

Introduction

Police violence disparately affects low-income Black, Indigenous, and people of color (BIPOC) communities. In 2022, 1,096 individuals were killed in fatal police shootings, setting the record for the highest number of individuals killed by police-involved shootings in one year (“Police Shootings Database,” 2023). On average, Black Americans are killed by police at more than twice the rate of White Americans despite being more likely to be unarmed and less likely to be threatening someone when killed (Mapping Police Violence, 2022; “Police Shootings Database,” 2023). Similarly, Indigenous populations are 60% more likely and non-white Latinx populations are 30% more likely to be killed by the police than their White counterparts (Mapping Police Violence, 2022). As a result, BIPOC communities are more likely to experience spillover effects of police violence, including greater risks to physical (Sewell et al., 2020), mental (Bor et al., 2018; Galovski et al., 2016), and socioemotional (Ang, 2020) health.

In response to the numerous high-profile incidents of police killings of unarmed BIPOC individuals, including Eric Garner, Freddie Gray, George Floyd, and Breonna Taylor, policy makers nationwide have sought to reimagine public safety through efforts to reform, right-size,² and, in some cases, disband police departments altogether. To address and prevent harm within communities, several cities are investing in policing alternatives to operate in place of or in coordination with police by embedding mechanisms of community empowerment and connection to services and supports. Credible messengering programs, CURE violence, and READI Chicago are three examples of such strategies that aim to employ cross-sectoral, community-integrated approaches to lessen the influence of the criminal legal system within BIPOC communities. In many examples of policing alternatives, policy makers and communities have endeavored to partner with police to ensure that policing enforcement is tailored appropriately to the strengths of the local department.

¹ Ryan Fisher is a Senior Research Associate at the National Policing Institute who helped to conceptualize this body of work.

² *Right-sizing* policing is a term we introduce to articulate that the scope of policing needs to be fit appropriately with needs of community.

To facilitate police accountability and community engagement, several partners, from policy makers to practitioners, have proposed reforming police protocols with a specific focus around use of force policies. Use of force policies ranging from banning chokeholds (particularly on the heels of Eric Garner’s death) to the requirement to provide more systemized police use of force reporting have swept the nation in the last decade following numerous high-profile incidents of police killings. Unfortunately, the simultaneous expansion of the evidence base on the effectiveness of these policies has been more limited.

The American Institutes for Research® (AIR®) is working to better understand the fast-changing landscape on effective police use of force interventions and to codify the broadly conceived barriers and solutions to systemic abatement of inappropriate use of force³ disproportionately affecting BIPOC communities. In our pursuit to better understand the current landscape of use of force reform and the barriers preventing systemwide change, AIR conducted a review of the existing quantitative literature on the impact of use of force interventions, legal research concerning limitations of existing policy and how they may be addressed, and policy briefs published by community and national organizations working to reimagine traditional approaches to public safety. With this brief, we aim to highlight the role of limited standardized police use of force legislation around data transparency, police accountability, and collaboration with community as principal challenges to preventing police violence. We conclude with actionable recommendations to advance systemwide changes to police use of force.



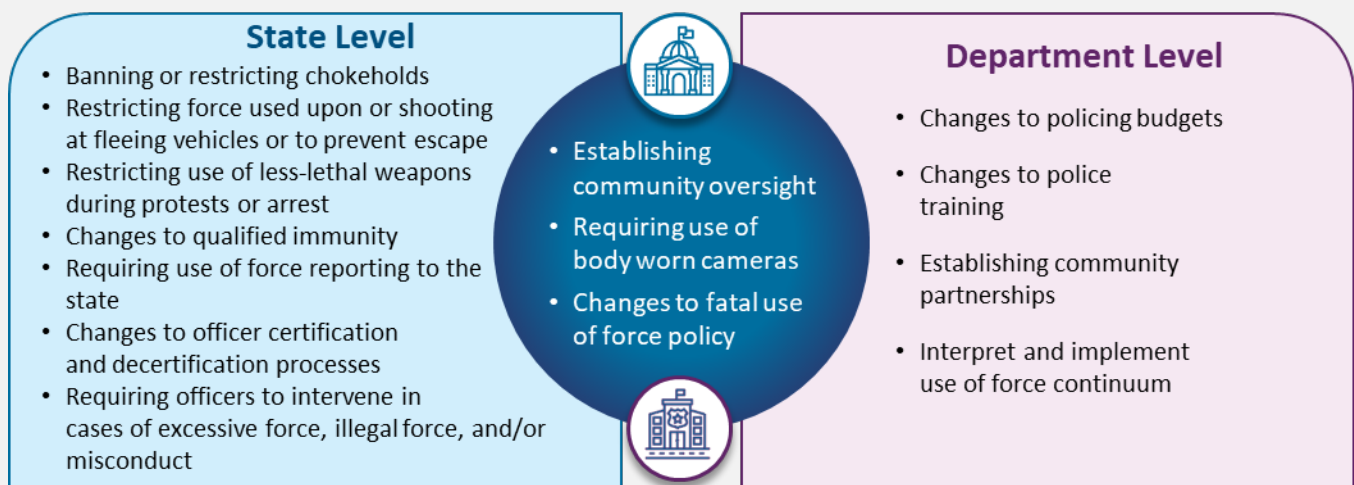
³ Inappropriate use of force exceeds efforts that are required by police officers to make an arrest, and to protect themselves and others from harm (NIJ, 2020). According to Boxer et al. (2021), this term “acknowledges that the police can ‘go too far’ in the application of force as well as the fact that, categorically, certain situations should never permit the use of force” (502).

Recent Patterns in Use of Force Reform

The scope of reform efforts is generally limited to changes at the department and state level, rather than systemwide changes at the national level that address systemic issues with police accountability. Department-level changes consist of reforms to use of force policies, accountability mechanisms and technology, and conditions and environment within individual police departments. State-level changes refer to legislative efforts to reform police use of force policies and behaviors across all police departments within a particular state. See Exhibit 1 for a full description of the use of force reform landscape between 2020 and 2021.

To date, there is no standardization across states for police operations and accountability mechanisms, which encumbers reforms to police use of force at the national level. In particular, the lack of standardized use of force policies, police accountability, and data transparency serve as barriers to national level changes in police use of force. Further, national level policing reforms may reveal larger impacts for interventions that are currently encumbered not only by disparities in available use of force data for evaluation purposes but also limited accountability mechanisms that restrict the short-term and long-term impacts of reform. To achieve national level changes in police use of force and advance accountability and transparency, communities, policy makers, and practitioners are calling for the standardization of police use of force legislation, centralized and/or community oversight of police departments, and mandated reporting standards.

Exhibit 1. Use of Force Reform Landscape (2020–2021)



Note. This is not a comprehensive list of all police reform policies but represents state use of force policies enacted from 2020 to 2021. We divide use of force reforms into three categories: department-level, state-level, and department and state-level reforms. While many of the listed reforms are informed by state legislation, the interpretation and implementation of these reforms may vary at the department level. Some departments have adopted individual reform policies that are informed by local context, budgetary considerations, and community needs. Source(s): Garrett (2023), National Conference of State Legislatures (2021), Subramanian and Arzy (2021).

