

HOT SPOTS POLICING

**An evidence-based
practice guide for
police in Latin America
and the Caribbean**

**Spencer Chainey
Nathalie Alvarado
Rodrigo Serrano-Berthet**

2024

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ABBREVIATIONS

ARIMA	Autoregressive Integrated Moving Average
CCDI	Crime Concentration Dispersion Index
GIS	Geographic Information System
GPS	Global Positioning System
IDB	Inter-American Development Bank
ILP	Intelligence-Led Policing
IOR	Inverse Odds Ratio
KDE	Kernel Density Estimation
ODI	Offense Dispersion Index
PADO	Programa de Alta Dedicación Operativa, a hot spots policing program in Montevideo, Uruguay
POP	Problem-Oriented Policing
RCT	Randomized Controlled Trial
RIRR	Relative Incidence Rate Ratios
WDD	Weighted Displacement Difference
WDQ	Weighted Displacement Quotient

THE PURPOSE OF THIS BOOK

Hot spots policing is an effective approach for decreasing crime. This guide is designed to help police agencies better understand and make practical use of this policing strategy.

The guide explains how hot spots policing works in helping to decrease crime, and describes the processes involved in implementing a successful program in settings in Latin American and the Caribbean. It also offers practical advice on how to address many of the challenges involved in implementing hot spots policing, how to evaluate its impact, and how to complement it with other policing approaches to help sustain decreases in crime. Included throughout the publication are case studies from the region that help illustrate how hot spots policing is applied. The guide also answers questions that are often asked about hot spots policing, such as issues associated with the displacement of crime.

The guide is organized into seven sections. The first two explain what hot spots policing involves, drawing from a comprehensive range of studies to show the impact on crime reduction and summarizing the application of hot spots policing programs in Latin America and the Caribbean. Section 3 explains in detail how hot spots policing works, Section 4 describes what needs to be done to implement a hot spots policing program, and Section 5 explains how to evaluate the program's impact. Section 6 describes how hot spots policing programs can be strengthened and sustained, and the last section, Section 7, provides some additional useful resources.



WHAT IS HOT SPOTS POLICING?

Hot spots policing involves the deployment of police personnel to specific streets, intersections, or public places (such as train stations) where crime is known to concentrate (Braga & Weisburd, 2010; Sherman & Weisburd, 1995), with the objective of reducing the high levels of crime at these locations. Hot spots policing provides a means of helping to decrease crime by focusing police resources in a more efficient and effective way.

The hot spots where police personnel are deployed are determined by analyzing the geographic concentration of crimes (Chainey, 2021; Eck et al., 2005; Weisburd, 2015). The analysis of hot spots can include the use of official crime reports and calls for service. Sometimes, the analysis can also be informed by qualitative assessments provided by police personnel (Collazos et al., 2020). In hot spots policing, police officers patrol on foot or in vehicles in areas of high crime concentration. In principle, this is a practical way to decrease crime by strategically targeting the areas that experience the highest levels of crime.

Hot spots policing can not only decrease crime but can also help to improve the relationship between the police and the public (Braga et al., 2014) and improve the public's feelings of safety (Kelling et al., 1981). It provides the opportunity for police patrols to interact positively with members of the public through friendly informal conversation in the high-crime areas they patrol. This can help to improve the types of contact the police have with citizens (Chermak et al., 2001) and improve the public's satisfaction with the police (Haberman et al., 2015).

WHAT IS THE DIFFERENCE BETWEEN TRADITIONAL POLICE PATROLS AND HOT SPOTS POLICE PATROLS?

Traditional policing typically assumes that crime could happen at any moment, at any place, to anyone. This view of crime assumes that an entire city needs to have at least some police presence and that police patrols are required to cover as many areas as possible (Wilson, 1950). When crime increases, the natural response (when following this traditional approach) is to argue for more police patrols. This expectation creates financial, logistical, and operational challenges to police agencies, as their resources are limited and they often cannot easily ramp up their capabilities from one day to the next.

Hot spots policing is based on the premise that crime is not randomly or uniformly distributed across all the streets in a city. It uses data to show that crime concentrates in relatively few places and at certain times, and that it would be more efficient to focus police resources in a manner that responds to these patterns.

Another important distinction has to do with how police seek to intervene. In the traditional policing approach, the focus of intervention is the offender. The emphasis is on *who* is responsible for crime, and the aim is to identify, arrest, and prosecute as many offenders as possible as the primary means for decreasing crime. Hot spots policing focuses on the crime event. It not only looks at *who* committed the crime but gives equal attention to *where* and *when* crime occurs. It also expands the *who* element by seeking to decrease the vulnerability of anyone who may be a potential victim of crime (Braga & Weisburd, 2010).

Table 1.1: Traditional Policing vs. Hot Spots Policing**Traditional policing****Hot spots policing**

Crime is random: it is assumed to occur anywhere, at any time, and to anyone.

Crime is not random: it is concentrated in particular places, at particular times.

The main focus of any intervention is on the people breaking the law, with arrests used as one of the primary means of reducing crime.

The main focus of the intervention is on places, with prevention used as the primary means of reducing crime.

The suggested solution is often more police, with an emphasis on covering large areas, patrolling at random times and places, or attempting to react more quickly to a crime as a way to prevent crime in general.

The suggested solution is targeted patrols.¹ Policing particular places at particular times where crime is known to be more prevalent is meant to prevent crime in general.

This approach is mostly reactive; an emergency response and arrests are the top priority.

This approach is mostly proactive;² the top priority is to deploy police to places where crime is most likely to occur, to prevent criminal behavior.

Source: Compiled by the authors.

Notes:

1 Targeting police resources is one of the three T's that Sherman (2013) describes as essential for developing evidence-based practices and strategies in policing. The other T's are Testing police practices to help choose those that work best to reduce harm and Tracking the delivery and effects of police practice.

2 Hot spots policing (sometimes referred to as hot spot policing or hotspot policing) is one of several types of proactive policing approaches. (NASEM, 2017)

WHY DO I NEED A HOT SPOTS MAP TO SHOW ME WHAT I ALREADY KNOW?

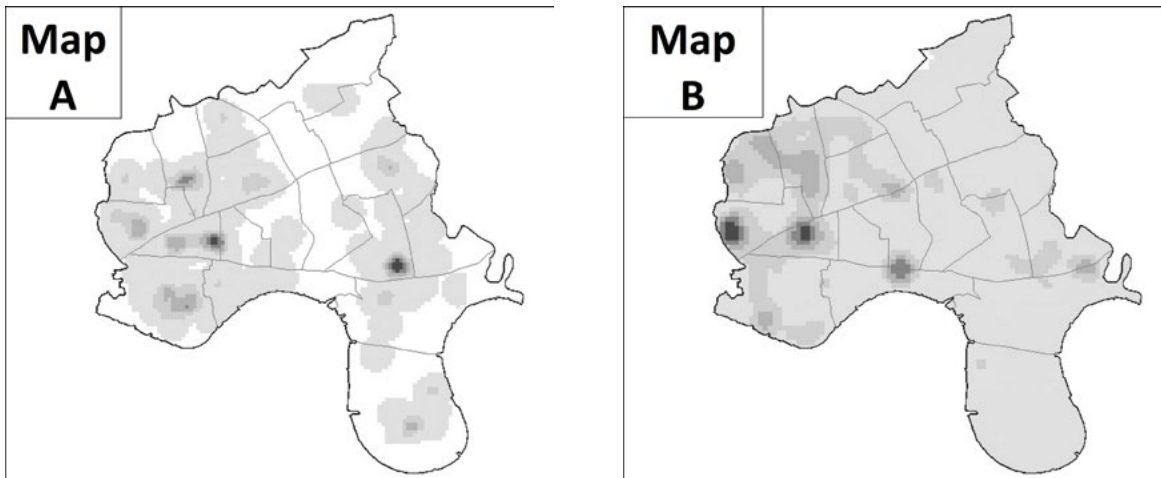
Studies have shown that perceptions from police about where crime hot spots are located do not necessarily match the reality of where hot spots actually occur (U.K. Home Office, 2005; Ratcliffe & McCullagh, 2001). Determining where to deploy police patrol resources based on perceptions about where hot spots are located can be unreliable for several reasons:

- ✓ Such a determination may be weighted by anecdotal information.
- ✓ It may be insensitive or overly biased to recent individual incidents, or biased to historical problem areas where crime hot spots are no longer present.
- ✓ It may be based on only limited facts about a small area instead of all the facts about the area as a whole.
- ✓ It may omit crucial information or may fail to consider information about all recent incidents or specific crimes of interest (such as robbery).

Although all incidents of crime are not reported to the police, the sample of incidents of crime that are recorded by the police is considered to be sufficient and reliable for indicating where crime hot spots are located (Eck et al., 2005).

In a study in one city (Chainey & Ratcliffe, 2005), police officers were asked to identify where they perceived crime hot spots to be located (see Map 1.1, Map A). The actual locations of the hot spots were quite different from their perceptions (see Map 1.1, Map B). In fact, they missed the location of the main hot spot in the city.

Map 1.1: Hot Spot Locations—Perceptions Locations (Map A) vs. Actual Locations (Map B).



Source: Chainey & Ratcliffe, 2005.

Note: Map A represents locations of hot spots based on perceptions of police officers. Map B represents actual locations of hot spots. Map B has a darker grey background because this crime density map is based on many more points of crime spread across the study area (more than 1,000 points) than those used to create Map A (234 points).

THE EVIDENCE ON THE IMPACT OF HOT SPOTS POLICING

This section provides information from a wide range of studies that have examined the impact of hot spots policing. This includes evidence on the impact of patrols, the type of crime that hot spots policing is most effective in helping to reduce, and the number of patrols that are required.

POLICE PATROL

The patrol function involves considerable police resources and is perhaps the single most important activity the police perform. Patrolling an area gives police personnel the opportunity to do something directly about crime. Even though patrolling has been a primary police function ever since police agencies were first established over 150 years ago, it was not until the 1970s that the first study was done that examined the impact that patrols have on crime. The findings from the 1972–73 Kansas City preventive patrol experiment surprised many by indicating that traditional police patrol strategies had limited impact on reducing crime (Kelling et al., 1974). The Kansas City study resulted in the suggestion that focused police strategies could be more effective.

Since this original study in Kansas City, findings from other studies have consistently concluded that crime concentrates in a small number of places (Chainey, Pezzuchi, et al., 2019; Lee et al., 2017; Sherman et al., 1989; Weisburd, 2015) and that focusing police resources on these areas of high crime concentration can have a significant impact on crime (Braga et al., 2019; Braga & Weisburd, 2020). Other studies have also examined the implementation

and sustainability of hot spots policing (Koper et al., 2021; Sorg et al., 2013), its effects on displacement (Collazos et al., 2020; Chainey, Serrano-Berthet, & Veneri, 2021; Guerette & Bowers, 2009; Piza & O'Hara, 2014), the impact of hot spots policing on the community's perception of the police (Braga & Bond, 2009; Haberman et al., 2015) and the activities that police officers perform in crime hot spots (Taylor et al., 2011). Each of these topics is discussed in detail in other sections of this guide.

IMPACT ON TYPES OF CRIME

A substantial body of research shows that hot spots policing can help to reduce crime but, more specifically, certain types of crime. Evaluations of hot spots policing programs show that this approach has contributed to a decrease in robberies (Chainey, Serrano-Berthet, & Veneri, 2021; Sherman & Weisburd, 1995), violent crime (Ratcliffe et al., 2011), disorder and mischief incidents (Andresen & Lau, 2013), drug offenses (Lawton et al., 2005), non-domestic firearm assaults (Rosenfeld et al., 2014; Sherman & Rogan, 1995a), burglary of commercial premises (Andresen & Lau, 2013; Weisburd & Green, 1995), and car thefts (Collazos et al., 2020), and has helped to reduce incident calls (Sherman & Weisburd, 1995; Andresen & Lau, 2013; Ariel et al., 2016; Haberman, 2016). For example, the Philadelphia foot patrol experiment reduced violent crime by 23 percent (Ratcliffe et al., 2011), and the hot spots policing program in Minneapolis reduced robberies by 20 percent (Sherman & Weisburd, 1995). Braga & Weisburd (2020) suggest that hot spots policing has the greatest effect in reducing violent crime (including robberies), drug-related crime, and disorder. Table 1.2 lists additional examples from studies that have examined the impact of hot spots policing.

A systematic review of 53 studies of hot spots policing from around the world—Argentina, Canada, Colombia, Denmark, India, Sweden, Trinidad and Tobago, the United Kingdom, and the United States,—found that these interventions generated a 19 percent reduction in violent crime, a 16 percent reduction in property crime, and a 20 percent reduction in disorder/drug crimes (Braga & Weisburd, 2020).

Hot spots policing has had mixed results in helping to reduce homicides (Lawton et al., 2005; Piehl et al., 2003) and non-street crimes such as thefts from

commercial premises and robberies on buses. The types of crime that are more impervious to hot spots policing can be reduced in other ways, such as by arresting repeat and prolific offenders (Chilvers & Weatherburn, 2001; Farrell & Sousa, 2001; Heaton, 2000) or using “focused deterrence” strategies (Scott, 2017). In situations where a specific single location has been identified, it may be more suitable to use crackdown operations that aim to minimize repeated offending behavior at these locations (Sherman, 1990; Sherman & Rogan, 1995b).

“[H]OT SPOTS POLICING WAS MOST EFFECTIVE IN REDUCING DRUG OFFENCES, FOLLOWED BY DISORDER OFFENCES, PROPERTY CRIME AND THEN VIOLENT CRIME. ALL REPORTED REDUCTIONS WERE STATISTICALLY SIGNIFICANT.” (U.K. COLLEGE OF POLICING, 2021)

Examples from the U.K. also show that for hot spots policing to have an impact, it does not necessarily need to involve heavily armed police (U.K. College of Policing, 2021). For example, in Peterborough, England, one hot spots policing program that used uniformed, unarmed community support police achieved a 20 percent reduction in calls for service (Ariel et al., 2016).

“[THERE IS] STRONG EVIDENCE THAT THE APPROACH [HOT SPOTS POLICING] WILL CONSISTENTLY GENERATE CRIME PREVENTION BENEFITS WHEN IMPLEMENTED BY POLICE DEPARTMENTS.” (BRAGA & WEISBURD, 2020, 18)

Table 1.2: Examples of Impacts of Hot Spots Policing

Location	Change following hot spots policing
Violent crime	
Boston, U.S.	17% reduction (violent crime)
Houston, U.S.	Statistically significant reduction (robbery)
Jacksonville, U.S.	No significant reduction (violent crime)
Kansas City, U.S.	49% reduction (gun crime)
Minneapolis, U.S.	13–20% reduction (robbery)
Montevideo, Uruguay*	23% reduction (robberies)
New York City, U.S.	Statistically significant reduction (assaults)
Newark, U.S.	42% reduction (violent crime)
Philadelphia, U.S.	23% reduction (violent crime)
St. Louis, U.S.	No significant reduction (firearm violence)
Other crimes	
Buenos Aires, Argentina	75% reduction (vehicle thefts)
Calls for service	
Lowell, U.S.	Statistically significant reduction (street fights and drugs)
Lower Lonsdale, Canada	16–17% reduction (mischief and commercial break-ins)
Minneapolis, U.S.	6–13% reduction
Peterborough, U.K.	20% reduction
Riley County, U.S.	Statistically significant reduction
Sacramento, U.S.	Statistically significant reduction

Sources: All studies are referenced in Braga et al. (2019), except for Montevideo* as referenced in Chainey, Serrano-Berthet & Veneri (2021).

Notes: Braga et al. (2019) conducted a systematic review of 65 studies of hot spots policing. The studies listed in this table are those that focused on decreasing violent crime and calls for service, as well as a study from Argentina that examined vehicle thefts. Where information was available, the table shows the level of the change in crime for the type of crime that was the focus of the study. For studies that use statistical models, only the significance of the change of crime was reported rather than the magnitude.

Despite strong evidence that hot spots policing decreases crime, most of these evaluations have focused on short-term periods of often no longer than three months. The only published study that examined a hot spots policing program that operated over a much longer period (Koper et al., 2021) showed that the program contributed to a sustained citywide reduction in citizen calls about crime and disorder of 14 percent.

TIME SPENT IN HOT SPOTS

Although many evaluations have shown that hot spots policing can have an impact on decreasing crime, less is known about how many police personnel are required for this type of program to be successful, and how frequent the patrols need to be. Koper (1995) suggested that the optimal time to spend at hot spots is 12 to 15 minutes every two hours before the police on patrol randomly move to another hot spot in an intermittent manner, similar to Sherman's (1990) crackdown–backoff rotation strategy. The rationale is to maximize the residual deterrence of the patrols—in other words, the length of time that crime continues to be deterred after the police patrol has traveled through a hot spot—by creating a sense of unpredictability about when the police patrol might return. Less is known, however, about whether this 12- to 15-minute period of police activity is applicable to Latin American urban settings where crime levels are often 10 times higher than in the areas where this concept was conceived. Also, the current evidence is mixed about whether the best hot spots policing patrol strategy should involve short and frequent visits or visits of longer duration. Ariel et al. (2016) showed that in public transportation settings, a greater frequency of patrol visits to hot spots had more of an impact in decreasing crime. In contrast, Williams & Coupe (2017) showed that longer and less frequent patrols had a greater impact than shorter but more frequent patrol visits to crime hot spots.

DOES HOT SPOTS POLICING RESULT IN CRIME DISPLACEMENT?

The results from many evaluations of hot spots policing, and from studies that have interviewed police officers who have conducted these types of patrols, suggest that hot spots policing programs do not result in crime simply being displaced elsewhere (Andresen & Lau, 2013; Chainey, Serrano-Berthet, & Veneri, 2021; Haberman, 2016; Rosenfeld et al., 2014; Weisburd & Telep, 2014). Some studies have observed that crime levels drop significantly in the targeted hot spots and increase slightly in the other areas, but the overall net effect is a reduction in crime across the whole area (Ratcliffe et al., 2011; Weisburd et al., 2006). Evidence from Uruguay shows not only that crime was not displaced to streets close to where the hot spots policing program was implemented but that it was not displaced to other areas of Montevideo (Chainey, Serrano-Berthet, & Veneri, 2021).

Crime displacement does come in other forms, though, such as temporal, target, tactical, and offense displacement, and offender replacement (Guerette & Bowers, 2009). Although less research has examined these other forms of displacement, Rosenfeld et al. (2014) found no evidence of temporal displacement (crime shifting to another time of the day or day of the week) and no offense displacement (to another crime type) in the hot spots policing program they examined. Weisburd et al. (2006) did, however, find evidence of tactical displacement for drug dealing and sex work (where offenders altered methods rather than places) in a hot spots policing program in Jersey City, U.S., but they argue that these results were very much due to the nature of these types of crime. For example, sex workers began to move their soliciting activities from the streets and instead started arranging “dates” with clients by other means, such as texting via cellphone. These types of studies suggest that the threat of displacement is greater for those types of crimes involving a sustained demand or sustained motivation, such as drug-related activities.

