

# HEALTH NOTE: Comprehensive Policing and Justice Reform Amendment Act of 2020 Bill 23-0882

## Council of the District of Columbia, Council Period 23

### Introduced by:

Councilmembers Allen, Cheh, Grosso, Nadeau, Silverman, R. White, Bonds, Gray, McDuffie, Pinto, Todd, T. White, and Chairman Mendelson

### Bill Summary:<sup>1</sup>

Establishes comprehensive policing and justice reform for District residents and visitors.

### Health Note Analysts:

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<https://www.pewtrusts.org/en/projects/health-impact-project><sup>2</sup>

### What is the goal of this health note?

Decisions made in sectors outside of public health and health care, such as in education, housing, and employment, can affect health and well-being. Health notes are intended to provide objective, nonpartisan information to help legislators understand the connections between these various sectors and health. This document provides summaries of evidence analyzed by the Health Impact Project at The Pew Charitable Trusts while creating a health note for Council of the District of Columbia Bill 23-0882. Health notes are not intended to make definitive or causal predictions about how a proposed bill will affect health and well-being of constituents. Rather, legislators can use a health note as one additional source of information to consider during policymaking. The analysis does not consider the fiscal impacts of this bill.

### How and why was this bill selected?

With the help of the Council of the District of Columbia's Office of the Budget Director, the Health Impact Project identified this bill as one of several important policy issues being considered by the Council during Council Period 23. The health note screening criteria were used to confirm the bill was appropriate for analysis. (See Methodology on page 8.) The project selected Bill 23-0882 for analysis because of its potential to affect the health and safety of residents who interface with law enforcement as well as the officers themselves. There is a strong evidence base linking violent encounters with police and effects on individual and community health.<sup>1</sup>

## SUMMARY OF HEALTH NOTE FINDINGS

There are approximately 18,000 local, county, state, and federal law enforcement agencies in the United States, staffed by more than 697,000 officers.<sup>2</sup> In 2018, an estimated 85,000 people were treated in emergency departments for nonfatal injuries from encounters with law enforcement officers.<sup>3</sup> Lifetime risk of being killed by police is greatest for Black men and women, American Indian/Alaska Native men and women, and Latino men as compared to their White counterparts.<sup>4</sup> In response to these and other concerning statistics, policymakers are exploring ways to improve interactions between law enforcement agencies and the public, reduce the risk of encounters that result in injury or death, and strengthen accountability. This review presents evidence, gathered through an expedited review of literature published in the past five years and earlier seminal research, on the potential effects of B23-0882 on determinants of health and health outcomes.

B23-0882 aims to “provide comprehensive policing and justice reform for District residents and visitors.”<sup>5</sup> This health note reviews the available evidence regarding potential health effects of seven components of the bill:

- Prohibiting the use of neck restraints.
- Improving access to body-worn camera (BWC) video recordings of fatalities resulting from the actions of law enforcement officers or serious use of force.
- Expanding continuing education.
- Use of force reforms.
- Restricting the purchase and use of military weaponry.

<sup>1</sup> Summary as described by the Council of the District of Columbia, <https://lims.dccouncil.us/Legislation/B23-0882>. The Health Impact Project conducted this health note based on the bill as introduced.

<sup>2</sup> The Health Impact Project is committed to conducting non-partisan research and analysis.

- Limiting the use of internationally banned chemical weapons, riot gear, and less-lethal projectiles.
- Enfranchising all eligible District residents incarcerated for felony convictions.

Below is a summary of key findings:

- The health effects from implementing policies to prohibit the use of neck restraints by law enforcement officers are **not well researched**. Studies have shown, however, that certain types of neck restraints can cause injury or death.<sup>6</sup> If implemented, the District of Columbia could evaluate the policy's effects on the health of residents and law enforcement officers.
- There is **strong evidence** that fatalities resulting from the actions of law enforcement officers and serious use of force incidents can negatively affect mental health of family members, communities, and officers, with Black communities disproportionately affected.<sup>7</sup> Exposure to videos of fatalities resulting from the actions of law enforcement officers can be traumatic for family and friends of the decedent and for the community at large, with implications for mental health and stress-related physiological responses.<sup>8</sup> Given the effects of these videos on mental health outcomes, consultation with experts in trauma and grief prior to the release of the footage could help viewers cope and manage these effects. However, exposure to videos of fatalities resulting from the actions of law enforcement officers and serious use of force incidents often occur through news and social media outlets, which police agencies cannot control.
- A primary goal of expanding the release of BWC video recordings is to increase transparency and accountability.<sup>9</sup> This review did not identify any studies specifically examining the relationship between changes in police accountability or transparency and health. Although the evidence regarding the effects of body worn cameras (BWCs) on officers' use of force, policing activities, and citizens' complaints is **mixed**, one national survey found that most respondents believed BWCs would increase police transparency and improve police-citizen relations.<sup>10</sup>
- There is a **fair amount of evidence** of short-term benefits of specific types of implicit bias training for law enforcement officers; however, the longer-term effects are **not well researched**.<sup>11</sup> Implicit biases can manifest in unequal treatment of individuals belonging to different demographic groups.<sup>12</sup> Experts suggest the importance of quality curricula and instruction, and reinforcing initial training as components of a jurisdiction's police reform efforts.<sup>13</sup>
- There is a **fair amount of evidence** that the adoption of strict policies on use of force tend to reduce police officers' use of physical coercion, with potential benefits for health by decreasing the risk of injury during encounters between police and the public.<sup>14</sup> The impacts of these policies on officer behavior vary based on implementation, adherence, accountability, and training.
- There is **strong evidence** that the use of chemical and projectile weapons, such as tear gas or rubber bullets, in crowd-control settings can cause significant injuries, permanent disabilities, and death.<sup>15</sup> To the extent that the bill results in a decreased use of these weapons, it could reduce the risk of negative health outcomes.
- Research for this analysis did not identify any studies specifically examining health effects from restoring people's right to vote. However, there is **strong evidence** that civic engagement, which includes voting, is positively associated with health, and there is a **fair amount of evidence** specifically documenting the association between voting and health outcomes including physical and mental health, health behaviors, and well-being.<sup>16</sup> One study also suggested a potential relationship between voting and lower rates of recidivism.<sup>17</sup>

## METHODS SUMMARY

To complete this health note, Health Impact Project staff conducted an expedited literature review using a systematic approach to minimize bias and identify recently published studies to answer each of the identified research questions. In this note, "health impacts" refer to effects on determinants of health, such

as education, employment, and housing, as well as effects on health outcomes, such as injury, asthma, chronic disease, and mental health. The strength of the evidence is qualitatively described and categorized as: not well researched, mixed evidence, a fair amount of evidence, strong evidence, or very strong evidence. It was beyond the scope of analysis to consider the fiscal impacts of this bill or the effects any funds dedicated to implementing the bill may have on other programs or initiatives in the state. To the extent that this bill requires funds to be shifted away from other purposes or would result in other initiatives not being funded, policymakers may want to consider additional research to understand the relative effect of devoting funds for this bill relative to another purpose. A detailed description of the methods is provided in Methodology Appendix on page 8.

## **WHY DO THESE FINDINGS MATTER FOR THE DISTRICT OF COLUMBIA?**

In 2018, there were 1,242 reported use of force incidents by the Metropolitan Police Department of the District of Columbia (MPD), an increase of 83% since 2015.<sup>18</sup> Fifty-five percent of these resulted in a reported injury to the subject. Although 48% of District residents are Black, 90% of all uses of force in 2018 involved Black citizens, and 14% of subjects were reportedly armed.<sup>19</sup>

## **WHAT ARE THE POTENTIAL HEALTH EFFECTS OF B23-0882?**

### **Effects of prohibiting the use of neck restraints**

- Research for this analysis did not identify any studies specifically examining the health effects of prohibiting the use of neck restraints by law enforcement officers. The research also did not identify any estimates of how frequently these restraints are used in police encounters.
- The intent of a vascular neck restraint is to cause temporary unconsciousness by restricting blood flow to the brain.<sup>20</sup> Restraints that compress the carotid arteries and jugular veins in the neck can result in severe hemorrhage or permanent injury, particularly if improperly applied or if the subject has an underlying health condition that makes the restraint more dangerous.<sup>21</sup> Striking the carotid sinus, also found in the neck, can even cause a fatal heart attack.<sup>22</sup> Therefore, to the extent that the bill results in a decreased use of these restraints, it could reduce the risk of negative health outcomes.