Existing Evidence on Police Use of Force Interventions

Though use of force interventions are implemented at varying levels, their general purpose is to reduce inappropriate use of force during police–community encounters and, thus, protect communities from further harm. Despite significant efforts to evaluate intervention efforts, particularly within the last decade, the efficacy of many use of force reforms remains an open question. We find five compelling results among commonly evaluated interventions implemented at the department level:

- Body-worn cameras (BWCs) are devices worn by sworn officers that record their interactions with citizens. Department adoption of BWCs reduces inappropriate use of force incidents in randomized controlled trials (Ariel et al., 2015; Braga et al., 2018) but a review across multiple studies (Lum et al., 2019) highlights inconsistencies between older and newer BWC interventions as policies regarding when a BWC must be activated become more varied. Overall, however, the effect of BWCs on use of force and citizen complaints holds promise (White et al., 2019).
- Crisis intervention team training aims to improve officer interactions with people with mental illness and promote diversion to mental health professionals, but a recent meta-analysis of studies evaluating crisis intervention team training found consistent effects only for improving officer perceptions of people with mental illness and not their use of force behaviors in the field (Seo et al., 2021). Related interventions—co-response or alternate response models involving mental health professionals or street outreach workers that respond to calls for service with, or as an alternative to, police officers—appear to show more promise in reducing citizen complaints and officer use of force, though empirical evaluations of these interventions remain scarce.
- De-escalation training teaches officers to use verbal and nonverbal skills to “slow down the sequence of events, enhance situational awareness...and allow for better decision-making to reduce the likelihood that a situation will escalate into physical confrontation” (Community Oriented Policing Services, n.d.). De-escalation training can yield small to moderate effects on reducing complaints and violent/aggressive incidents in the context of nursing and psychiatry, but variation in program design, evaluation methods, and a lack of comparable studies in the policing context limits external validity (Engel et al., 2020).
- Early intervention systems are tools used by police administrators to “identify police officers who are on a trajectory that may jeopardize either public safety or performance on the job” and then recommend appropriate interventions to reduce the risk of a “future adverse event” (Russek & Fitzpatrick, 2021, p. 1). Although widely adopted, early

intervention systems have rarely been empirically evaluated. A singular systematic review of early intervention systems shows that although they are widely appealing and adopted for their capacity to build on predictive analytics to flag and intervene with officers at the earliest signs of problematic behavior, such interventions yield inconsistent findings, partially because of differences in how problematic officers are identified (i.e., thresholds used to flag patterns of problematic behavior) and which additional interventions/treatments are applied to these officers (Gullion & King, 2020).

- Implicit bias awareness training is “designed to help officers develop awareness of their personal implicit biases, understand how those biases can influence their behaviors, and devise ways to prevent biases from leading to disparate treatment of members of the public” (CCJ Task Force on Policing, 2021b, p.1). Implicit bias awareness training has recently become more commonplace, though many evaluations focus strictly on changes to officer perceptions or simulation-based outcomes (Hunsinger et al., 2019; Lai et al., 2023) and not behavior in the field. A recent analysis of an implicit bias awareness training intervention within the New York City Police Department reported expected changes to officers’ perceptions and attitudes but no effect on their enforcement behaviors in the field (Worden et al., 2020).

With the above list, we present evidence on the most commonly evaluated interventions for their capacity to reduce inappropriate use of force. Taken together, these findings indicate that despite some positive effects for BWCs, co-response teams, and de-escalation training, the evidence for policing interventions indicates inconsistent effects overall on officer behavior in the field. As some scholars have observed, this pattern should be expected, as evaluating the effects of singular interventions on police behavior “may well be akin to finding the proverbial needle in a haystack” (Worden et al., 2020, p. vi). That is, because most interventions focus on singular proximate causes of inappropriate use of force, the effect of any given reform by itself tends to be quite modest and susceptible to contextual features of a police department that limit the efficacy of an intervention. Further, broad inconsistencies in the impact of use of force interventions are due, at least in part, to limitations in how data on use of force are collected, conceptualized, and operationalized across studies (Klahm et al., 2014) as well as the overall lack of comprehensive use of force data, which can limit considered outcomes to strictly officer perceptions or attitudes, not their actual use of force behaviors.

At the same time, given the longstanding racial/ethnic disparities in police use of force, we, the authors, believe that one central challenge associated with many of the most common interventions is their failure to center community. Policies that aim to address policing and justice inequities by centering public health approaches strive to ameliorate root causes or social determinants of crime, and in doing so, integrate community-based solutions. Recent police reform efforts that highlight community collaborations include interventions that offer wraparound community supports, such as mentoring, employment, education, and

trauma-informed services to directly affected communities, including credible messenger programs in which formerly system-impacted individuals are employed to work as the first line of crime de-escalation (Credible Messenger Justice Center, n.d.). One highly studied example of a model that frequently drew upon credible messengering is the randomized controlled trial investigating the READI Chicago Transformative Mentoring program. The evaluation of READI found incorporating relationship-based mentorship into programming for young men at high risk for being involved in gun violence, alongside cognitive behavioral therapy and steady employment, resulted in 63% of participants experiencing fewer arrests and 19% experiencing fewer victimizations for shootings and homicides in the 20-month follow-up window compared to a randomized control group (Bhatt et al., 2023). As a second example, an evaluation of the Michigan Youth Violence Prevention Center (MI-YVPC)—which intentionally builds partnerships across several state and local agencies alongside a number of faith-based organizations, neighborhood groups, and schools to cultivate a socio-ecological framework for youth safety and thriving— shows that youth victimization and assault injuries fell in the intervention area subsequent to the initiation of the interventions and that these reductions were sustained over time (Heinze et al., 2016). The MI-YVPC also featured evidence-informed, curriculum-based programming to foster added connection at each of these socio-ecological levels, including targeted outreach and mentorship for young people and families. Neither of these studies assessed the impact of these community-based interventions on police–community relations or inappropriate use of force. However, community-based violence prevention programs such as these have clear ramifications for the prevalence of police use of force and, by proxy, police–community relations. Future evaluations of community-based interventions should embed such considerations.

In the remainder of this brief, we explore the barriers and solutions to addressing inappropriate use of force. We conclude with a discussion of proposed next steps.



Barriers to Addressing Police Use of Force

Police Use of Force Statutes

Police use of force policies systematize the types and levels of force that police officers can use to mitigate a situation, to make an arrest, and to protect themselves and others from harm (NIJ, 2020). Police use of force policies are important because they are not only used to train police officers, but also to determine what constitutes inappropriate use of force (Obasogie & Newman, 2017). Along the use of force continuum, levels of force include basic verbal and physical (i.e., empty-hand) constraint, less lethal methods (e.g., baton, pepper spray, tasers), and lethal force (e.g., deadly weapons) (NIJ, 2020). Use of force policies outline when and how these levels and types of force can be used.

