and are the proportion of mass shootings that are DV-related. The present analysis is the first to address the potential relationship between gender and age and both mass shootings that occur in a home or residence and DV-related mass shooting events. This is an important first step in the process of understanding mass shootings as a complex public health issue, and these results can guide future causal studies that may determine whether interventions aimed to prevent DV and the possession of firearms by abusers may be effective interventions to reduce fatalities from mass shooting events.

The lack of a consistent, agreed upon definition of what constitutes a mass shooting seriously inhibits both research quantifying the effects of mass shooting events and policymaking efforts to address them. This paper makes the case for including events that occur in a home or residence and events that are found to be related to DV in that definition. Despite the political and media focus on “public” mass shootings and public perception that risk of experiencing a mass shooting event is greatest in public and around strangers, this paper provides further evidence that mass

shootings in the home and family members or current/former partners present just as much, if not more danger, especially for women and children. Already high in pre-pandemic years, the proportions of fatalities from mass shootings that occurred in a home or residence and/or occurred in a DV-related mass shootings rose in the pandemic. By excluding these types of events from discourse surrounding mass shootings, we fail to fully characterize the burden of mass shooting events and exclude women and children who are highly represented among fatalities from these types of events. This study also highlights that these two ways of characterizing mass shooting should not be used interchangeably to describe mass shooting events.

### **Conclusion**

As a society plagued by gun violence, recognizing the link between mass shootings and DV can help us better address mass shootings as a public health issue. While not all mass shooting fatalities that occur in a home or residence are also DV-related, this paper provides convincing evidence that policy interventions addressing DV may be a way to reduce fatality from mass shooting events. Future studies should investigate whether DV-related firearm policies, including those that remove firearms from perpetrators of DV, may show promise as policy interventions to reduce fatality from DV-related mass shooting events and/or mass shooting events occurring in a home or residence.

## V. Tables and Figures

**Table 2.1. Characteristics of mass shooting fatalities, 2014-2023 (N=1756)**

Characteristic of Fatality	N (%)
<b>Gender</b>	
Male	1020 (58.1)
Female	733 (41.7)
Missing	3 (0.2)
<b>Age</b>	
<10	157 (8.9)
10-17	185 (10.5)
18+	1368(77.9)
Missing	46 (2.6)
<b>Gender and age</b>	
Female and/or <18	900 (51.3)
Non-female and 18+	852 (48.5)
Missing	4 (0.2)
<b>Role in event</b>	
Perpetrator	153 (8.7)
Non-perpetrator	1603 (91.3)

**Table 2.2. Mass shooting fatalities by event location and event type, 2014-2023 (N=1756)**

Event characteristic	N (%)
<b>Type of location</b>	
Home or residence	926 (52.7)
Business	179 (10.0)
Bar/Nightclub	94 (5.4)
Festival/Parade	79 (4.5)
School	83 (4.7)
Church/Synagogue	48 (2.7)
Restaurant	21 (1.2)
Car	21 (1.2)
Street	20 (1.1)
Conference Center	16 (0.9)
Other*	73 (4.2)
Multiple Locations**	196 (11.2)
<b>Total</b>	1756 (100.0)
<b>Type of event</b>	
DV-related event	847 (48.2)
Non-DV-related event	834 (47.5)
Unsolved	75 (4.3)
<b>Total</b>	1756 (100.0)

\* “Other” is a combination of locations with n<10. These locations are group home, airport, military base, hospital, shopping mall, campground, abandoned building, dance studio, and non-residential farm

\*\* “Multiple locations” denotes spree shooting that occurred in multiple types of locations. Some of these spree shootings included residence, business, street, or car locations, but are not included in the counts for those location types

**Table 2.3. Mass shooting fatalities by location of event and type of event, 2014-2023 (N=1756)**

<b>Location distribution of fatalities by type of event</b>					
<i>Events that were DV-related</i>	<i>DV event</i>	<i>Non-DV event</i>	<i>Unsolved</i>	<i>Total</i>	<i>P value</i>
Location	N (%)	N (%)	N (%)	N (%)	
Residence	685 (74.0)	201 (21.7)	40 (4.3)	926 (100.0)	<0.001
Non-residence	162 (19.5)	633 (76.3)	35 (4.2)	830 (100.0)	
Total	847 (48.2)	834 (47.5)	75 (4.3)	1756 (100.0)	
<b>Event type distribution of fatalities by location of event</b>					
<i>Location of event</i>	<i>Residence</i>	<i>Non-residence</i>	<i>Total</i>	<i>P value</i>	
Type of event	N (%)	N (%)	N (%)		
DV-related	685 (80.9)	162 (19.1)	847 (100.0)	<0.001	
Non-DV-related	201 (24.1)	633 (75.9)	834 (100.0)		
Unsolved	40 (53.3)	35 (46.7)	75 (100.0)		
Total	926 (52.7)	830 (47.3)	1756 (100.0)		

**Table 2.4. Mass shooting fatalities by characteristic and location of event, 2014-2023 (N=1756)**

<b>Gender distribution of fatalities by location of event (N=1753) *</b>					
<i>Location of event</i>	<i>Residence</i>	<i>Non-residence</i>	<i>Total</i>	<i>P value</i>	
Gender	N (%)	N (%)	N (%)		
Male	503 (49.3)	517 (50.7)	1020 (100.0)	0.001	
Female	420 (57.3)	313 (42.7)	733 (100.0)		
Total	923 (52.7)	830 (47.3)	1753 (100.0)		
<b>Age distribution of fatalities by location of event (N=1710) **</b>					
<i>Location of event</i>	<i>Residence</i>	<i>Non-residence</i>	<i>Total</i>	<i>P value</i>	
Age group	N (%)	N (%)	N (%)		
<10	140 (89.2)	17 (10.8)	152 (100.0)	<0.001	
10-17	118 (63.8)	67 (36.2)	185 (100.0)		
18+	643 (47.0)	725 (53.0)	1368 (100.0)		
Total	901 (52.7)	809 (47.3)	1710 (100.0)		
<b>Gender and age distribution of fatalities by location of event (N=1752) ***</b>					
<i>Location of event</i>	<i>Residence</i>	<i>Non-residence</i>	<i>Total</i>	<i>P value</i>	
Gender and age group	N (%)	N (%)	N (%)		
Female and/or <18	549 (61.0)	351 (39.0)	900 (100.0)	<0.001	
Non-female and 18+	373 (43.8)	479 (56.2)	852 (100.0)		
Total	922 (52.6)	830 (47.4)	1752 (100.0)		

\*1753 excludes fatalities with unknown gender (n=3)

\*\*1710 excludes fatalities with unknown age (n=46)

\*\*\*1752 excludes fatalities with unknown age and/or gender group (n=4)

**Table 2.5. Mass shooting fatalities by characteristic and type of event, 2014-2023 (N=1756)**

<b>Gender distribution of fatalities by type of event (N=1753) *</b>					
<i>Events that were DV-related</i>	<i>DV event</i>	<i>Non-DV event</i>	<i>Unsolved</i>	<i>Total</i>	<i>P value</i>
Gender	N (%)	N (%)	N (%)	N (%)	
Male	428 (42.0)	543 (53.2)	49 (4.8)	1020 (100.0)	<0.001
Female	416 (56.8)	291 (39.7)	26 (3.5)	733 (100.0)	
Total	844 (48.1)	834 (47.6)	75 (4.3)	1753 (100.0)	
<b>Age distribution of fatalities by type of event (N=1710) **</b>					
<i>Events that were DV-related</i>	<i>DV event</i>	<i>Non-DV event</i>	<i>Unsolved</i>	<i>Total</i>	<i>P value</i>
Age group	N (%)	N (%)	N (%)	N (%)	
<10	137 (87.3)	19 (12.1)	1 (0.6)	157 (100.0)	0.001
10-17	111 (60.0)	67 (36.2)	7 (3.8)	185 (100.0)	
18+	573 (41.9)	728 (53.2)	67 (4.9)	1368 (100.0)	
Total	821 (48.0)	814 (47.6)	75 (4.4)	1710 (100.0)	
<b>Gender and age distribution of fatalities by type of event (N=1752) ***</b>					
<i>Events that were DV-related</i>	<i>DV event</i>	<i>Non-DV event</i>	<i>Unsolved</i>	<i>Total</i>	<i>P value</i>
Gender and age group	N (%)	N (%)	N (%)	N (%)	
Female and/or <18	534 (59.3)	333 (37.0)	33 (3.7)	900 (100.0)	<0.001
Non-female and 18+	309 (36.3)	501 (58.8)	42 (4.9)	852 (100.0)	
Total	843 (48.1)	834 (47.6)	75 (4.3)	1752 (100.0)	

\*1753 excludes fatalities with unknown gender (n=3)

\*\*1710 excludes fatalities with unknown age (n=46)

\*\*\*1752 excludes fatalities with unknown age and/or gender group (n=4)



**Table 2.6. Power calculation of Aim 3 and 4 Chi-squared analyses results, based on actual sample size**

<b>Power calculations of Chi-squared analyses of fatality characteristic and whether a fatality occurred in a residence</b>						
<i>Dependent variable</i>	<i>Independent variable</i>	<i>Parameter</i>	<i>Effect size*</i>	<i>Sample size</i>	<i>Significance Level</i>	<i>Power (%)</i>
Residence	Gender	Actual sample size	0.08	1753	0.05	91.1%
Residence	Age (categorical)	Actual sample size	0.10	1710	0.05	97.3%
Residence	Age (binary)**	Actual sample size	0.23	1710	0.05	100.0%
Residence	Gender + age	Actual sample size	0.12	1752	0.05	99.9%
Residence	DV-related	Actual sample size	0.40	1756	0.05	100.0%
<b>Power calculations of Chi-squared analyses of fatality characteristic and whether a fatality occurred in a DV-related event</b>						
<i>Dependent variable</i>	<i>Independent variable</i>	<i>Parameter</i>	<i>Effect size*</i>	<i>Sample size</i>	<i>Significance level</i>	<i>Power (%)</i>
DV-related	Gender	Actual sample size	0.14	1753	0.05	99.9%
DV-related	Age (categorical)	Actual sample size	0.11	1710	0.05	96.0%
DV-related	Age (binary)**	Actual sample size	0.11	1710	0.05	98.3%
DV-related	Gender + age	Actual sample size	0.23	1752	0.05	100.0%
DV-related	Residence	Actual sample size	0.56	1756	0.05	100.0%

\* Effect size is Cohen's W, calculated using actual sample size

\*\*Age treated here as binary (<18 and 18+)

**Table 2.7. Mass shooting fatalities by age (binary), type of event and location of event, 2014-2023 (N=1710\*)**

<b>Age distribution of fatalities by type of event (N=1710) *</b>					
<i>Events that were DV-related</i>	<i>DV event</i>	<i>Non-DV event</i>	<i>Unsolved</i>	<i>Total</i>	<i>P value</i>
<i>Age group</i>	<i>N (%)</i>	<i>N (%)</i>	<i>N (%)</i>	<i>N (%)</i>	
<18	248 (72.5)	86 (25.1)	8 (2.3)	342 (100.0)	<0.001
18+	573 (41.9)	728 (53.2)	67 (4.9)	1368 (100.0)	
Total	821 (48.0)	814 (47.6)	75 (4.4)	1710 (100.0)	
<b>Age distribution of fatalities by location of event (N=1710) *</b>					
<i>Location of event</i>	<i>Residence</i>	<i>Non-residence</i>	<i>Total</i>	<i>P value</i>	
<i>Age group</i>	<i>N (%)</i>	<i>N (%)</i>	<i>N (%)</i>		
<18	258 (75.4)	84 (24.6)	342 (100.0)	<0.001	
18+	643 (47.0)	725 (53.0)	1368 (100.0)		
Total	901 (52.7)	809 (47.3)	1710 (100.0)		

\*1710 excludes fatalities with unknown age (n=46)

## **Chapter 3: A detailed analysis of state-level approaches to federal gaps in firearm policy protections for victims of domestic violence (Study 2)**

### **I. Introduction**

#### **Background**

Intimate partner violence (IPV, a form of violence in which the victim is a current or former intimate partner of the perpetrator) accounts for one in five homicides and over half of homicides with female victims in the United States.<sup>6</sup> Rates of IPV and intimate partner homicide (IPH) vary across demographic groups: Non-Hispanic Black and Native American/Alaskan Native women have higher lifetime rates of IPV than non-Hispanic white women.<sup>73</sup> Elevated rates of IPV have also been reported in Hispanic populations in the United States.<sup>74</sup> Risk of experiencing IPV and IPH is also higher among pregnant and postpartum women, who have a 35% greater risk of homicide than non-pregnant, non-postpartum women.<sup>75</sup> While women with male partners make up between 78 and 84 percent of IPH,<sup>7,8</sup> lifetime prevalence of IPV is elevated among people of sexual and gender minorities.<sup>76</sup>

Prior violence and firearms make IPV much deadlier. The biggest risk factor for being killed by a partner is prior IPV perpetrated by that partner.<sup>8</sup> Incidents that involve a firearm are also 12 times more likely to result in death than those that do not.<sup>9</sup> People who have previously perpetrated domestic violence, defined by the United Nations as “physical, sexual, emotional, economic or psychological actions or threats of actions that influence another person” in any relationship, including spousal relationships, unmarried intimate relationships, familial relationships, or other household relationships,<sup>1</sup> are also more likely to commit acts of violence outside the home.<sup>9</sup> Over two thirds of mass shooting events are also domestic violence (DV)-related.<sup>3,10</sup> Gun owners with a history of perpetrating IPV have also been found to be at increased risk of arrest for any violent crime over gun owners without a known history of perpetrating IPV.<sup>11</sup>

Limiting access to firearms by perpetrators may be associated with lower rates of injury and death due to DV and IPV, as well as overall rates of violent crime.<sup>15</sup> Firearm prohibition laws for those subject to DVROs that also have relinquishment requirements are statistically significantly associated with lower rates of overall homicide and IPH, while this relationship is not statistically significant for laws without a relinquishment requirement.<sup>16,17,19,20,35</sup> Despite a growing body of evidence that state-level DV-related firearm laws are associated with reduced rates of injury and death from violent crime, more causal evidence is needed to support these types of policies.<sup>35</sup>

### **Federal and state policy environments**

The Federal Gun Control Act of 1968 prohibited those convicted of a DV felony from purchasing or possessing a firearm or ammunition.<sup>14</sup> The Violence Against Women Act (VAWA) amended this legislation in 1994, adding a prohibition of firearm purchase or possession for those subject to DVROs.<sup>77</sup> This prohibition only applied to those subject to DVROs that were issued after a notice and a hearing and protecting an “intimate partner”. “Intimate partner” was defined as a current or former spouse, a person who has a child in common with the respondent, or a person who currently cohabitates or formerly cohabitated with the respondent.

Shortly after VAWA, the 1996 Lautenberg Amendment further expanded this prohibition. This amendment prohibited those convicted in any court of a “misdemeanor crime of domestic violence” from purchasing or possessing a firearm or ammunition.<sup>78</sup> “Misdemeanor crime of domestic violence” was defined as any misdemeanor under federal, state, or tribal law that includes “the use or attempted use of physical force, or the threatened use of a deadly weapon, committed by a current or former spouse, parent, or guardian of the victim, by a person with whom the victim shares a child in common, by a person who is cohabiting with or has cohabited

with the victim as a spouse, parent, or guardian, or by a person similarly situated to a spouse, parent, or guardian of the victim”.<sup>78</sup> The prohibition of firearm and ammunition purchase and possession applies to anyone with a qualifying conviction, even if it occurred prior to the date the amendment was enacted.

Despite the Federal Gun Control Act, VAWA, and Lautenberg Amendment, several gaps persisted in current federal DV-related firearm policy. Congress enacted the Bipartisan Safer Communities Act in June 2022, aiming to address one of these gaps with a new DV-related firearm prohibitions in Title II.<sup>79</sup> Those convicted in any court of a DV misdemeanor against a person with whom they have a current or recent dating relationship are now prohibited from purchasing or possessing a firearm or ammunition for a period of five years after conviction. This expansion to dating partners effectively closed what is known as the “dating partner loophole” or “boyfriend loophole” for DV misdemeanors, as prior federal prohibitions only applied to those who were current or former spouses, had a child in common, or currently or formerly cohabitated with the victim. This change did not apply to DVROs, leaving a “dating partner loophole” still unaddressed by federal policy.

The federal government relies heavily on state and local judges and law enforcement to enforce federal policy. State-level policy also presents an opportunity for states to close gaps that may be left by federal policy. In the area of DV-related firearm policy, some states have enacted policies that partially or fully close federal gaps. States may also codify federal policies at the state level, ensuring they will remain in place if the federal policy is repealed or struck down. The content and language of such legislation varies by state.

## **This study**

As of writing, there is no current academic analysis of the full DV-related state firearm policy landscape that captures all laws addressing gaps in federal policy, discusses salient details of these laws, and identifies temporal and geographic policy trends through 2023. This study aims to identify major gaps in federal DV-related firearm policy, determine how states have attempted to address these gaps, and explore geographic and temporal trends in this state policy area. The last published academic comparative policy analysis of the full DV-related firearm law landscape was published in 2006.<sup>20</sup> More than half of states have enacted or updated DV-related firearm laws since then. A 2019 paper examines Domestic Violence Restraining Order (DVRO) laws in detail but did not cover law enforcement response to DV incidents or possession prohibitions for those convicted of DV misdemeanors.<sup>47</sup> A 2024 study identifies and analyzes relinquishment statutes for those subject to DVROs, *ex parte* DVROs, and those convicted of DV misdemeanors.<sup>34</sup> The authors underscore the importance of details of these state-level relinquishment statutes and show trends in state-adoption over time, providing important context regarding relative strength of state-level relinquishment policies.<sup>34</sup> However, the present study is the first to discuss wider state policy environments including provisions for removal of firearm(s) from the scene of a DV-incident and to identify geographic or political trends in state policy adoption.