In some cases, the evidence suggests an effect beyond simple crime displacement, with crime not only decreasing in the targeted areas but also

showing a slight decrease in areas immediately surrounding the hot spots being patrolled. This is known as a *diffusion of benefits effect*, and research has found it to be just as likely to occur as displacement (Braga, Papachristos, & Hureau, 2012; Guerette & Bowers, 2009; Johnson et al., 2014). For example, in Jersey City, Weisburd et al. (2006) observed evidence of a diffusion of benefits from the hot spots police patrols on social disorder. Furthermore, in a systematic review of the effects of hot spots policing on crime, Braga (2007, 16), found that of five studies that had examined displacement and diffusion effects, none reported “substantial immediate spatial displacement of crime into areas surrounding the targeted locations,” and four of these studies identified diffusion of benefit effects.

“HOT SPOTS POLICING DOES NOT APPEAR TO DISPLACE CRIME INTO AREAS SURROUNDING THE TARGET LOCATIONS AND CAN LEAD TO A DIFFUSION OF BENEFITS TO THE AREAS CLOSE TO THE HOT SPOT.” **(U.K. COLLEGE OF POLICING, 2021)**

THE U.S. NATIONAL RESEARCH COUNCIL’S COMMITTEE ON PROACTIVE POLICING REPORTED THAT “HOT SPOTS POLICING STRATEGIES GENERATE STATISTICALLY SIGNIFICANT CRIME REDUCTION EFFECTS WITHOUT SIMPLY DISPLACING CRIME.... HOT SPOTS POLICING STUDIES THAT DO MEASURE POSSIBLE DISPLACEMENT EFFECTS TEND TO FIND THAT THESE PROGRAMS GENERATE A DIFFUSION OF CRIME CONTROL BENEFITS INTO IMMEDIATELY ADJACENT AREAS.” **(WEISBURD & MAJMUNDAR, 2018, 6)**

WHAT SHOULD POLICE DO IN HOT SPOTS?

The success or failure of a hot spots program relies heavily on what police personnel actually do in the hot spots they patrol. Although there is good evidence that hot spots policing is effective, there are still questions for research to answer on the activities the police should perform at hot spots to reduce crime most effectively (Groff et al., 2014; Weisburd & Telep, 2014). The pres-

ence of police patrols in hot spots is highly associated with deterring crime (this is discussed further in Section 3); hence, the activity of the police in these hot spots is what influences the strength of the deterrence. Police officers can enhance the effects of their mere presence by using their knowledge of the hot spots they patrol to help inform problem-solving strategies that can further contribute to reducing crime (Braga & Bond, 2009; Braga et al., 2014; Braga & Weisburd, 2010; Taylor et al., 2011). Section 6 provides more details about how hot spots policing programs can be strengthened and sustained with support from other policing and crime prevention activities.

Another key feature that relates to what police do in hot spots has to do with how they engage with the public, and how approachable the police patrols appear. Several factors tend to affect relations between the public and the police. One of these is victimization. People who have been victims of crime tend to have less trust and confidence in the police (Ashcroft et al., 2003; Dammert & Malone, 2006). Another factor is the perception and fear of crime, as high levels of fear reduce public satisfaction in the police (Haberman et al., 2015; Reisig & Parks, 2000). Other factors include the ineffective control of police corruption, inappropriate use of force by the police (Mourtgos & Adams, 2020), and deficient procedural justice (Haberman et al., 2015). If patrol officers are effectively supervised and actively encouraged to informally engage with members of the public, and if decreases in crime are experienced, this in turn can help to generate a positive public attitude toward the hot spots policing intervention (Ashcroft et al., 2003; Braga et al., 2014; Haberman et al., 2015). However, in crime hot spots there is often an initial hurdle to overcome. Because these are areas where, by their very nature, more crime has previously taken place, the relationship between the community and the police may initially be strained. People who spend a considerable amount of time in a crime hot spot (because they live or work there) have less confidence in the police (Haberman et al., 2015), and if they view the police negatively, they are less likely to assist in crime control when a hot spots policing program is initially implemented (Sunshine & Tyler, 2003; Taylor, 2006). However, these attitudes towards the police are often short-lived when regular patrol activity increases (Kochel & Weisburd, 2017) and citizens in these areas begin to experience less crime and experience informal contacts with the police.

Hot spots policing works best when it is targeted specifically to places of high crime concentration, where the crimes of focus are those that take place on the streets rather than in buildings or on public transportation, and when the police know what to do when they are in hot spots. This includes police personnel taking advantage of the positive public engagement opportunities that are created by their presence in the hot spots they patrol.

A 2004 REPORT FOUND THAT “STUDIES THAT FOCUSED POLICE RESOURCES ON CRIME HOT SPOTS PROVIDE THE STRONGEST COLLECTIVE EVIDENCE OF POLICE EFFECTIVENESS THAT IS NOW AVAILABLE.” (U.S. NATIONAL RESEARCH COUNCIL, 2004, 250)

WHAT WE STILL DO NOT KNOW ABOUT HOT SPOTS POLICING

Certain aspects of hot spots policing have yet to be fully researched. These include:

- ✓ **A BETTER UNDERSTANDING OF THE DOSAGE REQUIRED.** The number of police required to patrol a hot spot and the frequency of their presence there is still unclear, especially in urban settings in Latin America and the Caribbean. Koper’s (1995) conclusion that the police should optimally spend 12 to 15 minutes in a hot spot and randomly circulate between hot spots was based on a single study in a city in the United States. Robbery levels in Latin American cities are typically five to ten times greater than those in North American, European, and Australasian urban settings where this Koper principle has been applied and tested. This suggests that a higher level of dosage (more patrol personnel, visiting hot spots more frequently) may be required in Latin American and Caribbean cities when implementing hot spots policing programs in order to have an impact on crime. Some evidence suggests that frequent short visits to crime hot spots may have a greater effect on reducing crime than if police patrols stay in the hot spots

for a longer period of time (Ariel et al., 2016; Chainey et al., 2022). However, another study showed the opposite—longer and less frequent patrols had a greater impact (Williams & Coupe, 2017)—suggesting that more research is required to determine the type of strategy that works best.

- ✔ **A BETTER UNDERSTANDING OF DISPLACEMENT.** Very few evaluations of hot spots policing have examined displacement to different times of the day (when the police patrols are not present), to different areas of the city (other than to areas close to where the hot spots policing program is implemented), or to different types of crime. In addition, most evaluations of hot spots policing have examined its impact on broad categories of crime (e.g., robbery), rather than examining specific types of crime (e.g., robbery against pedestrians, robberies from motorcyclists, robberies from car drivers). Evaluations are needed to determine if hot spots policing has more impact on specific types of crime than others and if so, why. This will enable those implementing these programs to have more realistic expectations about the potential for reducing crime.
- ✔ **FOOT PATROL VERSUS VEHICLE PATROLS.** Most research indicates that foot patrols to hot spots have a greater impact on crime than vehicle patrols such as motorbikes and cars (Ratcliffe & Sorg, 2017), yet very little research shows if a combination of the two works best, if one type of patrol has a greater residual deterrent effect than the other, and if vehicle patrols work best in certain situations (e.g., in reducing robberies against motorcyclists or patrolling certain areas of the city). The latter point is particularly important in settings in Latin America and the Caribbean, where in some places it is simply too dangerous to expect the police to patrol areas on foot, especially after dark.
- ✔ **COST-BENEFIT EFFECTS OF HOT SPOTS POLICING.** Little has been published on the cost benefits of hot spots policing. This is because hot spots policing typically involves using existing resources in a more targeted and efficient way rather than making a significant investment in new resources. One study, however, showed that deploying one additional police officer to a hot spots policing program had a benefit-to-cost ratio of \$5.36. That is, for every \$1 spent, \$5.36 was saved. These savings did not

just relate to savings by the police, but also to the savings other agencies experienced because of fewer crimes being committed (Washington State Institute for Public Policy, 2017). Hot spots policing also is likely to benefit social and economic welfare, such as by making places feel safer for people to walk around and encouraging business investment when crime levels have decreased; however, the value of such benefits are not included in cost–benefit evaluations.

- ✔ **THE BENEFITS OF INFORMAL ENGAGEMENT TO IMPROVE TRUST IN THE POLICE AND REDUCE THE FEAR OF CRIME.** In Latin America and the Caribbean, levels of trust in the police tend to be low; less than 30 percent of citizens in the region trust the police, compared with about 70 percent on average in the rest of the world (Gallup, 2018; Lati-nobarómetro, 2020). Because being a victim of crime (in particular, robbery) is a key factor that influences people’s fear of crime and their trust in the police (Dammert & Malone, 2006), and because friendly informal conversation between patrol officers and the public can help lower barriers between the two, hot spots policing that involves interaction with the public while police are on patrol theoretically has the potential to reduce the fear of crime (Kelling et al., 1981; Quinton & Tuffin, 2007). Informal community engagement also provides an opportunity to improve trust in the police (Ashcroft et al., 2003). To test this requires more research involving public attitude surveys in places where hot spots police patrols are deployed. Also, it would be valuable to test whether this type of policing is more effective with community engagement.
- ✔ **HOT SPOTS POLICING IN SMALLER CITIES.** Most hot spots policing programs, especially those that have had the biggest impact on crime, have been implemented in large cities. In areas where crime rates are lower, it is expected that hot spots policing will have less of an overall impact (Weisburd & Telep, 2014). However, hot spots policing may be most effective in less populated areas if only the places with the very highest levels of crime concentration are targeted.
- ✔ **TEMPORAL CONCENTRATION OF CRIME.** Hot spots of crime are not necessarily hot spots all of the time; therefore, a consideration of the days of the week and times of the day when crime concentrates in hot

spots is necessary if the targeted deployment of police patrols is to be effective. However, very little research to date has examined the spatial and temporal characteristics of hot spots policing to determine when it is most effective.

- ✔ **IMPACT OF HOT SPOTS POLICING ON ARRESTS AND THE USE OF STOP AND SEARCH.** Very little research has examined the impact that hot spots policing has on arrests. In one study, Ratcliffe et al. (2011) showed that hot spots policing resulted in a 13 percent increase in arrests in the targeted areas, and drug-related detections increased by 15 percent. However, this was considered to be related to the 64 percent increase in pedestrian stops that took place in the targeted areas. Other evidence suggests that high levels of pedestrian stops can have a damaging impact on police and local community relations (Miller et al., 2000; Weisburd et al., 2016), so increasing pedestrian stops in hot spots may damage other intentions of a hot spots policing program.

- ✔ **EXPERIENCE/AGE OF POLICE AND THEIR TRAINING.** Very little research has been published that indicates whether recent recruits or experienced police personnel are better at performing hot spots patrols. Research is also lacking on the types of training the police should receive to prepare them for conducting these patrols. In most cases, no additional training is provided, but it is believed that training that helps explain the principles of hot spots policing, and that provides police personnel with practical ways to improve positive informal community engagement while they are on patrol, is beneficial (Chainey et al., 2017). In some Latin American and Caribbean countries, weak institutional capacities of the police are likely to present an additional challenge in implementing hot spots policing; however, this can be overcome by turning to experts in hot spots policing for assistance in the training that police officers receive (Chainey et al., 2022).

HOW IS HOT SPOTS POLICING DIFFERENT FROM COMMUNITY POLICING, INTELLIGENCE-LED POLICING, AND PROBLEM-ORIENTED POLICING?

- ✔ **COMMUNITY POLICING** has a primary emphasis on engaging the community in the policing process. It aims to develop partnerships between the police, community members, and civic organizations. It requires police agencies to engage with the public as they set priorities and develop tactics, advocates for collaborative responses between the police and community in tackling local crime issues, and emphasizes that the decision-making process for tackling local issues should be shared between the police and the community. Community policing encourages the police to play an expansive role (beyond law enforcement), which typically includes attempting to meet social development objectives in the communities in which they serve.
- ✔ **INTELLIGENCE-LED POLICING (ILP)** and **PROBLEM-ORIENTED POLICING (POP)** are broad approaches that may include hot spots policing as a specific initiative or response. Problem-oriented policing is also geared toward the police being more proactive in how to control crime; it encourages the police to apply crime prevention approaches alongside their operational law enforcement and investigative activities. Other POP activities can also be targeted at crime hot spots (as a complement to hot spots policing) to address certain underlying conditions that create opportunities for crime. This may involve, for example, working with public transportation providers and the municipal government to identify ways to improve the environments around bus and train stations and other transportation hubs to reduce victimization of passengers and staff. See Hinkle et al. (2020) for a review of POP interventions.



THE USE OF HOT SPOTS POLICING IN LATIN AMERICA AND THE CARIBBEAN

Hot spots policing has been used widely in North America and the United Kingdom since the 1990s, but its use to date in Latin American and Caribbean countries has been relatively limited. To better understand the general knowledge on hot spots policing in the region, and to examine how hot spots policing has been used, a survey of police agencies was conducted between October 2017 and April 2018. Responses were received from 11 countries—Argentina, The Bahamas, Chile, Colombia, Ecuador, Guyana, Honduras, Mexico, Paraguay, Peru, and Uruguay.

The survey found that police agencies from these countries were familiar with the general concept of hot spots policing, but there were differences in how they defined it. A common feature within all the definitions was the notion of analyzing crime data to determine areas where crime levels were highest, and then using the analysis results to allocate resources more efficiently.

THE EVOLUTION OF HOT SPOTS POLICING IN LATIN AMERICA AND THE CARIBBEAN

The region has seen an increase in recent years in the interest and application of hot spots policing, with programs becoming more sophisticated in their objectives, analyses, selection of target areas, program implementation, and evaluation.

One of the first experiences of hot spots policing in the region was in 2005 in The Bahamas when the Royal Bahamas Police Force made changes to its operations and strategic priorities after identifying that a significant number of offenses were taking place in particular areas. This led to the implementation of a policing program that involved the police becoming more geographically focused in their operations. Chile adopted a more geographically focused approach in 2011, building on the Quadrant Plan program that had been introduced by the Carabineros of Chile in 1996. In the latest iteration, improved analysis of crime patterns in Santiago resulted in police patrols targeting specific high-crime quadrants (covering approximately five by five street blocks) during the times of the day when crime had been observed to highly concentrate. A similar approach was also used in Colombia, specifically in Medellín (in 2015) and Bogotá (in 2016), where crime data were analyzed to determine areas of high crime concentration to which police patrols were then deployed. In both cases, the police patrol deployment involved vehicle patrols and some foot patrols to the targeted areas.

Police agencies in Paraguay, inspired by the programs implemented in Chile and Colombia, have introduced hot spots policing programs in the cities of Fernando de la Mora and San Lorenzo. In more recent years, Argentina, Ecuador, Mexico, Peru, and Uruguay have implemented these types of policing programs in specific cities, several of which are large-scale police deploy-

ment operations that daily involve more than 100 police personnel. In all cases, the general objectives of the hot spots policing programs were to reduce crime in the targeted areas.

Although the regional survey did not receive a response from Trinidad and Tobago, a hot spots policing trial was introduced in 2013 in several police districts in Trinidad that had experienced the highest incidence of violent crimes. There were several implementation challenges that prevented the program from proceeding successfully (Sherman et al., 2014), which this report examines in Section 4.

The hot spots policing initiatives in Argentina and Uruguay were supported by the Inter-American Development Bank (IDB) as part of lending or technical cooperation programs, with researchers from University College London acting as the lead consultants. This collaborative work on the design, implementation, and evaluation of these initiatives has yielded a rich set of lessons learned, which are reflected in this guide. (For more about the case studies, see Section 7.)

ANALYSIS-INFORMED HOT SPOTS POLICING IN URUGUAY

Between 2013 and 2015, the Uruguay Police trialed several approaches to improve the deployment and targeting of police patrols in the city of Montevideo. This included a predictive policing trial using software created by PredPol to identify quadrants of 100 meters by 100 meters, and using maps that the police created themselves showing “critical areas” (each covering several street blocks) where high levels of crime had been experienced. Learning from these trials, the Uruguay Police decided instead to focus on the street segment as the geographic unit of analysis for the deployment and targeting of police patrols. This would help them identify the specific locations where crime was most present and would be easier to use in an operational sense

because street segments are an easier geographic unit to use for patrol deployment purposes than square blocks. The Uruguay Police invested in creating a new national Crime Analysis Unit that had the task of identifying the street segments and intersections where high levels of crime persisted, and to use analysis results to inform police resource deployment. The result of the Crime Analysis Unit's initial work led to the creation of a new hot spots policing program that was introduced in Montevideo in 2016 with the support of a loan from the IDB.

Map 2.1: Example of an Analysis Used to Inform a Hot Spots Policing Program



Source: Spencer Chainey.

Note: This map shows circles of different sizes at intersections relating to the number of robberies and red lines for segments of high-crime streets. This analysis was used to inform a hot spots policing program in Uruguay.

As hot spots policing programs in the region have developed, the programs' objectives have become more specific, focusing for example on reducing certain types of crime, such as robberies and street thefts in Uruguay and Argentina, gun crimes in The Bahamas, and crime against property in Ecuador. Hot spots policing programs introduced in Mexico have also been used to help improve coordination between national and local security agencies. In Colombia, meanwhile, such programs have identified ways municipal government agencies can support the crime reduction objectives of hot spots policing by improving public lighting and increasing the frequency of garbage collection. In Argentina, hot spots policing programs implemented in 2017 in Santa Fe, La Plata, Tres de Febrero, and Morón have also aimed to improve engagement with the public.

THE ANALYSIS OF HOT SPOTS AND THE DEPLOYMENT OF POLICE PATROLS TO TARGETED AREAS

Of the countries surveyed, all stated that they had used geographically referenced crime data to analyze and identify hot spots, with over half also noting their use of crime statistics to determine where patrols should be deployed.

The main difference between the countries surveyed was the defined geographic unit of analysis and the subsequent geographic unit to which patrols were deployed. Some countries defined hot spots in terms of districts, beats, neighborhoods, or quadrants, whereas others were more specific by identifying hot spots at the street segment and intersection level for the targeted deployment of hot spots patrols (see Table 2.1).

Table 2.1: Geographic Units Used for Hot Spots Analysis and Police Patrol Deployment

Police beats and neighborhood blocks	Quadrants	Street segments and junctions
Bahamas	Chile	Argentina
Ecuador	Mexico	Colombia
	Paraguay	Uruguay

Source: Authors' summary.

Notes: Police beats and neighborhood blocks are typically larger than 1 square kilometer; quadrants are typically smaller than 1 square kilometer.

For example, in The Bahamas, hot spots were defined as a police beat (typically larger than 1 km²) to which a vehicle police patrol was deployed (cars or minibuses). In Chile, Mexico, and Paraguay, the hot spots where police were deployed were defined as quadrants (typically smaller than 1 km²). Chile designated areas that were 375 m² in size and deployed police officers to patrol on foot, supported by vehicle patrols, the mounted police, and the canine unit. In Paraguay, hot spots were defined as an area of around 8 to 10 street blocks to which a patrol was assigned. In Mexico, only vehicle police patrols were deployed to crime hot spots. In Ecuador, hot spots were defined as areas between 1 km² and 5 km² in size.