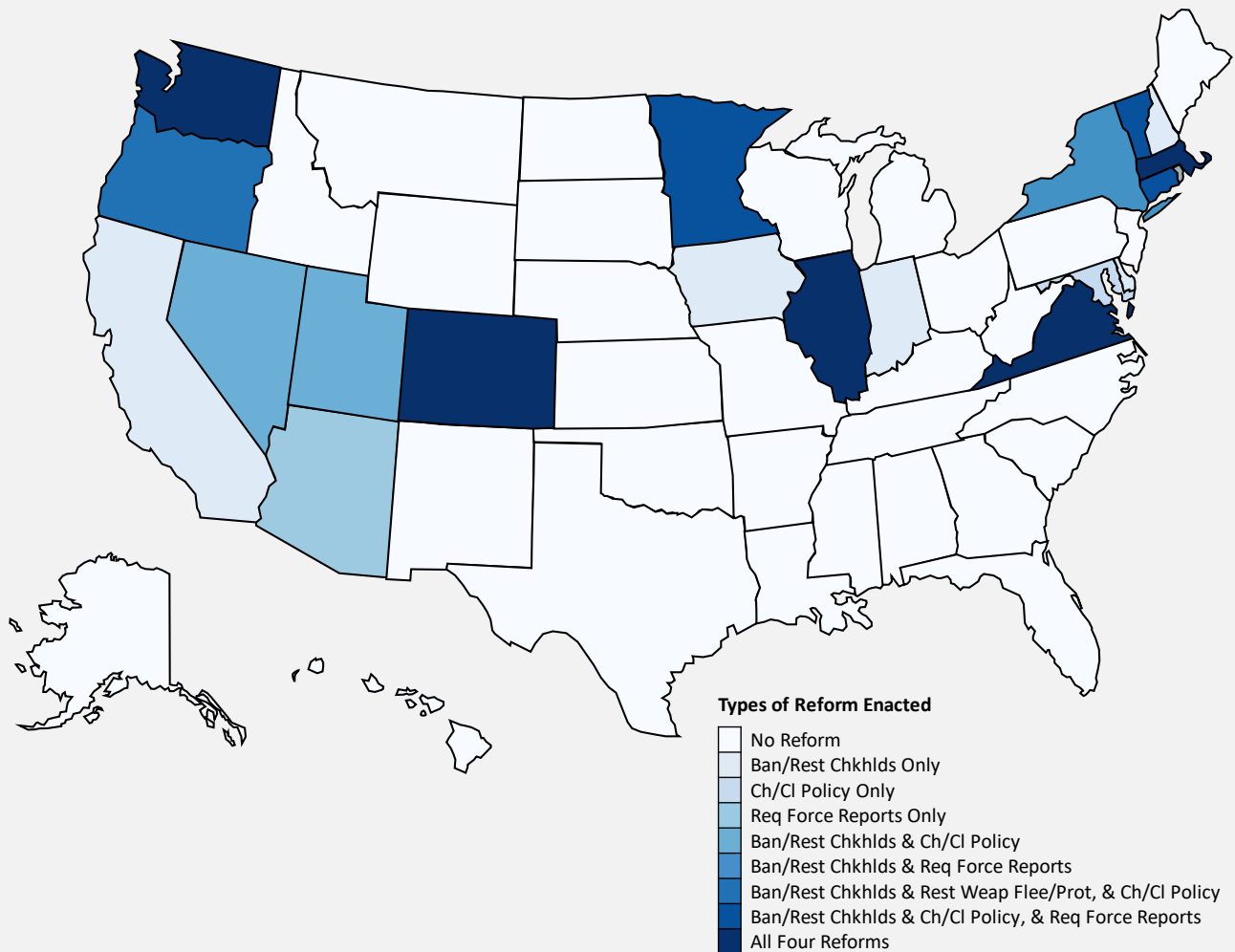
Police use of force is conceptualized and operationalized differently across states. This is largely because of variation in the use of force legislation enacted within different states. Exhibit 2 shows the states that enacted legislative policing reforms between May 2020 and May 2021 following the police killing of George Floyd. While this figure is not representative of all state-level use of force reforms enacted over time, it provides a snapshot of the variation in use of force policies enacted within a timeframe where use of force bills nearly doubled (Garrett, 2023). From 2020 to 2021, nine states and Washington, DC enacted bills banning the use of chokeholds or other neck restraints, eight states restricted the use of chokeholds or other neck restraints to instances where officers are legally justified to use lethal force, six states and Washington, DC restricted the use of less lethal weapons during protests or arrests, five states restricted use of force upon fleeing suspects or vehicles or shooting at fleeing suspects or vehicles, and 12 states and Washington, DC changed or clarified their fatal use of force policies (Subramanian & Arzy, 2022) (see Exhibit 2).

Even in cases where states adopt reform bills that restrict or ban the same types or levels of force, the content of these bills may differ. For instance, while Washington, DC and Colorado restrict the use of less lethal weapons during protests, the types of less lethal force mentioned and guidelines for officers who use them vary. In Washington, DC, large-scale canisters of chemical irritants cannot be used at protests unless it is deemed necessary to protect the officers and others from physical harm or to arrest actively resisting persons (Use of Riot Gear, Chemical Irritants, or Less-Lethal Projectiles; Reporting Requirements, 2020). The commanding officer on the scene must, however, first approve of this force and file a written report with the chief of police justifying their decision no more than 48 hours following the event (Use of Riot Gear, Chemical Irritants, or Less-Lethal Projectiles; Reporting Requirements, 2020). In Colorado, officers are not allowed to discharge kinetic impact or less

lethal projectiles indiscriminately into the crowd or target the head, pelvis, or back (Prohibited Law Enforcement Action in Response to Protests, 2020). Furthermore, prior to the use of chemical agents or irritants, such as pepper spray and tear gas, officers must issue an order to disperse, repeat the order if needed, and give protesters ample time to comply with the order (Prohibited Law Enforcement Action in Response to Protests, 2020). Unlike the DC bill, the Colorado bill does not require the commanding officer to document the reasoning for the use of less lethal weapons. These subtle differences in use of force policies can have larger implications for police accountability to communities. The variation in use of force legislation at the state level also has important ramifications for use of force policies and practices at the department level.

Exhibit 2. Map of Use of Force Reform (2020–2021)

Bans/Restrictions on Chokeholds, Force Restrictions for Fleeing/Protests, Changes/Clarifications to Use of Force Policy, or Requiring Use of Force Reports



Note. Source(s): National Conference of State Legislatures, 2021; Subramanian and Arzy, 2021.

Police departments across the nation vary widely in the types and levels of force they allow. While a majority of police departments have a use of force continuum policy (Terrill et al., 2011), there is no standard use of force practice that is adopted among police departments nationwide (Terrill et al., 2011). While some departments have restrictive use of force policies that only allow officers to use severe levels of force to resist actively aggressive persons, other departments allow officers to use all levels of force against all levels of resistance (Terrill et al., 2011). In their analysis of use of force policies adopted by police departments in the 20 largest cities in the United States, researchers found that only 30% of policies required that police officers exhaust all other alternatives before using fatal force (Obasogie & Newman, 2017). Departments also vary in the tactical placement of physical and weapons-based force on their use of force continuum (Terrill et al., 2011). This means that some departments may rank certain use of force behaviors as more severe or higher on the continuum than others. These findings are indicative of the lack of “specificity and rigor” in use of force policies across police departments nationwide (Obasogie & Newman, 2017, p. 282).

Given the ambiguity in use of force policies, police officers are often expected to use their discretion to determine what level and type of force is appropriate in an encounter (Pogarsky & Piquero, 2004). Officers who have broad discretion may allow external influences and biases to affect the types and levels of force used in community encounters (Nowacki, 2015; Pogarsky & Piquero, 2004). Biases could result in some officers perceiving certain community members as more threatening than others based on characteristics such as race and neighborhood context. This could result in preemptive and disparate use of inappropriate force within BIPOC communities (Nowacki, 2015). Stringent use of force policies that clearly outline the levels and types of force officers are permitted to use can serve as an effective deterrent to police violence (Nowacki, 2015). Strict use of force guidelines give officers less discretion on when use of lethal force is appropriate and as such, could help to reduce lethal force incidents, especially within BIPOC communities (Nowacki, 2015). To deter police violence on a national scale, however, it is imperative to standardize use of force guidelines and penalties for officers who violate them.


Police Accountability

From 2013 to 2022, approximately **98.1%** of police killings did not result in officers being charged with a crime (Mapping Police Violence, 2022).

While roughly 1,200 people were killed by the police in 2022, only 12 officers (1%) were charged with a crime (Mapping Police Violence, 2022). Moreover, from 2005 to 2019, only 104 nonfederal law enforcement officers, including police officers, deputy sheriffs, and

state troopers, were arrested for murder or manslaughter that resulted from an on-duty shooting (Stinson & Wentzlof, 2019). Of the 104 charged, only 35 were convicted (Stinson & Wentzlof, 2019). While not all fatal use of force incidents are attributable to police misconduct, a report published by the Bureau of Justice Statistics (2006) indicated that of the 26,556 citizen complaints made to large state and local law enforcement agencies (i.e., those with 100 or more sworn officers) about use of force incidents in 2002, 8% were sustained (i.e., a ruling in favor of the citizen). If the percentage among all use of force incidents is representative of *fatal* use of force events, this indicates that officers are rarely being held accountable for fatal use of force events where misconduct has occurred. Considering recent evidence that suggests the introduction of BWCs can increase the rate of sustained citizen complaints (Cubucku et al., 2023), this 8% figure may be a conservative estimate of the prevalence of officer misconduct in use of force incidents. These data are indicative of a nationwide lack of police accountability and limitations to past and current efforts to deter police misconduct.

