

Improving Police Clearance Rates of Shootings: A Review of the Evidence

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Executive Summary

Clearance rates for fatal and nonfatal shootings, especially cases involving gang- and drug-related violence, are disturbingly low in many American cities. Low clearance rates undermine police efforts to hold offenders accountable, to disrupt cycles of gun violence, and to provide justice to victims. The prevailing view has been that follow-up investigations are of limited value because crimes are primarily cleared by patrol officers making on-scene arrests and through eyewitnesses and forensic evidence at the crime scene. Other research, however, suggests that the work of criminal investigators can increase the likelihood that crimes might be cleared through arrest.

After years of homicide clearance rates that were lower than the national average, the Boston Police Department engaged a research and development enterprise to improve their post-homicide criminal-investigation processes and practices. A rigorous evaluation found that the intervention significantly increased key investigative activities and improved clearance rates relative to existing homicide clearance trends in other Massachusetts and U.S. jurisdictions. This research enterprise was extended to compare city investigative resources invested in clearing gun-homicide cases relative to nonfatal gun assaults.

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The study found that gun homicides and nonfatal shooting cases shared very similar characteristics. However, higher clearance rates for gun homicides relative to nonfatal shootings were primarily a result of sustained investigative effort in homicide cases made following the first two days. Police departments should invest additional resources in the investigation of nonfatal gun assaults. When additional investigative effort is expended, law enforcement improves its success in gaining the cooperation of key witnesses and increases the amount of forensic evidence collected and analyzed.

The available research evidence indicates that enhanced investigative resources, improved management structures, and oversight processes can increase homicide clearance rates and improve the chances that murderers are apprehended in even the most difficult cases to clear. More gang- and drug-related gun homicides that plague most urban areas can be cleared with a focused investigation strategy. Given the considerable overlap between fatal and nonfatal shooting events, so, too, might more of these latter crimes be cleared. The effective investigation of shootings can help prevent further cascades of gun violence in cities by deterring retaliation and by incapacitating violent individuals who could persist in their crimes or end up as victims of retaliatory shootings.

Introduction

In 2020, cities across the U.S. experienced a stunning increase in serious gun violence. In New York City, the number of shooting incidents nearly doubled, from 777 in 2019 to 1,531 in 2020.¹ This included an 88% increase in gun murders (from 154 in 2019 to 290 in 2020) and a 99% increase in nonfatal shootings (from 630 in 2019 to 1,251 in 2020). The New York City Police Department (NYPD) attributes much of the increased gunplay in such places to surging violence among city gangs and street crews.² Shootings are not evenly spread throughout the city; they tend to be concentrated at specific locations in socially disadvantaged areas such as the Howard Houses in Brooklyn.

Last year was uniquely difficult for law enforcement. The Covid-19 pandemic caused police departments to change their day-to-day operations to ensure that they followed critical public health precautions while protecting the public. The lockdowns created a sudden, deep economic downturn that will continue to harm municipal budgets and further affect policing. The criminal-justice system has also been disrupted, thanks to the slow adjudication of arrests and the very limited capacity of jails and prisons to hold people awaiting trial and convicted of crimes.

Police department resources in many jurisdictions were further strained by managing the anti-police protests following the death of George Floyd on May 25, 2020, and dealing with demoralizing calls to “defund the police.” These challenges continue in 2021 and will be a feature of urban policing for the foreseeable future.

Beyond these contemporary circumstances is a persistent and deadly problem that contributes to gun violence in American cities: low fatal and nonfatal shooting “clearances.” Police performance in solving crimes is generally measured through clearance rates, a metric defined by the FBI’s Uniform Crime Reports as the proportion of crimes that have had at least one person arrested, charged with the commission of the offense, and turned over to the court for prosecution. Crimes can also be cleared through a variety of exceptional circumstances, such as the confession of a suspect already in custody, the issuance of an arrest warrant for a suspect who dies before apprehension, and other means.³

In 2020, the NYPD cleared 47% of the city’s gun murders (136 of 290) and 32% of the city’s nonfatal shooting incidents (402 of 1,251). The notable gap in clearances for fatal and nonfatal shootings seems to be ubiquitous in the cities that have examined this issue. For instance, in Chicago between 2010 and 2016, annual clearance rates for gun homicides ranged from 26% to 46% and from 5% to 11% for nonfatal shootings. In Durham, North Carolina, half of all gun homicides in 2015 resulted in an arrest but only 10% of nonfatal shootings.⁴

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All too often, violent gun offenders are not held accountable for their crimes, and justice is denied to victims and their loved ones. Moreover, unsolved shootings feed cycles of urban gun violence. Dangerous people continue shooting others. Gunshot-wound survivors and the friends and families of gun-homicide victims may take the law into their own hands to get justice. Retaliatory shootings beget further retaliatory shootings as each side seeks retribution. In mostly minority neighborhoods long-suffering from gun violence problems, unsolved shootings fuel suspicions that the police don't care about black and brown victims. Trust in the police erodes, undermining the willingness of community members to share information on suspected shooters.