While several publicly available databases of state-level firearm laws exist, these databases vary in inclusion criteria. No existing database fully captures all policies addressing federal DV-related firearm policy gaps. The RAND Firearm Policy Database does not include detail about prohibitions for those convicted of DV misdemeanors or whether laws regarding removal of firearms from the scene of a DV incident apply to all firearms or only those used in the

incident.<sup>80</sup> Giffords Law Center to Prevent Gun Violence also maintains a summary of state DV-related firearm laws. The Giffords summary does not include salient details such as protocol for firearm relinquishment requirements or what support for victims is required after responding to a DV incident.<sup>18</sup> The present analysis uses rigorous comparative public policy methods to provide a comprehensive investigation into all state-level DV-related firearm laws through 2023 and trends in policy adoption.

## **II. Methods**

### **Study aims**

The present comparative policy analysis seeks to answer the following questions: 1) Do state DV-related firearm laws reinforce federal DV-related firearm laws? 2) Do state DV-related firearm laws fill gaps in federal DV-related firearm law? 3) How has the landscape of state-level DV-related firearm laws changed over time? 4) What geographic trends exist in the state-level DV-related firearm policy environment?

To conduct this comparative policy analysis of state DV-related firearm laws, a novel policy database was created. All 50 states and the District of Columbia were analyzed for relevant laws. 34 state-level DV-related firearm policy provisions were found.

### **Data sources**

This analysis utilizes legislation that was current as of December 31, 2023. State legislative websites were used to initially identify state laws, determine policy categories and target policy provisions, and develop the codebook. Search terms were “domestic violence”, “domestic abuse”, “intimate partner”, “restraining order”, “protective order”, “prohibited possession firearm” and “domestic violence misdemeanor”. Relevant policies were found in both criminal and family code, depending on the state. The Thomson Reuters Westlaw Database was used to

further examine existing state laws, assess historical versions of state laws to determine when certain policy provisions were enacted, and to finalize coding for each state. The Westlaw Database is the most comprehensive online legal database and is a primary legal research tool for legal scholars and lawyers. Detailed full text for each law was available using the Westlaw Database for use in coding. The same search terms listed above were used in the Westlaw Database to ensure all DV-related firearm policies were captured for each state. Language from the relevant current or historical statute and a link to the source document were included in the database to appropriately demonstrate rationale and source material for each code.

### **Methodology**

After a literature review, six gaps in federal DV-related firearm policy were identified that guided policy analysis. Federal law does not currently:

- Authorize nor require removal of firearms from the scene of a DV incident
- Prohibit firearm purchase and possession for those subject to DVROs that apply to dating partners
- Prohibit firearm purchase and possession for those convicted of DV misdemeanors for longer than five years after conviction
- Require the removal/relinquishment of firearms for those subject to DVROs, nor provide directions for relinquishment of weapons
- Require the removal/relinquishment of firearms for those convicted of DV misdemeanors (under federal, state, or tribal law), nor provide directions for relinquishment of weapons
- Prohibit firearm purchase and possession for those subject to *ex parte* DVROs

A coding framework was developed using comparative policy methods to capture key differences in legislative approaches across states in the DV-related firearm policy areas identified above.<sup>81</sup> Laws were coded to examine how the identified federal policy gaps were or were not addressed by state law. Items were determined using a) theoretical considerations about the potential effects on frequency or fatality of domestic or intimate partner violence and b) consensus in the literature on the value of these policy items.<sup>82</sup> For example, measures identify whether a policy was an authorization or requirement, whether relinquishment of firearms was included in the policy, and whether dating partners are covered by the policy. A detailed set of coding rules were systematically created using the framework above and documented in a codebook. All data was double coded and coding protocol can be found in **Appendix A**.

This study was exempt from regulations for research with human subjects as it does not meet the definition of human subject research.

Policy elements coded: The first variable (item) in each section of the database indicated the presence of a foundational policy in that category (removal of firearms from the scene of a DV incident, possession prohibition for those subject to DVROs, and possession prohibition for those convicted of DV misdemeanors). All these foundational policies were coded either “yes” or “no”, while subsequent sub-item policies were coded as “not applicable” if the item was coded as “no”. For example, states were coded as “yes” if a policy was in place that either authorizes or requires law enforcement to remove firearms from the scene of a DV incident. A state was then coded indicating whether that state authorized or required law enforcement to remove firearms from the scene. For authorization states, each state was coded to determine whether law enforcement was authorized to remove all firearms at the scene or only firearm(s) used in the incident. For requirement states, each state was coded to indicate whether law enforcement was required to



remove all firearms from the scene after a search, all firearms “in plain view”, or only firearm(s) used in the incident. If states had a policy either authorizing or requiring law enforcement to remove firearms from the scene of an incident, they were then coded to indicate the length of time before a firearm was returned to its owner (if listed) and what requirements the law indicates for victim support (if any).

When a policy used optional language such as “law enforcement *may* remove firearms” or “if deemed appropriate by the court”, a policy was coded as “authorized”, indicating that the law allows the discretion of law enforcement or a judge to determine an outcome. When a policy used mandatory language such as “law enforcement *shall* remove firearms”, a policy was coded as “required”. Each law was coded as it was written. While assumptions may be unavoidable, only data that was explicitly included in the text was included. Measures used for analysis of each identified federal policy gap can be found in **Appendix B**.

The year that a policy went into effect was recorded for each variable. A policy was considered “in effect” for a given year if it went into effect prior to January 1 of that year. If the content or definitions of a policy has changed over time, these changes were captured in notes for that item. Analysis: Analysis of temporal trends was conducted by comparing the date of policy enactment to other states and federal policy changes. United States Census Regions were used to determine geographic trends in policy adoption and the Cook Partisan Voting Index (PVI) for 2023 was used as a measure of political leaning of each state.<sup>83,84</sup> While the Cook PVI includes both a binary measure of direction (Republican or Democratic) and a numerical score to indicate degree, the binary measure was deemed sufficient for this analysis. The PVI for 2023 was used because it reflects state-level political leaning through 2023, the last year of analysis.

### III. Results

A summary of state-level policy approaches to identified gaps in federal DV-related firearm policy can be found in **Table 3.1**.

#### **Removal of firearms from the scene of a DV incident**

No federal policy currently authorizes or requires the removal of firearms from the scene of a DV incident by responding law enforcement. Less than half of states (n=20) were found to have a law in this category. Six states (30%) authorize law enforcement to remove firearms when deemed necessary and 14 states (70%) require removal of firearms in all cases (**Figure 3.1**).

Among authorization states (n=6), all six states authorize law enforcement to remove all firearms at the scene. Among requirement states (n=14), nine states require only the removal of firearms used in the incident and five states require removal of all firearms, regardless of whether they were used in the incident (**Figure 3.1**).

Despite evidence that prior IPV is a risk factor for IPH and that likelihood of fatality from IPV is higher when a firearm is present, few states indicate how long law enforcement are authorized or required to confiscate a firearm from the scene. In fact, only five states with a law in this category (25%) include a specified length of time a firearm must remain in law enforcement possession before being returned. In all cases, language indicated that confiscated weapons should be returned within this time frame, unless that individual were prohibited from possessing the firearm in question. Four states indicated a weapon should be confiscated for a week or less, while one state (New Jersey) indicated a weapon should be confiscated for up to 45 days.

Pennsylvania was the first state to enact a law authorizing or requiring firearm removal from the scene of a DV incident in 1986. This followed over a decade of advocacy from women's groups across the United States for better protections for victims of DV.<sup>85</sup> Illinois and Ohio followed

with similar laws enacted in 1994 and six more states enacted laws in 1995-1996 (**Figure 3.2**).

This nation-wide wave of state-level policy enactment to improve protections for victims coincided with VAWA and the Lautenberg Amendment, neither of which provided federal requirements for the removal of firearms from the scene of DV incidents. Seven states enacted laws between 2000-2004. Three have enacted similar laws since 2012.

Fewer states in the South (24%) have a law authorizing or requiring firearm removal from the scene of a DV incident than in other regions. In contrast, 56% of states in the Northeast and 54% of states in the West have a law of this type (**Figure 3.1**). Fewer than half of the 20 states with a law in this category are found in Democratic-leaning states, while several states that have high Republican PVIs and have consistently been “red” states (such as Indiana, Montana, Nebraska, Oklahoma, and Tennessee) have partially or fully closed this gap.

### **The “Dating Partner Loophole”**

Closing the “dating partner loophole” expands to current or former dating partners the legal protections that previously only applied to current or former spouses. Federal law recently addressed this loophole for misdemeanors, but a gap still exists for DVROs.

Dating partner loophole for DVRO laws: Among the 43 states that had some prohibition of possession for those subject to a DVRO, 32 states (74%) either fully or partially close the dating partner loophole (**Figure 3.3**). States were considered to have closed this gap if definitions of “intimate partner” or synonymic terms used in protective order policy explicitly extended to current or former dating partners. 30 states allow DVROs for relationships outside current or former spouses, those who have children in common, and relationships in which individuals have formerly cohabited or currently cohabit. Two states (Maryland and Washington) extend DVRO

availability to dating relationships but do still include a requirement for current or former cohabitation.

California closed the dating partner loophole for DVROs in 1984. Illinois, New Jersey, North Dakota, Oregon, and Pennsylvania all followed suit and closed the dating partner loophole for DVROs before 1994. A majority of the 32 states who have closed the dating partner loophole for DVROs did so in the decade following VAWA and the Lautenberg Amendment, between 1994 and 2005 (**Figure 3.2**). Only six of the 32 states that have closed the dating partner loophole have done so since 2005. Connecticut, Tennessee and Louisiana extended DVROs to dating partners long before they implemented a firearm purchase and possession prohibition.

Most states in the Northeast (78%) and West (77%) have closed this loophole for DVROs, while only 53% of states in the South and 50% of states in the Midwest have done so (**Figure 3.3**). An even political distribution among states that have a policy in place closing the dating partner loophole was found, excluding the District of Columbia which does not have a PVI.

Dating partner loophole for DV misdemeanor laws: While the dating partner loophole was closed at the federal level in 2022 for DV misdemeanors, 23 states explicitly closed this loophole in their definition of applicable misdemeanors prior to the 2022 federal change. As with DVROs, more states with explicit language closing this loophole for misdemeanors were Western and Northeastern states. Fewer states in the South and Midwest had this provision in place prior to the 2022 federal policy change.

### **Length of firearm possession prohibition for those convicted of DV misdemeanors**

Federal law prohibits purchase or possession of a firearm by those convicted of a DV misdemeanor (by federal, state, or tribal law). However, this federal prohibition lasts for only five years after conviction (granted the individual is not convicted of another misdemeanor in

that period). 34 states have a law prohibiting possession of a firearm by those convicted of a DV misdemeanor, and several include a specified period of prohibition (**Figure 3.4**). Some state laws are more lenient than the federal requirement of five years: South Dakota and Minnesota have prohibitions lasting for one year and three years, respectively. Arizona's law only prohibits possession of a firearm for the time a person is on probation for a DV misdemeanor and Texas only prohibits possession for five years after release from confinement or community supervision. Kansas, Maine, Delaware, and the District of Columbia match the federal prohibition of five years after conviction. Others have prohibitions that last longer than the federal prohibition: Nebraska (seven years), California (10 years) and Connecticut (20 years). South Carolina and Tennessee's prohibition times vary by type of offense.

Of the 34 states with a DV misdemeanor possession prohibition, 15 (44%) have a lifelong prohibition (Colorado, Hawaii, Illinois, Iowa, Louisiana, Maryland, Massachusetts, New Jersey, Oregon, Rhode Island, Utah, Vermont, Virginia, Washington, and West Virginia). A lifetime possession prohibition was found in 44% of Northeastern and 38% of Western states. Only two Midwestern states (17%) and four Southern states (38%) have lifetime prohibitions (**Figure 3.4**). This policy intervention appears to be more common among consistently "blue" states as only four of the 15 states with lifetime prohibitions have a Republican PVI (Iowa, Louisiana, West Virginia, and Utah).

### **Other types of DV misdemeanors**

Federal law only prohibits the purchase and possession of firearms by those convicted of DV misdemeanors that fit within the federal definition of "misdemeanor crime of domestic violence". While the 2022 Bipartisan Safer Communities Act extended this prohibition to crimes committed against current and former dating partners, it is still limited to violent crimes. Crimes

like stalking and harassment are not included under the federal definition yet may present safety issues for victims if the perpetrator has access to a firearm after conviction.

Among the 34 states with purchase and possession prohibition for those convicted of a DV misdemeanor, there is wide variation in the types of misdemeanors for which the prohibition applies. Some states (Delaware, Nebraska, Pennsylvania, South Dakota, and Tennessee) explicitly use the federal definition of “misdemeanor crime of domestic violence”. Other states (Illinois, Indiana, Louisiana, Maryland, Massachusetts, South Carolina, Texas, West Virginia, and Virginia) have prohibition laws that only explicitly apply to violent crimes like domestic battery and/or assault, also following the pattern of federal law.

Some states have a wide array of qualifying misdemeanors listed in the firearm prohibition, including other misdemeanors not necessarily DV-related. For example, Washington law covers assault, coercion, stalking, reckless endangerment, criminal trespass, violation of protective order, and harassment. Rhode Island includes cyber-stalking and cyber harassment, as well as disorderly conduct. North Dakota includes distribution of intimate images. Hawaii’s law states that any “crime of violence” qualifies for the prohibition, including sexual assault and harassment. New Jersey, New Mexico, Oregon, and Vermont have prohibitions that apply to “violent misdemeanors” but include stalking in the state’s definition of that term. Utah changed its state prohibition to apply to any misdemeanor in 2021. Most of these states with definitions of DV misdemeanor extending beyond the federal definition are in the Northeast or West and are Democratic-leaning states.

A few states have prohibitions that apply to specific misdemeanors not covered by federal law but are weaker than those listed above. Minnesota’s law includes stalking and harassment for

only 3 years after conviction. Tennessee does not include a possession prohibition for stalking but does include a purchase prohibition for those convicted of stalking.

### **Firearm relinquishment requirements**

Federal firearm purchase and possession prohibitions do not require the relinquishment of firearms already in possession, which may limit effectiveness of possession prohibition policies. Many states have laws authorizing or requiring relinquishment of firearms when an individual is subject to a DVRO or is convicted of a DV misdemeanor. Some states also give specific instructions for law enforcement or the courts regarding how to remove firearm(s) from an individual and how long a firearm should be retained before being returned to an individual.

Relinquishment requirements for DVROs: Of the 43 states mirroring federal law by prohibiting purchase and possession by those subject to DVROs, 18 (42%) authorized a judge to prohibit possession when deemed necessary and 25 (58%) require a prohibition in all DVRO cases (**Figure 3.5**). Among authorization states (n=18), eight states (44%) authorize a judge to also require relinquishment of firearms in possession. Two states (11%) require relinquishment in all cases in which a judge has prohibited possession, and eight states (44%) neither authorize nor require relinquishment of firearms. Among states in which a judge is authorized to both prohibit possession and require relinquishment of firearms (n=8), five states included specific directions for relinquishment.

Among states with a purchase and possession prohibition for all DVRO cases (n=25), eight states (32%) authorize a judge to also require relinquishment of firearms in possession, 12 states (48%) require relinquishment in all cases, and five states (20%) did not include a relinquishment requirement. Among those states that require purchase and possession prohibition and authorize a judge to also require relinquishment of firearms (n=8), four states (50%) provided specific

directions for relinquishment. Among those states that require purchase and possession prohibition and require relinquishment of all firearms in possession (n=12), 11 states included specific directions for relinquishment.

Of the states that require relinquishment of firearms when subject to a DVRO (n=14), 12 states include a period within which firearms must be relinquished to law enforcement or to another individual. Among this group, three states require relinquishment immediately or within 24 hours of the protective order, while four states allow 48 hours.

When states enacted relinquishment requirements for DVROs varies widely (**Figure 3.2**). Four states (California, Hawaii, Massachusetts, and Washington) enacted DVRO prohibitions between 1993 and 1994, all including relinquishment requirements. Around the time of the Lautenberg Amendment in 1996, eight more states enacted DVRO firearm prohibition laws. Like other gaps in federal DV-related firearm policy, these states demonstrate a wave of state policy adoption alongside federal policy adoption. Consistent growth was seen in this policy area through the late 1990s and 2000s, and six states have enacted similar laws since 2014.

Louisiana, Maryland, North Carolina, Tennessee, and Virginia have DVRO prohibition laws that include relinquishment requirements, making up 24% of Southern states. Only Maryland does not also have directions for relinquishment. Five Western states (38%) require relinquishment, and four of those (California, Colorado, Hawaii, and Oregon) include directions for relinquishment. Three (33%) Northeastern states require relinquishment of firearms for DVROs (Connecticut, New Hampshire, and Massachusetts). These three states also provide directions for relinquishment (**Figure 3.5**). States with Republican PVI were underrepresented among those states with relinquishment requirements for those subject to DVROs. Only three of the 14 states that have a policy provision addressing this federal policy gap had a Republican PVI in 2023.