Exhibit 3. Barriers to Police Accountability

	<p style="text-align: center;">Lack of Centralized & Community Oversight</p> <ul style="list-style-type: none"> No centralized oversight at national level Misconduct often investigated only internally by other police officers Fewer than half of states require community oversight Community oversight limited by police unions and restrictive legislation
	<p style="text-align: center;">Police Unions</p> <ul style="list-style-type: none"> Erasure policies for disciplinary records Time limits for civilian complaints
	<p style="text-align: center;">Law Enforcement Bill of Rights</p> <ul style="list-style-type: none"> Shields officers from testifying in court Can require legislative change to address officer accountability
	<p style="text-align: center;">Qualified Immunity</p> <ul style="list-style-type: none"> Shields police officers from liability Exceptions to immunity require high burden of proof Only three states have limited the application of qualified immunity
	<p style="text-align: center;">Variation in Decertification Processes</p> <ul style="list-style-type: none"> Substantial state-to-state variation in decertification policies and processes Decertification panels rarely involve impacted community members
	<p style="text-align: center;">Lack of National Data on Police Misconduct</p> <ul style="list-style-type: none"> Only 13 states require departments to report officer misconduct Only 3 states require reporting to the National Decertification Index Lack of centralized reporting contributes to the wandering officer problem

Barriers to police accountability include the lack of centralized and community oversight of police departments, police unions, the Law Enforcement Bills of Rights, qualified immunity, variation in decertification processes for officer misconduct, and the lack of national data on officer misconduct (see Exhibit 3). Currently, there is no central oversight agency that holds each individual police officer or department across the United States accountable for police misconduct (Bloom & Labovich, 2021). Rather, many cases of police misconduct are investigated within police departments by an internal affairs unit comprised of police officers, which may result in the biased review of, and limited sanctions for, officers who engage in inappropriate use of force (Bloom & Labovich, 2021). Community oversight of the police is also lacking.

While several cities in the United States, such as Albuquerque, NM, Boston, MA, Durham, NC, and Minneapolis, MN, have established civilian review boards and independent police oversight commissions, these agencies often have limited investigative and disciplinary authority (Moore, 2020). Likewise, while at least 18 states and the District of Columbia have legislation requiring community involvement in police oversight, with six state statutes addressing civilian review boards, community oversight is often impeded by police unions (Moore, 2020; NCSL, 2022).

Police unions have not only opposed legislation on community oversight, but have also restricted civilian review boards from publicly disclosing incidents of police misconduct in Connecticut (PA 20-1) and several other states (Moore, 2020).

Police union contracts grant statutory job protections to officers accused of misconduct (Bloom & Labovich, 2021; Fisk & Richardson, 2017). Many police union contracts are protected under state law enforcement bills of rights, which require waiting periods for questioning and investigating incidents of misconduct, develop guidelines for the questioning of officers and shield some officers from testifying in court, and grant the officer accused of misconduct access to the entire investigative file, including witness statements, photos, videos, and notes from the internal investigation prior to their interrogation (Bloom & Labovich, 2021; Levinson, 2017). In an examination of 82 police union contracts in large cities nationwide, researchers found that most police union contracts require departments to erase disciplinary records as early as 6 months after the incident, making it difficult to document longstanding histories of officer misconduct (Levinson, 2017). Additionally, police union contracts can obstruct community oversight by setting time limits for community members to file complaints about police officers, only allowing misconduct-involved officers to be questioned by other officers, preventing public access to complaint and disciplinary records, establishing short statutes of

limitations for misconduct charges, prohibiting the investigation of anonymous complaints, and restricting which complaints can be investigated (Bloom & Labovich, 2021; Fisk & Richardson, 2017). In states where law enforcement bills of rights are written into state legislation, changes to police union contracts will not result in changes to police protections unless the statutes are also repealed (Fisk & Richardson, 2017). The legal protections afforded to law enforcement officials make it difficult to sustainably detect and penalize acts of misconduct.

Qualified immunity is another form of legal protection adopted by the Supreme Court that shields police officers and other government officials from liability for infringing upon community members' rights unless they violate clearly established law (Mims-Crocker, 2019). To prove that the violated right was clearly established, there must be a prior court case in which a government official violated a community member's rights in nearly the same way and the court ruled the official's actions unlawful (Baude, 2018). This incredibly high burden of proof has negative implications for victims of police violence, including a reluctance among attorneys to take on cases of police misconduct and an inability to receive compensation in cases where qualified immunity applies (NCSL, 2021a; Reinert et al., 2021; Schwartz, 2020). To date, only three states—New Mexico, Colorado, and Connecticut—have passed laws that limit when qualified immunity can be applied, and qualified immunity remains intact at the federal level (Everytown Research & Policy, 2023). According to critics of the qualified immunity doctrine, including Supreme Court Justice Sotomayor, qualified immunity “tells officers that they can shoot first and think later, and it tells the public that palpably unreasonable conduct will go unpunished” (*Kiesla v. Hughes*, 2018). Qualified immunity remains one of the greatest legislative barriers to police accountability.

State-by-state variation in decertification processes is another barrier to police accountability. States vary widely in the grounds for decertification, the process of decertification review and determination, the rate of decertification, and the decertification reporting of misconduct-involved officers (CCJ Task Force on Policing, 2021a). A review of state sanctions for police officers who fail to intervene, report, or render aid in cases of inappropriate use of force shows that officer decertification is discretionary in most states, including Connecticut (CT HB 6004), Illinois (IL HB 3653), Kentucky (KY SB 80), and Virginia (VA SB 5030) (Subramanian & Arzy, 2021). Though most of the 50 state Peace Officer Standards and Training boards are authorized to decertify officers convicted of a felony (92%), misdemeanor (78%), and failure to adhere to training requirements (69%), the rate of decertification varies widely between states (CCJ Task Force on Policing, 2021a). For instance, in 2016, 316 police officers were decertified in Georgia, while North Carolina decertified just 10 officers despite both states having comparatively sized populations (Kelly & Nichols, 2019). In some states, a central barrier to officer decertification is the exclusion of community oversight from decertification

review processes. Some decertification hearing panels do not include members of communities directly affected by police misconduct. In addition, some states will not launch a decertification investigation unless the police department notifies the decertification agency that a case of officer misconduct is under review (CCJ Task Force on Policing, 2021a). Launching investigations solely based on departmental reports of officer misconduct can result in low rates of officer decertification because of underreporting of incidents. This is especially pertinent in states where there are little to no consequences for police departments that fail to report decertifiable conduct (Goldman, 2012).