Unsolved shootings also undermine a key police crime-control mechanism: deterrence. Deterrence theory suggests that crimes can be prevented when a potential offender perceives the costs of committing a crime to outweigh the benefits. The available research suggests that deterrent effects are ultimately determined by offender perceptions of punishment risk and certainty.⁵ Police influence offenders' perception of risk through a variety of means, including increasing their presence in, and arrests of offenders in, high-crime areas. If prospective shooters perceive the risk of apprehension to be low, they will continue to fire their guns in public places.

This report reviews research supporting the perspective that investments and innovations in police investigations of shootings can improve their capacity to hold violent gun criminals accountable. Some of the strongest evidence in support of this perspective comes from my recent experiences working with members of the Boston Police Department (BPD) as they attempted to improve their homicide clearance rates and think strategically about enhancing their investigations of nonfatal shootings.

Arresting the shooter is a first step in holding violent offenders accountable for their crimes. However, it is equally important to ensure effective prosecutions that lead to convictions and avoid unintended miscarriages of justice. Judges should also apply appropriate sentences for violent offenders who inflict fatal and nonfatal gunshot injuries on their victims. The impacts of courts and prosecutors are not addressed here, but they, too, are key factors in generating deterrence.

What Makes Shootings So Difficult to Solve?

Over the past 40 years, the probability of arrest for most violent and property crimes has been stagnant, and clearance rates for homicides, the most thoroughly investigated crime, have declined steadily. As **FIGURE 1** shows, the clearance rate for violent crimes and property crimes has hovered around 46% and 17%, respectively, during 1971–2019. The clearance rate for homicide declined from 79% in 1976 to 61% in 2019. These trends are especially vexing, given that forensic technology and investigative techniques have generally improved, and homicide rates have declined markedly since the mid-1990s. Research studies suggest that declining homicide clearance rates are due in particular to a rising share of homicides from gang- and drug-related violence.⁶

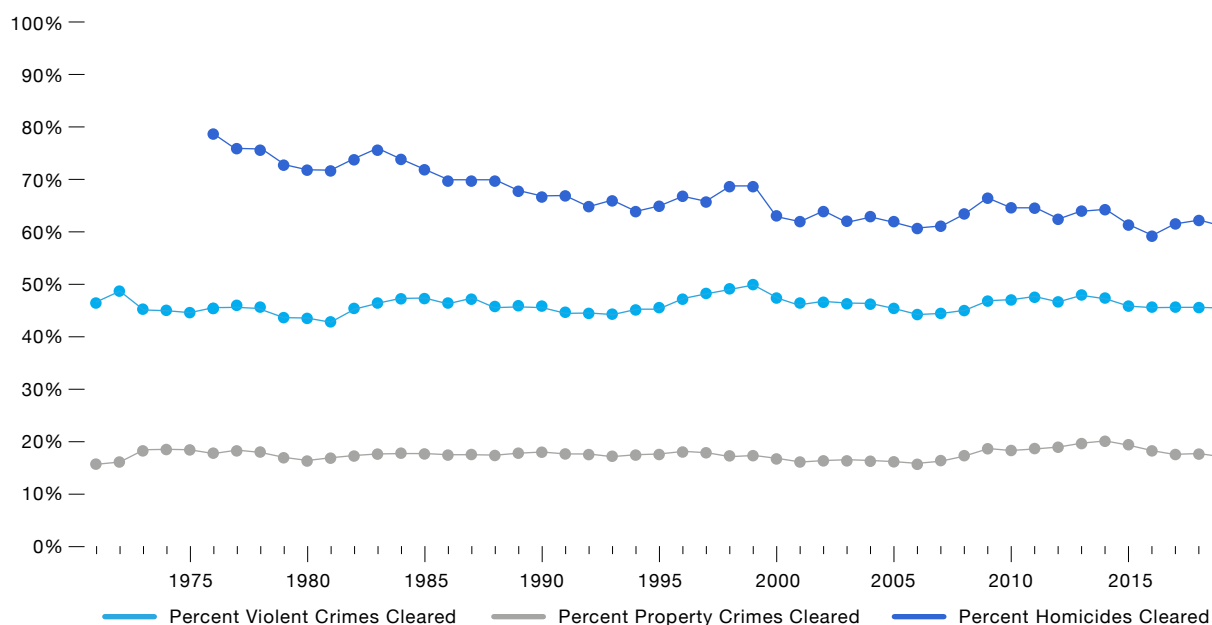
For gun murders, a long line of research suggests that victim, event, and crime-scene characteristics make certain kinds of homicide cases much more difficult to solve. Victim characteristics associated with a lower probability of homicide case clearance include whether the victim was male, was black or Hispanic, had a prior criminal history, was under the influence of drugs/alcohol, and was a known gang member. Event characteristics that make a homicide case more difficult to solve include those generated by gang- and drug-related motives, involving victims and offenders who were strangers, and the use of firearms.