CRIME CONCENTRATION IN COLOMBIA AND POLICE PATROL ALLOCATION

In Colombia, the police have recognized for some time that areas that experience the highest levels of crime should receive more attention from police patrols. Targeting police patrols to such areas has become common practice in many cities. However, more detailed study found a mismatch between the allocation of patrol resources and the patterns of crime concentration, and the targeting of police patrols to crime hot spots was considered to be insufficient for the level of crime in these areas. In Medellín, for example, a third of all crimes were found to be occurring on only 3 percent of all the street segments in the city, but in terms of allocation of police resources, these streets were receiving less than a fifth of the police force's patrol time (Collazos et al., 2020). In another study in Bogotá, 25 percent of all crimes took place on only 2 percent of the city's street segments, yet these segments were receiving only 10 percent of police patrol time (Blattman et al., 2021). These findings helped to inspire new hot spots policing programs in both cities to improve the time spent by police patrols in crime hot spots. (Details about these programs are provided later in this guide, and they are featured in Section 7.)

In contrast, the geographic unit of analysis of crime hot spots in Argentina and Uruguay was specific to street segments and intersections, which in turn were the specific areas to which hot spots police patrols (mainly foot patrols) were deployed. In Uruguay, the foot patrols that were deployed to certain street segments were supported by motorbike and car patrols. Police vehicles would patrol a wider area of several blocks, covering areas between the locations where many of the foot patrol officers were deployed. In Colombia, hot spots were also defined at the street segment level. After an analysis compared the allocation of police patrol resources against the patterns of crime concentration in Medellín and Bogotá, a new hot spots policing strategy was developed that deployed motorbike patrols across quadrants consisting of approximately 120 street segments. The patrols were required to cover the whole quadrant, but the aim was to intensify patrols on particular streets where hot spots had been identified.

Map 2.2: Hot Spots Identified in Medellín, Bogotá, and Montevideo



(A) Medellín



(B) Bogotá



(C) Montevideo

Sources: Map A (adapted from Collazos et al., 2020), Map B (adapted from Blattman et al., 2021), and Map C (adapted from Chainey, Serrano-Berthet & Veneri, 2021).

Notes:

Map A (of Medellín), Map B (of Bogotá), and Map C (of Montevideo) show results identifying street segments with high concentrations of crime.

Map A (of Medellín) depicts the experimental sample of 967 crime hot spots when considered as independent street segments, or 817 crime hot spots when contiguous streets are joined into one hot spot.

Map B (of Bogotá) shows the street segments, in black, which are the 1,919 streets included in the experimental sample.

Map C (of Montevideo) shows street segments (highlighted as the thickened lines) and circuits (or *circuitos* in Spanish) to where patrols were deployed. The circular symbols indicate the number of robberies that previously occurred on each street segment.

Almost all the police agencies in each country conducted analyses of when crimes took place in the hot spots to better understand how crime levels changed by the day of the week and the time of day, and then used this information to assist with resource deployment. For example, in Uruguay the police identified that the majority of street segments that should receive hot spots patrols needed to be patrolled for eight hours a day, from the late afternoon to 1 a.m.

In most of the places surveyed, the nature of the hot spots deployment involved police officers patrolling along the streets and across the areas where they had been assigned. Typically, the officers were assigned to patrol only one area. In Argentina, foot patrols were required to rotate between patrol areas during their shifts. Additionally, in Argentina and Ecuador the hot spots policing programs emphasized the need for the police to spend part of their patrol time at strategic fixed points in the patrol areas they had been assigned. This was to increase the presence of the police patrols in specific areas where crime levels had been particularly high, and to maximize the visibility of the police, such as at major intersections.

HOT SPOTS POLICING AND COMMUNITY ENGAGEMENT

Community policing has a long history in Latin America and the Caribbean, with a principal aim being to improve the public's trust and confidence in the police.

Taking advantage of the community engagement opportunities that are presented through hot spots policing is something that appears to have been done in all the countries surveyed. For example, in the hot spots policing programs in Argentina, Colombia, Mexico, Peru, and Uruguay, the police were actively encouraged to interact with citizens, residents, and business owners in the patrol areas to help improve the perception of safety. Engagement between the police and members of the community was also considered to be a good way to collect information about problems or conflicts that local people had observed. Similarly, Ecuador's program encouraged the police to speak to business owners, security officers, and other members of the public as they patrolled to assure them of their safety and share relevant information that may be of use. Additionally, in Honduras and Paraguay, the police patrols conducted short surveys with members of the public to gather information about crime and citizen security issues.

THE IMPACT OF HOT SPOTS POLICING IN LATIN AMERICA AND THE CARIBBEAN

In almost all the countries surveyed, reductions in crime were experienced after hot spots policing programs were introduced. The program in Bogotá , Colombia, was the main exception.

Although violent crimes in Bogotá dropped significantly, there was some evidence of displacement to property crimes (Blattman et al., 2021). The rigor of the evaluations performed in each country varied widely—only the programs in Argentina, Colombia, Ecuador, Honduras, and Uruguay used control groups to monitor the impact of their programs—but the overall experience of hot spots policing in the region showed that it can have a positive impact on reducing crime in urban settings. Notably, the biggest reported decreases in crime were seen in the hot spots policing programs designed at street segment level, in which the police patrolled very specific locations (rather than covering numerous streets) and focused on reducing certain types of crime (such as street robbery). For example, the program in Uruguay showed a 23 percent decrease in robberies across the street segments that were targeted with hot spots policing patrols within the first year of the program’s implementation (Chainey, Serrano-Berthet, & Veneri, 2021). This was after several consecutive years of increases in robbery in Uruguay. More details about the evaluations of hot spots policing programs in Argentina, Colombia, and Uruguay are provided in Section 5 and in the supporting case study documents from these countries listed in Section 7.



HOW DOES HOT SPOTS POLICING WORK?

Hot spots policing decreases crime through the targeted deployment of police patrols to the particular places where crime highly concentrates, and through the frequent presence of the police patrols in these areas. This section explains the concentration of crime and what police patrols need to do in these places to ensure that their presence is effective.

CRIME CONCENTRATION

Studies that have examined patterns of crime have shown that a very small proportion of places are responsible for a large proportion of crime. The observation that crime concentrates into a small number of places has been found to be applicable in a wide range of settings (see Table 3.1). For example, studies in New York City, Boston, London, Bogotá, Rio de Janeiro, and Montevideo have shown that less than 5 percent of places account for 50 percent of all crimes. In particular, violent crime such as robberies and assaults are consistently observed to highly concentrate in specific spots. This consistent observation of crime concentration provides the opportunity for targeting police resources to these places rather than dispersing them more widely. Targeting police resources to the small number of places where crime concentrates in a city can then have an overall impact on reducing the level of crime across the whole city. Although the displacement of crime is always a threat, it is not inevitable.

Table 3.1 Studies on the Concentration of Crime in Places

Location	Proportion of City's Streets/Places and Proportion of Crime Concentration															Reference	
	% Of Places																
	1%	2%	3%	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%		
Calls for service																	
Boston, U.S.	■	■	■	(50% of all calls)												Pierce et al. (1988)	
Minneapolis, U.S.	■	■	■	(50% of all calls)												Sherman et al. (1989)	
New York City, U.S.	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	(32% of property crime calls)	Eck et al. (2000)
Crime records—organized by type of crime																	
Northern Ireland, U.K.	■	■	■	■	■	(62% of all crime)										Macbeth & Ariel (2017)	
Seattle, U.S.	■	■	■	■	(50% of all crime)											Weisburd et al. (2009)	
Tel Aviv-Jaffa, Israel	■	(25% of all crime)															Weisburd & Amram (2014)
Vancouver, Canada	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	(60% of all crime)	Curman et al. (2014)
Boston, U.S.	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	(66% of street robberies)	Braga et al. (2010)
La Matanza, Argentina	■	■	(50% of vehicle thefts)														Chainey et al. (2019)
La Plata, Argentina	■	(25% of street robberies)															Chainey et al. (2019)
Medellín, Colombia	■	(25% of vehicle thefts)															Mejía et al. (2015)
Monterrey, Mexico	■	(50% of vehicle thefts)															Chainey et al. (2019)
Montevideo, Uruguay	■	(23% of street robberies)															Chainey et al. (2017)
Rio de Janeiro, Brazil	■	■	■	■	(50% of street robberies)												Chainey & Monteiro (2019)
Jersey City, U.S.	■	■	■	■	(20% of disorder crimes)											Weisburd & Mazerolle (2000)	
Boston, U.S.	■	■	(52% of firearms crime)														Braga et al. (2010)
Lima, U.S.	■	■	■	■	■	■	■	■	■	■	(40% of violent crimes)					Ackerman & Murray (2004)	
Bogotá, Colombia	■	■	(100% of homicides)														Blattman et al. (2021)
London, U.K.	■	■	■	■	■	(80% of murder and near-lethal violent crimes)										Summers & Johnson (2016)	
Nova Iguaçu, Brazil	■	(50% of homicides)															Chainey et al. (2019)
Seattle, U.S.	■	(33% of all crimes related to juvenile arrests)															Weisburd et al. (2009)

Sources: See the far right column for source information by study location.

Notes: This table summarizes studies of locations and the proportion of the location where calls for service and crimes concentrate. For example, in Boston, 3 percent of the city's streets/places concentrate 50 percent of all calls for service. The first category of rows is for calls for service, with locations organized alphabetically. The later rows focus on specific categories of crime. Some locations (such as Boston) are shown for calls and for specific categories of crimes.

WHY DOES CRIME CONCENTRATE?

It is the particular characteristics of places that explain why crime concentrates in some areas and not in others. On one level, these characteristics relate to the neighborhood. For example, where social ties within a community are too weak to influence how people behave or where they may strongly promote illegal behavior, crime activity is more likely (Sampson, 2012; Sampson et al., 1997; Shaw & McKay, 1942). On another level, the characteristics of places relate to the opportunities, interactions, and behaviors of people in those places (Brantingham & Brantingham, 1984; Clarke & Felson, 1993; Cornish & Clarke, 1986; Cohen & Felson, 1979). If a person has the motivation to commit a crime, such as a cell phone robbery, the opportunities to do so will be more present in certain locations—for instance, in a place that is familiar to the offender and where he or she sees many opportunities to commit this type of crime. Understanding the reasons for crime concentration at the neighborhood level and the street level can provide a better appreciation of how hot spots policing works to reduce crime.

WHY DOES CRIME CONCENTRATE IN PLACES?

THEORETICAL PRINCIPLE 1: NEIGHBORHOOD CHARACTERISTICS

SOCIAL DISORGANIZATION AND COLLECTIVE EFFICACY. Social disorganization theory posits the idea that higher levels of crime, especially crime committed by young people, are present in certain neighborhoods because the social fabric in these areas is not strong enough to have a controlling influence over the people who live there (Shaw & McKay, 1942). Collective efficacy refers to the ability that local residents have to control the behavior of individuals (Sampson, 2006; Sampson, 2012; Sampson et al., 1997). Without clear rules for what constitutes acceptable behavior and with few sanctions available to curb adolescent exuberance, crime (as the

theory suggests) is more likely. In certain neighborhoods, the collective efficacy of an area may indeed strongly promote illicit behavior; this could be the case in areas with a high degree of distrust in the police and a lack of respect for rule-setting, especially in certain Latin American and Caribbean cities (Corbacho et al., 2012).

While there is logic behind the theoretical arguments of social disorganization and collective efficacy, it can be quite difficult for police activity to make an impact on these issues because police agencies often have limited power to address these more systemic causes of crime. To tackle the issues associated with social disorganization and collective efficacy requires not only a police response—one that includes engaging with the public on what is and what is not acceptable, and building trust with the community—but a corresponding response from other agencies to strengthen the social fabric of the neighborhood. Contributions from other agencies may include improved local services, such as education; more opportunities for young people, such as sports activities; treatment for drug and alcohol misuse; and greater community cooperation and participation (Chainey, 2021).

Social disorganization and collective efficacy offer neighborhood-level explanations for crime; therefore, programs designed to address these challenges are considered to help create safer neighborhood environments.

THE STABILITY OF CRIME CONCENTRATION

Many studies on crime concentration patterns have shown that these patterns tend to be stable (Chainey & Monteiro, 2019; Gill et al., 2017; Jaitman & Ajzenman, 2016; Weisburd et al., 2004). That is, crime hot spots (especially for crimes such as street robbery and violent crime) tend not to move, and instead tend to persist in certain areas until something is done to address these hot spots. This means that where crime has previously concentrated is where crime is likely to concentrate in the future. The persistence of crime concentration is very much related to these areas being the places where the most favorable conditions for crime are located (Chainey, 2021).

WHY DOES CRIME CONCENTRATE IN PLACES?

THEORETICAL PRINCIPLE 2: SITUATIONAL CHARACTERISTICS

Effective hot spots policing operates at very specific geographic levels (such as at street segments and street junctions) (Weisburd et al., 2012) with the particular aim of countering the concentration of crime at these locations. It therefore focuses on countering the characteristics that explain why higher levels of crime are taking place in these places. It is the attention toward the specific situational characteristics in these locations that explains why crime can be reduced using hot spots policing. The reasons associated with these situational characteristics relate to the decision making, awareness spaces, and daily routines of offenders.

- **OFFENDERS' DECISION MAKING (THE RATIONAL CHOICE PERSPECTIVE).** Regardless of background, all individuals are rational actors who seek to maximize benefits while reducing costs and risks. This implies that we consider information from our environment when making decisions, and act accordingly by assessing the expected gains against the risks and costs associated with our actions. These principles apply not only to law-abiding people but also to those who commit crime. Offenders decide to commit a crime when and where they think the possible benefits are greater than the effort involved and greater than the risks of being caught (Cornish & Clarke, 1986). In hot spots policing terms, this simple rule is very useful for considering how crime can be reduced. For instance, if police patrols are oriented to a particular place at a particular time where crime frequently takes place, offenders who have previously acted with ease in these locations will now think twice about committing the crime they would normally commit. As a result of the new perceived risks due to the presence of the police, offenders are more likely to decide not to commit the offense because the risk of being caught is now greater than the potential benefits associated with committing the crime.

📍 **DAILY ROUTINES (THE ROUTINE ACTIVITY PERSPECTIVE).** We all have daily routines which in turn can help predict where and when we will be and what it is we are likely to be doing. In a crime context, the routine activity perspective is based on the simple idea that the behavior of offenders and their potential victims helps explain the occurrence of crime. For a crime to occur, according to this perspective, three components are necessary: the presence of a likely offender, the presence of a suitable target, and the absence of a capable guardian. The three components—offender, target, and lack of a guardian—must meet in time and space to provide the necessary chemistry for crime (Felson & Clarke, 1998). This meeting in time and space is not random but is dictated by the natural rhythm of daily life—people going about their routine activities, such as potential targets going to and from work. The combination of the three components (offender, target, and guardian) and their respective qualifiers (likely, suitable, and capable) then dictates how the risk of crime changes over time with the movement of people throughout their daily routines. Crime opportunities are most present when these components converge. This theoretical perspective helps explain why hot spots of crime are present during certain times of day rather than at all times. Police patrols that are targeted to these hot spots become capable guardians that restrict crime opportunities. Reducing crime in hot spots can also involve reducing the suitability of targets by making people aware of how to minimize their risk of victimization.

📍 **OFFENDER AWARENESS SPACES (CRIME PATTERN THEORY).** Crime pattern theory suggests that offenders will tend to steer toward areas familiar to them to commit crime (Brantingham & Brantingham, 1984). Over time, as we go about the routines in our daily lives, we develop an awareness space consisting of well-known areas in which we feel comfortable. Offenders also have awareness spaces, with the search for criminal opportunities most likely occurring in these places. Opportunities for crime are not evenly spaced throughout the landscape; therefore, within an offender’s awareness space there is the need to select certain areas where opportunities are more present. Although there are always exceptions, the majority of offenders tend to commit most

of their crimes in places they know, where the opportunities are present, where they know the best ways to escape, and where they feel comfortable, do not feel as if they stand out, or can easily appear to be anonymous (Chainey, 2021). Crime hot spots are where many offenders feel comfortable to commit crime. Restricting opportunities for crime in these locations, through the presence of hot spots police patrols, restricts the access that offenders have to their preferred and most available opportunities for crime.

COUNTERING THE CONCENTRATION OF CRIME WITH HOT SPOTS POLICING

Countering the geographic concentration of crime requires that the favorable conditions for crime are addressed in these specific locations. Hot spots policing works by making would-be offenders believe it is now much riskier for them to commit a crime. If a police patrol is now present in the places where offenders have previously been able to commit crimes, the offenders are likely to consider this factor when they assess the risks involved in committing a crime against any rewards they may gain. This theoretical principle does not suggest that all crime is deterred but that a large proportion of crime may now be deterred because of the presence of the police in these areas where many crimes have previously taken place. It also does not mean that offenders who previously committed crime in these areas of high crime concentration suddenly become law-abiding people! Instead, restricting offenders' opportunities to commit crime in a place where they previously did so means that they are now likely to commit less crime than before.

DO THE OFFENDERS WHO PREVIOUSLY COMMITTED CRIME NO LONGER COMMIT ANY CRIME?

Hot spots policing programs are mainly designed to affect the opportunities for offenders to commit crimes at specific places rather than the social characteristics and wider community issues in a neighborhood. Hot spots policing does not address the structural, social, or psychological factors that might induce a person to commit a crime; instead, it aims to reduce the opportunities that potential offenders have to act.

Deterrence is the main explanation for why hot spots policing can help decrease crime. The visible presence of police patrols in crime hot spots makes offenders think it is now riskier for them to commit crime in an area where they previously committed many crimes, and deters other potential offenders from committing crime where hot spots police patrols are present. However, mechanisms other than deterrence also help explain why hot spots policing can help to decrease crime:

- ✔ **ARRESTS OF OFFENDERS**—Additional police presence in an area is also associated with additional police activity, such as arrests. These arrests may result in the removal of offenders who were previously prolific in committing crime in the hot spots.
- ✔ **STOP CHECKS AND SEARCHES**—By stopping people who are suspicious, checking their ID, and searching them for weapons, drugs, or stolen items, police may help to disrupt offending activity and reinforce the deterrent effect of the hot spots police patrols. However, excessive use of stop checks and searches can damage trust and confidence in the police (Miller et al., 2000; Weisburd et al., 2016).

- ✔ **COMMUNITY INTERACTION**—Better interaction by the police patrols with local citizens, such as educating people about how to minimize their risk of victimization, may also contribute to reducing crime in hot spots.

Which of these specific mechanisms works best—whether deterrence, police activity, or community engagement—is not known and has become a recent field of research.

WHY DOES CRIME CONCENTRATE IN PLACES?