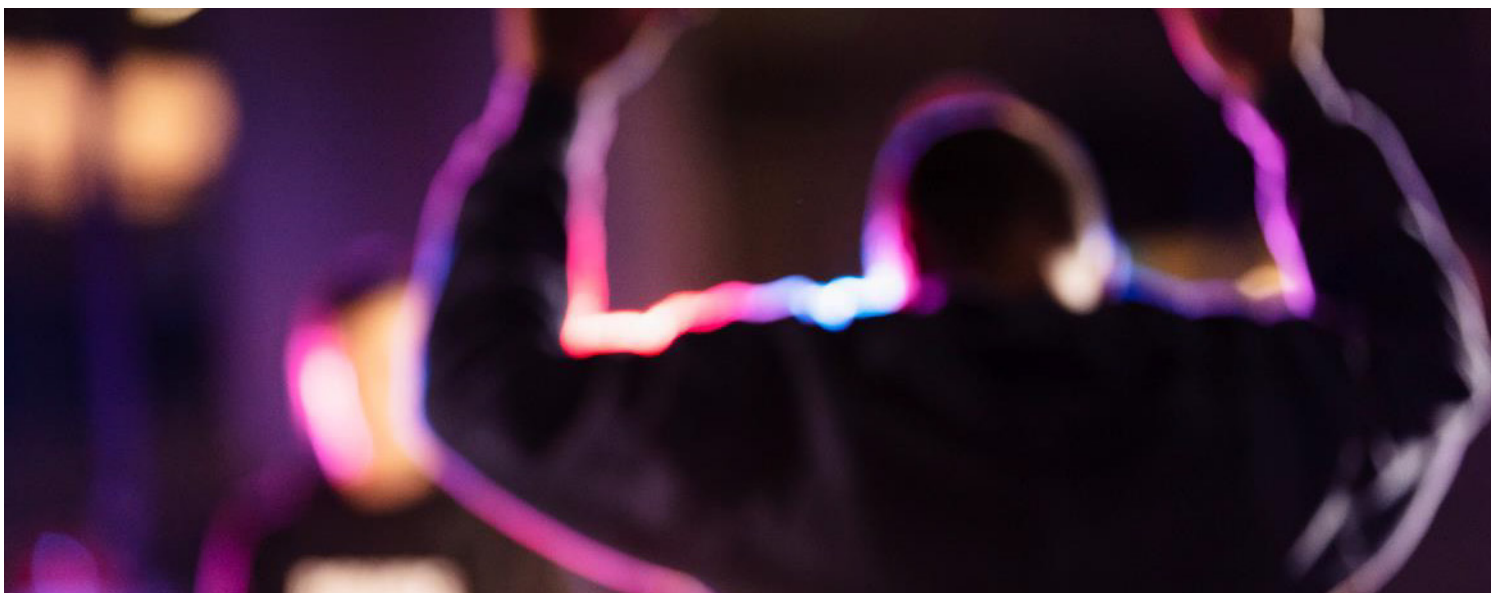
The lack of transparent national data on police misconduct—including officer decertification, resignations, terminations, and use of force—poses an additional barrier to police accountability and to research integrity. Most states do not require police departments to report officer decertification at the state or federal level. As of 2021, just 13 states had developed statutes that require officer resignations, terminations, and/or misconduct to be reported to the state (Subramanian & Arzy, 2022). Only Indiana, Washington, and Massachusetts require reporting to the National Decertification Index (NDI), a voluntary national database of decertified officers (Subramanian & Arzy, 2022). Most NDI data are voluntarily submitted by state Peace Officer Standards and Training Commissions (James & Finklea, 2021). Given the absence of reliable and consistent data on officer decertification at the state level and the lack of mandatory reporting of officer decertification at the national level, NDI registries are missing pertinent data on officer decertification. Similarly, the databases on police use of force are lacking. The types and levels of use of force that police officers are required to document may differ across individual police agencies and, in many cases, police use of force records are incomplete (Alpert & Smith, 1999; Pate & Fridell, 1993). As a result, the specificity and rigor of the use of force data collected within individual police departments is often insufficient for research purposes (Alpert & Smith, 1999). In the absence of an official national police use of force database, researchers must rely upon unofficial databases such as Fatal Encounters, Mapping Police Violence, and Fatal Force by *The Washington Post* (Nix, 2023). While these are the most comprehensive publicly available use of force databases to date, each database classifies fatal use of force differently and, as such, can have varying answers to seemingly simple questions, such as “How many people are killed by the police each year?” (Nix, 2023, p. 2). In addition, since these databases only capture fatal use of force, there is currently no comprehensive database that encompasses non-fatal use of force incidents—including officer-involved shootings—that do not result in death (Nix, 2023). This suggests that our knowledge of police use of force incidents and assessment of the effectiveness of use of force interventions are severely limited by the lack of transparent, comprehensive data.

The lack of transparent national police misconduct data can perpetuate violence. Officers who are terminated in one state may get hired within another state; this is known as the

wandering officer phenomenon (Grunwald & Rappaport, 2020). Wandering officers are especially likely to be hired within small police departments that are under-resourced and lack the infrastructure to conduct background checks (Grunwald & Rappaport, 2020). Even in cases where background checks are conducted, the lack of comprehensive police misconduct data—as well as short statutes of limitations for misconduct charges—can make it difficult to identify problem officers. Data indicate that there are as many as 1,100 wandering officers each year in Florida, which represents 3% of the state’s total police population (James & Finklea, 2021).

Wandering officers are more likely than officers who have never been fired to receive complaints for “moral character violations” and to be fired from their next job (Grunwald & Rappaport, 2020, p. 1687). Officers with previous histories of police misconduct are also more likely to engage in future misconduct (Pogarsky & Piquero, 2004). For example, in 2014, 12-year-old Tamir Rice was killed by Timothy Loehmann, a wandering officer in Cleveland, Ohio (Grunwald, 2020, p. 1680). Loehmann was allowed to resign from his former police department in Independence, Ohio after demonstrating a “dangerous loss of composure” during firearms training (Dewan & Oppel Jr., 2015). Since Loehmann was neither fired nor decertified, his impulsive behaviors were solely documented in his personnel files.

The Cleveland Police Department did not review Loehmann’s personnel files during the hiring process, resulting in the fatal and tragic loss of a young Black boy. Thus, data transparency and thorough screening during the hiring process are essential to preventing wandering officers from invoking further harm to communities affected by police violence.