### **Effects of improving access to body-worn camera video recordings**

- In addition to the devastating consequence of loss of life, fatalities resulting from the actions of law enforcement officers and serious use of force incidents can harm the health of family members, communities, and officers. For example, research on the effects of these incidents on Black communities shows that witnessing excessive use of violence and exposure to videos of fatalities resulting from the actions of law enforcement officers can be traumatic for family and friends of the decedent and for the community at large, with implications for mental health and stress-related physiological responses.<sup>23</sup> These fatalities and injuries can also result in financial strain for households stemming from time away from paid work to grieve, funeral costs, and lost income due to disabilities or among family members of a decedent, with negative effects on health through, for example, changes in food or housing security.<sup>24</sup> And several longitudinal studies have documented the negative health effects for police officers from experiencing a traumatic incident at work, including higher likelihood of post-traumatic stress disorder.<sup>25</sup>
- Research for this analysis did not identify any studies examining the effects of policies to ensure BWC videos of fatalities resulting from the actions of law enforcement officers or serious use of force are released using best practices in trauma and grief. Given the evidence of triggering effects of these videos on mental health outcomes, consultation with experts in trauma and grief prior to

the release of the footage could help viewers cope and manage these effects. However, exposure to videos of these fatalities and serious use of force incidents often occur through traditional and social media, which police agencies cannot control. Evidence exists supporting the influence of media consumption on attitudes toward police legitimacy regarding use of force.<sup>26</sup> Studies also support the strong influence of social media and news organizations on public perceptions.<sup>27</sup>

- Expanding the release of BWC video recordings aims to increase transparency and accountability, decrease use of force and change officer and civilian behavior, as well as expedite resolution of complaints and lawsuits.<sup>28</sup> Evidence on BWCs' impact on police use of force, citizen complaints, policing activity, and judicial outcomes is mixed.
  - Several systematic reviews have reported on these topics, with some studies finding reductions in use of force and resident complaints, and, in neighborhoods of concentrated disadvantage, decreases in low-level citations—which can lead to debt or imprisonment if the subject is unable to pay—and “self-initiating” activities such as pedestrian and vehicle checks.<sup>29</sup> For example, one randomized control trial found that BWCs reduced complaints from outside of the police department by 65%; another non-randomized study found a reduction of 62%.<sup>30</sup> Other research, including a randomized control trial involving 2,224 MPD officers, found no discernable effects of implementation of BWCs on police use of force, citizen complaints, or policing activity.<sup>31</sup>
  - A 2015 national cross-sectional survey found that most respondents felt BWCs would help increase police transparency (91%), reduce excessive use of force (80%), improve police-citizen relationships (66%), and increase citizen trust in police (60%).<sup>32</sup> An average of only 36% of respondents thought that BWCs could decrease racial tension between the police and minority communities.<sup>33</sup> Black respondents communicated less optimism in terms of BWCs' potential effects on transparency and citizens' relationships with and trust in the police. Despite their awareness of the technology's limitations, 85% of all respondents were supportive of requiring BWCs.<sup>34</sup>
  - The evidence concerning the effects of BWC footage on observers' judgements of interactions between police and the public is also mixed.<sup>35</sup>
    - A 2019 experiment examined the effects of BWCs on mock jurors' judgments in a case in which a community member (defendant) was charged with resisting arrest, but where the officer's use of force in conducting the arrest was controversial. When participants viewed BWC footage of the arrest, compared with when footage was transcribed or absent, they were less likely to vote the defendant guilty of resisting arrest, and also rated the officer's use of force less justifiable, and the officer more at fault and less credible.<sup>36</sup>
    - Conversely, a 2018 study used an experimental approach with nearly 400 publicly available police videos to compare variations in observers' judgement when witnessing the same police-public encounter via BWC or dashboard camera footage. The findings suggested that jurors and the general public may be less likely to judge a body camera wearer's actions as intended to produce a specific outcome, such as injury or death, compared with dashboard camera videos.<sup>37</sup> Researchers hypothesize that this could occur because the observer sees and takes on the perspective of the person wearing the BWC.<sup>38</sup>
    - Furthermore, a 2019 study involving 627 participants found that BWC footage can lead people to perceive officers more favorably than when they view the same encounter from a camera perspective that includes both the officer and civilian.<sup>39</sup>