THEORETICAL PRINCIPLE 3: THE LEAST EFFORT PRINCIPLE

An important concept central to situational characteristics is the theoretical principle of least effort (Brantingham & Brantingham, 2017). Physical space requires effort to cross it, and people usually exert the minimum effort possible to complete their tasks. The least effort principle, therefore, has an influence on the behavior of offenders by explaining why there are geographical limits to an offender's awareness space and to the distance the person is willing to cover to commit a crime. Increased distance to commit crime increases not only effort but also risk, as it increases the possibility that the offender will stray into an unknown area. The least effort principle is, therefore, a useful mechanism for thinking about the geographical extent of an offender's spatial behavior and the crime patterns that may result (Chainey, 2021). In terms of crime concentration and offender targeting, it suggests that the person who committed an offense is likely to be local and familiar with the area, lured by the awareness of the rich opportunities for crime in these places. Using hot spots policing to make the commission of crime more difficult in areas where opportunities are most present helps explain why offenders commit less crime in these areas and helps explain why they do not just displace their criminal activities to other locations.

Crime concentrates in certain places because of a combination of factors that make these places particularly favorable for crime to occur. These favorable factors relate to a combination of people's normal, everyday activities that place them in these environments; the unequal geographic distribution of opportunities to commit crime; an offender's assessment of the risks, efforts, and rewards for committing a crime; and the proximity to an offender's home and sense of familiarity.

THE CONCEPT OF RESIDUAL DETERRENCE

Hot spots patrols do not need to be positioned in a single street segment or street junction for the full duration of a patrol assignment. The concept of residual deterrence means that police officers assigned to a hot spot can patrol several neighboring street segments. Their presence has a residual effect that can last for several minutes (sometimes longer) after they have patrolled a location (Koper et al., 2013; Sherman, 1990). Research by Koper (1995) in a U.S. city suggests that the optimal time that police patrols should spend in a hot spot is 12 to 15 minutes, returning within two hours if crime has been analyzed to persist in this area for longer than a two-hour period. Crime levels in Latin American and Caribbean cities are often much greater than those in the urban settings where this Koper principle has been applied and tested. It is therefore likely that in these cities, the time spent by police patrols in crime hot spots should be greater; in other words, police patrols should spend more time patrolling hot spots and return more frequently to ensure a lasting residual deterrence effect.



HOW TO IMPLEMENT A HOT SPOTS POLICING PROGRAM

This section provides a comprehensive, step-by-step guide on how to implement a hot spots policing program. There are three key stages involved:

- ✓ **STAGE 1:** Analysis and design (including training of patrol personnel)
- ✓ **STAGE 2:** Implementation
- ✓ **STAGE 3:** Monitoring and evaluation planning

Each stage involves a number of steps that should be completed for the program to be effective. After each stage, a checklist is provided to help ensure that all the necessary steps have been completed.

STAGE 1: ANALYSIS AND DESIGN

The objective of the first stage is to ensure that the hot spots policing program is well designed and that commitments have been made to ensure its effective implementation. The first stage involves four steps:

- ✓ Establishment of support and commitment to the program from key officers
- ✓ Analysis, consultation, and the development of a proposal on the hot spots policing program
- ✓ Agreement on the hot spots policing program and its resourcing
- ✓ Officer training for hot spots patrols

ESTABLISHMENT OF SUPPORT AND COMMITMENT TO THE PROGRAM FROM KEY OFFICERS

The first step is to build interest and support among senior police officers for the idea of implementing a hot spots policing program. To achieve this will involve the following:

- ✔ Meeting with key officers to discuss what hot spots policing involves, how it could be used to help address a current problem (e.g., an increase or persistent issue with high levels of robbery), and the objectives of a planned hot spots policing program
- ✔ Using examples of hot spots policing programs and the impact these programs have had in decreasing crime
- ✔ Answering questions about hot spots policing, such as potential problems of crime displacement and the estimated number of patrol personnel that will be required
- ✔ Discussing the key stages involved in implementing such a program, and the proposed work plan for the program's implementation. This should include deciding who is going to be involved in moving the plans forward and implementing the program.

At this point, it is also useful to nominate a police officer who will take the lead in overseeing the planning and implementation of the program.

This initial step is fundamental. The second step should not begin unless and until there is interest, at least in principle, in the idea of implementing a hot spots policing program. Expectations for the program also need to be managed early on. The police will need to recognize that hot spots policing will not decrease all types of crime but will be geared toward reducing certain types of offenses. For evidence on the types of crime that hot spots policing is most effective in decreasing, see Section 1 of this guide.

ANALYSIS, CONSULTATION, AND THE DEVELOPMENT OF A PROPOSAL

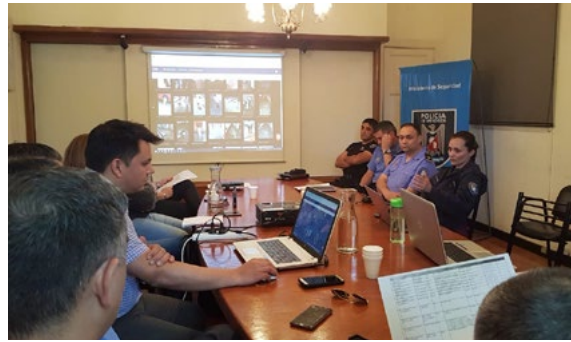
The second step includes analyzing crime patterns, conducting a review of and consultation on the analysis findings, and developing a proposal for a hot spots policing program. It is anticipated that this step will take between one and four months to complete, depending on the size of the program being planned.

ANALYSIS OF CRIME PATTERNS

The objective of this task is to complete a detailed analysis of where and when crime concentrates in the area where the hot spots policing program

is being considered. This task will require a person with suitable technical analytical skills, such as a crime analyst.

The analysis will require geographically referenced crime data, other geographic information (such as street maps of the study area), and appropriate information technology that will allow an analyst to identify patterns of crime. The crime data that are analyzed should include only those types of crime that the program plans to address, rather than all types of recorded crime. For example, if the goal is to reduce robberies, the analysis should look at police data on robberies. Analysis of similar types of crimes may be useful (such as thefts from cars in this example) to examine if patterns are similar. Use of incident data (calls for service to the police) may also be useful to include in the analysis, especially if the types of incidents are similar to the type of crime being analyzed. For example, if violent assaults are the focus, the analysis might look at data on calls for service related to disorder incidents. The crime data should also include details on when the crime took place for analysis of temporal patterns of crime.



Photos 4.1: Hot spots analysis workshops. Analysis was conducted through three-day workshops in Argentina and Mexico, resulting in 12 cities preparing hot spots policing proposals. Sources: (clockwise from upper left) Spencer Chainey, Carolina Appiolaza, Gaston Pezzuchi, Rodrigo Serrano-Berthet.

DATA AND TECHNOLOGY REQUIREMENTS FOR ANALYZING CRIME HOT SPOTS

- ✔ **POLICE-RECORDED CRIME DATA.** Crime data for at least one year should be used for the analysis of crime hot spots, to help identify any seasonal fluctuations in crime. If the crime being analyzed has recently increased, data covering the period of increase should be used to identify areas where high levels of crime persist and to identify high-crime areas that have experienced the highest recent increases. The recorded crime data should include the type of crime (such as robbery against a pedestrian or theft from a vehicle), the date and time when the crime took place, and the address where it occurred. If the crime record shows a date and time range—for example, in the case of a car theft when the victim does not know precisely when the offense occurred—each of the data fields within the range (committed from/to for the time and committed from/to for the date) should be extracted for analysis. Geographic referencing (also referred to as geocoding) involves assigning geographic coordinates that relate to the address where the crime took place. Geographic referencing should be sufficiently precise to ensure that the analysis of hot spots identifies the distribution of crime across street segments and street junctions. See Section 7 for further guidance on geographic referencing and geocoding.
- ✔ **OTHER GEOGRAPHIC INFORMATION.** Background mapping data will be required to identify the location of hot spots. Data on street segments and intersections should also be used to identify the specific locations where crime is observed to concentrate. In situations where street segment data are not available, micro-grid cells (of about 100 m² to 200 m²) should be used to identify areas of crime concentration. (For an example using grid cells, see Chainey & Monteiro, 2019.)
- ✔ **INFORMATION TECHNOLOGY.** Suitable computing hardware will be required—as a minimum, a PC or Mac with 8 GB of RAM, but preferably 16 GB or higher, and an adequate CPU speed with hyperthreading or

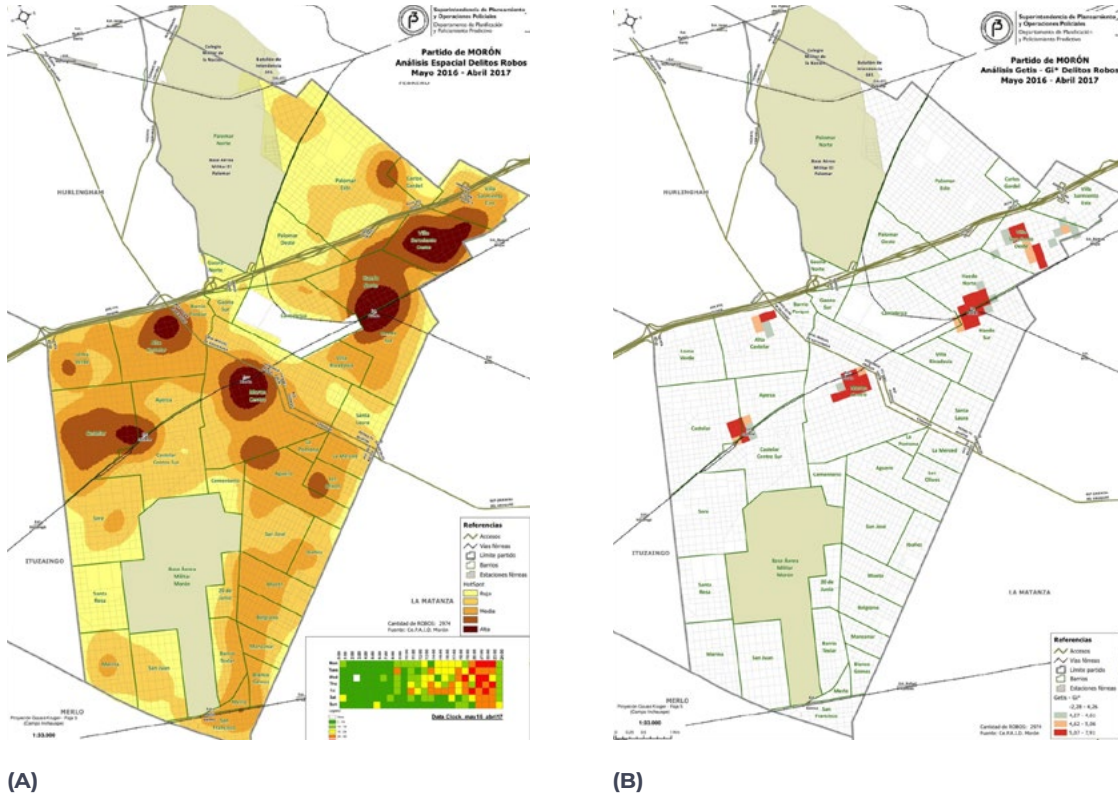
multi-core, and available internal hard drive storage. (The specific hardware details will change based on the software choices.) Spreadsheet software and geographic information system (GIS) software (such as ArcGIS, MapInfo, or QGIS) should be used to perform the analysis.

In addition, many police agencies use global positioning system (GPS) technology to monitor where patrol personnel are deployed. This GPS technology is often connected to police radios. Use of this technology should be reviewed (if not already in place) because it can be useful for monitoring the deployment of hot spots policing and the dosage of this deployment.

The analysis should focus on identifying specifically where and when crime concentrates. Listed below are details on analysis techniques that can be used to determine these areas. Links to further information about these techniques are provided in Section 7 of this guide.

KERNEL DENSITY ESTIMATION (KDE) AND THE GI* STATISTIC. KDE is a hot spots analysis technique available in many types of GIS software. It can help to initially identify areas where crime concentrates; from that information, specific streets and street junctions can be identified where high concentrations of crime are present. The Gi* statistic is a more advanced analysis technique that identifies areas where the concentration of crime is statistically significant. Although both the KDE and Gi* techniques will identify similar areas, they can be used in combination to help determine areas of focus from which street-level analysis can then be performed.

Map 4.2: Kernel Density Estimation, GI* Statistic, and Data Clock Examples for Morón, Argentina



Source: Ministry of Security for the Province of Buenos Aires. With thanks to Gastón Pezuchi.

Note: Both maps show where crime concentrates in the district of Morón, Argentina. Map A is a kernel density estimation (KDE) hot spots map. Map B is a GI* statistic hot spots map. Map A also includes a data clock showing when crime concentrates in the city.

ANALYSIS OF CRIME DISTRIBUTION ACROSS STREET SEGMENTS AND STREET JUNCTIONS

– This analysis identifies the street segments and street junctions that account for a large proportion of crime. This will require assigning each crime record to a street segment or street junction (if this was not performed during the geographic referencing process), and from this determining the number of crimes that took place on each street segment/junction. The result of this process can then be used to map those street segments and street junctions where crime levels were highest. Additionally, it is useful to list these street segments in a table to rank the number of crimes per street segment/junction. Useful statistics to generate from this process include:

- ✓ Number and proportion of street segments/junctions accounting for 25 percent of crime

- ✓ Number and proportion of street segments/junctions accounting for 50 percent of crime

Below is an example of these statistics, a table listing the hottest street segments, and a map showing a hot spot with hot street segments.

- Number of streets in study area: 8,042
- Number and proportion of streets responsible for 25 percent of crime: 235 (2.9 percent)
- Number and proportion of streets responsible for 50 percent of crime: 639 (7.9 percent)

Source: Ministry of Security for the Province of Buenos Aires. With thanks to Gastón Pezzuchi

Table 4.1: Hot Spots, Streets where 25% of Crime is Concentrated

ID	Street segment name	# of crime
1897	Av García	9
3529	R Fernández	9
2938	Av González	9
356	Av Rodríguez	9
7831	Av López	8
6372	R Martínez	8
793	Av Sánchez	8

The street names in this table are fake to protect their identity.

Source: Ministry of Security for the Province of Buenos Aires. With thanks to Gastón Pezzuchi

Map 4.2: Hot Spots, Where Crime Is Concentrated

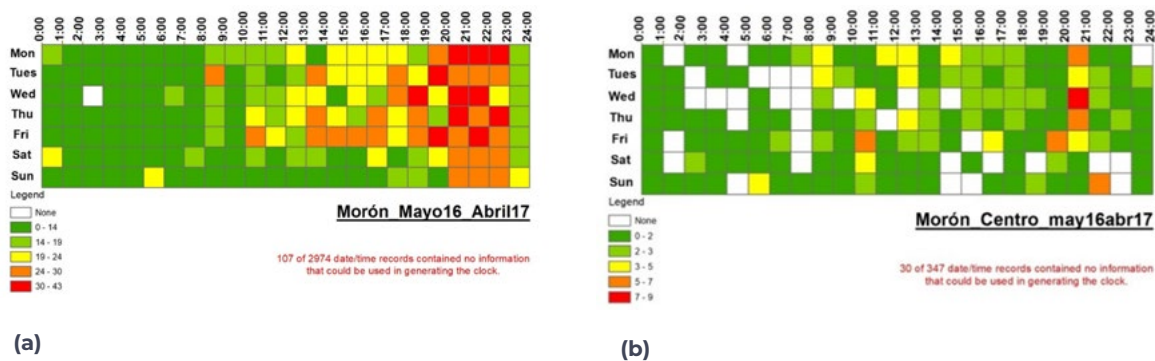


Source: Ministry of Security for the Province of Buenos Aires. With thanks to Gastón Pezzuchi.

Note: This map shows areas of significant crime concentration (using GI* statistics) and street segments that accounted for 25 percent of crime.

DAY OF THE WEEK AND TIME OF DAY ANALYSIS. An analysis should also be conducted on when crime concentrates. Data clocks are a useful technique for visualizing these patterns; they can calculate the number of crimes for each one-hour period over the seven days of the week. It is useful to analyze when crime concentrates for the whole study area and for each hot spot, to examine if differences exist. When a time range is recorded in a crime record, a weighted technique (often referred to as an aoristic method) can be applied to take account of the uncertainty about when exactly the crime took place. An example of a data clock is provided below, showing the days of the week and the times of the day when crime levels were highest, during a one-year period. See Section 7 for details about other tools to help with the analysis of crime patterns.

Figure 4.1: Temporal Hotspot Analysis using Data Clocks



(a) **(b)**
 Source: Ministry of Security for the Province of Buenos Aires. With thanks to Gastón Pezzuchi.

Note: The data clocks show the specific times of day on each day of the week when crime levels were highest. Data clock A shows data for the whole study area. Data clock B is for the hot spot in particular.

USING A HARM INDEX TO DETERMINE HOT SPOTS IN COLOMBIA

Hot spot mapping techniques such as KDE apply an equal weight to each crime incident. An alternative approach to mapping crime density is to map and analyze *harm*. Harm refers to the consequences of criminal activities, with each crime incident being weighted according to the consequential impact it has. That is, rather than treating each crime incident equally, each crime point is weighted by its harmful effect. Most harm studies use sentencing guidelines to weigh the impact of the harm (Chainey, 2021; Weinborn et al., 2017).

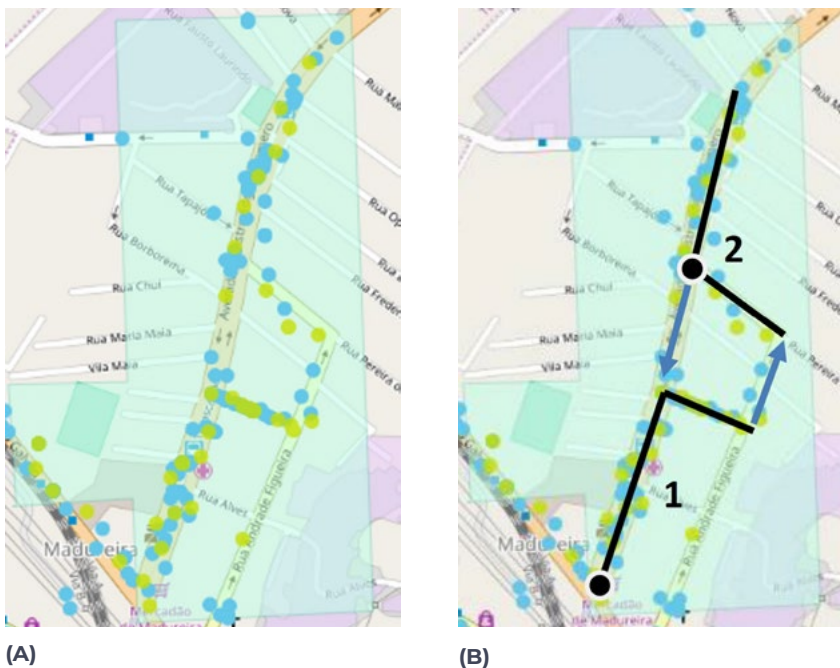
This approach was applied to determine the locations for hot spots policing programs in Bogotá and Medellín. A harm index was created with the weight assigned to each type of crime based on the average sentence for that crime under the Colombian Criminal Code (Mejía et al., 2015). From this process, the top 3 percent of street segments (with the highest harm index scores) were selected for consideration for the hot spots policing program in each city. Analysis of crime hot spots usually examines a specific type of crime (such as robbery from pedestrians) rather than many different types, and hence in most cases a harm mapping approach is not necessary.