Relinquishment requirements for misdemeanors: Among those states that had a law prohibiting purchase and possession of a firearm by those convicted of a DV misdemeanor (n=34), only 12 states (35%) required relinquishment of firearms in all cases. 22 states (65%) did not require relinquishment of firearms in possession at time of conviction (**Figure 3.6**). Prior to the Lautenberg Amendment, only New York (1911), Washington (1993), Connecticut (1994), and Pennsylvania (1995) had enacted a firearm prohibition for those convicted of DV misdemeanors that included a relinquishment requirement. Since 1996 there has been consistent adoption of such policies, with an increase since 2014.

In the South, only Louisiana and Tennessee have DV misdemeanor prohibition laws that explicitly require relinquishment of firearms upon conviction. In the Midwest, only Illinois has such a provision. The West and Northeast are better represented in this policy category with a relinquishment requirement for DV misdemeanors in 31% and 56% of states in those regions, respectively (**Figure 3.6**). Like relinquishment requirements for those subject to DVROs, states with Republican PVIs were underrepresented among states with relinquishment requirements for those convicted of DV misdemeanors. Only two of the 12 states that have a policy provision addressing this federal policy gap had a Republican PVI in 2023.

### **Firearm possession prohibition for *ex parte* orders**

Federal law requiring the prohibition of purchase and possession of a firearm by those subject to DVROs only applies to orders issued after notice and a hearing, thus excluding *ex parte* orders, often called temporary or emergency orders of protection. These orders are issued immediately, rather than waiting for a notice to be given to the subject and a hearing to take place. *Ex parte* orders are given when a judge deems the petitioner to be in immediate need of protection, as an attempt to ensure that victims of domestic violence are protected from potential harm

immediately. *ex parte* orders can provide protection in a crucial window of time in which the petitioner may be in a high level of danger from a partner, and have been found to be associated with lower rates of intimate partner homicide<sup>17</sup>. Some states increase this protection for victims by requiring relinquishment of firearms upon receipt of an *ex parte* order.

Among the 43 states that had some prohibition of possession for those subject to a DVRO, 25 states (58%) also had a law prohibiting possession of firearms for those subject to *ex parte* DVROs (**Figure 3.7**). Among states with a possession prohibition for those subject to *ex parte* DVROs (n=25), 10 states (40%) authorize a judge to require relinquishment in some cases, seven states (28%) require relinquishment of firearms in all cases, and six states (24%) did not include a relinquishment requirement (**Figure 3.7**). Among both authorization and requirement states, 11 states also include specific directions for relinquishment of firearm(s) already in possession. Fewer states in the South (24%) were found to have firearm prohibitions for *ex parte* DVROs than in other regions. The region with the largest share of state policies addressing this gap is the Northeast (78%), while about half of states in the West (50%) and Midwest (46%) have this policy provision (**Figure 3.7**). Excluding the District of Columbia, PVI was found to be evenly distributed among states with firearm possession prohibitions for *ex parte* DVROs.

#### **IV. Discussion**

This analysis found that it is increasingly common for states to fill gaps in DV-related firearm law, and this policy area appears to be common across regions and the political party spectrum. However, this analysis does highlight that removal of firearms from a perpetrator of domestic violence is much less common and is an important difference in state-level DV-related firearm laws bound by geography and political leaning. Waves of state policy adoption also appeared to

occur in tandem with federal policy change, indicating that federal DV-related policy change may generate energy among the states for further strengthening of legal protections for victims. All but seven states were found to have at least one DV-related firearm policy provision, and several states that are generally known for weaker firearm legislation have more provisions in place than might be expected. Over half of US states have a purchase and possession prohibition for those subject to DVROs, a prohibition for those convicted of DV misdemeanors, or both provisions. Similarly, over half of states have a provision closing the dating partner loophole for DVROs. However, only 14 states were found to have policy provisions closing at least four of the six identified loopholes in federal DV-related firearm policy, and only two states (Illinois and Hawaii) were found to have provisions in place closing all six identified federal loopholes. Both closing the dating partner loophole for DVROs and prohibiting possession of firearms for those subject to *ex parte* DVROs were found to be just as common in Republican PVI states as in Democratic PVI states. Authorizing or requiring the removal of firearms from the scene of a DV incident was the only policy area found to be more widespread in Republican PVI states than in Democratic PVI states. This indicates that DV may be an area of firearm policy with more bipartisan political appeal.

Firearm relinquishment requirements for those subject to DVROs or convicted of DV misdemeanors were much less common than other policy provisions. Among the few states that did include relinquishment requirements, specific directions for how firearms must be turned over to law enforcement were even less common. Only five of the 14 states that require law enforcement to remove a firearm from the scene of a DV incident also require law enforcement to remove all firearms from the scene. only 10 of the 25 states that prohibit purchase and possession of a firearm both those subject to an *ex parte* explicitly require relinquishment of

firearms by the subject of the order. Even in states with relinquishment requirements, many policies do not give specific directions for relinquishment, a gap that may lead to low or inconsistent enforcement of such a requirement and may allow perpetrators of abuse to avoid relinquishing the firearms they possess, further endangering victims. The biggest risk factor for being killed by a partner is prior IPV perpetrated by that partner,<sup>8</sup> and strengthening relinquishment requirements at the state and federal level may be an important way to reduce that threat of further violence. Relinquishment requirements were more commonly found in Northeastern and Western states and states with democratic political leaning.

An area worthy of future research is codified provisions for victims in state DV-related firearm policy. Of the 20 states with a law authorizing or requiring firearm removal from the scene of a domestic violence incident, only nine states (45%) include language instructing responding law enforcement to provide services to the victim when responding to a DV call (Alaska, Arizona, Connecticut, Hawaii, Illinois, Indiana, Montana, New Hampshire, Washington). Two states (Washington and New Hampshire) require law enforcement to provide purely informational support to victims. This may include advising victims of all reasonable means to prevent further abuse, such as the availability of shelters and notice of legal rights. Seven states (New Hampshire, Montana, Indiana, Illinois, Hawaii, Connecticut, Alaska) outline specific services that responding law enforcement must provide to victims or provide that law enforcement should “use all means to prevent further abuse”. Examples of services specified by some states include transporting the victim to a designated place to meet with a counselor, family member, or friend, or assisting the victim in removing belongings from the scene of the incident. Future studies should examine whether the presence of provisions for such services to victims of domestic violence is negatively associated with injury or death from domestic violence.

Both federal and state policy existing in this area is relatively recent, primarily passed in the last 30 years. Steady state adoption of DV-related firearm laws was observed throughout the late 1990s through the 2010s in all categories analyzed. Waves of adoption were seen in all policy areas around the passage of the federal Violence Against Women Act (VAWA) and Lautenberg Amendment in 1994 and 1996, respectively. This may reflect a national push for victim protections and widespread effort by states to address federal policy gaps after federal policies are passed.

### **Limitations**

While the database created for this analysis captures details of the language of state-level DV-related firearm laws, it does not capture discrepancies in how these policies are implemented or enforced across localities and between states. Thus, this analysis cannot comment on how policies are implemented or enforced in practice. Just because a state may have enacted a policy closing one of the federal policy gaps identified here does not indicate that law enforcement and courts are enforcing that law with fidelity. For example, a qualitative study conducted in two California counties between 2009 and 2010 found that subjects of DVROs were often not required to relinquish firearms in their possession, despite a requirement for relinquishment by California law.<sup>86</sup> Other studies have found similarly low levels of enforcement of state relinquishment laws by judges and law enforcement.<sup>87,88</sup> Prosecutors may also under-charge DV crimes to avoid firearm prohibitions, a phenomenon known as “prosecutorial subversion”.<sup>89,90</sup> These discrepancies are not captured in the present study.

### **Implications**

Given the feasibility and acceptability of state-level domestic violence-related firearm policies found here, closing the identified gaps in federal policy is an important policy area for states to

consider. Of the 44 states that have at least one domestic violence-related firearm law in place, few have closed all federal policy gaps in this area. This analysis provides a road map for states that have not yet closed all gaps in federal domestic violence-related firearm policy. The wide variation between states in policies aimed to address the same gaps in federal policy reinforces the value of determining the most effective approach and addressing these gaps in domestic violence-related firearm policy at the federal level.

To avoid low or inconsistent enforcement of policies in this area, states should consider making these prohibitions or relinquishment requirements required in all cases, rather than optional. To further avoid low or inconsistent enforcement of relinquishment requirements, states should also include specific directions for relinquishment of firearms already in possession. This implication is supported by emerging literature about firearm relinquishment requirements.<sup>34</sup> This study also demonstrates the feasibility and value of mapping state-level firearm laws and details of these laws, methods that should be applied to other state firearm policy areas. The detailed database of state-level domestic violence-related firearm policy created for this study will allow future studies to examine the impact of different state policy approaches. The intricacies captured in this database may allow future impact studies to capture more detailed differences between state-level policies that may have previously been categorized as the same type of law in other databases, such as whether a relinquishment requirement is included with a DVRO firearm possession and whether specific instructions for relinquishment are included. The level of detail captured here also highlights more specific gaps in federal policy that may be addressed by state policymakers and should be examined by researchers aiming to provide causal evidence of the effect of DV-related firearm policy on rates of DV and homicide.

This study demonstrates that DV is an area of firearm policy with political appeal across the aisle and across geographic regions. Since the larger waves of adoption alongside federal policy change in the mid-1990s, many states have continued to adopt new or strengthen existing policies aimed to protect victims of DV from firearm violence throughout the 2000s-2020s, indicating consistent appeal of this type of policy provision. While the trends identified in this study indicate that DV-related firearm policy has long-standing and wide political appeal, this policy area has been challenged in the courts. The Supreme Court upheld federal law prohibiting the possession of firearms by those subject to DVROs in *United States v. Rahimi*, but legal challenges to firearm policy in the United States have gained traction in recent years and future challenges may target other DV-related firearm restrictions.

While this study did not examine enforcement of state policies, there are potentially enormous public health implications of addressing the identified gaps in federal policy with fidelity. Prior violence and firearms make incidents of violence in domestic relationships much deadlier. The biggest risk factor for being killed by a partner is prior violence perpetrated by that partner, and incidents involving firearms are 12 times more likely to be fatal.<sup>8,9</sup> Racially and ethnically minoritized women and pregnant women of all groups are also at elevated risk of IPV and IPH.<sup>6,73-75</sup> Unplanned pregnancy is a primary risk factor for IPV,<sup>91</sup> and may be more common in states in the Midwest and South or states that are Republican leaning with policies in place restricting access to abortion or sex education. These states were also found to have fewer policies removing firearms from perpetrators, putting victims of IPV at potentially elevated risk of being killed by a firearm. Identifying these risk factors and addressing them through firearm prohibitions and relinquishment requirements for perpetrators is a way for states to protect victims or potential victims through policy intervention.

## **Conclusion**

State-level policy is a way to provide further protections for victims of DV beyond the provisions of federal policy. This policy tool can be especially useful when the passage of federal firearm laws is rare. While states have attempted to expand on federal DV-related firearm policy, serious gaps still exist in state policy that may leave victims of abuse vulnerable to further violence. Only with stronger federal legislation and/or more widespread state adoption of the policies analyzed here can these gaps be “closed”.

The language of these policies does not reflect how they may be implemented or enforced in practice. Using specific and actionable language in policymaking to address the policy gaps highlighted in this study may be a strategy for states to improve domestic and intimate partner violence outcomes. DV-related firearm policies that specifically address gaps in federal policy present an opportunity to both federal and state policymakers: this is a policy area that both appears to appeal to a both sides of the political spectrum and has been shown to be effective at reducing injury and death.



## V. Tables and Figures

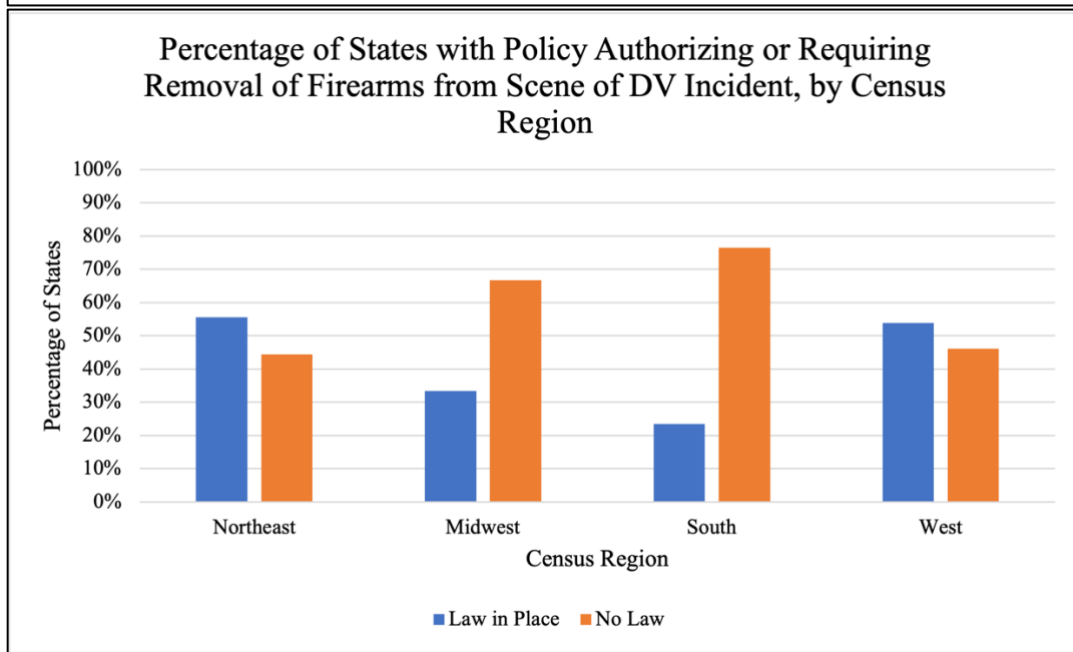
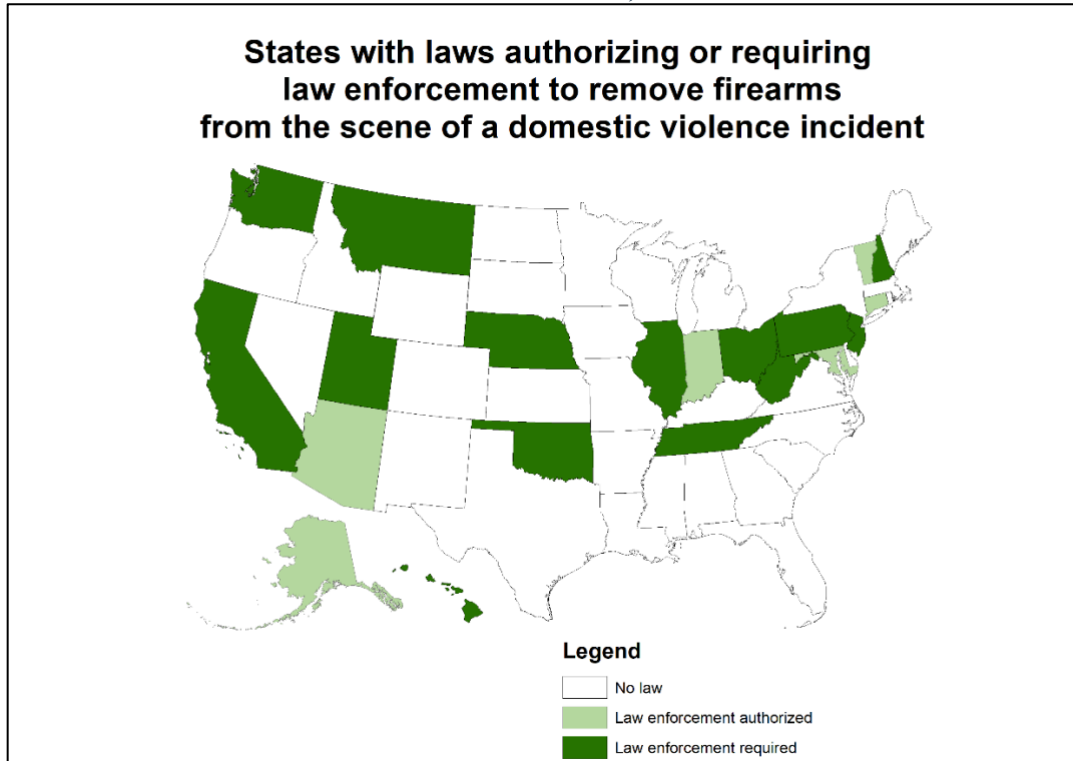
**Table 3.1. Summary of state-level policy approaches to identified gaps in federal domestic violence (DV)-related firearm policy**