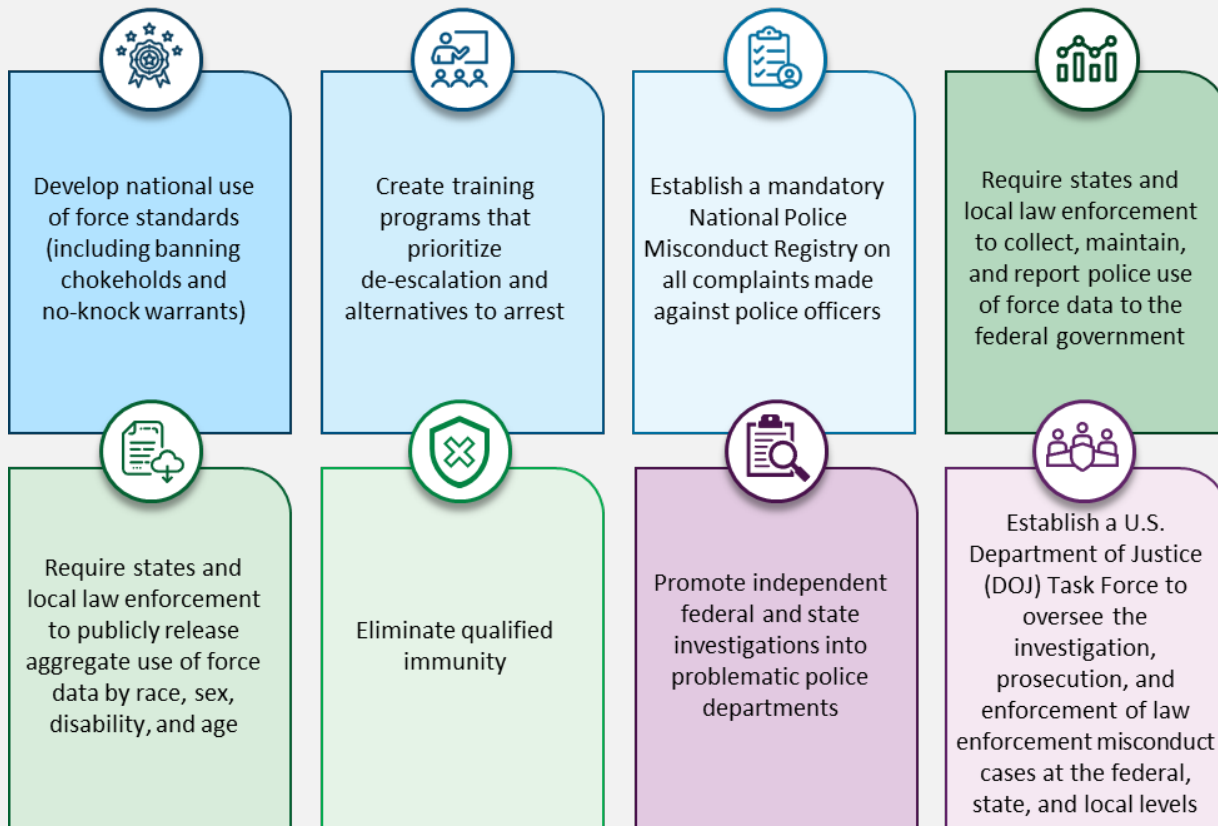


Solutions to Address Police Use of Force

For decades, despite reforms to police use of force policies and operations, police violence has permeated low-income BIPOC communities with lasting effects on community health and well-being. While research suggests that some use of force interventions, such as BWCs and co-response teams, hold promise, evidence on the effectiveness of use of force reforms remains mixed at best. To enact the systemic change necessary to engender safe and thriving communities, the implementation of uncoordinated use of force policies are unlikely to sufficiently alter the culture of police violence in the United States.

In recent years, the federal government has recommended promising solutions to standardize use of force policies and to advance police accountability and data transparency on a national scale. The Final Report of the President’s Task Force for 21st Century Policing (2015) and the George Floyd Justice in Policing Act (2021) entail a series of recommended reforms to police use of force policies and operations, data collection and reporting, and federal oversight of police departments (see Exhibit 4).

Exhibit 4. Federal Recommendations for National Level Use of Force Reform



To incentivize the coordinated implementation of the proposed reforms, the federal government has proposed to condition grants on state and local law enforcement agencies' adherence to the national use of force standards. Together, many of the proposed reforms—such as federal oversight of police department operations, tying federal funding to department performance, and the mandated reporting of all civilian complaints—have the potential to standardize police use of force operations, improve research on police use of force, promote accountability and transparency, and reduce harm within communities directly affected by police misconduct. In particular, the development of a national police use of force database would help to advance evidence-based research on the effectiveness of police use of force policies and interventions, track wandering officers, and right size the policing force to address the needs of affected communities.

AIR aims to contribute to the burgeoning discussion on police use of force data by providing concrete recommendations on what data to collect and report at the aggregate level. We believe that the U.S. Department of Education's National Center for Education Statistics (NCES) serves as an exemplar for how comprehensive national data can advance research and policy to improve the lives of youth, families, and communities. NCES is mandated to "collect, analyze, and report complete statistics on the condition of American education," and fulfills this mandate through the implementation of various elementary, secondary, and post-secondary data collection initiatives in addition to providing grants and technical assistance through its Statewide Longitudinal Systems Grant Program to facilitate the "design and implementation of statewide longitudinal data systems" (NCES, n.d.). Although the FBI supports a similar initiative for police use of force data—the National Use-of-Force Data Collection (NUFCD)—it is limited with respect to the types of incidents reported (strictly incidents with a fatality or where lethal force is used), current participation rates (roughly 60%) that preclude the reporting of aggregate use of force data until at least 80% of sworn officers are represented in the data, and the lack of information about officer misconduct. To improve upon the existing infrastructure of the NUFCD and to facilitate community oversight, we recommend the provision of additional resources to federal, state, and local law enforcement to fund the development of mandated longitudinal data systems that would encompass a broader range of use of force incidents, including much more prevalent non-lethal forms of police use of force. In addition, we recommend additional contextual data be collected for use of force incidents including if and how the officer attempted to de-escalate the event prior to using force, if the officer was wearing a body camera during the incident, and summary results of any internal affairs investigation associated with the incident. Finally, these data should be made publicly available in aggregate format, or via another appropriate data disclosure mitigation strategy, to enable community oversight and accountability.

The development of a national comprehensive database on police misconduct is critical to combating the “wandering officer” problem and to advancing research on police misconduct. As with the NCES data, the field of education already has a resource for school administrators to consult to verify the qualifications and eligibility of teachers they are considering hiring: the National Association of State Directors of Teacher Education and Certification (NASDTEC). The NASDTEC is widely adopted across the United States and provides data to educational institutions about actions taken against an educator’s certifications because of misconduct. In the development of a National Police Misconduct Registry, AIR recommends emulating and expanding upon the approach taken by the NASDTEC. Specifically, the registry should include information on all citizen complaints against officers, including contextual information about the incident that precipitated the complaint and department actions taken as a result. In addition to making these data publicly available in aggregated format (e.g., by state), these data should also be made available to researchers in disaggregated format to further our understanding of the causes and consequences of police misconduct. Naturally, disaggregated data come with significant concerns for the privacy and confidentiality of the citizens and officers included in these complaints. However, the federal government has existing protocols in place to provide researchers with sensitive data through its Federal Statistical Research Data Centers (FSRDC) program. Within these centers, researchers have access to highly sensitive person-level Census Bureau data but only under strict data security protocols where access is contingent upon successfully passing a federal background check. If data from the National Police Misconduct Registry were made available within FSRDC, this would allow for critical research to better understand police misconduct and would simultaneously protect the privacy of officers and citizens included in misconduct claims.



To prevent police violence, it is also imperative to reduce the footprint of policing in alignment with the specific interests and needs of over-policed communities. This can be done by investing in interventions that honor the specific needs of community, such as substance use support, job training, education, mentorship, behavioral health treatment, trauma-informed services, and crisis interventions. To reduce criminal legal contact and support community pathways to thriving, cities nationwide are adopting community-based violence and crime interruption models like READI Chicago, CURE Violence, diversion programs, and Credible Messengers as well as alternative crisis response teams, such as Crisis Assistance Helping Out on the Streets (CAHOOTS) and the Mobile Assistance Community Responders of Oakland (MACRO). However, policy makers and evaluators rarely integrate efforts to address the interests and needs of community with efforts to curb inappropriate police use of force. Ultimately, it will take intentional and collaborative efforts between government, researchers, evaluators, technical assistance advisors, practitioners, and community to achieve systemic changes to police violence in the United States. AIR is committed to partnering with diverse national constituents to generate and use rigorous evidence to support safer, thriving communities.