REVIEW OF AND CONSULTATION ON THE ANALYSIS FINDINGS, AND DRAFTING OF PATROL ROUTES

Following the analysis of crime patterns, it is important to review the findings and discuss them with police who are knowledgeable about the area. This includes checking the geographically referenced crime data to make sure these data have accurately identified the location of crime hot spots, as well as checking to see if the data refer to street settings or settings inside buildings such as shopping malls or hospitals (where the police are unlikely to be able to operate patrols). A review of the analysis findings should provide the opportunity to consider questions about how the analysis was conducted and to revise the analysis as necessary based on this feedback.

Once the analysis has been completed, patrol routes covering the hot spots should be drafted. The routes should focus on the areas of crime concentration, in particular the street segments where the crime levels were highest. Depending on the number of police personnel available to be assigned to the hot spots policing program, patrol routes may cover only one street segment or junction, or consist of a small number of adjoining street segments. Experience suggests that two to eight street segments can make up a patrol route, but the person designing the patrol route must be conscious of the likely dosage level of patrol resources required to adequately cover the hot spot. The example below shows the process from the identification of hot spots, based on geographically referenced data, to the drafting of foot patrol routes.

Map 4.3: Identifying Hot Spots and Drafting Patrol Routes



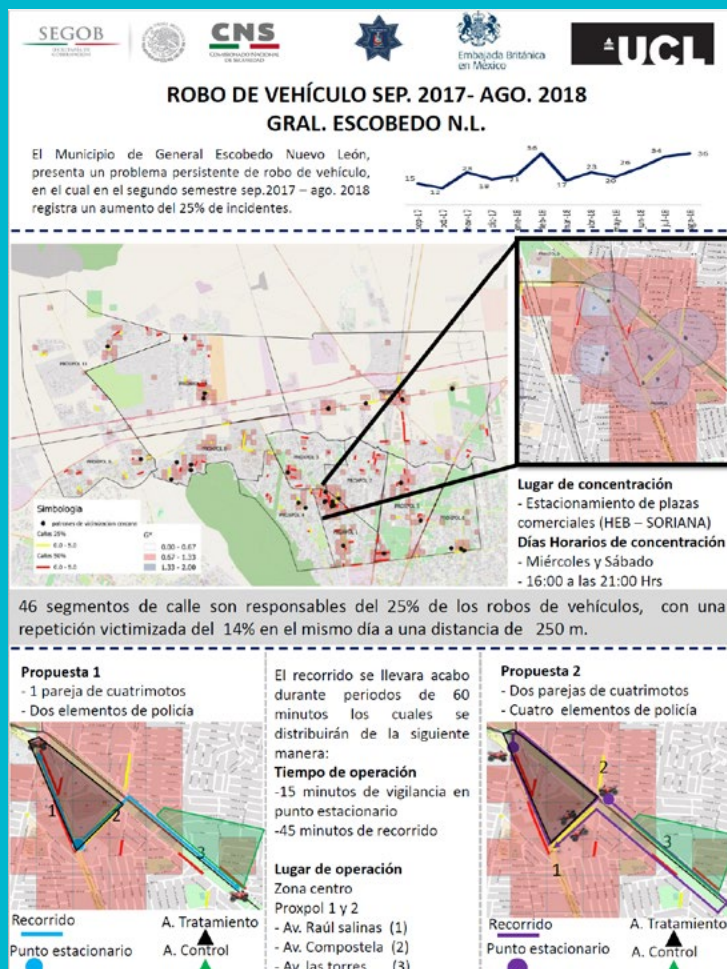
Source: Instituto de Publica, Rio de Janeiro. With thanks to Joana Monteiro.

Note: The maps help to illustrate the process of identifying the crime hot spots (Map A) and drafting two patrol routes (Map B) to cover the street segments with the highest level of crime. The dots on Map A represent crime incidents. On Map B, the foot patrol routes are shown with black lines, and black dots represent proposed stationary points for the patrols to spend additional time. Map B also uses blue arrows to mark the proposed route the patrol would take when rotating between patrol areas. The choice of the routes between patrol areas was designed to further maximize patrol route coverage in this crime hot spot.

BRIEFING NOTE ON HOT SPOTS POLICING

To begin the implementation of a hot spots policing program, it is useful to produce a short briefing note (no more than two pages) on the proposed plans and the main analysis findings. This briefing note can be given to senior police officers and other key stakeholders to help generate support for the proposed program. This briefing note should include details about what is being proposed, why a hot spots policing program will be beneficial, details on the next steps, and whom to contact for more details.

Figure 4.2: Example From Briefing Note for Hot Spots Policing.



Source: Spencer Chainey and José Luis Hernandez Ramirez.

Note: This example briefing note was produced by crime analysts in Escobedo, Mexico. It documents hot spots analysis and proposals for a small hot spots policing program to reduce vehicle theft.

It is also important at this stage to visit the hot spots that the analysis has identified. This will help determine if the patrol routes are located in an area where hot spots policing is suitable (for example, a street setting rather than a supermarket or shopping mall), if the patrol routes are sensible (not too long and located where the police patrol can be seen), and if the routes are not in areas where the police patrol may be vulnerable to criminal attacks. Although there is no known research that has examined the impact of hot spots policing on police personnel safety and well-being, patrol deployment commanders must ensure that the police can patrol these hot spots safely, especially at night. Visiting patrol routes also helps to identify if the routes should include any stationary points. These are locations where it would be useful for patrols to spend a greater amount of time. Stationary points can be in the highest crime concentration areas or in places where the patrols would be highly visible, such as at busy street junctions.



Photo 4.2: Visiting proposed patrol routes. A visit to a proposed patrol route helps ensure that police personnel can patrol there safely and identifies suitable stationary points.

Source: Spencer Chainey.

WHAT TYPE OF PATROL—FOOT, BICYCLE, MOTORCYCLE, OR CAR?

The type of patrol to implement depends on the type of crime that the hot spots policing program is attempting to reduce. For crimes that take place on foot (such as robbery from pedestrians), foot patrol provides the best means to visibly deter and intervene. For crimes that involve offenders using motorbikes or other vehicles, a vehicle patrol is advised. If the crimes take place in compact urban settings with one-way streets, motorbike patrols are advised over car patrols. In some situations, a combination of different types of patrol may be useful. For example, in the case of a hot spots policing program that mainly involves foot patrols, a small number of motorbike patrols may provide support, especially for patrolling the streets between the foot patrol areas. In situations where foot patrol is likely to be the best solution but the patrol route is quite long—such as in a park or along a coastal road—bicycle patrols are an alternative. Car patrols should be considered only when the policing program is focused on reducing vehicle thefts, when offenders use vehicles (other than motorbikes) in the commission of crime, and in places where the police cars can maneuver easily.

DEVELOPMENT OF A PROPOSAL ON THE PROGRAM TO BE IMPLEMENTED

Once the analysis of crime hot spots is completed, the findings should be written up in a report with recommendations on the patrol routes, details of when the patrols will operate (what days of the week and times of day), and the patrol resources required. Determining the ideal number of patrol personnel required for a hot spots policing program requires finding a balance between the estimated resources that will ensure a sufficiently high dosage level of police presence against the resources that are currently available. It is recommended that at least two options are provided in the

proposal—one based on all the necessary resources being made available and a second option based on fewer resources.

Consideration is also required on how the patrols will be assigned, and here too the decision must balance the resources available and the estimated level of police presence required for the patrols to have an effect.

- ✓ **OPTION 1:** In hot spots where the crime levels are very high, and where there are many pedestrians, the dosage level of police presence will need to be high.
- ✓ **OPTION 2:** In hot spots where crime levels are slightly lower, and where there are fewer pedestrians, the dosage level of police presence can be lower.

CREATING PATROL ROUTES IN FOUR CITIES IN ARGENTINA

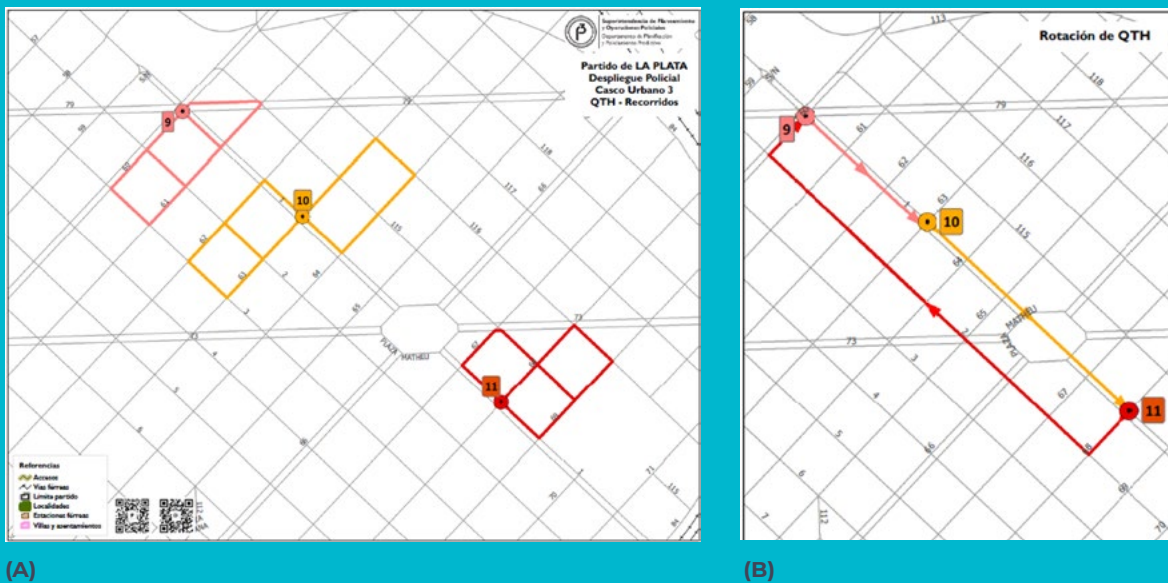
In October 2017, a six-month pilot program to reduce robberies in hot spots was implemented simultaneously in four cities in Argentina: La Plata, Morón, Santa Fe, and Tres de Febrero. The analysis examined geographic patterns of robbery using KDE, the GI* statistic, and the analysis of crime concentration at the street segment level. The analysis findings were used to propose the patrol routes for the new hot spots police patrols in each city. Patrol routes consisted of 5 to 12 street segments.

In each city, each patrol route was designed so that a pair of foot patrol officers could easily cover the whole route within one hour. Each patrol area also had an assigned stationary point. These locations, where robbery levels had previously been particularly high, were usually positioned at busy intersections to assist in promoting the visibility of the patrols. The patrol pairs were required to spend the first 15 minutes of their patrol at the stationary point and then patrol the rest of the route. At the end of the hour,

the patrol officers would walk the short distance to the next nearest route and continue to patrol this route for the next hour. Each city made use of its existing police personnel to perform the hot spots police patrols.

The maps (Map 4.4, A and B) show an example of the hot spots patrol routes in the city of La Plata. Three patrol routes are shown, with the numbers 9, 10, and 11 showing the stationary points where the patrol would spend 15 minutes. After patrolling an area for an hour, the patrol would then follow the path shown in the second map to the next patrol area and would continue this patrol rotation process for the duration of the shift.

Map 4.4: Patrol Routes in La Plata, Argentina.



Source: Ministry of Security for the Province of Buenos Aires. With thanks to Gastón Pezuchi.

Note: The maps show hot spots patrol routes and stationary points in the Casco Urbano 3 hot spot in La Plata. The arrows on Map B show the rotation routes taken between each patrol route, with each patrol beginning at the route's defined stationary point.

- ✔ **CALCULATING THE NUMBER OF PATROLS NECESSARY FOR A HOT SPOTS POLICING PROGRAM.** There is no simple statistical means for calculating how many police patrol officers are required to patrol an area. This estimation is a judgment that considers the number of crimes in the area, the activity on the street (i.e., how busy an area is), and the

police resources available to adequately support a hot spots policing program. Over the duration of the program, some experimentation is recommended in the dosage level of police presence to determine the optimal level of police staffing required to maximize the patrols' impact on reducing crime. If resources are limited, it is preferable to assign an adequate police presence to a small number of the highest crime areas rather than spread the patrols too thinly over many areas.

PATROLLING SINGLE AREAS OR ROTATING BETWEEN PATROL AREAS

Hot spots that require a high level of police presence may require patrols to be dedicated solely to single areas to ensure that these areas are covered during the entire period of time that is necessary. In many situations, the police patrols are likely to be able to rotate between patrol areas; in other words, they would cover one patrol area then move to a nearby area for a second patrol. This means that patrol areas that are in close proximity to each other can be organized into patrol groups. A foot patrol, for example, walks along one patrol route and then rotates to the others. It is best to have a presence in each patrol area during each one-hour period of the patrol shift. If a patrol group consists of three patrol areas, then, each patrol route should take about 15 minutes for the foot patrol to cover, allowing for five minutes to walk from one patrol area to the next.

- ✔ **SUPERVISION OF PATROLS.** The level of supervisory support for the patrols requires careful consideration. Supervision is usually arranged in a manner relating to the geographic distribution of the patrol areas and the number of patrol personnel. For example, a single supervisor may be responsible for supporting and overseeing 12 patrol routes involving 24 police personnel.

TYPES OF PATROLS USED IN A HOT SPOTS POLICING PROGRAM IN URUGUAY

In 2016, the Uruguay Police implemented a large-scale hot spots policing program in Montevideo called PADO (Programa de Alta Dedicación Operativa) to reduce different types of robberies targeting pedestrians, car drivers and motorcyclists, taxi drivers, and convenience stores. Over half of all the robberies were crimes against pedestrians, so the majority of the patrols to address this type of crime were foot patrols. Each foot patrol (usually consisting of two or three police personnel) was assigned to patrol a small group of street segments, usually no more than four segments. The program selected 120 foot patrol areas and organized them into 24 circuits. Each circuit was assigned a supervisor, who patrolled the circuit in a car for the duration of time the foot patrols were present in the circuit. In addition, two to four motorbike patrols would provide patrol support by driving along the streets where foot patrols were not present and providing back-up to the foot patrols when this was required.

Some parts of Montevideo are very challenging areas for the police to patrol, especially at night. In these areas of the city, the patrolling duties were handled not by the Policía Nacional de Uruguay but by another law enforcement agency, the Guardia Republicana.³



Photo 4.3: Patrols in Montevideo, Uruguay. PADO in Montevideo used a combination of Policía Nacional de Uruguay and Guardia Republicana personnel to patrol hot spots.

Source: Ministry of Interior for Uruguay and Inter-American Development Bank, 2017.

Note: PADO in Montevideo used a combination of Policía Nacional de Uruguay and Guardia Republicana personnel to patrol hot spots.

³ This information draws from Chainey et al. (2017) and Chainey, Serrano-Berthet, and Veneri (2021). For more about this and other case studies, see Section 7.

AGREEMENT ON THE HOT SPOTS POLICING PROGRAM AND RESOURCING

Step 3 includes reviewing the proposal for the program, making any changes to the proposal, agreeing on the resourcing levels required, and selecting the police personnel who will be involved.

POLICE PERSONNEL

Although patrol officers do not require any specific qualifications to participate, the nature of hot spots policing makes it especially important to select the teams with care. First, the personnel involved in the patrols should uphold the professional standards the police agency aims to promote. These officers will be on the front lines of visible policing and will interact regularly with citizens. This means they should not only be authoritative in their roles as police but should also be approachable and be good communicators. The patrol personnel will need to be briefed about the objectives of the program and the shift arrangements for the patrols. It is recommended that the police personnel who are selected receive additional training about hot spots policing; this can be done in one day, assuming that they have already received general training in patrolling. More details about training are provided later in this publication.

In most cases, police should patrol in pairs, whether they are on foot or in a vehicle. In more challenging neighborhoods, they may need to patrol in groups of three to provide adequate backup to each other when confronted with an issue that needs to be resolved. In some cases, it may be advisable to deploy police personnel with special training and expertise in working in difficult neighborhoods (for example, see the case study from Uruguay).

DEDICATED DUTIES TO HOT SPOTS POLICING

Several hot spots policing programs assign patrol personnel to hot spots during times when they are not performing regular activities on their shifts, such as responding to incidents. While this may seem to be a sensible solution, the disadvantage is that there is no guarantee that the hot spots will be patrolled consistently and at the times of day that are most critical. To address this, some police agencies assign personnel to perform only the hot spots police patrols. Dedicating police to the sole duty of hot spots policing can be beneficial in developing expertise and can make it easier to manage the resourcing of a hot spots policing program.



Photo 4.4: Dedicated hot spots police patrols in La Plata, Argentina

Source: Spencer Chainey.

HOT SPOTS PATROLS AND RESPONSE TO INCIDENTS

At this pre-implementation stage, it is important to consider how to retain police patrols in the hot spots to which they have been assigned when a call comes in to respond to a nearby incident. If hot spots police are required to respond to emergency calls for service and must leave their assigned areas, this will dilute the attention that is required in the hot spots. In many examples of hot spots policing, other police personnel are used to respond to calls for service, with hot spots police patrols dedicating their time to their assigned areas and only responding to incidents that occur on their patrol route.

WHAT HAPPENS WHEN A HOT SPOT POLICE PATROL ARRESTS SOMEONE?

It is important to consider the logistical arrangements for when a hot spot patrol makes an arrest. If the patrol officer is required to leave the area to process the arrest, this will leave the hot spot exposed to crime. In some examples of hot spots policing, other police response personnel are used to collect the person who has been arrested and take them to the local police station; this allows the arresting officer to continue his or her shift at the hot spot and later return to the police station to complete the details that relate to the arrest of the offender. To help address this situation, several police agencies have equipped their hot spots police patrols with tablet computers to process arrest information. In that case, when a person is arrested by a hot spots police patrol, a police response team is called, the person arrested is taken to a local police station by the response team, and the arresting officer remains in the patrol location, filling out the details about the arrest on the tablet. Police agencies in different countries operate different procedures for processing arrests, so it is important to establish these logistical arrangements before the program is implemented. The key consideration is to try to maintain a constant police presence in the hot spots for the entire duration of the assignment to these locations.



Photo 4.5: Hot spot police patrol making an arrest, supported by a police response team. Source: Ministry of Interior for Uruguay and Inter-American Development Bank, 2017.

Source: Ministry of Interior for Uruguay and Inter-American Development Bank, 2017.

HIGH VISIBILITY OF PATROLS

One of the main reasons hot spots policing works is that the presence of police patrols deters criminal behaviors. For this to be effective, the patrols must be seen. It is thus advisable to have police patrol personnel wear high-visibility uniforms or high-visibility vests over their regular uniform. Arrangements should be made to ensure there are adequate supplies of this gear and that the police personnel understand why wearing this uniform is important for hot spots policing.



Photo 4.3: Hot spot police patrol wearing high-visibility gear. High-visibility gear helps to ensure that hot spots police patrols are an effective visible presence

Sources: Spencer Chainey (left), Gaston Pezzuchi (right).