Policy Area	Description	Summary of findings
Removal From Scene	Law authorizing or requiring law enforcement to remove firearm(s) from the scene of domestic violence (DV) incident	<ul style="list-style-type: none"> <li>• States with policy in place: 20               <ul style="list-style-type: none"> <li>○ States authorizing law enforcement to remove firearm(s) from scene: 14</li> <li>○ States requiring law enforcement to remove firearm(s) from scene: 6</li> </ul> </li> <li>• Timeline of passage:               <ul style="list-style-type: none"> <li>○ 1 state enacted in 1980s</li> <li>○ 7 states enacted in 1990s</li> <li>○ 8 states enacted in 2000s</li> <li>○ 3 states enacted in 2010s</li> </ul> </li> <li>• Key variations:               <ul style="list-style-type: none"> <li>○ Only five states require removal of <i>all</i> firearms at the scene</li> <li>○ Only five states specify how long a firearm must remain in law enforcement possession before being returned</li> </ul> </li> </ul>
Dating Partner Loophole	The state extends the definition of “domestic violence” as including relationships beyond spousal relationships, those sharing children, and/or those that involve cohabitation for Domestic Violence Restraining Orders (DVROs)	<ul style="list-style-type: none"> <li>• States with extended definition: 32               <ul style="list-style-type: none"> <li>○ States that extend definition of “domestic violence” to dating partners: 30</li> <li>○ States that extend definition of “domestic violence” to dating partners, but require current or former cohabitation: 2</li> </ul> </li> <li>• Timeline of passage:               <ul style="list-style-type: none"> <li>○ 1 state extended definition in 1980s</li> <li>○ 15 states extended definition in 1990s</li> <li>○ 13 states extended definition in 2000s</li> <li>○ 3 states extended definition in 2010s</li> </ul> </li> <li>• Key variations:               <ul style="list-style-type: none"> <li>○ 7 states that have extended definition authorize the court to determine if a relationship can be</li> </ul> </li> </ul>

		considered a “significant” or qualifying relationship
>5-Year Misdemeanor Possession Prohibition	State prohibits those convicted of domestic violence misdemeanors from possessing or purchasing a firearm for a period longer than five years after conviction.	<ul style="list-style-type: none"> <li>• States with policy in place: 18 <ul style="list-style-type: none"> <li>○ States with lifetime prohibition: 15</li> <li>○ States with prohibitions less than lifetime but longer than federal prohibition: 3 <ul style="list-style-type: none"> <li>▪ Nebraska (7 years)</li> <li>▪ California (10 years)</li> <li>▪ Connecticut (20 years)</li> </ul> </li> </ul> </li> <li>• Timeline of passage: <ul style="list-style-type: none"> <li>○ 3 states enacted in 1990s</li> <li>○ 5 states enacted in 2000s</li> <li>○ 9 states enacted in 2010s</li> <li>○ 1 state enacted in 2020s</li> </ul> </li> <li>• Key variations: <ul style="list-style-type: none"> <li>○ 2 states have prohibitions that vary in time by type of misdemeanor</li> <li>○ 2 states have prohibitions shorter than the federal prohibition</li> </ul> </li> </ul>
Domestic violence misdemeanor definition	State extends the definition of “domestic violence misdemeanor” to activities not included in the federal definition	<ul style="list-style-type: none"> <li>• States with extended definition: 9 <ul style="list-style-type: none"> <li>○ States extending definition to stalking and harassment: 6</li> <li>○ States extending possession prohibition to any misdemeanor: 1</li> </ul> </li> <li>• Timeline of passage: <ul style="list-style-type: none"> <li>○ 1 state extended definition in 1910s</li> <li>○ 2 states extended definition in 1990s</li> <li>○ 1 state extended definition in 2000s</li> <li>○ 5 states extended the definition in 2010s</li> </ul> </li> <li>• Key variations: <ul style="list-style-type: none"> <li>○ Wide variation in which activities included in definition of “domestic violence misdemeanor” in extension states</li> </ul> </li> </ul>
Domestic violence restraining order (DVRO) relinquishment	States that have a law prohibiting purchase or possession of a firearm for those subject to domestic violence restraining orders (DVROs) also include a	<ul style="list-style-type: none"> <li>• States with policy in place: 14 <ul style="list-style-type: none"> <li>○ States with specific directions for removal of firearms: 12</li> <li>○ States with specific directions for removal that also include specified time for relinquishment: 7</li> </ul> </li> <li>• Timeline of passage:</li> </ul>

	requirement for relinquishment of firearms already in possession	<ul style="list-style-type: none"> <li>○ 6 states enacted in 1990s</li> <li>○ 3 states enacted 2000s</li> <li>○ 5 states enacted 2010s</li> <li>● Key variations: <ul style="list-style-type: none"> <li>○ 4 states require relinquishment within 48 hours</li> <li>○ 3 states require relinquishment within 24 hours</li> </ul> </li> </ul>
<i>ex parte</i> firearm possession prohibition	State has policy prohibiting possession and purchase of firearms for those subject to <i>ex parte</i> Domestic Violence Restraining Orders (DVROs)	<ul style="list-style-type: none"> <li>● States with policy in place: 25 <ul style="list-style-type: none"> <li>○ States authorizing a judge to require relinquishment of firearm(s): 10</li> <li>○ States requiring relinquishment of firearm(s) in all cases: 7</li> </ul> </li> <li>● Timeline of passage: <ul style="list-style-type: none"> <li>○ 1 state enacted in 1970s</li> <li>○ 1 state enacted in 1980s</li> <li>○ 9 states enacted in 1990s</li> <li>○ 8 states enacted in 2000s</li> <li>○ 4 states enacted in 2010s</li> </ul> </li> <li>● Key variations: <ul style="list-style-type: none"> <li>○ Among states that authorize or require relinquishment of firearm(s), 11 states also include specific directions for relinquishment</li> </ul> </li> </ul>

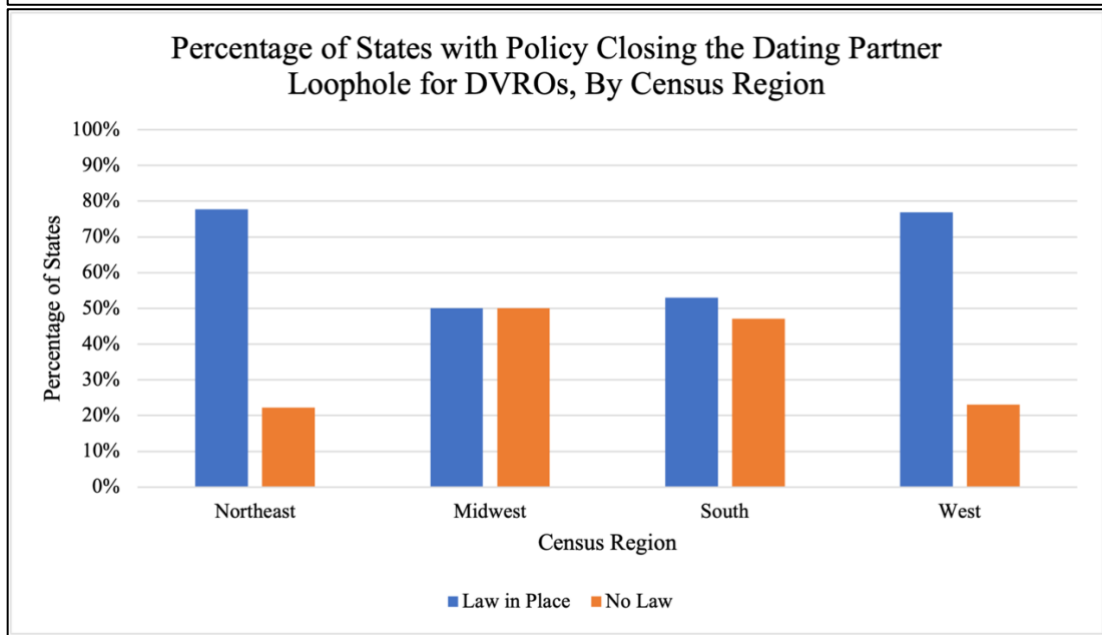
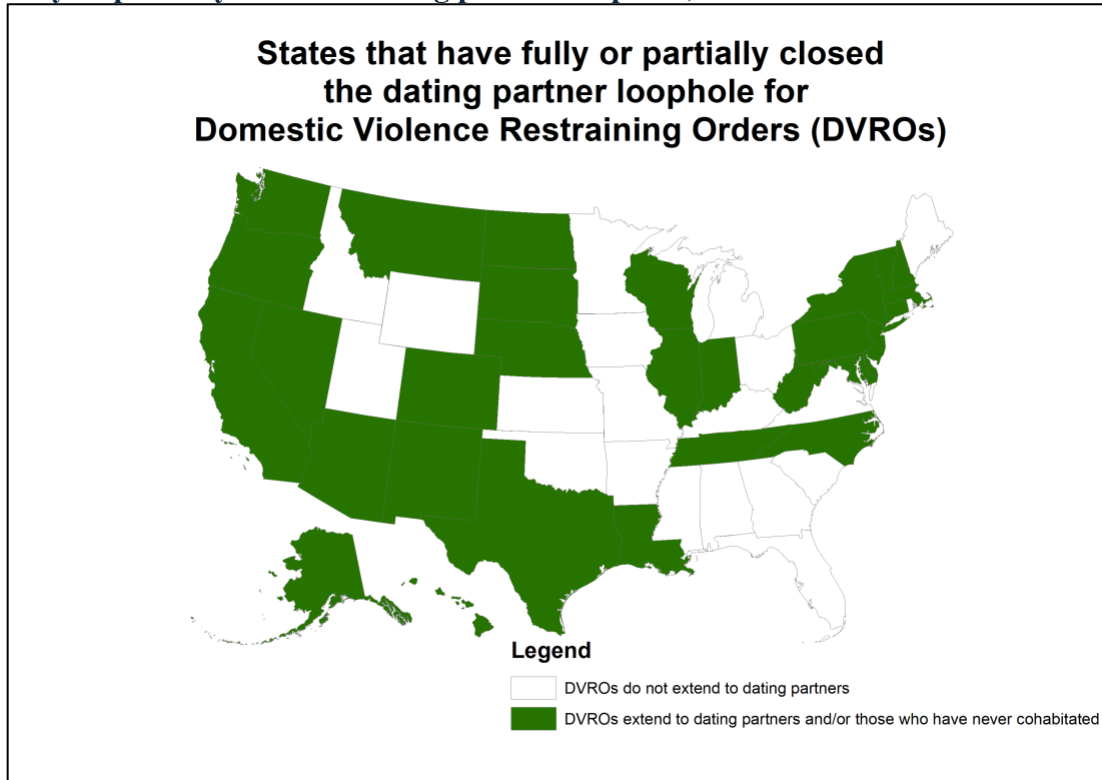
**Figure 3.1. States with laws authorizing or requiring law enforcement to remove firearms from the scene of a domestic violence incident, 2023**



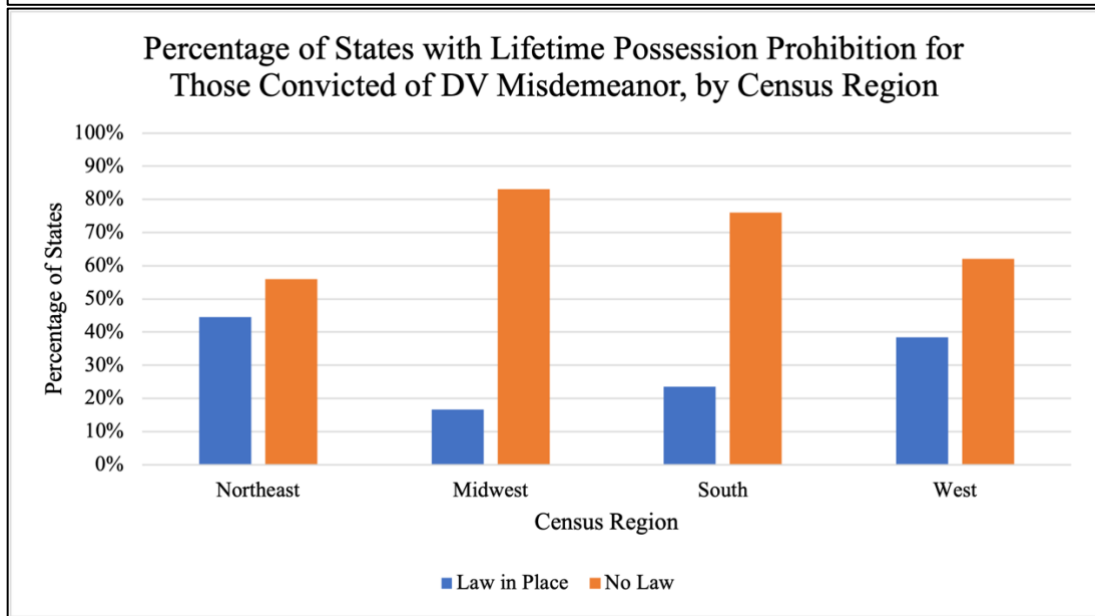
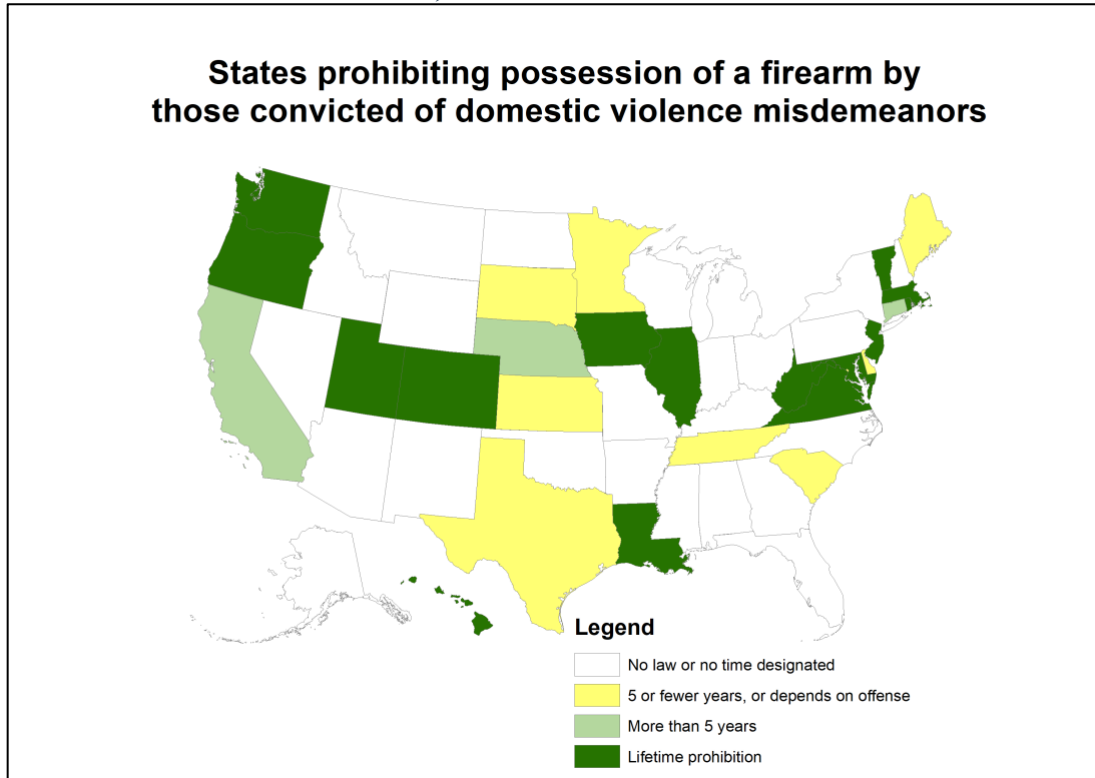
**Figure 3.2. Timeline of state-level closure of federal gaps in domestic violence-related firearm law**

		Decade enacted						
		Pre 1970s	1970s	1980s	1990s	2000s	2010s	2020s
State closure of gaps in federal law	Firearm possession prohibition for <i>ex parte</i> orders		DC	SD	AZ, CA, HI, IL, MA, MT, NY, ND, WI	MI, NH, NJ, NC, OH, PA, TX, VT	CO, CT, WA, WV	
	Firearm Relinquishment Requirement (Misdemeanor)	NY			CT, IL, MA, PA, WA	HI, NJ, TN	CA, CO, LA, OR, RI	
	Firearm Relinquishment Requirement (DVRO)				CA, HI, IL, MA, MD, WA	NC, NH, TN	CT, CO, LA, OR, VA	
	DV misdemeanor definition extends beyond federal definition	NY			CT, WA	HI	CA, KS, MN, NV, RI	
	>5-year possession prohibition for those convicted of DV misdemeanors				CT, IL, WA	HI, MD, NE, NJ, WV	CA, CO, IA, LA, OR, RI, UT, VT	VA
	The "Dating Partner Loophole" closed or partially closed for DVROs			CA	AK, CO, CT, IL, NV, NJ, NM, NC, ND, OR, PA, TN, VT, WA, DC	AZ, DE, HI, IN, LA, MD, MA, NE, NY, TX, VA, WV, WI	MT, NH, SD	
	Law authorizing or requiring removal of firearms from scene of DV incident			PA	AK, AZ, CT, IL, MD, MT, TN, UT	CA, IN, NE, NH, NJ, OH, OK, WV	HI, VT, WA	