Two distinct dimensions to crime-scene settings exert a significant influence on the likelihood of homicide clearance: (1) whether the shooting occurred indoors or outdoors; and (2) the broader neighborhood context. Indoor homicide scenes tend to have more usable physical evidence, and these gun crimes are associated with easier-to-solve cases involving domestic disputes and identifiable victim–offender relationships. Gun homicides concentrate in disadvantaged neighborhoods, which tend to have residents who view the criminal-justice system as illegitimate and unresponsive. Cynical views of police, prosecutors, and courts in a neighborhood can influence whether witnesses are willing to share information on homicide incidents and testify in court against charged suspects.

Cooperative eyewitnesses at the scene or developed through good detective work vastly improve the odds of making arrests in homicide cases. Unfortunately, it is particularly difficult to get young men who are involved in gangs and the illegal drug trade to provide information on shootings to the authorities. A study that interviewed 50 young black men from the Bronx and Brooklyn—many of whom were gang members and had been involved in gun violence—found that 92% of the respondents preferred retaliatory violence over cooperating with the police after shootings. One respondent commented, “Hell no, I would never talk to cops.” Another explained, “That’s not me. I don’t talk to the police.... I don’t even like the police.” Still another commented, “I would never talk to the police, period.... They not here to help me. They just want to take someone down, put someone away.”⁷ A Chicago study that surveyed inmates who had been shot found that half could have provided police investigators with useful information on the shooter, but most chose not to cooperate.⁸ These inmates generally invoked “street codes” against snitching, mistrust of the police, and the desire to retaliate against the shooter *personally* as justifications against cooperation.

FIGURE 1

Clearance Rates: Homicide, Violent Crime, and Property Crime, 1971–2019



Source: Anthony Braga et al., “Moving the Work of Criminal Investigators Towards Crime Control,” in *New Perspectives on Policing*, U.S. Department of Justice, National Institute of Justice, March 2011; updated statistics from 2008–19 were compiled by the author from FBI, UCR Publications

The influence of physical evidence on the success of homicide investigations is a complex issue. The existing body of research suggests that understanding how evidence is used is as important as understanding the quantity collected, the kinds of tests run, and the quality of forensic work. The recovery of the murder weapon at the scene improves the likelihood that a case will be solved. The presence of DNA evidence at crime scenes helps identify the offenders who are responsible for the crime.⁹ The ballistic imaging of recovered bullets and bullet fragments, expended shell casings, and test-fires of recovered crime guns can generate investigative leads that bring detectives closer to arresting shooters.¹⁰ The analysis of videos that capture shootings or people and vehicles connected to the events that precede and follow shootings can be very helpful as well. Subsequent examinations of social media (e.g., Snapchat, Twitter, Instagram, and Facebook) can generate leads on motives and participants in shooting events. The analysis of mobile-phone data can yield telling insights on the people present at shooting scenes. But detectives and forensic specialists do not control the presence of telltale evidence and cooperative witnesses at crime scenes—they either inherit a productive crime scene or they don't.

Homicide clearance rates are generally much higher than nonfatal shooting clearance rates. In 2019, U.S. law-enforcement agencies cleared 61% of murders and nonnegligent homicides but only 31% of aggravated assaults with firearms (which include gun assaults in which no victim is injured).¹¹ Fatal shootings are usually investigated by dedicated homicide units with investigators who carry smaller caseloads and receive priority access to and support from crime-lab staff, prosecutors, and others. Nonfatal shootings are usually handled by nonspecialist detectives who are swamped by numerous robberies, assaults, burglaries, thefts, and other crimes committed in the areas where they are assigned. Beyond an initial response at the crime scene and continued investigative work over the following two days, most nonfatal shooting investigations do not receive extended follow-up action by detectives. Unfortunately, failures to make arrests can fuel a cascade of retaliatory gun violence.

Given these facts, it is not surprising that nonfatal shooting arrest clearance rates are disturbingly low in many cities. In 2016, the Chicago Police Department cleared less than 12% of nonfatal shootings, the San Francisco Police Department cleared only 15% of its gun assaults, and the Los Angeles Police Department cleared 17% of its gun assaults. Even so, it is questionable whether homicide units in some cities are adequately resourced to investigate the flow of cases that detectives inherit. In 2017, the Baltimore Police Department had 57 homicide detectives assigned to investigate 483 murder cases, and 25% of fatal shootings were cleared; the citywide shooting unit had 26 detectives to investigate some 703 nonfatal cases and cleared roughly 23% of them.¹²

Studies generally suggest that a police department's ability to clear homicides is a function of the resources applied to conduct investigations and how its efforts are organized. It is essential that homicide units are centralized and adequately staffed, criminal investigators are well trained, detectives and forensic technicians complete a thorough initial response to the homicide scene, and the oversight, management, and evaluation of investigative work are given priority. A variety of other investigative factors exert significant influence on homicide case clearance. These include rapid responses to homicide scenes, the initial actions taken by first-responding officers to secure the scene, the detailed documentation of the scene, the mobilization of forensic technicians to process evidence at the scene, detective follow-up activities that substantiate statements made by witnesses and that could lead to additional witnesses, computer checks on individuals involved in the case, and close coordination with prosecutors in the investigation.