PATROL OFFICER TRAINING

Although it is expected that police assigned to patrol hot spots will have received training in patrolling, it is useful to provide training that helps them to be better prepared for this type of assignment. This training should explain what hot spots policing is and how it works, provide a brief background on the program being implemented and its objectives, describe the areas being targeted, discuss the patrol plans and how they will be supervised, and detail plans for monitoring and evaluating the program. It should also explain how hot spots policing provides an opportunity for positive engagement with citizens.

The training should include the use of data and analysis to show that crime is not everywhere and that a small proportion of areas account for a high proportion of crime. It should then show how the analysis findings have led to the creation of the hot spots police patrol routes. This is useful because the analysis findings often reflect the daily experience of these police personnel who are knowledgeable about crime that takes place. The training also provides the opportunity to explain that preventing crime is real police work. If very little crime takes place while they are patrolling, this should be considered a positive outcome because it demonstrates that their patrols are having an impact. The impact of their patrols can be supported with regular statistical updates so that the patrol personnel can see that crime is decreasing in their patrol areas. More details about monitoring the impact of the hot spots policing program are provided in a later section.



Photo 4.7: Hot spots policing training in La Plata, Argentina.

Source: Spencer Chainey.

The training also provides the opportunity to talk to these patrol officers about any concerns they may have about crime displacement, how they deal with certain situations (such as whether they are required to stay in the patrol area rather than respond to nearby emergency calls), and the arrangements for pre- and post-patrol briefing sessions. Post-patrol briefing sessions may help the patrol groups share information based on their experiences and observations while on patrol. More details on recommendations for debriefings are provided below.

Training can be provided either by local police who are knowledgeable about hot spots policing or by academic researchers or consultants with expertise in this area.



Photo 4.3: Hot spots police patrol personnel in Argentina receiving certificates after completing training.

Source: Spencer Chainey.

Table 4.2: Hot Spots Policing Stage 1 Checklist

Step 1: Support and commitment	Step 2: Analysis, consultation, and proposal	Steps 3 and 4: Resourcing and Training
<ul style="list-style-type: none"> • Meet with senior officers to explain how hot spots policing could be used • Identify lead officer who will be responsible for taking forward the hot spots policing program • Draft a proposed work program 	<ul style="list-style-type: none"> • Acquire data needed for hot spots analysis • Conduct an analysis of hot spots to identify specific street segments or junctions where crime concentrates • Draft proposal for hot spots policing program, including patrol routes and estimation of number of police required 	<ul style="list-style-type: none"> • Agree on proposed hot spots policing program and resourcing • Review patrol logistics • Train patrol personnel in hot spots policing

Source: Compiled by the authors.

STAGE 2: IMPLEMENTATION

This section explains the details to consider when implementing a hot spots policing program. This involves three key steps:

- ✔ Organizing shift plans
- ✔ Providing supervision and support (including briefings/debriefings)
- ✔ Making refinements to where the hot spots police patrols are deployed

ASSIGNING THE SAME POLICE PATROL PERSONNEL TO HOT SPOTS OR CHANGING ASSIGNMENTS

There is no known research that indicates whether it is better to assign the same patrol personnel to the same hot spots each day or to frequently change assignments. The advantage of patrolling the same hot spot each day means that the police officers are likely to become familiar with the patrol area and with people who live and work in that area. However, patrolling the same place for long periods of time can be boring for these police personnel (Ratcliffe & Sorg, 2017). Frequently changing where patrol personnel are deployed can be difficult to manage logistically and has the disadvantage of police personnel not becoming familiar with the places they patrol. In practice, it is suggested that some rotation of personnel between patrol routes helps to reduce boredom and can improve the commitment of patrol officers to the hot spots policing intervention (Chainey, Matias, Nunes Junior, et al., 2021; Ratcliffe & Sorg, 2017).

ORGANIZING SHIFT PLANS AND RESOURCING

The first main implementation task will be to create a shift assignment plan that ensures there are sufficient personnel to cover the hot spots during the times required. If a hot spot is to be patrolled only during the period of time that corresponds to an existing shift, this naturally makes it easier and less resource-intensive to assign patrols. If the hot spot needs to be patrolled over a period of more than one shift assignment, this will increase the amount of resources required.

The assignment plan also needs to determine where patrols are required to be at certain times. If patrol personnel are assigned to only one patrol route during their shift, this makes the planning of the assignments easier. When patrol personnel are required to rotate between patrol areas, care must be taken to ensure that they know where they need to be and when, and for how long.

SUPERVISION OF HOT SPOTS POLICE PATROLS

VISITING HOT SPOTS

Supervisors will need to actively coordinate the logistical aspects of the hot spots policing program and manage deployment. They will need to visit the hot spots during the times the patrols are active to ensure the patrol officers are not experiencing any issues and are safe. Supervisors will also need to ensure that patrol personnel are complying with the patrol routes and not straying into other areas. This includes ensuring that patrols are spending adequate time traveling along the assigned patrol route, that they are performing their duties appropriately and not aggressively (such as conducting unreasonable levels of stops and searches), and that they are engaging with members of the public. To ensure that patrols are spending adequate time in their assigned areas, it can be useful to monitor these police patrols using the GPS data that is collected from their police radios. This GPS data can be used in real time to ensure that patrols are where they should be, and can be used subsequently to measure the amount of time that patrols are spending in crime hot spots in comparison to other areas.

AVOIDING THE PATROLS BECOMING TOO PREDICTABLE

Offenders are usually observant and may quickly learn when the hot spots patrols are present. They will also observe the routes police patrols appear to take. If the direction for the patrol is always the same and any rotation between patrol areas is the same, offenders will likely predict when the police patrols will not be present and will try to take advantage by committing crime during these time windows. The trick is to keep offenders guessing to make them perceive that the risk of being caught is always high. Changing the direction a patrol route is walked, changing the order of rotation between patrol areas, and stopping for a period at street junctions are some of the ways to keep the patrols from becoming too predictable.

INFORMATION COLLECTION

Supervisors need to ensure that any police activities such as arrests and stops and searches are being recorded by police when they are on patrol in the hot spots. It is also useful to provide a means for police patrols to record information about problems they have seen in the area, so that their supervisor can review this information and use it to help address any issues. This may include, for example, taking note of faulty streetlights, information that can then be shared with the municipal government to arrange for repairs.

MANAGING DROPOUT

Experience from several hot spots policing programs suggests that supervisors should be prepared for some patrol personnel to decide to drop out of the hot spots policing program. This is often because of the physical requirements for police officers to be mobile for long durations, which for some police personnel can be problematic. The PADO hot spots policing program in Uruguay found that after two years, 25 percent of the police personnel originally assigned to the program had dropped out or were as-

signed to other duties and were replaced by other police officers. Refreshing the personnel assigned to hot spot duties can also help with retaining commitment to the program. Supervisors should have plans in place to ensure that required staffing levels can be maintained.

BRIEFINGS AND DEBRIEFINGS

It is recommended that a short briefing session be held at the beginning of each hot spots patrol shift. This provides an opportunity for the supervisors to reinforce goals and principles, share information relevant to the day's patrols, provide feedback (such as the impact of the patrols and comments received from the public), and answer any questions. A short debriefing meeting with the patrol staff is also recommended after each shift for the purpose of gathering and sharing information, such as about any arrests made or issues that arose. Briefing and debriefing can also be supported with apps on police mobile devices for capturing and sharing information.



Photo 4.4: Hot spots police officers receiving a briefing before they begin their patrols.

Source: Carolina Appiolaza.

ORGANIZING REFRESHMENTS

If hot spots patrols are assigned to locations for a long period of time (more than two hours), supervisors need to ensure that personnel are receiving adequate refreshments during their patrol shifts (water, coffee, snacks). This may require supervisors to organize a vehicle that is used for taking refreshments to the police patrols while they are patrolling the crime hot spots.

REFINEMENTS TO HOT SPOTS PATROL AREAS

Hot spots, by their nature, are areas where crime has persisted, so it is not usually necessary to constantly consider if the patrol areas need to be changed. However, it is useful to review changes in crime patterns at least every three months—or sooner, if new high-crime concentration areas are believed to have developed—to determine if the patrol plans need to be revised. This may include identifying new patrol areas and also reviewing the necessary level of resourcing required to adequately patrol the hot spots. Section 6 provides further information about how a hot spots policing program could be strengthened following an evaluation of its impact.

Establishing a pilot hot spots policing program is recommended before proceeding with implementation on a large scale. Piloting the implementation will help to identify and resolve any logistical issues prior to full implementation.

Table 4.3: Hot Spots Policing Stage 2 Checklist

Step 1: Shift plans and resourcing	Step 2: Supervision	Step 3: Refinements
<ul style="list-style-type: none"> • Create patrol shift plan 	<ul style="list-style-type: none"> • Agree on supervision arrangements • Organize pre-patrol briefing and post-patrol debriefings 	<ul style="list-style-type: none"> • Periodic review of hot spots patrol areas

Source: Compiled by the authors.

RAISING THE PROFILE OF HOT SPOTS POLICING

To mark the implementation of a hot spots policing program in Santa Fe, Argentina, a launch event was held, at which the Minister of Security spoke about the program and its purpose. The patrol personnel were also introduced at this event.

This type of launch event can help inform the public about what to expect from the hot spots policing program and highlight how the police are being proactive in decreasing crime and improving citizen security.

Photo 4.10: Hot spots policing launch in Santa Fe, Argentina. For more information about the event, see Section 7.



Source: Ministry of Security, Santa Fe.

STAGE 3: MONITORING AND EVALUATION PLANNING

Monitoring the impact of the hot spots policing program is important for its success. Sections 5 and 6 provide more information about how to monitor, evaluate, and strengthen the program once it is implemented. At the implementation stage, however, it is important to consider how the hot spots policing program will be evaluated and what needs to be done in advance to ensure the evaluation is effective.

PLANNING FOR CONTINUOUS MONITORING

Preparations should be made to support the continuous monitoring of the program. This will include monitoring changes in crime in each of the patrol areas and in the surrounding areas, and comparing any changes in crime in the broad area covered by the hot spots policing program to changes in a larger area, such as the entire city. Monitoring changes in crime should take place every month and if resources permit can be done more frequently (such as every two weeks). However, it is recommended that the monitoring not take place more often than once a week, as this could lead to “knee-jerk” reactions to single incidents and distract from the objectives of a hot spots policing program. This monitoring process should also be used to record comments received from the public about the hot spots patrols, as well as comments from patrol personnel and supervisors about any issues they have experienced. A monthly monitoring meeting of supervisors and key personnel involved in the hot spots policing program is useful for reviewing the impact of the program and discussing ways it could be improved.

Keeping detailed records of issues that are experienced will enable a more nuanced evaluation once the program is completed, by helping to explain if difficulties with implementation influenced the effectiveness of the program.

EVALUATION PLANNING

To help with planning for an evaluation of the program, it is useful during the implementation stage to consider the type of evaluation to conduct and identify “control areas” (areas against which the hot spots policing program can be compared). Section 5 provides more details on evaluation techniques and the selection and use of control areas. This includes describing the requirements that are necessary for a rigorous evaluation of a hot spots policing program, such as how to randomly select areas where hot spots patrols are assigned and control areas where patrols are not assigned.

HOT SPOTS POLICING SURVEY

Capturing the views of patrol personnel involved in hot spots policing is important. A survey of this type can help to gather patrol officers’ opinions on the impact and effectiveness of the hot spots policing program and receive structured feedback on the work they perform, the skills they have developed, and how they think the program can be improved. A survey of patrol personnel should be conducted within six months from the date the hot spots policing program is implemented and repeated annually if the program continues to operate for a long period.

SURVEY OF POLICE PATROL PERSONNEL IN MONTEVIDEO

As part of the evaluation of the hot spots policing program in Montevideo, Uruguay (PADO), more than 700 police personnel who were involved completed a questionnaire about their experiences and opinions about the patrols they performed, and how they thought PADO could be improved. The survey results led to changes that helped strengthen the program. These included better plans for how the patrols rotated between the routes they had been assigned; increased visibility of the police patrols, as their responses helped them recognize the importance of the high-visibility vests they had previously been reluctant to wear; and improved timeliness and quality of information they received about crime in the areas where they patrolled. The survey also increased their motivation for performing the hot spots police patrols, as they felt their opinions were heard and then acted upon.



Photo 4.11: Completing program evaluations. PADO patrols in Montevideo complete a questionnaire about their experiences and opinions on the hot spots policing program and ways it could be improved.

Source: Spencer Chainey.

VICTIMIZATION AND PUBLIC OPINION SURVEYS

Victimization surveys and public opinion surveys can provide another way to measure the impact of a hot spots policing program. To be most effective, surveys would initially have to be completed prior to the program's

implementation and then repeated later to measure any changes. The geographically targeted nature of a hot spots policing program means that these surveys would also need to focus on these areas and be repeated in suitable control areas to ensure an effective evaluation. Surveys of this type can be costly because of the large number of people who would need to be surveyed to ensure that the results were representative and adequately captured any significant changes in public opinions and victimization associated with the hot spots policing program. As an alternative means of capturing public opinion about crime, patrol personnel could conduct short, semi-structured surveys involving the public and local businesses while they perform their patrols. In general, victimization surveys and public opinion surveys can be useful to capture the short-term effects of a hot spots policing program. It is less common for these surveys to be used to explore long-term effects of victimization and opinions about the police; however, these types of surveys should be encouraged to help inform policing and citizen security policies.

Table 4.4: Hot Spots Policing Stage 3 Checklist

Step 1: Continuous monitoring	Step 2: Planning for evaluation
<ul style="list-style-type: none"> Implement a continuous monitoring process 	<ul style="list-style-type: none"> Identify control areas to ensure robust evaluation Plan for a hot spots personnel opinion survey Identify arrangements for gathering public opinions

Source: Compiled by the authors.

CHALLENGES IN IMPLEMENTING HOT SPOTS POLICING IN LATIN AMERICAN SETTINGS

Implementing a hot spots policing program can involve many challenges. This section lists some of these and makes suggestions about how to overcome them.

GETTING BUY-IN

- ✔ **SECURE AN INITIAL COMMITMENT.** One of the first challenges is getting the support, enthusiasm, and commitment needed from police of all ranks to implement and sustain a hot spots policing program. This can be particularly challenging when certain police personnel believe that the only way to reduce crime is to identify and arrest offenders. To counter these arguments, it is important to recognize that while arrests play a key role in helping to decrease crime, they are not the only tool available. Activities that focus on deterring criminal behavior and reducing victimization can often be easier to apply and can be more effective in reducing crime. A first step toward getting buy-in from police personnel is to show what hot spots policing is and how it works (see Sections 1 and 3), emphasizing on how it can decrease opportunities for crime in areas where crime has previously concentrated at high levels.
- ✔ **UNDERSTAND THE REASONS FOR CRIME.** Some skeptics argue that crime results from such factors as unemployment, poverty, and social inequality, so how can targeting police patrols to specific places make an impact? Although these factors can be important when considering differences in crime between cities and countries, at the street segment level they have less of an influence. Use the results of the analysis

of crime concentration to pinpoint locations where there are hot spots, and explain how features about these areas (such as close proximity to a bus terminal) contribute to the high levels of crime.

- ✔ **FOSTER INFORMED CONVERSATIONS ABOUT DISPLACEMENT.** Many police personnel believe that targeting one area with extra patrols will simply displace crime to other areas, and so they would argue there is little point in introducing a hot spots policing program. While displacement is a potential risk, experience has demonstrated that it is not inevitable and that tailoring the interventions to local settings can lead to decreases in crime. The examples cited earlier illustrate the impact of hot spots policing in many different settings and show that most such programs have led to significant decreases in crime and no displacement.

DISPLACEMENT IS NOT INEVITABLE

Opinions about displacement are often one of the main hurdles to be overcome when deciding to implement a hot spots policing program. As discussed in Sections 1 and 3, displacement is not inevitable. If other areas exist where the conditions are conducive to crime—in other words, places where crime could move *to*—these areas are likely to already have been identified as hot spots and hence included in the hot spots policing program. Hot spots are the *ideal* sites for criminals to commit crime, with other locations nearby being less favorable.

Consider the example of a hot spots policing program that aimed to reduce street prostitution and drug dealing in Jersey City (Weisburd et al., 2006, 578). Offenders told interviewers that displacing their activity to other areas was not viable because “the money won’t be the same,” they “would have to start from scratch,” and it “takes time to build up customers.” They repeatedly mentioned factors such as the importance of retaining their

regular customers, the fear that they themselves would become victims of crime, and the fear of operating in other areas where rival groups were already present. Rather than geographic displacement occurring, a *method displacement* effect was observed, involving sex workers and drug dealers moving their activities indoors. This change in activity often involved prearranging places to meet (by phone and messaging), working from home or other houses (combining spatial and method displacement), and quizzing potential clients to ensure they were not police. Although the crime issue was not necessarily solved, it was now considered to be less harmful because the issue had been removed from the streets.

Additionally, two recent studies in Latin America have identified some useful findings that help explain why, and under what circumstances, some crimes are more or less likely to relocate (Blattman et al. 2021; Collazos et al. 2020). In Bogotá, a hot spots policing program resulted in diffusion of benefits effects for most violent crimes. This was particularly observed for homicides, because most homicides did not have a sustained motive and were therefore less likely to move elsewhere. However, crime displacement to property crime was observed, but the reasons for this (and whether they were related to the hot spots policing program) were not clear. In Medellín, a hot spots policing program resulted in a decrease in car thefts in hot spots and places nearby, suggesting offenders found it difficult to effectively adapt their criminal activity to other areas when their main opportunities had been suppressed.

It is worth noting that many offenders are often creative in their criminal activity, so it is important that while a hot spots policing program is in operation, police agencies are alert to adaptations that offenders make to their criminal behavior.