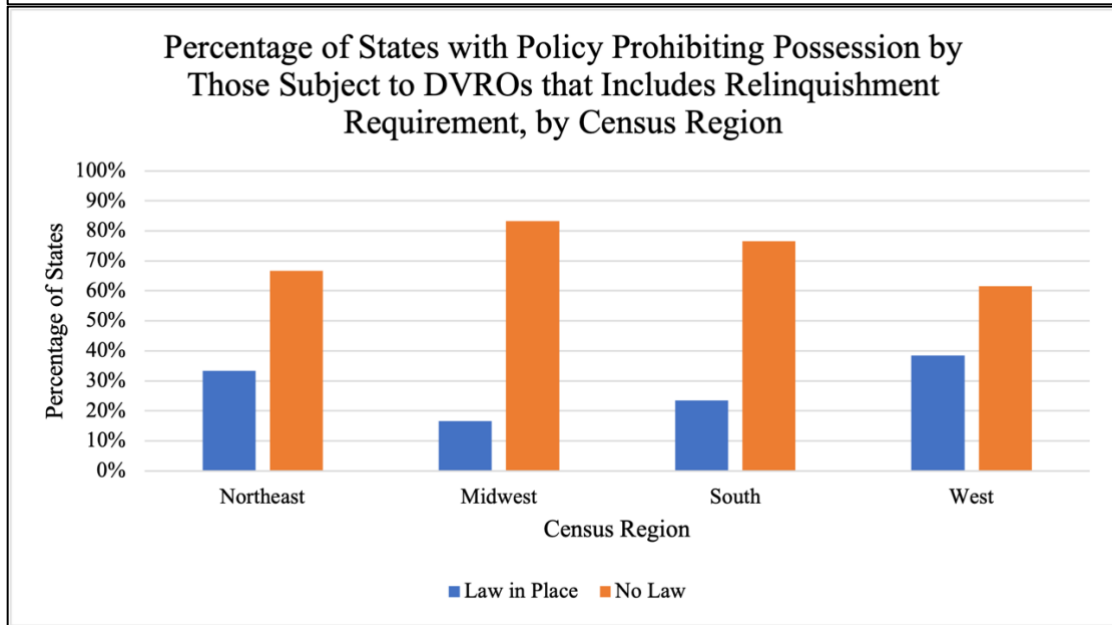
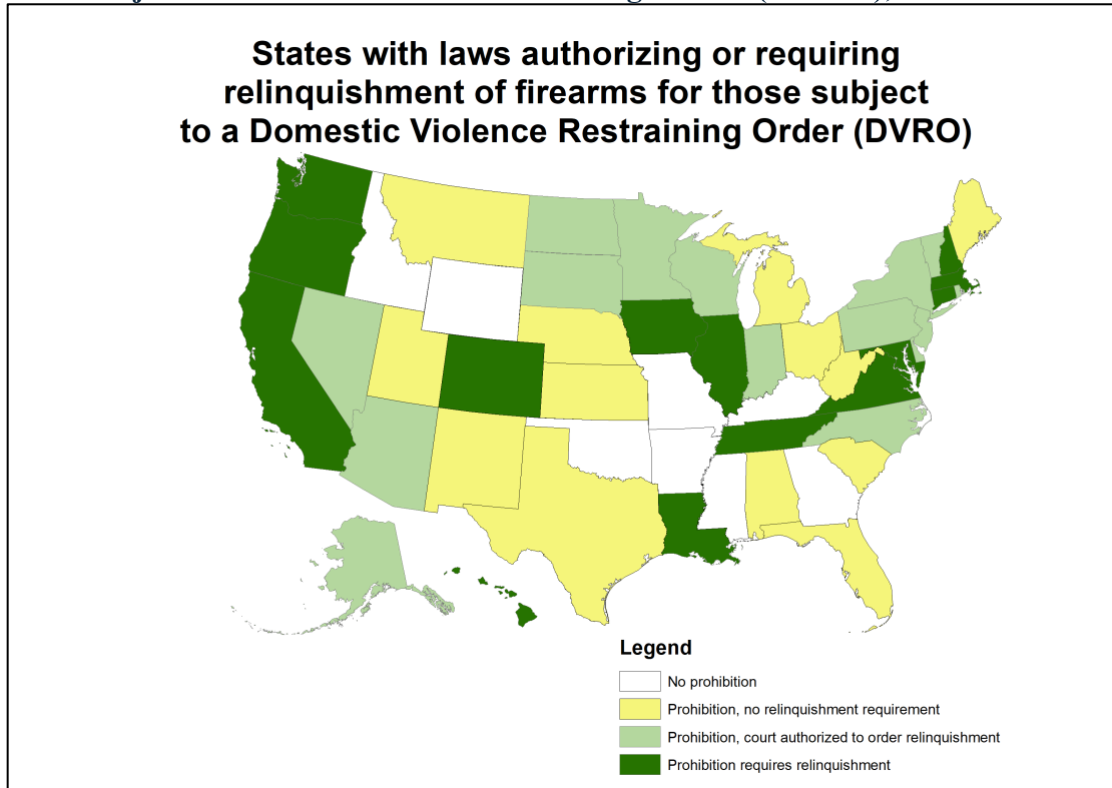
**Figure 3.3. States with laws expanding Domestic Violence Restraining Orders (DVROs) to fully or partially close the dating partner loophole, 2023**



**Figure 3.4. States with laws prohibiting possession of a firearm by those convicted of a domestic violence misdemeanor, 2023**

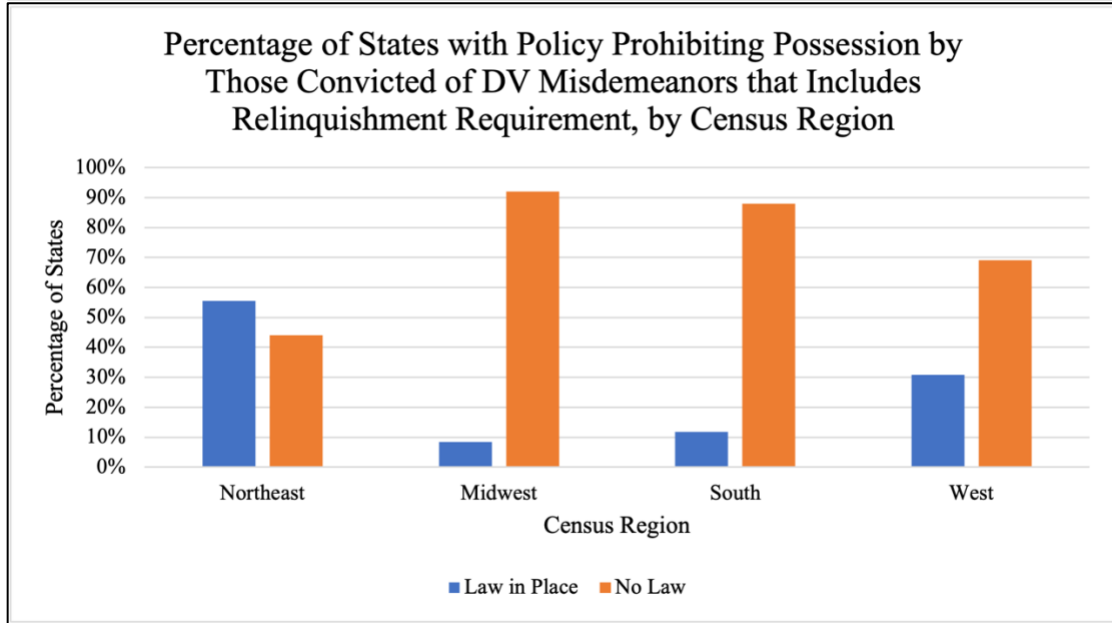
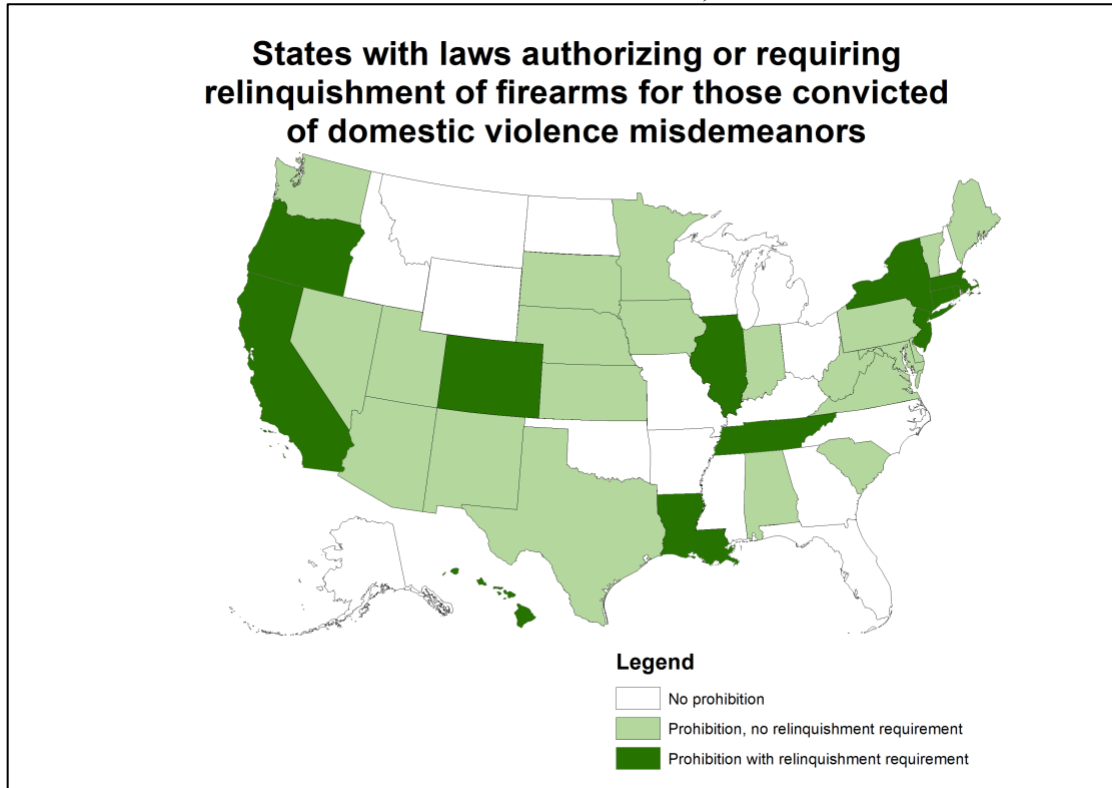


**Figure 3.5. States with laws authorizing or requiring the relinquishment of firearms by those subject to Domestic Violence Restraining Orders (DVROs), 2023**

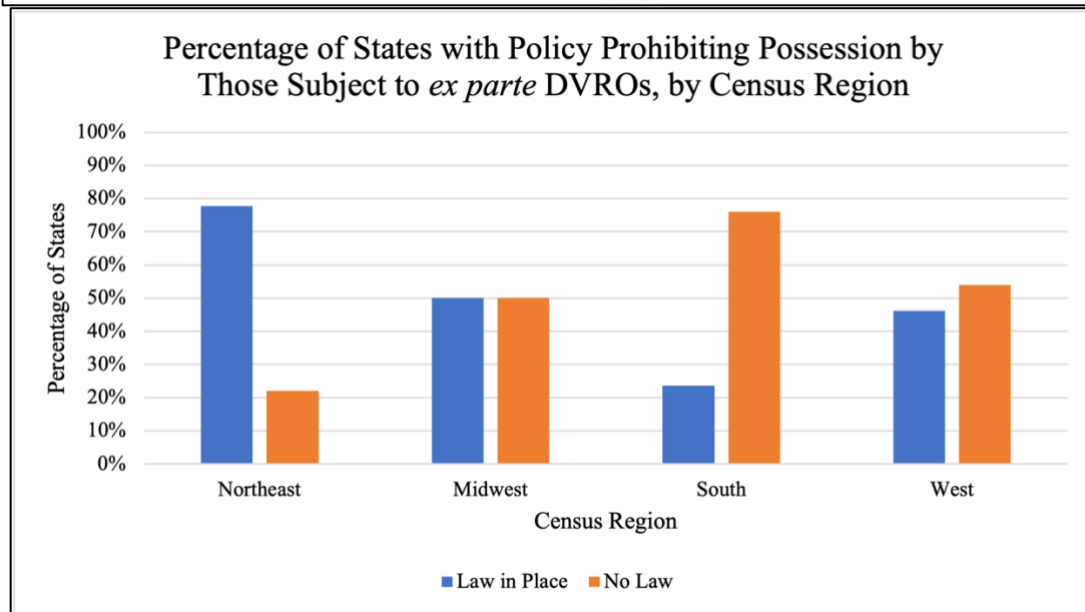
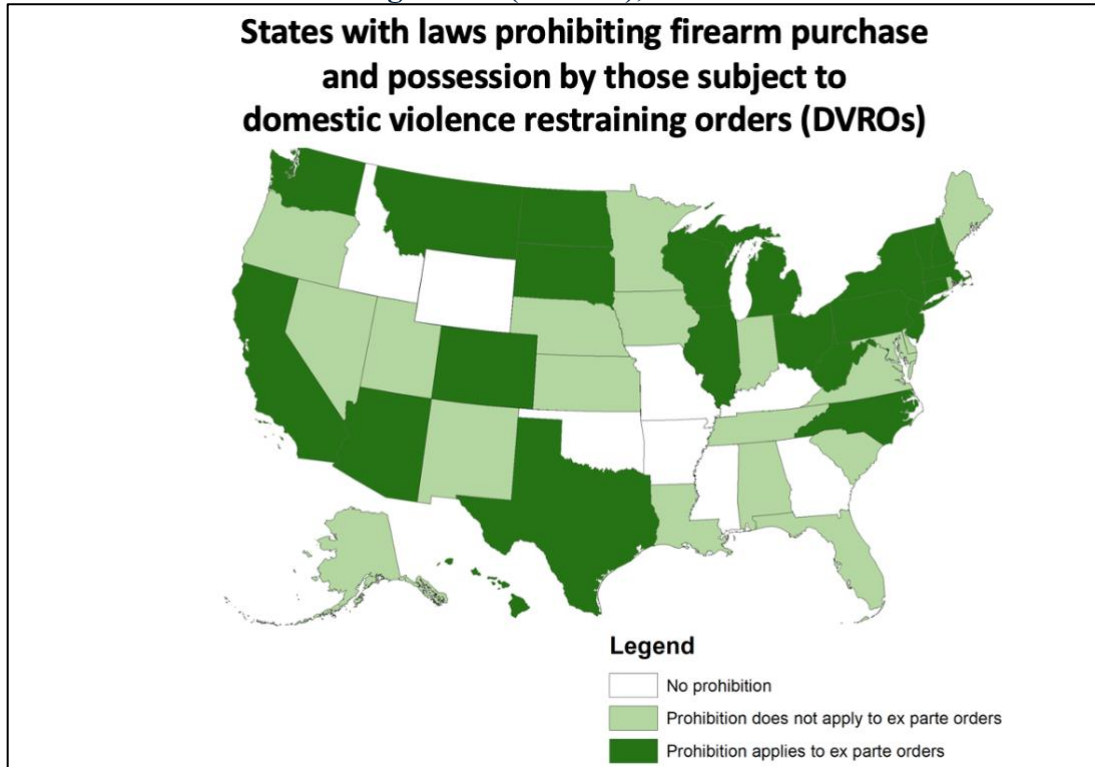




**Figure 3.6. States with laws authorizing or requiring the relinquishment of firearms by those convicted of domestic violence misdemeanors, 2023**



**Figure 3.7. States with laws prohibiting possession of firearms by those subject to ex parte domestic violence restraining orders (DVROs), 2023**



## **Chapter 4: State-level DV-related firearm laws and mass shooting fatalities, 2014-2023 (Study 3)**

### **I. Introduction**

#### **Background**

While mass shootings account for a small percentage of deaths by firearm each year,<sup>3</sup> the potential health impacts of mass shooting events on the health of the wider US population are much larger than the number of fatalities. Those injured, witnesses, and family members of those killed or injured in mass shootings may also experience physical and mental health effects.<sup>24,25,49</sup> Even members of the public may experience short-term emotional effects of a geographically relevant shooting or from repeated exposure to media coverage of a mass shooting event.<sup>25-29</sup> Beyond the extensive public health effects, mass shootings also constitute a great deal of the media coverage and political conversation surrounding gun violence in the United States. Due to this prominence in the public discourse around gun violence, finding policy approaches that reduce mass shooting incidence, morbidity, and mortality may be able to gain wider public and political appeal than other gun violence interventions.

A connection between mass shootings and domestic violence (DV) has been established in recent literature.<sup>3,5,31</sup> DV is defined by the United Nations as “physical, sexual, emotional, economic or psychological actions or threats of actions that influence another person” in any relationship, including spousal relationships, unmarried intimate relationships, familial relationships, or other household relationships.<sup>1</sup> In the literature surrounding the relationship between mass shootings and DV, a mass shooting is typically considered “DV-related” if a partner, ex-partner, or family member of the perpetrator is among the victims.<sup>3</sup> A 2021 study found that 59% of mass shootings 2014-2019 were DV-related and that 68% of mass shootings in that same period were either DV-related and/or events in which the perpetrator had a known history of perpetrating DV.<sup>3</sup> A similar

study by Everytown for Gun Safety concluded that in at least 53% of mass shooting incidents 2009-2021 a current or former intimate partner and/or a family member of the perpetrator was among the victims.<sup>31</sup>

Federal law prohibits those convicted of DV misdemeanors and those subject to DV restraining orders (DVROs) from possessing a firearm,<sup>14,77</sup> but these federal policies do not include provisions for removal of firearms already in possession. However, many states have laws in place authorizing or requiring removal of firearms in cases of DV, some of which include provisions that dictate duration of removal and give law enforcement or the courts specific directions for how firearm(s) should be removed.<sup>47</sup> Some DV-related firearm laws requiring removal of firearms have been found to be effective at reducing certain gun violence outcomes.<sup>15</sup> Despite the established connection between DV and mass shootings, there is a gap in research examining the potential of state-level DV-related firearm removal policies as potential interventions to address this public health issue.<sup>92</sup> Existing examinations of associations between specific firearm policies and mass shootings do not include DV-related firearm policies in analyses.<sup>93</sup> Prior studies of the effectiveness of extreme risk protection orders (ERPOs), including those related to DV, have been mostly limited to effectiveness in one state or county, and have not included mass shootings as an outcome.<sup>94</sup> No prior studies assess whether a relationship may exist between the presence of state-level DV-related firearm laws and the occurrence of fatalities in DV-related mass shootings.