## **Effects of mandating and expanding continuing education**

- Researchers hypothesize that law enforcement officers' perception of Black citizens as "dangerous" is associated with disproportionate rates of force used against Black citizens; in other words, implicit biases could influence officer behavior, with potential risks to health for non-White Americans.<sup>40</sup> Studies have found that White officers are more coercive than Black officers towards Black individuals.<sup>41</sup>
- To address these disparities, implicit bias training has become more common in police departments across the U.S due to recommendations from the President's Task Force on 21<sup>st</sup> Century Policing, with the average training lasting about 5 hours. Although these trainings can show short-term reductions in implicit biases against racial and ethnic minorities, the evidence regarding long-term effects is inconclusive and suggests the importance of continuous training.<sup>42</sup>
  - Several reviews have identified promising practices in reducing implicit bias, at least in the short term. One meta-analysis examining 494 studies on change in implicit bias found that the most successful interventions "associate sets of concepts, invoke goals or motivations, or tax mental resources ... whereas procedures that induced threat, affirmation, or specific moods/emotions changed implicit bias the least." However, the authors found no evidence that changes to implicit bias result in behavior changes.<sup>43</sup>
  - A systematic review of 30 studies examining implicit bias interventions found that the most effective interventions involved intentional strategies to overcome biases, exposure to individuals from other races and ethnicities who counter common stereotypes, empathizing with the outgroup, building new associations, and provoking emotion.<sup>44</sup>
  - One randomized control trial that framed changing implicit biases as breaking a bad habit gave participants in the treatment group a set of strategies to choose from to combat their own implicit biases and asked them to report on their use over the course of two months. The study found a sustained reduction in Implicit Association Test scores among the treatment group over the duration of the test period, as well as greater self-reported awareness and concern about discrimination.<sup>45</sup>

## **Effects of use of force reforms**

- One study found that having strict policies on use of force tended to reduce police officers' use of physical coercion.<sup>46</sup> Given that more than half of the use of force incidents in D.C. resulted in injury in 2018, strategies that could reduce use of force could reduce the risk of injury during encounters between police and the public.<sup>47</sup>
- The effectiveness of these policies depends on implementation, adherence, accountability, and training. Although research is limited, there are increasing indications that de-escalation training may be one effective strategy to reduce the use of force.<sup>48</sup> One study that analyzed the New Orleans Police Department's efforts to comply with a federal consent decree found that changing policy and regulation was not sufficient to ensure compliance within the police department. They found that the following model for implementing organizational and cultural change was most effective: "frequently measure what you want to change; produce actionable, clear results; and hold leadership accountable for performance."<sup>49</sup>

## **Effects of limiting use of chemical weapons, riot gear, and projectiles and restricting the purchase and use of military weapons**

- This review examined the evidence around each of the following components separately: limiting or restricting the use of chemical weapons, riot gear, projectiles, and military weapons. It did not yield any studies that examined health effects resulting from policies that restrict the use of military weapons, chemical weapons, or projectiles. However, a strong body of research shows that

projectiles and exposure to chemical weapons, such as tear gas and pepper spray, can cause a range of negative health effects:

- Kinetic impact projectiles, such as rubber and plastic bullets, can cause significant negative health effects including: penetrative injuries; trauma to the head, neck, and torso; lacerations; long-term neurological effects; and death.<sup>50</sup> A systematic review of injuries, permanent disabilities, and deaths from projectiles in crowd-control settings worldwide over a 27-year period found that 71% of the total injuries were severe, and that 15.5% of survivors suffered permanent disabilities.
- Tear gas can cause skin irritation, eye pain, excessive secretion of tears, blepharospasm (uncontrollable eyelid movements, such as twitching), coughing, and chest tightness, among other effects.<sup>51</sup> Studies have also shown that exposure to high concentrations of tear gas can result in severe respiratory symptoms, cardiovascular and gastrointestinal effects, severe eye trauma, and permanent disabilities.<sup>52</sup>
- A systematic review that examined injuries, permanent disabilities, and deaths from chemical irritants worldwide over a 25-year period found that, among nearly 6,000 people who were exposed to irritants such as tear gas and pepper spray, 87% suffered injuries or died as a result of the exposure.<sup>53</sup> Of these injuries, 8.7% were severe, 17% were moderate, and 74.3% were minor.
- Stun grenades, also known as flashbang grenades, are usually considered a non-lethal device used to distract occupants of a building before law enforcement officers enter. However, a ProPublica investigation found that 50 Americans, including police officers, have been seriously injured or killed by stun grenades between 2000 and 2014.<sup>54</sup>
- Evidence from two systematic reviews suggests that chemical weapons and projectiles can be used inappropriately in crowd-control settings.<sup>55</sup> For example, a systematic review concluded that deployment of kinetic impact projectiles, such as rubber and plastic bullets, may occur in crowds at distances much closer than deemed “safe.”<sup>56</sup>
- Research also suggests that Special Weapons and Tactics (SWAT) units are increasingly using military style weaponry to search people’s homes rather than their original purpose to handle hostage and active shooter situations.<sup>57</sup> A report by the American Civil Liberties Union that analyzed 800 SWAT deployments conducted by 20 law enforcement agencies across the U.S. from 2011 to 2012 found that 79% percent of the events involved executing a search warrant at a person’s home, and 60% involved drug searches.<sup>58</sup> Only 7% of the SWAT deployments examined involved hostage, barricade, or active shooter situations.<sup>59</sup> Their analysis also found that at least 54% of the people targeted for searched executed by SWAT teams were either Black or Latinx.<sup>60</sup>
- Research for this health note did not yield any studies specifically examining the health effects of riot gear or of limiting the use of riot gear.