Some research suggests that police departments should establish a "cold-case unit" whose mission is to clear unsolved homicide cases and provide a reliable quality-assurance check on homicide investigations.¹³ After a specified period of inactivity, unsolved homicide cases can be transferred to the cold-case unit and receive a fresh review by a team of investigative experts on established "solvability" factors grounded in research and best practices. Cases that seem promising based

on new possible investigative avenues, such as reconsidering physical evidence with enhanced forensic tests from newly available technology, can then be selected for continued detective work. For instance, in 2013, the BPD used DNA evidence to end a half-century controversy over whether Albert DeSalvo was really the infamous “Boston Strangler” who killed 13 women in 1962–64.¹⁴ Homicide detectives were able to confirm that DNA recovered from one of his victims was a statistically relevant match to DNA from DeSalvo’s remains, which were exhumed that same year. Solving cold cases can help bring back citizens’ trust in a police department and may plausibly enhance prospective offenders’ perceptions of apprehension risk.

The Boston Homicide Clearance Project

Most of the research on homicide clearance rates has been descriptive. That is, the studies tend to contrast the characteristics of successful homicide investigations with the characteristics of unsuccessful homicide investigations, or to compare the investigative policies and practices of police departments that have high homicide clearance rates with those that have low homicide clearance rates. The BPD homicide clearance project was the first field test to determine whether increasing investigative resources and implementing new policies and procedures can improve homicide clearance rates.¹⁵ When this project was implemented, I served as the chief policy advisor to then-police commissioner Edward Davis and provided research and development support.

Homicide clearance rates in Boston were noticeably lower than national homicide clearance rates during the early 2000s and 2010s. During 2004–11, the department’s homicide unit cleared, on average, about 44% of the homicides investigated. The national homicide clearance rate during this same period was roughly 63%. With the support of the U.S. Bureau of Justice Assistance funds, the BPD began a wide-ranging research project in 2011 to understand the underlying nature of their homicide clearance problem, develop appropriate responses to enhance their investigations, and evaluate the impact of the implemented changes.

The initiative started with a detailed analysis of 314 homicides between 2007 and 2011. The department also convened a Homicide Advisory Committee staffed by homicide detectives, district detectives, Crime Scene Response Unit (CSRU) officers, Forensics Group analysts, intelligence analysts, homicide prosecutors, and others to identify best practices and gaps in their investigative processes. The development of appropriate changes also drew upon best practices in other jurisdictions—most notably, from the UK. The BPD hired a UK investigative consultant to review and make recommendations on the proposed reforms.

Consistent with the existing literature, Boston’s homicide research project confirmed that certain kinds of cases were less likely to be cleared by its homicide detectives—including black and Hispanic victims relative to white victims, victims killed as the result of gang- and drug-related disputes relative to victims killed as the result of personal and domestic disputes, and victims recovered from outdoor crime-scene locations relative to victims recovered from indoor crime-scene locations. Large shares of black and Hispanic gun homicides in Boston were motivated by gang- and drug-related disputes, and this explained much of the racial gap in clearance rates when compared with white victims.

Contrary to some narratives, the investigative resources devoted to drug and gun homicides that took the lives of blacks and Hispanics were no different from other homicides. In fact, there tended to be a slightly higher number of officers canvassing the initial crime scenes of these murders for witnesses and physical evidence relative to other homicides. Boston homicide detectives observed that gang and drug homicides more frequently involved larger outdoor crime

scenes, and therefore additional support was needed to locate witnesses and evidence. Homicide detectives also had a quicker average response time to gang and drug homicides when compared with other homicides. Due to the public settings in which gang and drug violence occurred, homicide detectives suggested that gang and drug shootings were more likely to be reported in “real time” and that this resulted in more rapid responses to initial crime scenes.

Gang and drug homicides tended to produce larger numbers of witness interviews from the crime scene relative to other fatal shootings. Homicide detectives, once again, suggested that the public settings in which gang and drug homicides tended to occur led to interviews with larger numbers of people who may have witnessed some or all of the event. However, when compared with other homicide investigations, the investigation of gang and drug homicides yielded less physical evidence from the initial crime scene. Homicide detectives explained that the use of firearms and the resulting distance between victims and offenders facilitated by gunfire generally meant that there was less physical evidence to be collected. While gang and drug homicides were associated with larger numbers of ballistic tests of firearms, shell casings, and bullets recovered from initial crime scenes, they were less likely than other homicides to have available evidence for DNA testing, fingerprinting, toolmark analysis, hair and fiber analysis, and other forensic tests.

Gang and drug homicide investigations produced, on average, fewer follow-up interviews with witnesses first identified at the initial crime scene than other homicides. Boston homicide detectives suggested that eyewitnesses to gang and drug homicides were generally less willing to share relevant information due to fear of retaliation, street norms against snitching to the police, and a general lack of trust in the police by residents in disadvantaged minority neighborhoods. They further suggested that many witnesses interviewed at gang and drug homicide scenes tended to omit key details from the information provided to detectives, which led to fewer follow-up interviews. It was similarly difficult to get witnesses identified after the initial crime scene to cooperate with the investigation.