The clear connection between mass shootings and DV highlights a need for policymakers to understand whether enacting or strengthening DV-related firearm policies may be an effective strategy to reduce mass shooting incidence, morbidity and mortality. This study seeks to investigate in detail which DV-related policies may be promising approaches to addressing DV-

related mass shootings and identify potential associations between presence of DV-related firearm policies and fatalities from DV-related mass shooting events. Using this approach, this paper identifies specific state-level DV-related firearm policies that may be potential focus areas for policymakers seeking to reduce the impact of mass shooting events.

## **II. Methods**

### **Aims**

The overall aim of this analysis is to determine which state-level DV-related firearm laws that require removal of firearms from perpetrators, if any, show promise as potential avenues for intervention in reducing DV-related mass shooting mortality. This analysis takes two approaches to this aim:

1. First, determine whether a potential relationship exists between the presence of state-level DV-related firearm laws that require removal of firearms from perpetrators and fatalities from DV-related mass shootings.
2. Second, this paper qualitatively examines in detail a potentially promising area of DV-related firearm policy- removal of firearms from those who have perpetrated abuse- that may have bipartisan support.

### **Study design**

This study is an observational, retrospective cross-sectional analysis, including an original qualitative analysis of policies that require removal of firearms from perpetrators. This study was exempt from regulations for research with human subjects as it does not meet the definition of human subject research.

## **Data sources**

This study uses Gun Violence Archive (GVA)'s mass shooting database for the years 2014-2023. GVA maintains a database of mass shootings beginning in 2014 which includes date, time, geographic location, number killed, and number injured for each event. This database is widely considered as suitable for epidemiological research,<sup>67,68</sup> and has been used in prior studies of the relationship between DV and mass shootings.<sup>3,4</sup> The GVA database is generated using automated queries and manual analysis of local and state police data, media sources, data aggregates, and government sources. Each entry is double coded and provides source links.<sup>69</sup> This database includes mass shootings often excluded from other lists of mass shooting events, such as those considered "gang-related" or "drug-related", those that occurred in the home or workplace, and those in which the perpetrator is considered an injury or death (through self-inflicted gunshot wound or being shot by law enforcement).

For each event included in this study sample, publicly available news articles were analyzed to determine the circumstances of shooting (i.e., whether the shooting was DV-related).

To include data elements illustrating the DV-related firearm policy environment in both Aim 1 and Aim 2, this analysis used a 2023 Hammett-created database of state-level DV-related firearm laws that used the Thomson Reuters Westlaw Database to detail state-level DV-related firearm laws through 2023. This DV-related firearm policy database includes year and month in which the policy was enacted and will be made publicly available upon publication. Four DV-related firearm policies that require the removal of firearms from an individual were identified and used in both aims of this analysis.

## Definitions

There is no official legal definition of “mass shooting” in the United States and definitions vary widely in the media and political discourse. This complicates research and policymaking by leading to inconsistency in definition and data sources across studies.<sup>24</sup> For example, in 2013 the Congressional Research Service defined “public mass shootings” as “incidents occurring in relatively public places, involving four or more deaths—not including the shooter(s)—and gunmen who select victims somewhat indiscriminately”.<sup>50</sup> The Federal Bureau of Investigation (FBI) similarly tracks “active shooter” incidents, which it defines as one or more people attempting to kill or killing people in a “populated area”, excluding incidents deemed to be related to gang violence or DV.<sup>51</sup> In contrast, GVA defines a mass shooting as any shooting in which four or more individuals were injured or killed (not including the shooter), regardless of circumstances.<sup>69</sup> Scholarly literature often defines a mass shooting as a shooting event in which four or more individuals are killed by a firearm, excluding the perpetrator.<sup>4,24</sup> This study expands this definition to include the perpetrator, if the perpetrator died by suicide or was killed by law enforcement. The decision to include the perpetrator (if the perpetrator died by suicide or was killed by law enforcement during the incident) in this study was made to better capture murder-suicide events and capture an often-overlooked characteristic of some victims of many DV-related shootings. While defining mass shootings by the number of injuries rather than deaths (like GVA’s definition) would have allowed for a larger sample size and the inclusion of injuries (another group often excluded from analyses of mass shootings), this analysis relied on news coverage to provide key variables, a resource not widely available for events with fewer than four deaths.

Mass shooting events were considered “DV-related” for this analysis if any family member or current, or former romantic partner was among the victims. This includes events in which victims were children of the perpetrator and several events in which victims were siblings or parents of the perpetrator. GVA does not include family members in its own definition of “domestic violence”, so news articles about each event were used to determine whether a shooting fit this study’s definition of “DV-related”. Including events in which children, parents, or siblings of the perpetrator were killed again captures fatalities that may be excluded from prior analyses of mass shooting events and DV.

### **Study sample**

A new sample of mass shootings that occurred between January 1, 2014, and December 31, 2023 was generated for this study. For this analysis, events that met the chosen definition of “mass shooting” and occurred between January 1, 2014, and December 31, 2023, in any US state or the District of Columbia were included. Events with more than one shooter and unsolved events were also included. 309 mass shooting events met inclusion criteria. These events included 1756 total fatalities. Using GVA’s event descriptions and publicly available news articles found through internet searches, each event was coded for the following variables: gender of shooter(s) (categorical, possible multiple codes), number of shooters (ordinal), and whether the event was DV-related (binary).

Of the mass shooting events included in this analysis, 17 were unsolved and thus had no available information about the perpetrator or whether the event was DV-related. From analysis of news coverage of all included shootings, many of these unsolved or indeterminant events are thought by law enforcement to be drug or gang related. While it is not possible to determine for sure whether these unsolved events were DV-related in nature, drug or possible gang



involvement does not preclude an event from being DV-related. The decision was made to conduct main analyses including fatalities from unsolved events as a separate category of fatality, and a sensitivity analysis with fatalities from unsolved events categorized as “fatalities from non-DV-related events”.

## **Analysis**

Aim 1: Descriptive methods were used for Aim 1, with fatality as the unit of analysis. The number of mass shooting fatalities (of all genders) that occurred in states with and without each firearm removal policy in place at the time of the shooting was calculated, stratified by type of event in which they occurred (“DV-related”, “non-DV-related”, or “unsolved”). Chi-squared tests of independence were performed for each policy to evaluate whether a potential relationship exists between presence of that policy and whether a fatality occurred in a DV-related mass shooting event. P values less than 0.05 were considered statistically significant.

A policy was considered “in place” for a given mass shooting if it was enacted before January 1 of the year in which a mass shooting occurred. Fatalities that occurred in states that had a possession prohibition but no associated removal policy (i.e., a possession prohibition for those subject to DVROs but no associated requirement for removal of firearms already in possession) were included in the “no removal law” comparison group. In some states, removal of firearms is authorized rather than required, meaning that a judge or law enforcement officer is authorized to decide that firearm(s) should be removed from the individual. For the purposes of this study, authorization laws were not included in analysis due to the inability to capture inherent variation in enforcement, however, comparison states that were considered to have no removal law in place had neither a required nor an authorized removal law in place at the time of the mass

shooting. Fatalities in unsolved events for which a connection to DV is unknown and fatalities in events with no known connection to DV were also calculated and included in analyses (N=75). Policies included in this analysis were: requirement that law enforcement remove firearm(s) from the scene of DV event, requirement of removal of firearms from individuals subject to a traditional Domestic Violence Restraining Order (DVRO), requirement of removal of firearms from individuals subject to an *ex parte* DVRO, and requirement of removal of firearms from individuals convicted of a DV misdemeanor. An *ex parte* DVRO is a DVRO granted before notice and a hearing, thus going into effect immediately.

Aim 2: The firearm removal requirement policies included in Aim 1 were then qualitatively analyzed to determine salient details that may then be explored as contributing factors to relative strength of the policy at reducing fatalities from DV-related mass shooting events.<sup>47</sup> This analysis aimed to build upon the results of Aim 1 to identify differences in policy details found in the legal text of each included policy and determine those that should be further explored using causal methods. Due to change in these policies over the course of the study period in some states, qualitative analyses of removal policies were conducted comparing policies in place in the year 2023.

### **Sensitivity analyses**

For the main statistical analyses in Aim 2, fatalities from unsolved events were included as a separate category of fatalities (“fatalities from unsolved events”). To test the sensitivity of the main analyses, each Chi-squared test of independence was conducted a second time with fatalities from unsolved events included in the category “fatalities from non-DV-related events”. To further test the sensitivity of the analyses in Aim 2, Chi-squared tests of independence were repeated for each removal policy with event as the unit of analysis.

### III. Results

#### Characteristics of included events and fatalities

308 mass shooting events met inclusion criteria, 17 of which were unsolved or had no publicly available information on the perpetrator at the time of analysis. Of the remaining 291 events, an overwhelming majority were perpetrated by male shooters (n=275). Over half (54%) of all events were coded as DV-related, and when unsolved events were dropped, 57% of solved events were coded as DV-related. Across the 308 included mass shooting events, 1756 fatalities occurred. A small percentage of these fatalities (4%) occurred in unsolved events, for which relationship to DV is indeterminant. Fatalities occurring in DV-related events accounted for 48% of total fatalities (n=847) and 50% of fatalities from solved events. **Table 4.1** displays the characteristics of included events and fatalities.

#### Removal of firearms from the scene of a DV incident

Required removal of firearms from the scene of a DV incident was found to be statistically significantly associated with whether a fatality occurred in a DV-related shooting event ( $p < 0.001$ ). Among states with a law requiring removal of firearms from the scene of a DV incident, an almost even distribution of fatalities was found across DV-related shootings (n=248) non-DV-related shootings (n=243). Among states without this type of law in place, fatalities were more evenly distributed between DV-related shootings (48%) and non-DV-related shootings (49%). **Table 4.2** displays the results from this analysis. For policies requiring removal of firearms from the scene of a DV incident that also include a duration of time for which firearms must be removed from possession (57%), the period of removal was found to commonly last until a court order allows return of firearm(s) to the individual (**Table 4.3**). Most states with this

type of removal law in place in 2023 also specified directions for law enforcement on how relinquishment should occur (71%).

### **Removal of firearms from those subject to traditional DVROs**

Required removal of firearms from those subject to traditional DVROs was found to be only slightly statistically significantly associated with whether a fatality occurred in a DV-related shooting event ( $p=0.047$ ). Among states with a law requiring removal of firearms from those subject to a traditional DVRO, fewer fatalities occurred in DV-related shootings (43%) than in non-DV-related shootings (54%). Among states without this type of law in place, fatalities were more evenly distributed between DV-related shootings (51%) and non-DV-related shootings (47%), but less so than in other policy areas analyzed. **Table 4.2** displays the results from this analysis. A smaller percentage of traditional DVRO removal requirement laws also included a duration for removal (43%) than other types of removal policy analyzed (**Table 4.3**). For those states that did indicate duration of removal for DVROs, some states were found to require removal of firearm(s) from an individual's possession for the full duration of the DVRO, while others indicated that removal of firearm(s) should only occur for a few days. Most states with this type of removal law in place in 2023 also specified directions for law enforcement on how relinquishment should occur (86%).

### **Removal of firearms from those subject to *ex parte* DVROs**

Required removal of firearms from those subject to *ex parte* DVROs was found to be statistically significantly associated with whether a fatality occurred in a DV-related shooting event ( $p=0.001$ ). Among states with a law requiring removal of firearms from those subject to an *ex parte* DVRO, fewer fatalities occurred in DV-related shootings (42%) than in non-DV-related shootings (51%). Among states without this type of law in place, fatalities were more evenly

distributed between DV-related shootings (48%) and non-DV-related shootings (47%). **Table 4.2** displays the results from this analysis. A higher percentage of states with removal requirements for *ex parte* DVROs (71%) also include a specified duration of removal than states with other types of removal laws analyzed (**Table 4.3**). Most states with this type of removal law in place in 2023 also specified directions for law enforcement on how relinquishment should occur (86%).

### **Removal of firearms from those convicted of DV misdemeanors**

Required removal of firearms from those convicted of a DV misdemeanor was found to be statistically significantly associated with whether a fatality occurred in a DV-related shooting event ( $p < 0.001$ ). Among states with a law requiring removal of firearms from those convicted of a DV misdemeanor, fewer fatalities occurred in DV-related shootings (42%) than in non-DV-related shootings (48%). Among states without this type of law in place, fatalities were more evenly distributed between DV-related shootings (50%) and non-DV-related shootings (47%).

**Table 4.2** displays the results from this analysis. About half (54%) of states with a law in place requiring removal of firearm(s) from those convicted of DV misdemeanors were found to also include a specific duration for which firearm(s) must be removed (**Table 4.3**). Durations of removal for those convicted of DV misdemeanors were found to typically last for a period of years or an indefinite period. Most states with this type of removal law in place in 2023 also specified directions for law enforcement on how relinquishment should occur (69%).

### **Sensitivity analyses**

When fatalities from unsolved events were coded as non-DV-related as a sensitivity analysis, statistically significant evidence of a relationship was found in all four policy categories, including for policies requiring firearm removal from those subject to traditional DVROs

( $p < 0.001$ ) (**Table 4.4**). Additional sensitivity tests using event as the unit of analysis again found statistically significant evidence of an association for all removal policies.

#### **IV. Discussion**

These results support assessments from prior literature that when unsolved events are excluded, a majority of mass shooting events are DV-related (57%).<sup>3,31</sup> The present analysis includes almost three years of data from COVID-19 pandemic years, in which a rise in firearm mortality- and particularly firearm homicide- occurred in the United States.<sup>95,96</sup> This analysis also included events in which the perpetrator was killed (either by suicide or law enforcement), differentiating it from prior studies.<sup>3</sup> Despite these differentiating factors, this study confirms that DV-related mass shooting events continued throughout the pandemic and demonstrates that including the perpetrator in fatality counts does not have a profound effect on the proportion of mass shooting events determined to be DV-related.

Statistically significant evidence of a relationship between presence of removal law and whether a fatality occurred in an event that was DV-related was found in all four policy categories analyzed in Aim 1. The results of this analysis also support the hypothesis that certain DV-related firearm laws may be associated with lower fatality rates from DV-related mass shootings.

Policies requiring the removal of firearms from the scene of a DV incident ( $p < 0.001$ ), policies requiring removal of firearms from those subject to *ex parte* DVROs ( $p = 0.001$ ), and policies requiring removal of firearms from those convicted of DV misdemeanors ( $p < 0.001$ ) all show promise as potential policy interventions. The most striking difference in percentage of fatalities occurring in DV-related vs. non-DV-related mass shooting events was found for presence of a policy requiring the removal of firearm(s) from those subject to either traditional DVROs or *ex parte* DVROs. While barely statistically significant evidence of a relationship was found

between presence of a policy requiring removal of firearms from those subject to traditional DVROs and whether a fatality occurred in a DV-related shooting event ( $p=0.047$ ), the sensitivity analyses indicated that a relationship may indeed be present for this policy area and show that it may also be worth further investigation with causal methods ( $p<0.001$ ). Because coding fatalities from unsolved events as “non-DV-related” may underestimate DV-related mass shooting fatalities if any unsolved shootings were in fact DV-related, statistical significance found in all four included policy areas in this sensitivity analysis further indicates that these policies should be explored further with causal methods to better understand their potential usefulness as interventions to reduce the burden of firearm injury and death from DV-related mass shootings. This analysis also highlighted important differences in the salient details of DV-related firearm removal laws that may contribute to relative strength of association with fatalities from DV-related mass shootings. While over 50% of states with three of the four removal policies in place included a duration of removal in the legal text, only 43% of states with a policy requiring removal of firearm(s) from those subject to a traditional DVRO did so. Many of the states that require removal of firearms from those subject to traditional DVROs and do indicate a duration for removal indicate a period of a matter of days rather than the full period that the DVRO is in effect. Firearms removed from those subject to traditional DVROs appear to typically be returned in a shorter time than for other policy areas analyzed. In contrast, durations of removal for those convicted of DV misdemeanors typically last for a period of years or an indefinite period, which indicates that a court must deem the situation safe enough for the return of relinquished firearms. We hypothesize that longer periods of required removal (such as those required for those convicted of DV misdemeanors) may be more strongly associated with lower

percentage of mass shooting fatalities occurring in DV-related mass shootings than short term removal requirements.

Specific directions for how firearm(s) should be removed from a subject were a much more common detail found in the policy categories analyzed. For all four removal policy areas analyzed, 69% or more of states with a removal law in place in 2023 also specified directions for law enforcement on how relinquishment should occur. For both traditional and *ex parte* DVROs, 86% of states with a removal policy in place also specified directions for law enforcement for relinquishment. For policies requiring removal of firearms from the scene of a DV incident, 71% of states with a policy in place specified how exactly law enforcement should remove and store firearms, while 69% of states with a removal policy for those convicted of DV misdemeanors included specific directions for law enforcement for relinquishment. There are several arguments that could be made for why individuals who have come into contact with law enforcement and/or the court system for domestic violence offenses may need to maintain possession of a firearm, such as hunting for food or protection, but it has been well established that the presence of a firearm makes DV much more deadly.<sup>8,97,98</sup> Using a framework for examining the relative strength of DV-related firearm laws that require relinquishment or removal of firearms from perpetrators developed by some of the leading researchers in the field, specificity in legal text to ensure that law enforcement and the courts have a protocol to follow in removing firearms further strengthens the policy provisions by providing a system of accountability.<sup>47</sup> While Aim 1 of this study found evidence of an association between the presence of four types of DV-related firearm policy requiring removal of firearms and whether a fatality occurred in a DV-related event, further studies should investigate whether more detailed policy provisions such as



including a duration of removal and/or providing specific directions for removal of firearms may be associated with reduced numbers of fatalities from DV-related mass shooting events.