References

- Alpert, G. P., & Smith, M. R. (1999). Police use-of-force data: Where we are and where we should be going. *Police Quarterly*, 2(1), 57–78. <https://doi.org/10.1177/109861119900200103>
- Alpert, G. P., & Walker, S. (2000). Police accountability and early warning systems: Developing policies and programs. *Justice Research and Policy*, 2(2), 59–72. <https://doi.org/10.3818/JRP.2.2.2000.59>
- Ang, D. (2020). The effects of police violence on inner-city students*. *The Quarterly Journal of Economics*, 136(1), 115–168. <https://doi.org/10.1093/qje/qjaa027>
- Ariel, B., Farrar, W. A., & Sutherland, A. (2015). The effect of police body-worn cameras on use of force and citizens' complaints against the police: A randomized controlled trial. *Journal of Quantitative Criminology*, 31(3), 509–535. <https://psycnet.apa.org/doi/10.1007/s10940-014-9236-3>
- Baude, W. (2018). Is qualified immunity unlawful? *California Law Review*, 106(1), 45–90.
- Bhatt, M. P., Heller, S. B., Kapustin, M., Bertrand, M., & Blattman, C. (2023). *Predicting and preventing gun violence: An experimental evaluation of READI Chicago* (Working Paper No. 30852). National Bureau of Economic Research. <https://doi.org/10.1093/qje/qjad031>
- Bloom, R. M., & Labovich, N. (2021). The challenge of deterring bad police behavior: Implementing reforms that hold police accountable. *Case Western Reserve Law Review*, 71(3), 924–985.
- Bor, J., Venkataramani, A. S., Williams, D. R., & Tsai, A. C. (2018). Police killings and their spillover effects on the mental health of black Americans: A population-based, quasi-experimental study. *The Lancet*, 392(10144), 302–310. [https://doi.org/10.1016/S0140-6736\(18\)31130-9](https://doi.org/10.1016/S0140-6736(18)31130-9)
- Boxer, P., Brunson, R. K., Gaylord-Harden, N., Kahn, K., Patton, D. U., Richardson, J., Rivera, L. M., Smith Lee, J. R., Staller, M. S., Krahé, B., Dubow, E. F., Parrott, D., & Algrim, K. (2021). Addressing the inappropriate use of force by police in the United States and beyond: A behavioral and social science perspective. *Aggressive Behavior*, 47(5), 502–512. <https://doi.org/10.1002/ab.21970>
- Braga, A. A., MacDonald, J. M., & McCabe, J. (2022). Body-worn cameras, lawful police stops, and NYPD officer compliance: A cluster randomized controlled trial*. *Criminology*, 60(1), 124–158. <https://doi.org/10.1111/1745-9125.12293>
- Braga, A. A., Sousa, W. H., Coldren, J. R., & Rodriguez, D. (2018). The effects of body-worn cameras on police activity and police-citizen encounters: A randomized controlled trial. *Journal of Criminal Law & Criminology*, 108(3), 511–538. <http://www.webofscience.com/wos/woscc/full-record/WOS:000434956100003>
- Campaign Zero. (2022). End qualified immunity: Research basis.
- CCJ Task Force on Policing. (2021a). *Decertification: Policy assessment*. <https://assets.foleon.com/eu-west-2/uploads-7e3kk3/41697/decertification.d1229f8ea972.pdf>
- CCJ Task Force on Policing. (2021b). *Implicit bias training: Policy assessment*. https://assets.foleon.com/eu-central-1/de-uploads-7e3kk3/41697/implicit_bias.524b7c301e55.pdf
- Community Oriented Policing Services. (n.d.). *Community policing development: De-escalation training solicitation*. <https://cops.usdoj.gov/de-escalation#:~:text=De%20Descalation%20refers%20to%20the,or%20injury%20and%20to%20ensure>
- Credible Messenger Justice Center. (n.d.). A whole justice approach. <https://cmjcenter.org/approach/>
- Cubukcu, S., Sahin, N., Tekin, E., & Topalli, V. (2023). The effect of body-worn cameras on the adjudication of citizen complaints of police misconduct. *Justice Quarterly*, <https://www.tandfonline.com/doi/full/10.1080/07418825.2023.2222789>
- Dewan, S., & Oppel Jr., R. A. (2015, January 22). In Tamir Rice case, many errors by Cleveland Police, then a fatal one. *New York Times*. <https://www.nytimes.com/2015/01/23/us/in-tamir-rice-shooting-in-cleveland-many-errors-by-police-then-a-fatal-one.html>
- Engel, R. S., McManus, H. D., & Herold, T. D. (2020). Does de-escalation training work?: A systematic review and call for evidence in police use-of-force reform. *Criminology & Public Policy*, 19(3), 721–759. <https://doi.org/10.1111/1745-9133.12467>

- Everytown Research & Policy. (2023). *Which states limit qualified immunity for police officers?* <https://everytownresearch.org/rankings/law/qualified-immunity-limited/>
- Fisk, C., & Richardson, L. S. (2017). Police unions. *The George Washington Law Review*, 85(3), 712–799.
- Galovski, T. E., Peterson, Z. D., Beagley, M. C., Strasshofer, D. R., Held, P., & Fletcher, T. D. (2016). Exposure to violence during Ferguson protests: Mental health effects for law enforcement and community members. *Journal of Traumatic Stress*, 29(4), 283–292. <https://doi.org/10.1002/jts.22105>
- Garrett, B. L. (2023). *The laws that regulate police: The Wilson Center's policing legislation database*. Wilson Center for Science and Justice at Duke Law. <https://wcsj.law.duke.edu/wp-content/uploads/2023/05/Policing-Database-Report-May-2023.pdf>
- Goh, L. S. (2021). Did de-escalation successfully reduce serious use of force in Camden County, New Jersey? A synthetic control analysis of force outcomes. *Criminology & Public Policy*, 20(2), 207–241. <https://doi.org/10.1111/1745-9133.12536>.
- Goldman, R. L. (2012). A model decertification law. *Saint Louis University Public Law Review*, 32(1), 147–156.
- Grunwald, B., & Rappaport, J. (2020). The wandering officer. *Yale Law Journal*, 129, 1676–1782.
- Gullion, C. L., & King, W. R. (2020). Early intervention systems for police: A state-of-the-art review. *Policing: An International Journal*, 43(4), 643–658. <https://doi.org/10.1108/PIJPSM-02-2020-0027>
- Heinze, J. E., Reischl, T. M., Bai, M., Roche, J. S., Morrel-Samuels, S., Cunningham, R. M., & Zimmerman, M. A. (2016). A comprehensive prevention approach to reducing assault offenses and assault injuries among youth. *Prevention Science*, 17, 167–176. <https://doi.org/10.1007/s11121-015-0616-1>
- Hickman, M. J. (2006). *Citizen complaints about police use of force*. U.S. Department of Justice, Office of Justice Programs, Bureau of Justice Statistics.
- Hunsinger, M., Christopher, M., & Schmidt, A. M. (2019). Mindfulness training, implicit bias, and force response decision-making. *Mindfulness*, 10(12), 2555–2566. <https://doi.org/10.1007/s12671-019-01213-8>
- James, N., & Finklea, K. (2021). *Proposals for systems of records on decertified officers and police misconduct*. Congressional Research Service. <https://sgp.fas.org/crs/misc/IF11585.pdf>
- Kelly, J., & Nichols, M. (2019, April 24). Search the list of more than 30,000 police officers banned by 44 states. *USA Today*. <https://www.usatoday.com/in-depth/news/investigations/2019/04/24/biggest-collection-police-accountability-records-ever-assembled/2299127002/>
- Kisela v. Hughes, 1148 (138 S.Ct. 2018).
- Klahm, C., Frank, J., & Liederbach, J. (2014). Understanding police use of force: Rethinking the link between conceptualization and measurement. *Policing: An International Journal of Police Strategies and Management*, 37. <https://doi.org/10.1108/PIJPSM-08-2013-0079>
- Lai, C. K., & Lisnek, J. A. (2023). The impact of implicit-bias-oriented diversity training on police officers' beliefs, motivations, and actions. *Psychological Science*, 34(4), 424–434. <https://doi.org/10.1177/09567976221150617>
- Levinson, R. (2017, January 13). Special report: Police union contracts offer shield of protection. *Reuters*. <https://www.reuters.com/investigates/special-report/usa-police-unions/#:~:text=The%20episode%20is%20a%20telling,to%20residents%20complaining%20of%20abuse>.
- Lum, C., Stoltz, M., Koper, C. S., & Scherer, J. A. (2019). Research on body-worn cameras: What we know, what we need to know. *Criminology & Public Policy*, 18(1), 93–118. <https://doi.org/10.1111/1745-9133.12412>
- Mapping Police Violence. (2022). *Police violence database* [dataset]. https://mappingpoliceviolence.org/?gclid=CjwKCAjw4P6oBhBsEiwAKYVvkq4T3WljkGP0B2AXXG-kRSQok1phlBV5X_IHgeFr8LvEqg5fpmUWdQRoCxGAQAvD_BwE
- Mims Crocker, K. (2019). Qualified immunity and constitutional structure. *Michigan Law Review*, 117.7, 1405. <https://doi.org/10.36644/mlr.117.7.qualified>
- Moore, K. M. (2020). For civilian review boards to work, they must avoid past mistakes. ACLU Connecticut. <https://www.acluct.org/en/news/civilian-review-boards-work-they-must-avoid-past-mistakes>
- National Center for Education Statistics (NCES). (n.d.). *About NCES*. National Center for Education Statistics. <https://nces.ed.gov/about/>.