### **Effects of restoring the right to vote**

- Research for this analysis did not identify any studies specifically examining health effects from restoring people’s right to vote. However, research among the general population shows that voting and other forms of civic engagement are positively associated with health outcomes including physical and mental health, health behaviors, and well-being.<sup>61</sup>
- One study of 1,000 youth followed longitudinally examined political participation in the 1996 election and subsequent criminal behavior. This study suggested a potential relationship between voting and lower rates of recidivism. Specifically, those who vote were less likely to be arrested and incarcerated, and less likely to report committing certain crimes such as violent offenses.<sup>62</sup> The study also showed consistently lower rates of subsequent arrest, incarceration, and self-reported criminal behavior among voters as compared to nonvoters, though the relationship between voting and subsequent arrest did not appear to depend on criminal history.<sup>63</sup>

## **WHICH POPULATIONS ARE MOST LIKELY TO BE AFFECTED BY THIS BILL?**

Research shows that Black Americans are more likely than Whites to experience an injury related to a police intervention and to be killed by police officers.<sup>64</sup> One estimate suggested that Black residents accounted for 86% of arrestees in Washington, D.C. between 2013 and 2017, but represented 47% of the population.<sup>65</sup> Although there is limited research on the relationship between negative police encounters and health outcomes, the available evidence shows that Black and Latino men who report more frequent police encounters report higher rates of trauma and anxiety and that, among Black men, experiencing frequent, discriminatory law enforcement encounters is associated with higher depressive symptom scores.<sup>66</sup>

Coercive policing and negative police encounters tend to be geographically concentrated in predominately Black and Latino neighborhoods.<sup>67</sup> One study showed that the level of racial residential segregation was a strong and positive correlate of the Black and White disparity in fatal police shooting rates.<sup>68</sup> A growing body of evidence shows the negative effects of frequent interactions with police or living in over-policed neighborhoods on mental health, resulting in trauma and anxiety symptoms.<sup>69</sup> One study found a significant negative association between having been stopped and subjected to a physical search by the police and self-reported thriving, similar to thriving rates reported by those who have been incarcerated multiple times.<sup>70</sup> These findings demonstrate how even lower-intensity interactions with the criminal justice system can be significantly associated with lower self-reported conditions of well-being.<sup>71</sup> Insofar as the provisions of this bill result in a reduction of use of force or over-policing in D.C. communities of color, families of color — particularly Black and Latino young men — could experience mental health benefits.

The use of chemical weapons could have negative health impacts for medically vulnerable populations. Research suggests that children, seniors, and individuals with underlying respiratory, skin, and cardiovascular illnesses are at greater risk for negative health effects from exposure to chemical weapons such as tear gas.<sup>72</sup>

## **HOW LARGE MIGHT THE IMPACT BE?**

Where possible, the Health Impact Project describes how large the impact may be based on the bill language and literature, such as describing the size, extent, and population distribution of an effect. In 2018 in D.C., two citizens were fatally injured by police officers and the Use of Force Review Board determined that 10 allegations, or 37%, of all excessive force allegations, were supported by the evidence.<sup>73</sup> Under the emergency police reform legislation, the D.C. Board of Elections has mailed ballots to 2,400 residents serving prison sentences for felony convictions.<sup>74</sup>

It was beyond the scope of this analysis to consider the fiscal impacts of this bill or the effects any funds dedicated to implementing the bill may have on other programs or initiatives in the District. To the extent that this bill requires funds to be shifted away from other purposes or would result in other initiatives not being funded, policymakers may want to consider additional research to understand the relative effect of devoting funds for this policy relative to another purpose.