Most of the policies included in this analysis are policies that intervene at critical points for the safety of victims of DV, such as those dictating removal of firearms from the scene of an incident or removal of firearms from those subject to *ex parte* DVROs. The period after law enforcement involvement in DV incidents is particularly high-risk for victims of domestic abuse. The biggest risk factor for being killed by a partner is experience of prior violence perpetrated by that partner,<sup>8</sup> and the use of a firearm also makes intimate partner violence incidents 12 times more likely to result in death.<sup>9</sup> *Ex parte* DVROs are given when a judge deems the petitioner to be in immediate need of protection and go into effect immediately, rather than waiting for notice to be served and a hearing to occur. These orders have been found to be associated with lower rates of intimate partner homicide, as they can provide protection when the petitioner may be in particularly high danger of experiencing violence from partner.<sup>17</sup> Special attention in future causal analyses should be paid to policies that intervene at these critical points. Further studies should also stratify by gender, race, and age to determine the morbidity and mortality among women, people of color, and children of DV-related mass shootings and whether the policies examined here may be potentially effective interventions for those demographics. Many mass shootings in this sample that were DV-related were also perpetrated by men who then died by suicide or were killed by law enforcement, highlighting another victim characteristic that is worth considering in future research and targeting for prevention efforts.

In [Chapter 3](#) of this dissertation, DV-related firearm laws that prohibit access to firearms and/or remove firearm(s) from the possession of DV perpetrators were found to have been passed in states with both historically Republican and historically Democratic political leanings, indicating

that initiatives to enact DV-related firearm policies that remove firearm(s) from perpetrators may be able to gain bipartisan support. Evidence of an association with whether fatalities occurred in DV-related mass shooting events found in this analysis indicate further indicates that removal policies may be an appropriate focus area for policymakers seeking to reduce DV-related mass shootings and gain widespread political support for interventions.

### **Limitations**

The primary limitation of this study is that it is associational, rather than causal. A quasi-experimental study using causal methods was deemed not appropriate for this analysis in part because of the difficulties associated with controlling for the full policy environment. While changes in policies that occurred during the study period were captured in the quantitative analysis of this study, we were not able to control for additional firearm policies or other policies that may be associated with rates of DV. Many firearm-related policies are passed in conjunction with one another, often in the aftermath of an event that has gained state or national attention and controlling for more than one legal change was considered outside the scope of this analysis. Despite this limitation, this study provides valuable insight into policy areas that have the potential to be effective in reducing fatalities from DV-related mass shootings. The findings of this analysis are consistent with the hypothesis that the presence of policies requiring removal of firearms may be associated with lower fatality from DV-related events involving firearms, such as mass shooting events. The present analysis is the first to address the potential relationship between these DV-related firearm policies and whether fatalities from mass shootings occurred in DV-related events and is an important first step in the process of beginning to understand this complex public health issue. The results of this analysis can guide future causal studies to determine whether policies that require removal of firearms, rather than simply prohibiting

possession or authorizing a judge to call for removal, may be more effective at reducing DV-related firearm fatalities. Future longitudinal studies of these policy areas may enable the examination of causal mechanisms.

Another limitation of this study is the reliance on GVA's mass shooting database to generate the study sample, which may have resulted in exclusion of some mass shootings that technically meet study inclusion criteria. Due to differing inclusion criteria between the study sample and GVA, mass shootings in which a perpetrator killed three others and themselves yet did not injure any additional people would be excluded from GVA and thus are not included in this analysis despite meeting chosen inclusion criteria. We anticipate that the number of mass shootings excluded due to this difference in inclusion criteria is likely small and may not have changed the results of analysis.

Conducting Chi-squared analyses at the event level rather than the fatality may have allowed for adjustment for the fact that a small number of mass shooting events have very high numbers of fatalities (such as the 2017 Las Vegas shooting). However, the public health impact of mass shootings is rooted in the morbidity and mortality resulting from these events. Thus, the main aim of this paper is to determine DV-related firearm policy areas that would be worth exploring as policy interventions to reduce mass shooting fatalities, rather than the number of events.

### **Implications**

Much of the literature regarding mass shootings is focused on social and psychological characteristics of assailants or environmental factors that may lead to such events,<sup>99-104</sup> or the relationship between firearm availability and such events.<sup>101,105</sup> Examinations of the relationship between policy and mass shootings largely focus on the reduced number of mass shootings during the federal assault weapons ban of 1994-2004,<sup>106</sup> or the relationship between mass

shootings and an overall measure of state firearm policy strength, such as the total number of active firearm restriction laws or overall grade of gun policy restrictiveness.<sup>107-110</sup> While there is some evidence that assault weapon bans may reduce casualties in mass shootings and an emerging connection between high capacity magazines and mass shooting casualties suggests a target area for policy intervention,<sup>92,111,112</sup> there is a paucity of research identifying other policy areas that might be worthwhile interventions for policy-makers to consider to reduce mass shooting incidence, morbidity, and mortality, particularly in DV-related mass shooting events. The few studies that consider the relationship between DV-related firearm laws and mass shootings focus on perpetrator history of perpetrating DV,<sup>4</sup> while the present study expands upon existing literature to address mass shooting events that are in and of themselves DV-related, regardless of perpetrator history.

This analysis also provides a framework for other researchers interested in addressing gaps in the literature regarding the relationship between policy and mass shooting fatalities and provides evidence to suggest that DV-related policy is an area worth exploring more critically as a potential area of policy intervention. Because the effects of mass shooting events extend beyond fatalities to injuries, family members of victims, and witnesses or community members, potential policy interventions to reduce fatalities from DV-related mass shooting events have wide public health potential.

## **Conclusion**

Mass shootings are often dismissed as a small portion of overall firearm deaths and conversations about policy responses to mass shooting events often focus on assault weapons and high-capacity magazines. While these policy areas are important, this analysis demonstrates

that such conversations should also include discussion of protections of victims of DV or those at risk of experiencing DV from partners or family members.

This analysis provides evidence that addressing the relationship between mass shootings and domestic violence may be a critical part of any approach to addressing mass shootings in the United States. While it is clear from the literature that many different approaches are necessary in order to reduce the incidence, morbidity, and mortality of mass shooting events and the associational results of this analysis do not suggest that policies removing firearm(s) from those who have perpetrated domestic violence or abuse would eradicate mass shooting events, these results do show the potential of these policies to be an effective piece of a multipronged approach to this public health issue. Upstream interventions preventing domestic abuse should also be evaluated and considered.

## V. Tables and Figures

**Table 4.1. Characteristics of mass shooting events (N=308) and fatalities (N=1756), 2014-2023**

<i>Events</i>	N	% total events (N=308)
Gender of perpetrator		
Male	275	89%
Female	10	3%
Multiple	6	2%
Unknown	17	6%
Number of shooters		
1	269	87%
2	15	5%
3 or more	5	2%
Unknown	19	6%
Relationship to DV		
DV-related	167	54%
Not related to DV	124	40%
Unsolved	17	6%
<i>Fatalities</i>	N	% fatalities (N=1756)
Relationship to DV		
Occurred in DV-related events	847	48%
Did not occur in DV-related events	834	47%
Occurred in unsolved event	75	4%

**Table 4.2. Examining potential relationship between mass shooting fatalities that occurred in DV-related mass shooting events and presence of DV-related firearm laws that require removal of firearms (including unsolved events), 2014-2023 (N=1756)**

	<i>DV Fatalities</i>	<i>Non-DV Fatalities</i>	<i>Unsolved</i>	<i>Total</i>	<i>P value</i>
	N (%)	N (%)	N (%)	N (%)	
States with law requiring removal of firearms from scene of DV incident in all cases (either firearm used in incident or all firearms)	248 (46%)	243 (46%)	43 (8%)	534 (100%)	<0.001
States <b>without</b> law authorizing or requiring removal of firearms from scene of DV incident	528 (48%)	545 (50%)	32 (3%)	1105 (100%)	
<b>Total</b>	<b>776 (47%)</b>	<b>788 (48%)</b>	<b>75 (5%)</b>	<b>1639 (100%)</b>	
	<i>DV Fatalities</i>	<i>Non-DV Fatalities</i>	<i>Unsolved</i>	<i>Total</i>	<i>P value</i>
	N (%)	N (%)	N (%)	N (%)	
States with law requiring removal of firearms from those subject to DVROs	165 (43%)	205 (54%)	12 (3%)	382 (100%)	0.047
States <b>without</b> law authorizing or requiring removal of firearms from those subject to DVROs	483 (51%)	447 (47%)	24 (3%)	954 (100%)	
<b>Total</b>	<b>648 (49%)</b>	<b>652 (49%)</b>	<b>36 (3%)</b>	<b>1336 (100%)</b>	
	<i>DV Fatalities</i>	<i>Non-DV Fatalities</i>	<i>Unsolved</i>	<i>Total</i>	<i>P value</i>
	N (%)	N (%)	N (%)	N (%)	
States with law requiring removal of firearms from those subject to <i>ex parte</i> DVROs	132 (42%)	160 (51%)	21 (7%)	313 (100%)	<0.001
States <b>without</b> law authorizing or requiring removal from those subject to <i>ex parte</i> DVROs	575 (48%)	595 (49%)	32 (3%)	1204 (100%)	
<b>Total</b>	<b>707 (47%)</b>	<b>757 (50%)</b>	<b>53 (3%)</b>	<b>1517 (100%)</b>	
	<i>DV Fatalities</i>	<i>Non-DV Fatalities</i>	<i>Unsolved</i>	<i>Total</i>	<i>P value</i>
	N (%)	N (%)	N (%)	N (%)	
States with law requiring removal of firearms from those convicted of DV misdemeanors	151 (42%)	172 (48%)	37 (10%)	360 (100%)	<0.001
States <b>without</b> law authorizing or requiring removal from those convicted of DV misdemeanors	696 (50%)	662 (47%)	38 (3%)	1396 (100%)	
<b>Total</b>	<b>847 (48%)</b>	<b>834 (47%)</b>	<b>75 (4%)</b>	<b>1756 (100%)</b>	

P values are results of Chi-squared test of independence and are considered significant at the 0.05 level

**Table 4.3. Salient details of firearm removal policy areas, duration of removal, and specific details for removal of firearms**

	Firearm Removal Policy Area*			
	<i>Removal from scene of DV incident**</i>	<i>Removal from those subject to DVROs</i>	<i>Removal from those subject to ex parte DVROs</i>	<i>Removal from those convicted of DV misdemeanors</i>
Number of states with removal law (N, %)	14 (100%)	14 (100%)	7 (100%)	13 (100%)
States with removal law that includes duration of removal (N, %)	8 (57%)	6 (43%)	5 (71%)	7 (54%)
States with specific directions for LE for how removal should occur (N, %)	10 (71%)	12 (86%)	6 (86%)	9 (69%)

\* Data indicates policies in place in 2023

\*\* States that allow return of weapons with court order or after acquittal are included as states that “include duration of removal”



**Table 4.4. Examining potential relationship between mass shooting fatalities that occurred in DV-related mass shooting events and presence of DV-related laws that require removal of firearms, 2014-2023 (unsolved categorized as non-DV fatality) (N=1756)**

	<i>DV Fatalities</i>	<i>Non-DV Fatalities</i>	<i>Total</i>	<i>P value</i>
	N (%)	N (%)	N (%)	
States with law requiring removal of firearms from scene of DV incident	248 (46%)	286 (54%)	534 (100%)	
States <b>without</b> law authorizing or requiring removal of firearms from scene of DV incident	528 (48%)	577 (52%)	1105 (100%)	
Total	776 (47%)	863 (53%)	1639 (100%)	<0.001
	<i>DV Fatalities</i>	<i>Non-DV Fatalities</i>	<i>Total</i>	<i>P value</i>
	N (%)	N (%)	N (%)	
States with law requiring removal of firearms from those subject to DVROs	165 (43%)	217 (57%)	382 (100%)	
States <b>without</b> law authorizing or requiring removal of firearms from those subject to DVROs	483 (51%)	471 (49%)	954 (100%)	
Total	648 (49%)	688 (51%)	1336 (100%)	<0.001
	<i>DV Fatalities</i>	<i>Non-DV Fatalities</i>	<i>Total</i>	<i>P value</i>
	N (%)	N (%)	N (%)	
States with law requiring removal of firearms for those subject to <i>ex parte</i> DVROs	132 (42%)	181 (58%)	313 (100%)	
States <b>without</b> law authorizing or requiring removal of firearms from those subject to <i>ex parte</i> DVROs	575 (48%)	629 (52%)	1204 (100%)	
Total	707 (47%)	810 (53%)	1517 (100%)	<0.001
	<i>DV Fatalities</i>	<i>Non-DV Fatalities</i>	<i>Total</i>	<i>P value</i>
	N (%)	N (%)	N (%)	
States with law requiring removal of firearms for those convicted of DV misdemeanors	151 (42%)	209 (58%)	360 (100%)	
States <b>without</b> law authorizing or requiring removal of firearms from those convicted of DV misdemeanors	696 (50%)	700 (50%)	1396 (100%)	
Total	847 (48%)	909 (52%)	1756 (100%)	<0.001

P values are results of Chi-squared test of independence and are considered significant at the 0.05 level

## **Chapter 5: Discussion**

A clear connection exists between DV and mass shootings,<sup>3</sup> yet not all definitions of mass shooting include DV-related shootings or those that occur in the home. By reframing mass shootings as a public health problem intimately connected to DV, this dissertation provides a clearer understanding of the burden of mass shooting events when DV-related shootings and those that occur in the home are included, qualitatively analyzes the current state of DV-related firearm policy in the United States, and determines whether certain DV-related firearm policies may be possible interventions to reduce mass shooting fatality. This dissertation does not examine policy effectiveness, but instead provides important background characterizing both mass shooting events and DV-related firearm policy. This work provides an important basis for future causal studies that may examine effectiveness of policy approaches to reducing fatality from mass shootings.

### **Summary of results**

Paper 1 found that almost half (48%) of mass shooting fatalities were found to have occurred in DV-related mass shootings, and over half (53%) of fatalities were found to have occurred in a home or residence. Women and children were highly represented among fatalities from these types of events. When these types of events are excluded from definitions of mass shooting, women and children may be underrepresented in subsequent analysis and discourse. While overlap was found between mass shootings occurring in the home and DV-related mass shootings, Paper 1 demonstrates that these categories are not interchangeable. These results support the call for a more consistent, comprehensive definition of mass shooting that includes both types of events.

The results of Paper 2 show that it is increasingly common for states to implement DV-related firearm laws that fill gaps at the federal level. This policy area also appears to be common across geographic regions and the political party spectrum. Waves of state policy adoption also appear to occur in tandem with federal policy change, indicating that federal DV-related policy change may generate energy among the states for further strengthening of legal protections for victims. Over half of states were found in Paper 2 to have a possession prohibition for those subject to DVROs and/or a prohibition for those convicted of DV misdemeanors in place. However, relinquishment of firearms by perpetrators was found to be much less common. Even in states with relinquishment requirements, many policies do not give specific directions for relinquishment which may lead to low or inconsistent enforcement. Paper 2 also found that some DV-related firearm policy provisions may have bipartisan political appeal.

[Paper 3](#) showed that several policy provisions that remove firearms from perpetrators of DV may be worth further investigation as potential interventions to reduce mass shooting fatalities.

Statistically significant evidence of a relationship between presence of removal law and whether a fatality occurred in an event that was DV-related was found all four policy categories analyzed.

Paper 3 also highlighted important differences in DV-related firearm removal laws that may contribute to relative strength of association with fatalities from DV-related mass shootings.

Further studies should investigate whether more detailed policy provisions such as including a duration of removal and/or providing specific directions for removal of firearms may be associated with reduced numbers of fatalities from DV-related mass shooting events.

### **Implications**

The results of this dissertation further exhibit both the need for better, nationally representative and centralized mass shooting data and for a comprehensive and consistent definition of mass

shootings that includes events regardless of location or intent.<sup>24,30</sup> These results show how characterization of the burden of mass shootings can change when certain types of events are excluded. When scholars use a definition of “mass shooting” that excludes events that occurred in the home and DV-related events, over half of the fatalities examined in this dissertation are excluded. These fatalities would thus be excluded by any subsequent estimations of the burden of mass shooting fatalities. The results of this dissertation lend legitimacy to the argument that focusing on public mass shootings in research, media coverage, and political discourse may lead to mischaracterization among members of the public of individual risk of experiencing a mass shooting. Researchers conducting future studies, if choosing to exclude shootings that occur in the home and/or are DV-related, should be explicit as to why they have chosen to exclude these types of events and the implications of that exclusion. “Events that occur in the home” and “events that are DV-related” should also not be used as proxies for one another in defining mass shooting events.

People who are not a current or former partner or family member of the perpetrator may be killed in DV-related mass shootings and not all DV-related mass shootings happen in the home. While there may be valid reasons for researchers and/or policymakers to distinguish these types of events from others to target interventions, this dissertation interrogates how this categorization is operationalized and calls for clarity and consistency in defining “mass shooting” in future research and policymaking.