PRECISION OF ANALYSIS

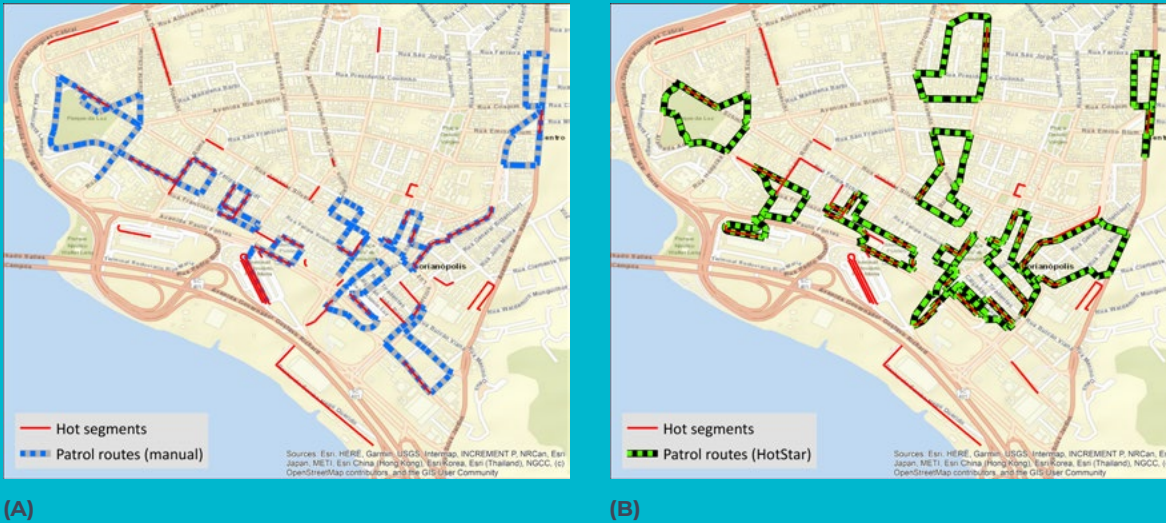
- ✔ **KNOW WHERE CRIME HAPPENS, PRECISELY.** One weakness in several hot spots policing programs is that the initial analysis was not precise enough to identify specific streets and street junctions where crime concentrates. This is usually related to two main factors: the crime data were not geographically referenced to this level of precision and resulted in only identifying whole neighborhoods as high-crime areas; or the analysis techniques used were not adequate for identifying the street segments or street junctions that experienced the highest levels of crime concentration. Improving geographic referencing can take time if existing reference systems containing addresses, street segments, street junctions, and their respective geographic coordinates are not adequate. In the first instance, it is best to consult with the information technology experts in your agency to determine how geographic referencing of crime data can be improved to the level that is required for hot spots analysis. It is also worth consulting expert advice from local GIS providers, university researchers, and crime observatories who are knowledgeable about geographic referencing systems that can be used in your area.
- ✔ **KNOW WHEN CRIME HAPPENS, PRECISELY.** In most cases, the types of crime that are the focus of hot spots policing are crimes against the person (such as robberies and assaults), which means the day and time when the offense was committed is usually known and is sufficiently precise for hot spots analysis. For crimes against property, a data/time range for the crime record may exist, so this will require the application of the weighted technique (aoristic analysis) referred to previously in this section. Usually, you should have sufficient data to indicate when most crime takes place. However, in many situations, the time or the date may not be recorded. Be aware that many police recording systems default to 00:00 as the time entry when the time of the offense has not been entered, so be sure to look for these errors so you do not incorrectly interpret that a large number of crimes take place precisely at midnight!

- ✔ **TAP INTO TECHNICAL ANALYSIS SKILLS AND TECHNOLOGY.** Some police agencies may not have the skills or technology available to perform a precise hot spots analysis. The long-term plan should be to build these skills, but in the short term, discuss your requirements with local research institutes, universities, crime observatories, and independent consultants who may be able to help conduct the analysis with you.

AUTOMATING HOT SPOTS ANALYSIS AND CREATING PATROL ROUTES

A team of researchers at the Federal University of Ceará (Brazil) and University College London (U.K.) have been collaborating on an app that creates hot spots police patrol routes. The app is designed to help in the analysis of hot spots and the establishment of patrol routes that are practical for hot spots policing. It uses crime data that is geographically referenced to street segments to identify the most criminogenic locations in a city—in other words, the small number of locations where 50 percent of crime is concentrated—and then uses these results to create patrol routes. The routes are constrained in length to ensure that they are practical. (Generally, they are about 1 km in length for a foot patrol to walk at 5 to 7 km per hour, and so to complete the route within 15 minutes.) The patrol routes are also designed to optimize the patrol's coverage by avoiding the need for a police patrol to traverse the same street more than once (and hence duplicate their presence on this street) at the potential cost of not patrolling another street where their presence is required (Nunes Junior et al., 2021). In tests that used the same analysis results to compare the patrol routes created by the app to routes created by a police commander, the app was better at creating routes that covered where most crimes had previously occurred (Chainey, Matias, Nunes Junior, et al., 2021).

Map 4.5: Patrol Routes Created Manually and With Computer Applications.



Source: Spencer Chainey.

Note: These maps show patrol routes created for downtown Florianópolis, Brazil. Map A was created manually. Map B was created using an automated spatial computational approach.

RESOURCING OF HOT SPOTS POLICE PATROLS

- ✓ **AVOID SHORTAGE OF PATROL RESOURCES.** Previously, this section provided advice on estimating the required number of patrol personnel for the crime hot spots that have been identified. If the patrol resources available are below the estimated requirement, it is best to begin by focusing the patrols on a smaller number of top priority areas to ensure that these areas receive adequate attention. Later, if the patrols are proving to have an impact in reducing crime, this could then be used as an argument to request more resources to cover other hot spots.
- ✓ **ADAPT TO CHANGES IN THE RESOURCES AVAILABLE.** At some point during the program, personnel may be reassigned from the hot spots policing program, or the hot spots patrols may be required to engage in other activities such as emergency response. First, it is important to avoid using hot spots patrol personnel for other activities during their hot spot assignment; this will only take them away from the high-crime areas where they are required and will dilute the intended impact of the program. If fewer resources are available, it is better to retain a small team of police who perform only hot spots patrols, rather than operate with a larger number of personnel who are required to perform nu-

merous other duties while also trying to do the patrols. A smaller team could provide the opportunity to experiment by rotating patrols between hot spots patrol areas during shift assignments and monitoring the effect this has on levels of crime.

- ✔ **BE ON THE ALERT FOR PROGRAM FATIGUE.** Any program that lasts for more than several months is susceptible to program fatigue. This is where commitment to the program's continuation may begin to wane—particularly if pressures from other tasks begin to take priority—and when police involved in the program begin to tire of the routine. In addition to addressing the challenge of fewer resources, as discussed above, it is also useful to continually remind senior police officers of the original objectives of the program and—if the program has been successful—the potential risks that a reduction in resources may have on its continued success. To address program fatigue, it is useful to talk to the patrol officers about how the program can be improved. Rotating police patrol personnel to new areas can also help retain their interest in the program. It is also useful to hold events that celebrate the impact of the program and recognize the efforts of those involved.
- ✔ **ENSURE COMPLIANCE OF PERSONNEL.** One of the challenges often cited in hot spots policing is ensuring that police officers keep to the patrol routes they have been assigned. They should be made aware that by deviating from the assigned routes, they will only dilute the attention in the high-crime areas they have been assigned, and this will most likely reduce the impact of the program. Also, if they patrol areas other than their assigned routes (in particular, places designated as control areas), this can undermine any evaluation of the program.
- ✔ **CONFRONT OFFICER BOREDOM.** Standing on a street corner where very little criminal activity now takes place because of the presence of the hot spots patrols can be boring to many police. First, reassure the patrol personnel by regularly reminding them that the low level of criminal activity shows they are having an impact on crime. Another way to address boredom is to promote the opportunity for community engagement while they are on patrol. Ensure that the patrol person-

nel are interacting with members of the public either through friendly conversation or by conducting short surveys, as previously mentioned.

- ✔ **GUARD AGAINST UNREASONABLE POLICE ACTIVITY.** The increased presence of police patrols in high-crime areas can naturally lead to an increase in police activities such as arrests or stops and searches. Monitor the levels of these activities to ensure they are not unreasonable. Excessive stop and search can undermine relationships between the police and the community.
- ✔ **DEDICATE SUPERVISORY SUPPORT.** Most successful hot spots policing programs have been well supervised. It is important to ensure that your hot spots policing program has dedicated supervisory support and that these supervisory officers understand the roles they should perform. (See guidance on supervision previously in this section.)
- ✔ **COMMIT TO THE PROGRAM FOR A REASONABLE PERIOD.** Hot spots policing is not about assigning extra police to areas every now and then or committing to extra patrols for only a week or two. Hot spots are persistent areas of high crime concentration. A police agency should commit to a hot spots policing program for at least three months. When such a program proves successful, this should be taken as an opportunity to make this style of proactive policing more mainstream to how the police agency organizes its patrols (i.e., targeting areas of most need), rather than viewing hot spots policing as a type of specialized activity.

MONITORING AND EVALUATION

- ✔ **PROVIDE FEEDBACK TO PATROL PERSONNEL AND ASK FOR THEIR OPINIONS.** It can be difficult to maintain enthusiasm if the patrol personnel do not see the results of their efforts. Ensure that patrol personnel receive regular updates on how levels of crime have changed and provide them with any feedback received from residents and businesses in the patrolled areas. Before the program's implementation, allocate sufficient resources to monitor impact from the outset. Senior police officers

should regularly visit the hot spots police patrols on duty to conduct observational visits, speak to the patrols, and listen to their opinions.

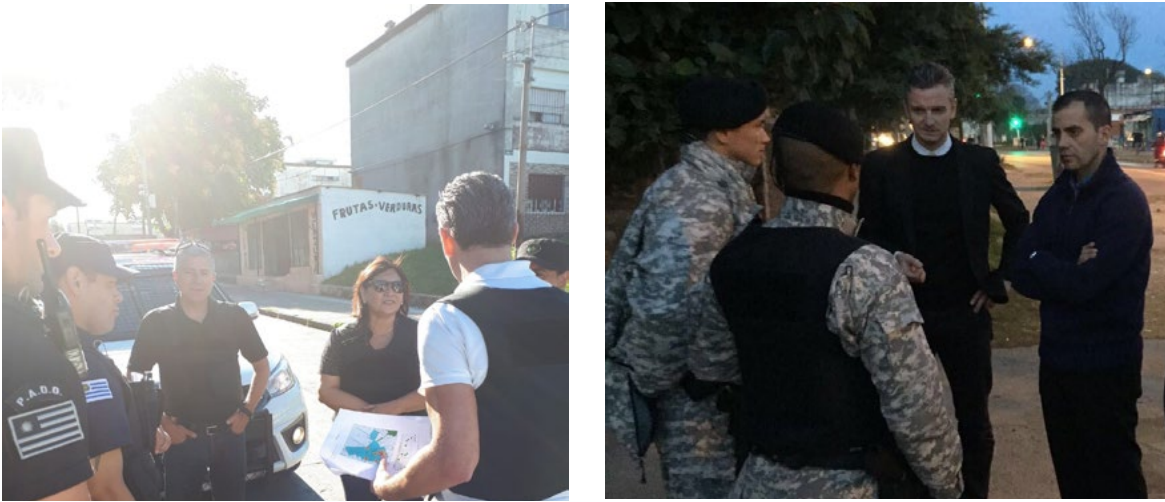


Photo 4.12: Senior police officers visiting hot spots patrols to gain insights.

Source: Spencer Chainey.

- ✔ **CONDUCT AN EFFECTIVE EVALUATION OF THE PROGRAM.** Many hot spots policing programs have performed only limited evaluations, examining differences in crime levels in only the hot spots police patrol areas before the program's implementation and onward. To perform an effective evaluation requires the use of particular methods and techniques, which are discussed in Section 5. This process may require partnering with a local institution such as a university, research agency, or observatory that has expertise in evaluation techniques. Plan to evaluate the program after three months or after six months, depending on its duration. If the program continues for some time, ensure evaluations are repeated at least once a year.

Hot spots policing is just one type of proactive policing response that can be used to reduce crime, and a point may be reached when the program does not contribute further to reducing crime but simply helps maintain levels of crime at lower levels than prior to the program's implementation. There are other proactive activities that can complement hot spots polic-

ing and that should be considered, either when planning the implementation of a hot spots policing program or at some later point to help sustain its effect. Details on other types of proactive policing strategies are provided in Section 6.

LESSONS LEARNED FROM A HOT SPOTS POLICING PROGRAM—EXPERIENCES FROM TRINIDAD AND TOBAGO⁴

The Trinidad and Tobago Police Service was one of the first police agencies in the Latin American and Caribbean region to attempt a randomized controlled experiment to test a hot spots patrol strategy. The experiment was conducted from September to December 2013 in the 40 police districts of Trinidad that had experienced the highest incidence of violent crimes (murder, rape, shootings/wounding, and robbery). The 40 districts were organized into rank-ordered pairs (by the number of violent crimes), with districts in each pair being randomly assigned to a treatment group (where the new patrols were assigned) or a control group. The implementation and evaluation of the program proved to be quite challenging. Reasons for this included:

LEADERSHIP

- ✓ A few of the police leaders for treatment districts were unable to attend the training events that preceded the introduction of the program. This meant they were unclear about what to do in the biweekly briefing meetings with their patrol personnel (termed “COP-Stat meetings”) that were essential for the continuous review and tasking activities of the program.
- ✓ COP-Stat meetings that were held across the districts ranged from being extremely focused to lacking in clarity and conciseness. This was because of variations in the police leaders’ understanding of the program and their own commitment to the hot spots patrol strategy.

⁴ This case study draws from Sherman et al. (2014).

- ✔ Variations were observed in the levels of accountability the police leaders enforced on their patrol personnel. In some cases, police leaders did not want to be held to account for their patrol activities, or they misunderstood the principles of the program. This, in turn, affected how the program was organized and implemented.
- ✔ Consistency in leadership styles was difficult to achieve in the districts where the hot spots patrol strategy took place. Some police leaders were exceptional in how they embraced and operated the program, whereas others were totally disengaged.

COMPLIANCE OF PATROLS

- ✔ Much time was spent during many of the initial COP-Stat meetings in emphasizing the importance of the patrols staying within the boundaries of the designated hot spots, to the point that this often consumed most of the time within these meetings, with limited time being spent on other matters.
- ✔ Despite this emphasis, getting compliance proved difficult. This resulted in variation between the treatment districts in the level of patrol compliance, and hence differences in the level of patrol intensity in these treatment areas.

LOGISTICS

- ✔ Many logistical issues were experienced in the production and delivery of the crime maps (showing crime patterns in the hot spots) to commanders and their patrol units. This limited the ability to update police in the treatment districts on the impact of their patrols.
- ✔ Monitoring the presence of the patrols in treatment areas was difficult because of faulty GPS devices and issues with the interpretation and reliability of the GPS signals indicating where the patrols were located. This meant it was difficult to evaluate if there was any difference in the length of time police patrols spent in the treatment areas in comparison to the control areas, with only informal evidence suggesting an increase of patrol time within treatment districts.
- ✔ In many cases it was difficult to ensure the police patrols assigned to the hot spots stayed within those areas. This resulted in the “contamination” of many control areas (hot spots police patrols also patrolling control areas), and a dilution of the treatment in the hot spots, limiting

the ability to determine if there had been any real differences in patrol levels between treatment and control areas.

- ✔ Continuous monitoring of the program became increasingly difficult because biweekly updates of the crime maps of the treatment areas were no longer produced due to resource limitations. Only monthly or less frequent updates on crime trends were made available. At no point were crime maps produced for the 20 control districts, making monitoring of crime displacement or diffusion of benefits difficult.



**MONITORING
AND EVALUATING**
THE IMPACT OF
THE HOT SPOTS
POLICING PROGRAM

Evaluating the impact of a hot spots policing program provides the opportunity to determine if the program was successful. There are a number of evaluation techniques that can be used; these differ in terms of their statistical complexity and their ability to determine with confidence if it was the hot spots policing program that was responsible for any decreases in crime. Conducting an evaluation requires care and will likely use statistical techniques that police personnel are not trained in. This section offers guidance and advice on how to create control groups and provides details of statistical evaluation techniques. However, we recommend that police agencies also review the many examples of hot spots policing evaluations for further details about statistical evaluation techniques.

We provide some examples to illustrate these techniques and also refer readers to Gertler et al. (2016) and Chainey (2021) as sources of further advice on how to evaluate police interventions that are targeted to geographic areas. We also recommend that police agencies collaborate with researchers who are familiar with these techniques (such as from a local university or crime observatory) and seek their support in conducting an evaluation. In this section, we also provide advice on setting targets and monitoring changes in crime as a hot spots policing program is in operation, and provide details about process evaluation.

SETTING TARGETS

During the pre-implementation stage, it is useful to set targets for what the police agency hopes the hot spots policing program will achieve and how it intends to measure success. A target such as improving the public's trust in the police may be desirable but hard to measure. As Section 4 explains, gathering public opinions can be difficult because of the complexity and costs involved in conducting suitable surveys. The simplest targets will relate to changes in crime, albeit with reliance on police recorded crime data. Setting targets relating to changes in crime should be made specific to the types of crime the hot spots policing program is designed to help prevent (e.g., robbery).

Target setting should also consider whether changes in calls for service, changes in arrest levels, changes in stops and searches, and changes in informal community engagement provide a means for measuring the impact of the hot spots policing program. With regard to stops and searches, it is advisable not to set targets for the number of stops and searches that each patrol is required to perform during each shift. If these interventions are used unreasonably—for example, if they are overused in crime hot spots—they can have negative consequences and can undermine relationships between the police and the community. Alternatively, providing patrol personnel with a target for the number of informal engagements with the public they are required to perform during a shift can encourage community contact; those evaluating can then monitor if certain patrol personnel are using these engagements to excessively conduct stops and searches.

When setting targets that relate to reducing crime and calls for service, it is important to make an assessment of what is a realistic and achievable target. For instance, if crime in designated hot spots accounts for 30 percent of crime in the whole city, do not expect the level of crime for the city to drop by more than 30 percent as a result of the program. Indeed, to achieve this level of decrease would assume that since the hot spots police patrols were introduced there has been zero crime in the hot spots and no changes in crime in the rest of the city. Similarly, if the hot spots police patrols were active for only one third of the day, seven days a week, and this period accounts for when 50 percent of crime previously occurred, do not expect to reduce crime by more than 50 percent in the hot spots. Again, to achieve a 50 percent reduc-

tion in crime in the hot spots would assume there has been no crime in the hot spots during the time periods when the patrols were active.

A useful starting point, drawing from the experience of other hot spots policing programs, would be to consider that the presence of the patrols during the time they are operating will decrease crime in the hot spots by one half. From this, if 50 percent of the crime took place in the hot spots during the period the patrols were active, this would mean the patrols could reduce crime in the hot spots by 25 percent across all times (i.e., half of 50 percent). So, the target would be a 25 percent decrease in crime in the hot spots. As the hot spots accounted for 30 percent of crime across the whole city, the target for the whole city would be to decrease crime by 7.5 percent (i.e., 25 percent of 30 percent). This example illustrates how the information about crime concentration from the analysis of hot spots can help set realistic targets for a hot spots policing program.



Photo 5.1: Technical workshop in Argentina to help prepare analysts for their monitoring and evaluating tasks.

Source: Spencer Chainey.

CONTINUOUSLY MONITORING IMPACT

Continuous monitoring of the hot spots policing program involves conducting a regular descriptive analysis to examine how crime has changed in the areas where the patrols are targeted. The focus for this continuous

monitoring should be on the types of crime the program aims to prevent, reserving analysis of a wider range of crime types to a more detailed evaluation. Continuous monitoring of the program should regularly compare how levels of crime change in each hot spot (by the number of crimes and crime rate, where suitable rate denominators are available) compared with the same period the previous year, and for the total period since the beginning of the program. For example, if the hot spots policing program began on February 1 and today was May 1, the monitoring would compare changes in crime in each patrol area for the last month (April) against the same month in the previous year, and compare changes in crime from February to April of the current year with the same three-month period in the previous year for each patrol area. This monitoring process will help determine if certain areas are performing better than others. Changes in crime for all the hot spots patrol areas should also be aggregated and compared with changes in crime in the whole city, using the same time periods. This will help determine if the changes in crime in the hot spots are contributing to the targeted citywide reduction in crime or if other factors may be influencing the citywide levels of crime. This type of monitoring should take place at least once a month and no more than once a week.