## APPENDIX: METHODOLOGY

Once the bill was selected, a research team from the Health Impact Project hypothesized connections, or pathways, between the bill, health determinants, and health outcomes. These hypothesized pathways were developed using research team expertise and a preliminary review of the literature. The selected bill components were mapped to steps on these pathways and the team developed research questions and a list of keywords to search. The research team reached consensus on the final conceptual model, research questions, contextual background questions, keywords, and keyword combinations. The conceptual model, research questions, search terms, list of literature sources, and draft health note were peer-reviewed by two external subject matter experts. The experts also reviewed a draft of the health note. A copy of the conceptual model is available upon request.

The Health Impact Project developed and prioritized 15 research questions related to the bill components examined:

- To what extent does prohibiting police use of neck restraints affect use of force?
- To what extent does access to BWCs affect police use of force?
- To what extent does access to BWCs affect the number of citations or arrests?
- To what extent does consideration of trauma and grief effects in advance of release of BWCs affect health outcomes?
- To what extent does access to BWCs affect health outcomes?
- To what extent does restricting use of military weapons affect health outcomes?
- To what extent does restricting use of riot gear affect health outcomes?
- To what extent does restricting use of chemical weapons affect health outcomes?
- To what extent does restricting use of less-lethal projectiles affect health outcomes?
- To what extent does police training on bias, racism, and white supremacy affect use of force in interactions between the police and racial and ethnic minorities?
- To what extent does allowing incarcerated individuals to vote affect their self-reported physical and mental health?
- To what extent does allowing incarcerated individuals to vote affect their feeling of disenfranchisement?
- To what extent does allowing incarcerated individuals to vote strengthen their social ties and connections to the broader society?
- To what extent do police reform efforts affect chronic stress among racial and ethnic minorities?
- To what extent is police/community cooperation improved when use of force is reduced?

The research team next conducted an expedited literature review using a systematic approach to minimize bias and answer each of the identified research questions.<sup>c</sup> The team limited the search to systematic reviews and meta-analyses of studies first, since they provide analyses of multiple studies or address multiple research questions. If no appropriate systematic reviews or meta-analyses were found for a specific question, the team searched for nonsystematic research reviews, original articles, and research reports from U.S. agencies and nonpartisan organizations. The team limited the search to electronically available sources published between September 2015 and September 2020.

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<sup>c</sup> Expedited reviews streamline traditional literature review methods to synthesize evidence within a shortened timeframe. Prior research has demonstrated that conclusions of a rapid review versus a full systematic review did not vary greatly. M.M. Haby et al., "What Are the Best Methodologies for Rapid Reviews of the Research Evidence for Evidence-Informed Decision Making in Health Policy and Practice: A Rapid Review," *Health Research Policy and Systems* 14, no. 1 (2016): 83, <https://doi.org/10.1186/s12961-016-0155-7>.



The research team searched PubMed and EBSCO databases along with the following leading journals in public health, as well as sector-specific journals suggested by subject matter experts for this analysis (e.g., criminology and policing) to explore each research question: American Journal of Public Health, Social Science & Medicine, Health Affairs, Criminology, The Police Journal, Policing: A Journal of Policy and Practice, and Police Quarterly.<sup>d</sup> For all searches, the team used the following search terms: police, prohibit neck restraints, use of force, police body cameras, citations, arrests, accountability, trauma, grief, police body camera footage, restrict military weapons or chemical weapons or projectiles, incarceration, voting, connect\*, social, police training, racism, police transparency, community trust, health, injury, and disability. The team also searched ACLU, Brookings Institution, Center for Policing Equity, U.S. Department of Justice, Urban Institute, and The Sentencing Project for additional research and resources outside of the peer-reviewed literature.

After following the above protocol, the team screened 476 titles and abstracts,<sup>e</sup> identified 98 abstracts for potential inclusion, and reviewed the full text corresponding to each of these abstracts. After applying the inclusion criteria, 44 articles were excluded. Five additional sources were incorporated based on feedback from the expert reviewers, and 25 additional sources were identified upon review of the included articles. A final sample of 30 articles, including 2 meta-analyses and 4 systematic reviews, was used to create the health note. In addition, the team used 32 references to provide contextual information.