Based on these research findings, a series of recommendations to increase the size of the homicide unit, enhance the training of detectives, and adopt new practices and policies were made to the police commissioner. The department began to implement the changes in 2012 by expanding the homicide unit. The BPD homicide unit today is commanded by a lieutenant detective and comprises eight squads that handle current investigations and one cold-case squad investigating older unsolved homicides. Previously, each homicide squad was staffed by one sergeant detective and two detectives; with the new approach, one additional detective was assigned to each squad. A civilian crime analyst was hired to enhance the ability of the unit to search computerized databases in real time and pursue analyses to generate investigative leads. The department also added a second victim-witness resource officer and strengthened its connections to victim-assistance organizations in an effort to improve relationships between detectives and homicide victims’ families and witnesses. The willingness of BPD’s leadership to make investments in adequately staffing the unit and implement innovations were critical aspects of the new approach.

Along with the homicide unit and district detectives, CSRU and the staff of the Forensics Group received extensive additional training in cutting-edge investigative techniques. These included the development of an updated annual 40-hour crime-scene response in-service training at the BPD Academy to improve their collection and processing of evidence recovered at homicide scenes. Homicide detectives received medico-legal homicide-investigation training offered by the forensics program at Boston University Medical Center; they also attended the New York State Homicide Seminar. There was also updated and expanded annual in-service training for Forensics Group and CSRU staff. The BPD sent two deputy superintendents in its Bureau of

Investigative Services (BIS) to the UK's National Policing Improvement Agency's Senior Investigative Officer training, where they learned the details of that country's investigative business model and important concepts such as peer review of homicide investigations.

A key issue identified during the research phase of the clearance project was the variation in homicide-investigation practices across individuals, police districts, and units—even by squads within a unit. This led to a comprehensive set of standardized protocols across the various stages of homicide investigations. These protocols included, but were not limited to, the formalized witness-identification and management techniques, increasing the deployment of Forensics Group technicians to homicide scenes, the collection and transfer of evidence to the Forensics Group for storage and testing, and working with homicide prosecutors to prepare cases for consideration by grand juries. The protocols provided guidance for supervisors and line staff working in each investigative area and required participants to fill out checklist forms. These documents were reviewed by the department's BIS command staff to ensure standardization.

The BPD homicide unit convened monthly peer-review sessions for all open investigations, which were intended to increase accountability by ensuring that all possible avenues for identifying responsible offenders were being pursued. Detectives presented key aspects of their cases to their peers and supervisors. The BIS superintendent, homicide unit commander, and other homicide detectives not assigned to the case would offer constructive criticism and advice to investigating detectives. A similar process was put into place to manage the processing and testing of physical evidence by the Forensics Group. New forensic technology was also acquired and used, such as 3-D shooting-incident reconstruction technology, in order to more accurately identify bullet-trajectory flight paths at homicide scenes.

An evaluation revealed that these reforms improved homicide clearance rates in Boston relative to homicide clearance rates in the rest of Massachusetts and the United States. The BPD homicide unit cleared about 47% of homicides during 2007–11. During 2012–14, when the project reforms were implemented, some 66% of homicides were cleared. In the latter years, homicide clearance rates in the U.S. remained flat while Massachusetts homicide clearance rates dropped. An analysis that controlled for case characteristics found that the changes led to a 23% increase in homicide clearance for cases investigated.¹⁶

For example, the average clearance for a homicide case involving a 24-year-old black male killed outdoors with a firearm in a gang-related dispute was 27% before the investigation changes; the clearance rate rose to 43% after the BPD homicide unit changed its investigation strategy. These findings suggest that the reforms generated a noteworthy improvement in the odds that offenders were held accountable in these very difficult-to-solve cases.

What About Nonfatal Shootings?

The victim dies in about one out of every six criminal assaults involving a gunshot wound.¹⁷ The difference between a gun murder and a nonfatal shooting, a Boston police officer told me, “is often only a matter of inches and luck—a lot of times, a nonfatal shooting is just a failed homicide.” The officer's sentiment suggests that the difference is contingent on several uncontrollable factors such as the aim of the shooter, the distance to the target, a rapid call to the police, and the response time of medical assistance.

The BPD received additional federal funding to extend its analyses to include nonfatal shootings. I collaborated with Duke economist Philip Cook on the research presented here.¹⁸ In brief, our work confirmed the aforementioned officer's practical experience: there is a strong overlap in

the circumstances and characteristics of fatal and nonfatal shootings. **FIGURE 2** presents the characteristics and circumstances of fatal and nonfatal shootings occurring in Boston during 2010–14. Most gun-murder victims and gunshot-injury survivors tend to be younger black and Hispanic males who are well known to the criminal-justice system and who are shot as a result of gang- and drug-related disputes. The lethality of these assaults was dependent on the location of the attack, the caliber of the gun used, the number of wounds on the victim, and the locations of those wounds. Indoor locations bring shooters into closer proximity to their intended victims. Larger-caliber bullets generated more extensive tissue damage. Criminal gun assaults were more likely to be fatal when victims suffered multiple gunshot wounds and when gunshot wounds were located on the victims' head and neck, as well as thorax, relative to their extremities. Comprehensive statistical analysis revealed that the circumstances of the assault and the victim characteristics had no systematic association with the number of wounds, the general location of wounds, or the firearm caliber used in the assault. In short, there is some random luck in who isn't killed from a gunshot.