It also highlights the need for future causal studies to determine whether certain DV-related firearm policy provisions are effective interventions to reduce fatality from mass shootings that occur in the home and/or are DV-related. While this dissertation showed that women and children are highly represented among fatalities from these types of mass shooting events, future

studies should include race, ethnicity, and socioeconomic variables to better determine who is most affected by mass shootings that occur in the home and/or are DV-related. This dissertation argues that structural exclusion of these types of mass shootings from scholarly, political, and media discourse is reinforced by and reinforces issues of gender inequality in the United States. However, race and socioeconomic factors have been linked to experiences of intimate partner violence (IPV),<sup>113</sup> and Non-Hispanic Black and Native American/Alaskan Native women have been shown to have higher lifetime rates of IPV than non-Hispanic white women.<sup>73</sup> Future studies should draw more deeply upon intersectional feminist theorists to examine the ways in which class, race, and other demographic factors should be considered when examining and addressing mass shooting fatality as a public health issue in the United States.

DV-related firearm policy may be a way to help reduce the overall impact of mass shooting events. Most of the policies included in Paper 3 are policies that intervene at critical points for the safety of victims of DV. The period after law enforcement involvement in DV incidents is particularly high-risk for victims of domestic abuse. Special attention in future causal analyses should be paid to policies that intervene at these critical points. While I do not consider DV-related policy a sole intervention, the results of this dissertation show that certain policy interventions may be worth considering as part of a wider network of potential interventions. Despite the need for intervention at these critical points for survivors of or those at risk of experiencing DV, future research in this area should take an anti-carceral approach and consider the vast structural and racial inequalities in and reliance on law enforcement for implementation of policies that remove firearms from perpetrators. Special care should be taken in research and policy implementation to ensure that these structural racial inequalities are not perpetuated in the way that policies are interpreted and enforced. Communities around the United States are

designing and implementing gun violence interventions that can be examined by both researchers and policymakers as sources of innovative solutions that do not rely so heavily upon law enforcement to reduce risk.

## **Conclusions**

This dissertation adds to a growing body of literature calling for a consistent, comprehensive definition of mass shooting, and makes the case for including DV-related events and events that occur in the home in that definition. When these events are included, mass shooting fatality is revealed to be a public health issue intimately tied to domestic violence and an issue that particularly affects women and children. This dissertation demonstrates that addressing domestic violence itself and removing firearms from those who may perpetrate domestic violence can and should be considered as part of a wider policy approach to reducing mass shooting fatality in the United States.

## Appendices

### Appendix A. List of included policy provision codes and coding options

Variable	Question	Coding Options
<b>remsc</b>	Is there any law indicating that firearm(s) should be removed from the scene of a DV incident?	Choose one of the following: <ul style="list-style-type: none"> <li>• No (0)</li> <li>• Yes (1)</li> </ul>
<b>remsc_dat</b>	What is the level of data used to determine the existence of law indicating that firearm(s) should be removed from the scene of a DV incident??	Choose one of the following: <ul style="list-style-type: none"> <li>• Full text available (1)</li> <li>• Some full text or clear summary (2)</li> <li>• No relevant legislative text found (3)</li> </ul>
<b>remsc_LE</b>	Are law enforcement authorized, but not required, to remove firearms from the scene of a DV incident?	Choose one of the following: <ul style="list-style-type: none"> <li>• Not applicable (-7)</li> <li>• No (0)</li> <li>• Yes (1)</li> </ul>
<b>remsc_LE_used</b>	In case of removal authorization (not requirement): Does this law only apply to firearm(s) used in the incident?	Choose one of the following: <ul style="list-style-type: none"> <li>• Not applicable (-7)</li> <li>• No (0)</li> <li>• Yes (1)</li> </ul>
<b>remsc_LE_all</b>	In case of removal authorization (not requirement): Does this law apply to firearms found in the home that were not used in the incident?	Choose one of the following: <ul style="list-style-type: none"> <li>• Not applicable (-7)</li> <li>• No (0)</li> <li>• Yes (1)</li> </ul>
<b>remsc_req</b>	Are law enforcement officers <i>required</i> to remove firearms from the scene of a DV incident?	Choose one of the following: <ul style="list-style-type: none"> <li>• Not applicable (-7)</li> <li>• No (0)</li> <li>• Yes (1)</li> </ul>
<b>remsc_req_used</b>	In case of removal requirement: Does this law only apply to firearm(s) used in the incident?	Choose one of the following: <ul style="list-style-type: none"> <li>• Not applicable (-7)</li> <li>• No (0)</li> <li>• Yes (1)</li> </ul>
<b>remsc_req_pv</b>	In case of removal requirement: Does this law apply only to firearms in plain view?	Choose one of the following: <ul style="list-style-type: none"> <li>• Not applicable (-7)</li> <li>• No (0)</li> <li>• Yes (1)</li> </ul>
<b>remsc_req_all</b>	In case of removal requirement: Does this law apply to ALL firearm(s), regardless of whether they were used in the incident?	Choose one of the following: <ul style="list-style-type: none"> <li>• Not applicable (-7)</li> <li>• No (0)</li> <li>• Yes (1)</li> </ul>
<b>remsc_dur</b>	What is the duration of removal of firearms before they are returned?	Enter numeric value in days. <ul style="list-style-type: none"> <li>• Life (-6)</li> <li>• Not applicable (-7)</li> <li>• Differs by situation (-8)</li> <li>• Legislative language is unclear, or none designated (-9)</li> </ul>
<b>remsc_victim</b>	What protections are required for victims when LE respond to DV calls?	Enter freely

<b>remsc_source</b>	What is the source text used for coding variables regarding removal of firearm from scene?	Copy and paste the complete source text, including secondary sources.
<b>remsc_notes</b>	Are there any notes on removal of firearms from the scene of a DV incident?	Enter freely
<b>dvro</b>	Is there any law indicating that a person under a DV restraining order (DVRO) should be prohibited from possessing a firearm?	Choose one of the following: <ul style="list-style-type: none"> <li>• No (0)</li> <li>• Yes (1)</li> </ul>
<b>dvro_dat</b>	What is the level of data used to determine the existence of DVRO related firearm policy?	Choose one of the following: <ul style="list-style-type: none"> <li>• Full text available (1)</li> <li>• Some full text or clear summary (2)</li> <li>• No relevant legislative text found (3)</li> </ul>
<b>dvro_auth</b>	Does the DVRO possession prohibition authorize (but not require) the prohibition when certain conditions are met?	Choose one of the following: <ul style="list-style-type: none"> <li>• Not applicable (-7)</li> <li>• No (0)</li> <li>• Yes (1)</li> </ul>
<b>dvro_req</b>	Is the DVRO possession prohibition required, regardless of conditions?	Choose one of the following: <ul style="list-style-type: none"> <li>• Not applicable (-7)</li> <li>• No (0)</li> <li>• Yes (1)</li> </ul>
<b>dvro_rem</b>	Does the DVRO law include removal of firearm(s) while individual is under DVRO?	Choose one of the following: <ul style="list-style-type: none"> <li>• Not applicable (-7)</li> <li>• No (0)</li> <li>• Yes (1)</li> </ul>
<b>dvro_rem_judge</b>	In case of DVRO removal requirement: Does the law only require removal if deemed necessary by a judge or law enforcement, or if certain conditions are met?	Choose one of the following: <ul style="list-style-type: none"> <li>• Not applicable (-7)</li> <li>• No (0)</li> <li>• Yes (1)</li> </ul>
<b>dvro_rem_all</b>	In case of DVRO removal requirement: Is the removal required in all cases?	Choose one of the following: <ul style="list-style-type: none"> <li>• Not applicable (-7)</li> <li>• No (0)</li> <li>• Yes (1)</li> </ul>
<b>dvro_rem_spec</b>	In case of DVRO removal requirement: Does the law include directions for HOW surrender of weapon(s) should occur?	Choose one of the following: <ul style="list-style-type: none"> <li>• Not applicable (-7)</li> <li>• No (0)</li> <li>• Yes (1)</li> </ul>
<b>dvro_rem_spec_time</b>	In case of DVRO removal requirement with specific directions for surrender: How long (in days) does a person have to surrender their firearm(s)	Enter numeric value for number of days. <ul style="list-style-type: none"> <li>• Not applicable (-7)</li> <li>• No designation (-9)</li> </ul>
<b>dvro_exparte</b>	In case of DVRO possession prohibition: Does the law apply to <i>ex parte</i> DVROs?	Choose one of the following: <ul style="list-style-type: none"> <li>• Not applicable (-7)</li> <li>• No (0)</li> <li>• Yes (1)</li> </ul>
<b>dvro_exparte_rem</b>	In case of DVRO possession prohibition for <i>ex parte</i> orders: Does the prohibition include mention of removal of firearm(s) while individual is under DVRO?	Choose one of the following: <ul style="list-style-type: none"> <li>• Legislative language is unclear (-9)</li> <li>• Not applicable (-7)</li> <li>• No (0)</li> <li>• Yes (1)</li> </ul>



<b>dvro_exparte_rem_judge</b>	In case of DVRO possession prohibition for <i>ex parte</i> orders with removal requirement: Is removal only required if deemed necessary by a judge or law enforcement, or if certain conditions are met?	Choose one of the following: <ul style="list-style-type: none"> <li>• Not applicable (-7)</li> <li>• No (0)</li> <li>• Yes (1)</li> </ul>
<b>dvro_exparte_rem_all</b>	In case of DVRO possession prohibition for <i>ex parte</i> orders with removal requirement: Is the removal required in all cases?	Choose one of the following: <ul style="list-style-type: none"> <li>• Not applicable (-7)</li> <li>• No (0)</li> <li>• Yes (1)</li> </ul>
<b>dvro_exparte_rem_spec</b>	In case of DVRO <i>ex parte</i> removal requirement: Does the law include directions for surrender of weapon(s)?	Choose one of the following: <ul style="list-style-type: none"> <li>• Not applicable (-7)</li> <li>• No (0)</li> <li>• Yes (1)</li> </ul>
<b>dvro_dur_num</b>	What is the duration of surrender of firearm(s) or prohibition of possession outlined in the legislation prohibiting possession of a firearm by a person subject to a DVRO?	Enter numeric value for number of days. <ul style="list-style-type: none"> <li>• Duration of DVRO (-6)</li> <li>• Not applicable (-7)</li> <li>• Legislative language is unclear (-9)</li> </ul>
<b>dvro_def_dp</b>	Does the DVRO firearm law apply to dating partners outside the federal definition of intimate partners*?  <i>*respondent's spouse or former spouse, an individual who has a child in common with the respondent, or an individual who currently or previously lived with the respondent (but not other dating partners)</i>	Choose one of the following: <ul style="list-style-type: none"> <li>• Not applicable (-7)</li> <li>• No (0)</li> <li>• Yes (1)</li> </ul>
<b>dvro_def_hab</b>	Does the DVRO firearm law apply to partners who have never cohabitated or do not share children?	Choose one of the following: <ul style="list-style-type: none"> <li>• Legislative language is unclear (-9)</li> <li>• Not applicable (-7)</li> <li>• No (0)</li> <li>• Yes (1)</li> </ul>
<b>dvro_def_notes</b>	Are there any notes on the definition of dating partner or DV?	Enter freely
<b>dvro_source</b>	What is the source text used for coding DVRO firearm policy?	Copy and paste the complete source text, including secondary sources.
<b>dvro_process</b>	Are there any notes on the logistical process for obtaining a DVRO?	Enter freely
<b>dvro_notes</b>	Are there any notes on the DVRO firearm policy?	Enter freely
<b>md_pro</b>	Is there any law indicating that persons convicted of DV misdemeanors should be prohibited from possessing a firearm?	Choose one of the following: <ul style="list-style-type: none"> <li>• No (0)</li> <li>• Yes (1)</li> </ul>
<b>md_pro_dat</b>	What is the level of data used to determine the existence of policy prohibiting possession of firearms by those convicted of DV misdemeanor crimes?	Choose one of the following: <ul style="list-style-type: none"> <li>• Full text available (1)</li> <li>• Some full text or clear summary (2)</li> <li>• No relevant legislative text found (3)</li> </ul>
<b>md_rem</b>	In case of DV misdemeanor possession prohibition: Does the law include mention of removal of firearm(s)?	Choose one of the following: <ul style="list-style-type: none"> <li>• Not applicable (-7)</li> <li>• No (0)</li> <li>• Yes (1)</li> </ul>

<b>md_rem_judge</b>	In case of DV misdemeanor possession prohibition with removal requirement: is removal only required if deemed necessary by a judge or law enforcement?	Choose one of the following: <ul style="list-style-type: none"> <li>• Differs by offense (-8)</li> <li>• Not applicable (-7)</li> <li>• No (0)</li> <li>• Yes (1)</li> </ul>
<b>md_rem_spec_time</b>	In case of misdemeanor removal requirement with specific directions for surrender: How long (in days) does a person have to surrender their firearm(s)	Enter numeric value for number of days. <ul style="list-style-type: none"> <li>• Not applicable (-7)</li> <li>• No designation (-9)</li> </ul>
<b>md_NICS</b>	Does the state law include a requirement to report conviction of a DV misdemeanor to the National Instant Criminal Background Check System (NICS)?	Choose one of the following: <ul style="list-style-type: none"> <li>• Not applicable (-7)</li> <li>• No (0)</li> <li>• Yes (1)</li> </ul>
<b>md_def_dp</b>	In case of DV misdemeanor possession prohibition: Does the law apply to dating partners outside the federal definition of intimate partners*?  <i>*respondent's spouse or former spouse, an individual who has a child in common with the respondent, or an individual who currently or previously lived with the respondent (but not other dating partners)</i>	Choose one of the following: <ul style="list-style-type: none"> <li>• Not applicable (-7)</li> <li>• No (0)</li> <li>• Yes (1)</li> </ul>
<b>md_pro_num</b>	What is the duration of prohibition of possession outlined in the legislation prohibiting possession of a firearm by a person convicted of a DV misdemeanor?	Enter numeric value for number of years. <ul style="list-style-type: none"> <li>• Life (-6)</li> <li>• Not applicable (-7)</li> <li>• Differs by offense (-8)</li> <li>• No clear designation (-9)</li> </ul>
<b>md_rem_num</b>	What is the duration of surrender of firearm(s) outlined in the legislation prohibiting possession of a firearm by a person who has been convicted of a DV misdemeanor?	Enter numeric value. <ul style="list-style-type: none"> <li>• Life (-6)</li> <li>• Not applicable (-7)</li> <li>• Differs by offense (-8)</li> <li>• No clear designation (-9)</li> </ul>
<b>md_def_notes</b>	Are there any notes on what is considered a DV misdemeanor?	Enter freely
<b>md_source</b>	What is the source text used for coding policies regarding prohibition of possession of firearms by those convicted of DV misdemeanors?	Copy and paste the complete source text, including secondary sources.
<b>md_offense_notes</b>	Are there any notes on how firearm prohibitions or removals differ by type of DV misdemeanor offense?	Enter freely

**Appendix B: Identified gaps in federal domestic violence-related firearm policy and measures used in analysis of state policy**

Identified gap in federal policy	Measures used
Authorization or requirement for removal of firearms from the scene of a DV* incident	<ul style="list-style-type: none"> <li>-Presence of law</li> <li>-Law enforcement authorized (“may”) or required (“shall”) to remove firearms</li> <li>-If authorized: only applicable to firearms used in the incident or applicable to all firearms</li> <li>-If required: only applicable to firearms used in the incident or applicable to all firearms</li> <li>- Duration of removal of firearms before they are returned (in days)</li> <li>-Stated protections or services provided for victims by law enforcement during or after responding to an incident</li> <li>-Year enacted</li> </ul>
Prohibition of firearm purchase and possession for those convicted of DV misdemeanors that lasts longer than 5 years after conviction	<ul style="list-style-type: none"> <li>-Presence of law</li> <li>-Duration of prohibition, if stated</li> <li>-Year enacted</li> </ul>
Requirement for the removal/relinquishment of firearms for those subject to domestic violence restraining orders (DVROs)	<ul style="list-style-type: none"> <li>-Presence of possession and purchase prohibition for those subject to DVROs</li> <li>-Courts authorized (“may”) or required (“shall”) to prohibit possession</li> <li>-Relinquishment of weapons explicitly mentioned</li> <li>-Relinquishment of weapons authorized or required</li> <li>-Language included that provides directions for relinquishment</li> <li>-Duration of relinquishment</li> <li>-Year enacted</li> </ul>
Requirement for the removal/relinquishment of firearms for those convicted of DV misdemeanors	<ul style="list-style-type: none"> <li>-Presence of possession and purchase prohibition for those convicted of DV misdemeanors</li> <li>-Courts authorized (“may”) or required (“shall”) to prohibit possession</li> <li>-Relinquishment of weapons explicitly mentioned</li> <li>-Relinquishment of weapons authorized or required</li> <li>-Language included that provides directions for relinquishment</li> <li>-Duration of relinquishment</li> <li>-Year enacted</li> </ul>
Prohibition of firearm purchase and possession for those subject to DVROs that apply to dating partners	<ul style="list-style-type: none"> <li>-Definition of “intimate partner”, “cohabitant”, or “family member” includes partners that have never been married and do not share children</li> <li>-Definition of “intimate partner”, “cohabitant”, or “family member” includes partners that have never been married and do not share children, and includes partners who have never cohabitated</li> <li>-Year enacted</li> </ul>
Prohibition of firearm purchase and possession for those subject to <i>ex parte</i> DVROs	<ul style="list-style-type: none"> <li>-Presence of possession and purchase prohibition for those subject to <i>ex parte</i> DVROs</li> <li>--Courts authorized (“may”) or required (“shall”) to prohibit possession</li> <li>-Relinquishment of weapons explicitly mentioned</li> </ul>

	<ul style="list-style-type: none"><li>-Relinquishment of weapons authorized or required</li><li>-Language included that provides directions for relinquishment</li><li>-Duration of relinquishment</li><li>-Year enacted</li></ul>
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