Of the studies included, the Health Impact Project qualitatively described and categorized the strength of the evidence as: not well researched, a fair amount of evidence, strong evidence, or very strong evidence. The evidence categories were adapted from a similar approach from Washington state.<sup>75</sup>

**Very strong evidence:** the literature review yielded robust evidence supporting a causal relationship with few if any contradictory findings. The evidence indicates that the scientific community largely accepts the existence of the relationship.

**Strong evidence:** the literature review yielded a large body of evidence on the association, but the body of evidence contained some contradictory findings or studies that did not incorporate the most robust study designs or execution or had a higher than average risk of bias; or some combination of those factors.

**A fair amount of evidence:** the literature review yielded several studies supporting the association, but a large body of evidence was not established; or the review yielded a large body of evidence but findings were inconsistent with only a slightly larger percent of the studies supporting the association; or the research did not incorporate the most robust study designs or execution or had a higher than average risk of bias.

**Mixed evidence:** the literature review yielded several studies with contradictory findings regarding the association.

**Not well researched:** the literature review yielded few if any studies, or yielded studies that were poorly designed or executed or had high risk of bias.

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<sup>d</sup> American Journal of Public Health, Social Science & Medicine, and Health Affairs were selected using results from a statistical analysis completed to determine the leading health research journals between 1990 and 2014 and in consultation with policing and criminal justice experts. Merigó, José M., and Alicia Núñez. "Influential Journals in Health Research: A Bibliometric Study." *Globalization and Health* 12.1 (2016), <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4994291/>.

<sup>e</sup> Many of the searches produced duplicate articles. The number of sources screened does not account for duplication across searches in different databases.

## EXPERT REVIEWERS

This document benefited from the insights and expertise of Dr. Sheldon Greenberg, Deputy Director of the National Criminal Justice Technology Research, Test & Evaluation Center at the Johns Hopkins University School of Education and Dr. William Terrill, Associate Dean of the Watts College of Public Service and Community Solutions and Professor in the School of Criminology and Criminal Justice at Arizona State University. Although they reviewed the note and found the approach to be sound, neither they nor their organizations necessarily endorse its findings or conclusions.

## ACKNOWLEDGEMENTS

The Health Impact Project thanks the Council of the District of Columbia's Office of the Budget Director and Jeff Hild at the George Washington University's Sumner M. Redstone Global Center for Prevention and Wellness for providing insights into the policy context of B23-0882.

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<sup>1</sup> A.A. Sewell and K.A. Jefferson, "Collateral Damage: The Health Effects of Invasive Police Encounters in New York City," *Journal of Urban Health : Bulletin of the New York Academy of Medicine* 93, no. Suppl 1 (2016): 42-67, <https://pubmed.ncbi.nlm.nih.gov/26780583>.

<sup>2</sup> E. Duffin, Number of Full-Time Law Enforcement Officers in the United States from 2004 to 2019, accessed October 12, 2020, September 28, 2020, <https://www.statista.com/statistics/191694/number-of-law-enforcement-officers-in-the-us/>; Bureau of Justice Statistics, National Sources of Law Enforcement Employment Data, accessed October 12, 2020, April 26, 2016, <https://www.bjs.gov/index.cfm?ty=pbdetail&iid=5600>.

<sup>3</sup> Centers for Disease Control and Prevention, Web-Based Injury Statistics Query and Reporting System, 2018, accessed October 8, 2020.

<sup>4</sup> F. Edwards, H. Lee, and M. Esposito, "Risk of Being Killed by Police Use of Force in the United States by Age, Race-Ethnicity, and Sex," *Proceedings of the National Academy of Sciences* 116, no. 34 (2019): 16793-98, <http://www.pnas.org/content/116/34/16793.abstract>.

<sup>5</sup> Comprehensive Policing and Justice Reform Amendment Act of 2020, B23-0882, Council of the District of Columbia (2020), <https://lims.dccouncil.us/Legislation/B23-0882>.

<sup>6</sup> J.C. Vera-Jiménez et al., "A Legal and Forensic Medicine Approach to Police Physical Intervention Techniques in High-Risk Situations," *International journal of environmental research and public health* 17, no. 8 (2020): 2809, <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7215352/>.

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