FIGURE 2

Characteristics of Nonfatal and Fatal Shootings in Boston, 2010–14

	Nonfatal (n = 291)	Fatal (n = 220)
Sex		
Male	93%	91%
Female	7%	9%
Race		
Black	80%	83%
Hispanic	14%	13%
White	5%	4%
Asian/Other	1%	<1%
Age		
Years, mean	27.0	26.4
Criminal history		
Mean number of prior arraignments	12.4	11.9
Circumstance		
Gang-related	67%	67%
Drug-related	16%	17%
Personal dispute	13%	10%
Robbery	3%	4%
Domestic	2%	2%
Other	0%	<1%

Location*		
Outdoor	87%	75%
Indoor	13%	25%
Caliber*		
Small caliber (.22, .25, .32)	21%	13%
Medium caliber (.38, .380, 9 mm)	61%	55%
Large caliber (.44, .45, 10 mm, +)	18%	33%
Number of wounds*		
Single	73%	35%
Multiple	27%	65%
Mean number of wounds	1.7	2.8
Single wound location*		
Head, neck	7%	54%
Chest, back, abdomen	30%	44%
Arms, shoulders, legs	63%	2%
Multiple wound location (most serious)*		
Head, neck	12%	50%
Chest, back, abdomen	52%	49%
Arms, shoulders, legs	36%	1%

Source: Adapted from Anthony A. Braga and Philip J. Cook, "The Association of Firearm Caliber with Likelihood of Death from Gunshot Injury in Criminal Assaults," *Journal of the American Medical Association, Network Open* 1, no. 3 (2018)

*Differences noted were statistically significant at the $p < .05$ level (meaning that the differences would occur by chance alone fewer than five times in 100).

Note: Percentages are rounded and may not equal 100%. There were 220 fatal shootings and 1,012 nonfatal shootings in Boston during the study period. The 291 nonfatal shootings included in this table were a randomly selected representative sample of the 1,012 nonfatal shootings.

The two groups of cases, fatal and nonfatal, were statistically indistinguishable with respect to circumstances, with the sole exception of whether the shooting took place indoors or outdoors. However, the clearance-by-arrest rate for gun-murder cases was more than twice as high as the corresponding rate for gunshot-assault cases—43% and 19%, respectively. As in other cities, gun murders were investigated by the BPD's homicide unit, which has lighter caseloads and priority access to the crime lab and other units of the police force. Nonfatal shootings were investigated by district detectives who carried much larger caseloads and handled a variety of cases in addition to gun assaults. Therefore, while the shooting event circumstances were essentially the same, the level of police investigative effort launched to clear cases was dramatically different, depending on whether the victim lived or died. This allowed us to compare the impact of enhanced investigative resources on clearing shooting cases.

The key analysis in nonfatal shootings developed time-to-clearance as a measure of the “intrinsic difficulty” of investigative success. As **FIGURE 3** reveals, arrest rates during the two days immediately following the shooting were the same for fatal and nonfatal cases: 11%. The much higher rate of homicide arrests arose later, sometimes months after the shooting. The equal success rate during the first two days reflected the easy-to-solve cases that were cleared without the need for the extra resources deployed in homicide investigations. These cases included on-site arrests by first-responding officers and cooperative witnesses who could clearly identify the shooters responsible for the attacks. The 24-percentage-point gap (43% vs. 19%) was entirely a result of arrests made after the first two days, which suggests that the more sustained effort in homicide cases in the first 48 hours is an important part of the difference. Much of that difference was associated with the greater success in gaining the cooperation of key witnesses.

FIGURE 3

Time-to-Clearance in Fatal and Nonfatal Shooting Cases in Boston, 2010–14

Clearance Time	One or More Gun Homicides		Nonfatal Only	
	N	Cumulative %	N	Cumulative %
At the scene or leaving the scene	12	(6.0)%	13	(5.7)%
Not at the scene, same day	5	(8.5)%	6	(8.3)%
1–2 days	5	(11.0)%	6	(11.0)%
>2–7 days	1	(11.5)%	5	(13.2)%
>1 week–1 month	10	(16.5)%	3	(14.5)%
>1–6 months	30	(31.5)%	6	(17.1)%
>6 months–1 year	11	(37.0)%	3	(18.4)%
>1 year	13	(43.5)%	1	(18.9)%
Open investigation	113	(100.0)%	185	(100.0)%
Total	200		228	

Source: Philip J. Cook et al., “Why Do Gun Murders Have a Higher Clearance Rate than Gunshot Assaults?” *Criminology & Public Policy* 18, no. 3 (August 2019): 525–52

Note: The unit of analysis in Figure 3 is the case rather than the victim, as presented in Figure 2. Shooting events can include multiple victims. Shooting cases with at least one fatality were included in the “one or more gun homicide” category. A small number of cases cleared through exceptional circumstances were excluded from the analysis because the clearance did not represent investigative success or failure.