- National Conference of State Legislatures (NCSL). (2021a). *Qualified immunity*. <https://www.ncsl.org/civil-and-criminal-justice/qualified-immunity#:~:text=If%20qualified%20immunity%20a%20money,government%20entity%20virtually%20always%20pays.>
- National Conference of State Legislatures (NCSL). (2021b). *Use of force standards database*. <https://www.ncsl.org/civil-and-criminal-justice/use-of-force-standards-database>
- National Conference of State Legislatures (NCSL). (2022). *Community oversight*. <https://www.ncsl.org/civil-and-criminal-justice/community-oversight>
- National Institute of Justice (NIJ). (2020, March 5). *Overview of Police Use of Force*. <https://nij.ojp.gov/topics/articles/overview-police-use-force#:~:text=Law%20enforcement%20officers%20should%20use,lethal%20force%2C%20and%20lethal%20force.>
- Nix, J. (2023, April 21). Making sense of unofficial deadly force data. *Police Chief Online*. <https://www.policechiefmagazine.org/making-sense-unofficial-deadly-force-data/?ref=dd6d9e004336b9e1d94421a8c6d2ef85>
- Nowacki, J. S. (2015). Organizational-level police discretion: An application for police use of lethal force. *Crime & Delinquency*, 61(5), 643–668. <https://doi.org/10.1177/0011128711421857>
- Obasogie, O. K., & Newman, Z. (2017). Police violence, use of force policies, and public health. *American Journal of Law & Medicine*, 43(2–3), 279–295. <https://doi.org/10.1177/0098858817723665>
- Pate, A., & Fridell, L. (1993). Police use of force: Official reports, citizen complaints, and legal consequences. *The Police Foundation*, 1.
- Peterson, B. E., & Lawrence, D. S. (2021). Do the effects of police body-worn cameras on use of force and complaints change over time? Results from a panel analysis in the Milwaukee Police Department. *Criminal Justice and Behavior*, 48(6), 734–754. <https://doi.org/10.1177/0093854820970583>
- Peterson, J., Densley, J., & Erickson, G. (2020). Evaluation of ‘the R-Model’ crisis intervention de-escalation training for law enforcement. *The Police Journal: Theory, Practice and Principles*, 93(4), 271–289. <https://doi.org/10.1177/0032258X19864997>
- Pogarsky, G., & Piquero, A. R. (2004). Studying the reach of deterrence: Can deterrence theory help explain police misconduct? *Journal of Criminal Justice*, 32(4), 371–386. <https://doi.org/10.1016/j.jcrimjus.2004.04.007>
- President’s Task Force on 21st Century Policing. (2015). *Final report of the President’s Task Force on 21st Century Policing*. Office of Community Oriented Policing Services.
- Prohibited law enforcement action in response to protests, 24-31-905 (2020). <https://casetext.com/statute/colorado-revised-statutes/title-24-government-state/principal-departments/article-31-department-of-law/part-9-law-enforcement-integrity/section-24-31-905-prohibited-law-enforcement-action-in-response-to-protests>
- Reinert, A., Schwartz, J. C., & Pfander, J. E. (2021). New federalism and civil rights enforcement. *Northwestern University Law Review*, 116(3), 1–81.
- Russek, Z., & Fitzpatrick, D. (2021). *Early intervention systems*. University of Chicago Crime Labs. <https://urbanlabs.uchicago.edu/attachments/32d00780dcf1082f6b49c678f2afa838c9105f0c/store/b551dd26ecaa556d96398cc4b4d2ca48ce57165a1c8187b5fc0d0a2f87b0/EIS.pdf>
- Schwartz, J. C. (2020). Qualified immunity’s selection effects. *Northwestern University Law Review*, 114(5), 1101–1178.
- Sewell, A. A., Feldman, J. M., Ray, R., Gilbert, K. L., Jefferson, K. A., & Lee, H. (2020). Illness spillovers of lethal police violence: The significance of gendered marginalization. *Ethnic and Racial Studies*, 44(7), 1089–1114. <https://doi.org/10.1080/01419870.2020.1781913>
- Seo, C., Kim, B., & Kruis, N. E. (2021). Variation across police response models for handling encounters with people with mental illnesses: A systematic review and meta-analysis. *Journal of Criminal Justice*, 72, 101752. <https://doi.org/10.1016/j.jcrimjus.2020.101752>.
- Stinson, P. M., & Wentzlof, C. A. (2019). On-duty shootings: Police officers charged with murder or manslaughter. Bowling Green State University.
- Subramanian, R., & Arzy, L. (2021). *State policing reforms since George Floyd’s murder*. Brennan Center for Justice. <https://www.brennancenter.org/our-work/research-reports/state-policing-reforms-george-floyds-murder>
- Terrill, W., Paoline, E. A., & Ingram, J. (2011). Final technical report draft: Assessing police use of force.

The Washington Post. (2023). *Police Shootings Database* [dataset]. <https://www.washingtonpost.com/graphics/investigations/police-shootings-database/>

United States General Accounting Office. (1977). *Overview Of activities funded by the Law Enforcement Assistance Administration* (GGD-78-21). <https://www.gao.gov/assets/ggd-78-21.pdf>

Use of riot gear, chemical irritants, or less-lethal projectiles; reporting requirements, D.C. Code §5–331.16 (2020). [https://code.dccouncil.gov/us/dc/council/code/sections/5-331.16#:~:text=D.C.%20Law%20Library-%C2%A7%205%E2%80%93331.16.,tactics%20at%20First%20Amendment%20assemblies.&text=\(B\)%20May%20not%20be%20used,disperse%20a%20First%20Amendment%20assembly](https://code.dccouncil.gov/us/dc/council/code/sections/5-331.16#:~:text=D.C.%20Law%20Library-%C2%A7%205%E2%80%93331.16.,tactics%20at%20First%20Amendment%20assemblies.&text=(B)%20May%20not%20be%20used,disperse%20a%20First%20Amendment%20assembly)

Walker, S. (2001). Searching for the denominator: Problems with police traffic stop data and an early warning system solution. *Justice Research and Policy*, 3(1), 63–95. <https://doi.org/10.3818/JRP.3.1.2001.63>.

White, M. D., Gaub, J. E., & Padilla, K. E. (2019). Impacts of BWCs on use of force: Directory of outcomes. Retrieved September 22, 2023, from Bureau of Justice Assistance Body-Worn Camera Training and Technical Assistance website: <http://www.bwctta.com/resources/directories-outcomes>

Worden, R. E., McLean, S. J., Engel, R. S., Cochran, H., Corsaro, N., Reynolds, D., Najdowski, C. J., & Isaza, G. T. (2020). The impacts of implicit bias awareness training in the NYPD. *The John F. Finn Institute for Public Safety, Inc. and The Center for Police Research and Policy at the University of Cincinnati*.

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