Based on a variety of indicators, the initial crime-scene investigations managed by Boston homicide detectives yielded more evidence of various sorts. The commitment of additional resources to gun-homicide cases was also evident from comparing the amount of evidence collected outside the crime scene, mostly generated through increased numbers of search warrants. Most successful investigations had as one key source of evidence the information provided by

a cooperating eyewitness. Excluding exceptional clearances, that source was named as the key in solving the case for 28% of all homicide investigations, compared with 14% of all nonfatal investigations. The direct connection with effort was clear for collecting other types of evidence, such as ballistic and video evidence, latent prints, and analysis of phone calls. One or more of those factors were mentioned as the key to success more than 100 times in homicide cases but only 24 times in nonfatal cases.

After the study, the BPD developed plans to test whether nonfatal shooting clearances were improved by establishing a specialized shooting-investigation unit that would have resources similar to those of the homicide unit. Unfortunately, these plans were never implemented. Other cities, however, have established similar units with very promising results. The Denver Police Department, for example, created a special unit to investigate nonfatal shootings with the same level of effort as homicides. In the first seven months of 2020, the unit solved 65% of the city's nonfatal shootings, a dramatic improvement over the department's previous 39% non-fatal shooting rate.¹⁹

Concluding Thoughts

Research and experience indicate that shooting investigations can be strengthened to increase the ability of the police to hold gun offenders accountable for their crimes. The Boston Homicide Clearance Project provides rigorous evidence that enhanced investigative resources, improved management structures, and oversight processes can increase homicide clearance rates and improve the chances that murderers are apprehended in even the most difficult cases to clear. More gang- and drug-related gun homicides that plague most urban areas can be cleared with a focused investigative strategy. Given the considerable overlap between fatal and nonfatal shooting events, so, too, might more of these latter crimes be cleared. The effective investigation of shootings can help prevent further cascades of gun violence in cities by deterring retaliation and incapacitating violent individuals who could persist in their crimes or end up as victims of retaliatory shootings.

Police departments should be implementing a variety of evidence-based responses to gun violence. In addition to strengthening shooting investigations, complementary strategies include applying community problem-solving approaches to cool down violent-crime hot spots and implementing focused deterrence programs that blend law enforcement, social services, and community mobilization strategies to halt ongoing disputes between gangs and street crews.²⁰

The NYPD seems to be taking this kind of strategic approach to deal with the recent spike in gun violence. In late 2020 and early 2021, the department increased the size of its Gun Violence Suppression Division by more than one-third (68 new officers were added, for a total of 274 in the division), in order to enhance its shooting investigations. All NYPD detectives are required to follow the “basic dozen” steps to guide canvases, interview witnesses and victims, collect evidence, and engage in other investigative actions to ensure robust responses to crime scenes.

NYPD analyses of 2020 gun violence revealed that exactly 100 people were connected to three or more gunfire incidents as offenders, witnesses, or victims. They also found that 90 street blocks in the city had three or more gunfire incidents in 2020 (some blocks experienced as many as eight incidents). The department has concentrated its neighborhood policing efforts in gun-violence hot spots and is focusing its deterrence efforts to prevent gun violence by high-risk groups and individuals. These kinds of innovations are critical in today's policing environment. Hopefully, these approaches indeed reduce gunfire on New York City streets. The available scientific evidence suggests that they should, if these efforts are adequately staffed and well implemented.

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Endnotes

- ¹ I would like to thank Deputy Inspector John Hall and Deputy Commissioner Tanya Meisenholder for providing me with official NYPD crime statistics used in this article. Please note: the NYPD reports gun murders by the number of homicide *victims* killed with a firearm and the number of nonfatal shootings by the number of *incidents*, not the number of those injured by gunfire. I would also like to thank NYPD Lieutenant Commander of Detectives John Russo, as well as David O’Keefe, Rafael Mangual, Hannah Meyers, and the other participants in a Manhattan Institute workshop for their helpful comments.
- ² Kerry Burke, Graham Rayman, and Bill Sanderson, “‘They End Up Shooting Whoever’—Rising Gun Mayhem Across NYC Hits Brooklyn Housing Project Hardest, with Four Deaths,” *Daily News*, Oct. 24, 2020.
- ³ FBI Uniform Crime Reporting (UCR), “Crime in the United States 2019.”
- ⁴ E.g., see Max Kapustin et al., “Gun Violence in Chicago, 2016,” University of Chicago Crime Lab, January 2017; Philip J. Cook, Jeffrey Ho, and Sara Shilling, “Criminal Investigations of Gun Assaults and Murders in Durham, 2015: The Challenge of Securing Victim and Witness Cooperation,” Sanford School of Public Policy, Duke University.
- ⁵ Daniel Nagin, “Deterrence in the Twenty-First Century,” *Crime and Justice* 42 (2013): 199–63.
- ⁶ The general research findings summarized in this report draw upon a series of homicide clearance studies, including Charles Wellford and James Cronin, “An Analysis of Variables Affecting the Clearance of Homicides: A Multistate Study,” Justice Research and Statistics Association, October 1999; Charles Wellford et al., “Clearing Homicides: Role of Organizational, Case, and Investigative Dimensions,” *Criminology & Public Policy* 18, no. 3 (August 2019): 553–600; Deborah Baskin and Ira Sommers, “The Influence of Forensic Evidence on the Case Outcomes of Homicide Incidents,” *Journal of Criminal Justice* 38, no. 6 (November–December 2010): 1141–49; Graham Ousey and Matthew Lee, “To Know the Unknown: The Decline in Homicide Clearance Rates, 1980–2000,” *Criminal Justice Review* 35, no. 2 (June 2010): 141–58; Wendy Regoeczi and John Jarvis, “Beyond the Social Production of Homicide Rates: Extending Social Disorganization Theory to Explain Homicide Case Outcomes,” *Justice Quarterly* 30, no. 6 (2013): 983–1014; Robert C. Davis, Carl Jensen, and Karin E. Kitchens, “Cold-Case Investigations: An Analysis of Current Practices and Factors Associated with Successful Outcomes,” RAND Corporation, 2011.
- ⁷ Rod K. Brunson and Brian Wade, “‘Oh Hell No, We Don’t Talk to Police’: Insights on the Lack of Cooperation in Police Investigations of Urban Gun Violence,” *Criminology & Public Policy* 18, no. 3 (August 2019): 623–48.
- ⁸ Kailey White, Philip J. Cook, and Harold Pollack, “Gunshot-Victim Cooperation with Police Investigations: Results from the Chicago Inmate Survey,” *Preventive Medicine* 143 (February 2021).

- ⁹ Anne Sophie Tegner Anker, Jennifer L. Doleac, and Rasmus Landersø, “The Effects of DNA Databases on the Deterrence and Detection of Offenders,” *American Economic Journal: Applied Economics*, forthcoming; John Roman et al., “The DNA Field Experiment: A Randomized Controlled Trial of the Cost-Effectiveness of Using DNA to Solve Property Crimes,” *Journal of Experimental Criminology* 5, no. 4 (December 2009): 345–69.
- ¹⁰ Anthony A. Braga and Glenn L. Pierce, “Reconsidering the Ballistic Imaging of Crime Bullets in Gun Law Enforcement Operations,” *Forensic Science Policy and Management* 2, no. 3 (2011): 105–17; Anthony A. Braga and Glenn L. Pierce, “Linking Gun Crimes: The Impact of Ballistics Imaging Technology on the Productivity of the Boston Police Department’s Ballistics Unit,” *Journal of Forensic Sciences* 46, no. 4 (2009): 701–6.
- ¹¹ FBI UCR, “Crime in the U.S., 2019,” table 25: Percent of Offenses Cleared by Arrest or Exceptional Means by Population Group; see also table 27: Percent of Offenses Cleared by Arrest or Exceptional Means, Additional Information About Selected Offenses by Population Group.
- ¹² Sara Ryley, Jeremy Singer-Vine, and Sean Campbell, “Shoot Someone in a Major US City, and Odds Are You’ll Get Away with It,” BuzzFeed News, Jan. 24, 2019.
- ¹³ Davis, Jensen, and Kitchens, “Cold Case Investigations”; U.S. National Institute of Justice, *National Best Practices for Implementing and Sustaining a Cold Case Investigation Unit* (Washington, DC: U.S. Department of Justice, 2016).
- ¹⁴ Phil Bulman, “Solving Cold Cases with DNA: The Boston Strangler Case,” *NIJ Journal* no. 273 (March 2014) 48–51.
- ¹⁵ Anthony A. Braga and Desiree Dusseault, “Can Homicide Detectives Improve Homicide Clearance Rates?” *Crime & Delinquency* 64, no. 3 (March 2018): 283–315.
- ¹⁶ Anthony A. Braga, Brandon Turchan, and Lisa M. Barao, “The Influence of Investigative Resources on Homicide Clearances,” *Journal of Quantitative Criminology* 35, no. 2 (June 2019): 337–64.
- ¹⁷ Philip J. Cook et al., “Constant Lethality of Gunshot Injuries from Firearm Assault: United States, 2003–2012,” *American Journal of Public Health* 107, no. 8 (August 2017): 1324–28.
- ¹⁸ Anthony A. Braga and Philip J. Cook, “The Association of Firearm Caliber with Likelihood of Death from Gunshot Injury in Criminal Assaults,” *Journal of the American Medical Association, Network Open* 1, no. 3 (2018); Philip J. Cook et al., “Why Do Gun Murders Have a Higher Clearance Rate than Gunshot Assaults?” *Criminology & Public Policy* 18, no. 3 (August 2019): 525–52.
- ¹⁹ Elise Schmelzer, “Denver Police Solved Less than Half of All Nonfatal Shootings Last Year. A New Solution is Showing Promise,” *Denver Post*, Nov. 13, 2020.
- ²⁰ Anthony A. Braga and David L. Weisburd, *Policing Problem Places: Crime Hot Spots and Effective Prevention* (New York: Oxford University Press, 2010); Anthony A. Braga and David M. Kennedy, *A Framework for Addressing Violence and Serious Crime: Focused Deterrence, Legitimacy, and Prevention* (New York: Cambridge University Press, 2020).