In addition to examining changes in crime statistics, continuous monitoring should examine changes in the spatial patterns of crime. This monitoring should not be done more than once a month; otherwise, it will be difficult to draw sensible conclusions from the patterns that are observed. The monitoring process should include generating maps of crime hot spots (using methods such as kernel density estimation) to examine if geographic patterns in crime have changed substantially in comparison with those that were drawn up in preparation for the program. In other words, the hot spots maps for the last month would be compared against the maps created to determine where to target the patrols, which were based on a year's worth of data. Section 6 provides details about several techniques for comparing how the spatial distribution of crime has changed over time.

Additionally, it would be useful to monitor if the hot spots patrols had led to any changes in crime patterns in terms of day of the week or time of day. This could involve comparing data clocks for the designated hot spots for the periods before and since the implementation of the hot spots policing

program. This type of crime pattern analysis will help determine if the extra attention provided by the patrols in the hot spots is having the desired effect of reducing the concentration of crime in these areas during the times the patrols are active.

The production of monitoring reports should not be onerous and should not involve significant analysis resources. Monitoring reports should be designed so they are simple to complete. The use of technology is encouraged to automate this process as much as possible and enable the efficient production of these reports.

USING CONTROL GROUPS

Control groups provide the means to help determine if the hot spots policing program was the reason for a reduction in crime. Control groups should be as similar as possible to the patrol areas that are being targeted, by being similar in size and level of crime. There are two main options to follow when using control areas:

- ✔ **RANDOM ALLOCATION OF TREATMENT AND CONTROLS.** This approach randomly selects treatment areas (areas where the hot spots patrols are present) and control areas (where they are not present). This approach will mean that the two groups are equivalent, and hence explanations attributing the changes in crime to the hot spots policing program are more plausible.
- ✔ **SELECTION OF SIMILAR CONTROL AREAS.** An alternative approach is to select control areas that are as similar as possible to the treatment areas or are located in an area that is useful for the evaluation. This may include choosing areas surrounding the patrol areas as control areas. Using control areas that are not determined by random allocation, and which may not be similar to the patrol areas, will result in less certainty that any differences in the changes in crime are because of the hot spots policing program.

In many circumstances, specifying crime hot spots as control areas is not always practical, especially when there is pressure on police chiefs to reduce any recent increases in crime. The use of control groups should be en-

couraged because they more accurately determine whether the hot spots policing program has had an impact. The evaluation section below provides details of statistical techniques that can be used to help measure the impact of hot spots policing programs.

EVALUATION APPROACHES AND TECHNIQUES

Two main approaches are used to robustly evaluate the impact of targeted interventions such as hot spots policing: experimental and quasi-experimental evaluation designs. The former (also called randomized controlled trials) use randomization to determine treatment and control areas, while the latter compare treatment and control areas but do not select the controls at random. Other than these differences in the selection of treatment and control areas, many of the statistical techniques that are described in this section can be applied to both randomized controlled trials and quasi-experimental evaluations.

WHY CAN'T I JUST COMPARE CRIME LEVELS IN THE HOT SPOTS BEFORE AND AFTER THE HOT SPOTS POLICING PROGRAM TO KNOW IF IT IS WORKING?

Comparing the level of crime in hot spots before and after the program began can be useful for regular monitoring, but it does not establish whether the change in crime is because of the hot spots policing program. The main issue with before-and-after comparisons is that they can confound the impact of the hot spots policing program with the effect of any other factor that may change over time. Consider the following example.

Suppose that after the start of a hot spots policing program, there has been a substantial decrease in the number of people moving around a city because of a major, sustained drop in air temperature (i.e., people decided to

stay home). Independent of the hot spots policing program, crime is likely to decrease because fewer people are out of their homes and moving around the city (fewer people on the streets, fewer crime opportunities). A before-and-after comparison of crime levels in the hot spots policing areas might show a large decrease in crime, but this comparison would not have distinguished the effect of the program from that of the decrease in temperature and people's mobility. If the decrease in crime is attributed to the hot spots policing program, the evaluation would overestimate its impact. This problem can (mostly) be solved with the use of control areas that are similar to the areas where the hot spots patrols were deployed (the treatment areas). So, if air temperature and mobility decreased equally across treatment and control areas, a comparison in the crime levels between these two types of areas would make it possible to determine the effect that people's reduced mobility had on crime (overall) and to identify the impact the hot spots policing program had in the treatment areas.

Furthermore, simple before-and-after assessments of crime in hot spots have a greater risk of overstating the positive impact of the program than do experimental evaluation designs. That is, when using simple before-and-after methods, the results of an evaluation will be more likely to overplay the positive effects of the treatment and less likely to highlight the negative effects of the treatment (Weisburd et al., 2001). Experimental evaluations reduce bias and provide greater confidence that differences between the treatment group and control group can be attributed to the program that was implemented rather than to other factors.

In the interest of developing a base of evidence in the Latin American and Caribbean region on what works and what does not work to reduce crime, and for the purpose of improving public confidence in the effect of policing and public safety services, evaluations must include control groups to accurately report the impact of interventions such as hot spots policing.

The rest of this section lays out details about the most important aspects of different statistical techniques that have been used for evaluating the impact of hot spots policing programs. Some of these techniques require a

good level of mathematical understanding, but each case includes examples of how the techniques can be used to evaluate hot spots policing programs. The goal is to replicate these evaluation techniques for hot spots policing programs in Latin America and the Caribbean. These techniques vary in sophistication and complexity and therefore have different advantages in certain situations, which are highlighted below. First, some details about randomized controlled trials and quasi-experimental approaches must be provided.

EVALUATION APPROACHES

✔ **RANDOMIZED CONTROLLED TRIALS (RCTs).** This method allows for a direct comparison between two sets of groups that have been selected at random: one that received a treatment (the treatment group) and one that did not (the control group). An RCT can be used to compare groups and assess the impact of the treatment. One key benefit is that it minimizes selection bias, as the allocation of groups is randomized. That makes it possible to identify the causal effect of a certain treatment. RCTs are widely considered to provide robust evidence to learn about the effects of an intervention. An RCT approach was applied to a hot spots policing program in Philadelphia and was used to determine that the program was responsible for a 23 percent decrease in violent crime (Ratcliffe et al., 2011). An RCT approach was also used to evaluate the impact of a hot spots policing program in Medellín (see case study below).

MEASURING THE IMPACT OF A HOT SPOTS POLICING PROGRAM IN MEDELLÍN USING RCT⁵

A hot spots policing program was implemented in Medellín in 2015. Once the analysis process had identified potential areas where hot spots police pa-

⁵ This case study draws from Collazos et al. (2020).

trols could be deployed, these were randomly arranged into treatment areas and control areas. In Medellín, 967 street segments had been identified as potential patrol areas, representing about 3 percent of the streets in the city. As the plan was to use existing police personnel who were allocated to each quadrant in the city, it was decided that a maximum of four street segments per quadrant would be assigned to these police personnel to patrol more intensely. After the random selection of treatment and control areas, 384 street segments were assigned to receive hot spots patrols, with the remaining 583 assigned to one of two control groups: street segments that were adjacent to treatment areas (and potentially liable to displacement effects) and street segments that were remote from treatment areas.

Each quadrant in Medellín consisted of an average of 95 street segments, with a pair of motorbike patrols active in their assigned quadrant for the duration of their eight-hour shift. The motorbike patrols were still required to patrol the whole quadrant but were instructed to increase their patrol presence in the hot spots street segments in their quadrant. This meant that the patrols, spread over three eight-hour shifts, spent an average of 50 to 70 more minutes of their day patrolling the street segments within the designated hot spots.



Photo 5.2: Police patrols in Colombia. The patrols visit street segments in hot spots while also patrolling their whole quadrant.

Source: Spencer Chainey

The hot spots policing program in Medellín resulted in a significant decrease in the number of car thefts in the street segments within the hot spots (the treatment areas). Importantly, there was no displacement of these offenses to neighboring streets; instead, there was a significant diffusion of benefit effect, with car thefts also decreasing in nearby areas. The decreases in car thefts were greatest in the areas that had previously experienced the highest levels of this type of crime. Overall, the decrease in car thefts in the treatment areas and the immediate surrounding control areas contributed to an 11 percent decrease in car thefts across the city. However, there were no significant decreases in homicide, personal injury, personal theft, and theft of motorcycles in the treatment areas.

In addition to measuring the impact on crime, the hot spots policing program included a survey of more than 24,000 citizens, sampled across treatment areas and control areas. The survey results found that the hot spots patrols had significantly improved the public's perception of safety but had no impact in improving perceptions of the police.

✔ **QUASI-EXPERIMENTAL APPROACH.** A quasi-experimental approach can be used to compare changes in crime between a treatment group and a control group, but in this case the two sets of groups have not been selected at random. Although this approach can be used to assess the impact of the treatment, it has some limitations that mainly relate to the bias associated with the selection of control areas. For example, for an evaluation to be robust, the level of crime (and the trend of crime) in the treatment group and the control group before the intervention should be the same. If the treatment group consists of the areas where crime highly concentrated, it is unlikely that the control areas will also have experienced the same levels of crime; otherwise, they would have been identified as hot spots and chosen as treatment areas.

Many hot spots policing programs have used the quasi-experimental approach to evaluate impact because these programs—in response to the real-

ities of policing—are often applied only in the areas where crime levels were highest. Although the quasi-experimental approach is less robust than a randomized controlled trial, quasi-experimental evaluations are considered to offer a high standard, with the results from studies that have used this approach incorporated in the systematic reviews of hot spots policing. A quasi-experimental approach was applied to the evaluation of the hot spots policing program in Montevideo (see case study in this section) and was used to determine that the program was highly likely to be responsible for a 23 percent decrease in robberies and thefts (Chainey, Serrano-Berthet, & Veneri, 2021).

SYNTHETIC CONTROL METHODS are an alternative way to select control groups when randomization is not possible or has not been used. Synthetic control methods use computer models to create a weighted combination of control units that mimic the behavior of the outcome being studied in the period before the program was implemented. The comparison between this synthetic control group and the treatment group is used to estimate what would have happened to the treatment group if it had not received the treatment. An advantage of this method is that it can reduce the bias introduced by models that use nonequivalent comparison groups. Saunders et al. (2015) used a synthetic control approach to assess the impact of the High Point Drug Market Intervention in the U.S. state of North Carolina. The synthetic control method was identified as a very good match across all sociodemographic and crime data for the intervention and control areas. The impact of the High Point Drug Market Intervention on crime was estimated to be larger than previously had been calculated in evaluations that had used non-equivalent comparison groups. Rydberg et al. (2018) also used a synthetic control method to evaluate the impact of a hot spots policing program in Flint, Michigan. The evaluation revealed an increase in aggravated assaults in the treatment areas; this increase had not been identified using basic trend analysis approaches, which had previously suggested decreases in violent crime in the treatment areas.

STATISTICAL TECHNIQUES USED IN EVALUATIONS OF HOT SPOTS POLICING

✔ **ODDS RATIOS** involve a straightforward calculation of crime levels in the treatment group compared with the control group for periods before and after the implementation of the hot spots policing program. Often, an inverted odds ratio is used because it makes it easier to explain that a value that is less than 1 is a measure of the successful impact of the program. The inverted odds ratio is calculated as follows:

$$\text{Inverse Odds Ratio} = \text{IOR} = \frac{1}{\text{OR}} = \frac{1}{\frac{(a \times d)}{(b \times c)}} = \frac{(b \times c)}{(a \times d)}$$

in which **a** is the count of crimes in the treatment group before the implementation of the hot spots policing program, **b** is the count of crimes in the treatment group while the program was in operation, **c** is the count of crimes in the control group before the implementation of the program, and **d** is the count of crimes in the control area while the program was in operation. An inverted odds ratio of less than 1 indicates that the intervention was associated with a decrease in crime in comparison with the control area, while also considering differences in the level of crime in the two areas for the period before the intervention. To illustrate, let's say that $a = 220$, $b = 171$, $c = 200$, and $d = 212$. This would generate an inverted odds ratio of 0.733 ($1/(220 \times 212)/(171/200)$). We could interpret from this that there was a 26.7 percent decrease in crime in the treatment area when compared to the control area. Ratcliffe et al. (2011) used the inverted odds ratio in their study on the impact of a hot spots policing program in Philadelphia.

✔ **RELATIVE INCIDENCE RATE RATIOS** (RIRR) have been recommended instead of odds ratios for comparing changes in crime between treatment groups and control groups when evaluating the impact of more than one hot spots policing program. This is because odds ratios can underestimate the effect of interventions and RIRRs are more flexible for comparing changes in crime when the pre-intervention and post-intervention periods are of different lengths (Wilson, 2021).

Braga & Weisburd (2020) used RIRRs to recalculate the impact of hot spots policing programs that had been included in a systematic review of these programs (in which odds ratios had previously been used). They determined that the RIRRs suggested the hot spots policing programs had a more substantive effect in reducing crime than had previously been calculated using odds ratios and other techniques.

✔ **DIFFERENCE IN DIFFERENCES** is a technique that determines the effect of an intervention by calculating the difference in outcomes from before and after the intervention. The estimated effect of a treatment is measured by this difference. This is a solid technique which intends to mitigate the effects of extraneous factors and selection bias. It includes examining if the trends in crime in the treatment areas and control areas are similar prior to the implementation of the intervention and determining the effect these trends have on the intervention's impact. Sherman & Weisburd (1995) used difference-in-differences techniques to evaluate the impact of increased police patrols on crime levels in 110 hot spots in Minneapolis. Hot spots were identified as address clusters that experienced high volumes of citizen calls for police service over a two-year period. Differences between citizen calls in years before the intervention and the years when the intervention was operating were compared via control and treatment groups assigned previously through the randomized selection of treatment and control areas. Hot spots that did not receive intensified police patrols experienced a greater increase in the numbers of citizen calls to police than in the treatment locations. The evaluation of the hot spots policing program in Montevideo also used a difference-in-differences approach (Chainey, Serrano-Berthet, & Veneri, 2021).

QUASI-EXPERIMENTAL EVALUATION OF THE PADO HOT SPOTS POLICING PROGRAM, MONTEVIDEO

The evaluation of the PADO hot spots policing program in Montevideo, Uruguay, used a quasi-experimental approach that compared areas where PADO had been deployed with two sets of control areas. Control 1 areas consisted of street segments and street junctions within 300 meters of a PADO patrol street segment or junction, and Control 2 areas consisted of all other street segments and street junctions in the city. The use of two types of control areas meant that any local displacement effects could be measured and that a comparison could be made with the change in crime across the rest of the city. A difference-in-differences approach was used to measure the impact of the program. This provided a robust means of determining if PADO had an impact on robbery in Montevideo, and if this impact was statistically significant.



Photo 5.3: Implementation of PADO in Uruguay. For the video about implementing the PADO program, shown in this screenshot, see Section 7.

Source: Ministry of Interior for Uruguay, 2016.

In the two years prior to the implementation of PADO (in 2014 and 2015), Montevideo had seen increases in robberies of 14 percent and 10 percent against the previous year. After PADO was implemented, the areas where PADO was

deployed had a statistically significant decrease in robberies of 21.1 percent compared with Control 1 areas. When comparing the PADO areas to Control 2 areas, there was a statistically significant decrease of 23.1 percent. When comparing PADO areas to all non-PADO areas of Montevideo (Control areas 1 and 2 combined), there was a statistically significant decrease of 22.6 percent. Robbery levels did not significantly increase in either of the two control areas; if anything, the results indicated a small decrease of 2.1 percent in the areas immediately surrounding where PADO police patrols were deployed. The decrease in robberies in the PADO areas not only halted the previous year-on-year increases in robbery that had been experienced in Montevideo but was the main factor that contributed to a citywide decrease in robberies of 6 percent in 2016 (Chainey, Serrano-Berthet, & Veneri, 2021).

✔ **DIFFERENCE IN MEANS** is the comparison between the pre-test and post-test means of observed events in treatment and control areas. This technique is relatively simple to conduct; it does not require sophisticated statistical knowledge and is an easy and quick way to get insights into the impact of an intervention. Sherman & Rogan (1995b) conducted displacement tests for the Kansas City Gun Project using a difference-in-means approach and t-tests to determine if the differences were statistically significant. The tests compared weekly gun crimes for the 29 weeks of the first phase of the patrol program to the 29 weeks prior to the first phase. The evaluation of the hot spots policing program in Medellín also used this technique, albeit following an RCT approach (Collazos et al., 2020).

Statistical methods with less statistical rigor include the following:

✔ **DIFFERENCE IN ABSOLUTE TERMS** refers to the simple difference obtained after comparing the total number of observations between the pre- and post-intervention periods. Caeti (1999) used difference in absolute terms and mean comparisons to evaluate the impact of the Targeted Beat Program conducted by the Houston Police Department between 1994 and 1996.

- ✔ An **AUTOREGRESSIVE INTEGRATED MOVING AVERAGE (ARIMA)** model is used in time-series analysis to better understand the data or to do forecasting. The purpose of each of the model's features is to make the model fit the data as well as possible. Lawton et al. (2005) used ARIMA to assess the impact of Operation Safe Streets, a targeted policing program to address illegal drug activity in Philadelphia. Using this approach, they were able to examine the impact of the program and determine if any spatial displacement or diffusion effects had occurred.

- ✔ **SIMPLE TREND ANALYSIS** is a technique that aims to find an underlying pattern of behavior in a time series. When evaluating an intervention, data on crime can be plotted from before, during, and after the intervention. The variation in crime at specific points across the intervention period can be traced in the plot. Among the advantages of this approach are that it does not require sophisticated software (it can be performed in Microsoft Excel), it allows for the visualization of data through time, and it provides information about crime tendencies and inflection points. Hope (1994) used simple trend analysis, which included a year prior to the intervention and six months following, to evaluate policing efforts made at three hot spots located at specific addresses associated with street-level drug sales in the U.S. city of St. Louis.

- ✔ The **WEIGHTED DISPLACEMENT QUOTIENT (WDQ)** compares how much crime occurs between a targeted area, a buffer area, and a control area before and during the intervention to examine how crime in those areas has changed. An advantage of the WDQ is that it can detect if crime has been displaced into the surrounding buffer, or if that surrounding buffer has actually experienced some benefits due to its proximity to the intervention. In addition to detecting displacement or the diffusion of benefit, the WDQ can also be used to identify where the effect was most prominent. Taylor et al. (2011) used the WDQ in a study of hot spots policing to assess whether a diffusion of benefits or displacement occurred. A weakness of the WDQ is that it does not test whether the change in crime or the displacement effects were statistically significant. To address this limitation, a new statistical measure has been introduced. The weighted displacement difference (WDD)

not only allows for the determination of the statistical significance of findings, thus enabling the estimation of an intervention's effectiveness in terms of crime reduction, but also provides a measure of the standard error, accounting for whether the results were obtained by mere chance (Wheeler & Ratcliffe, 2018).

PROCESS EVALUATION

The evaluation techniques described in this section can be used to determine the impact of the program. Process evaluation involves an assessment of *how* the program worked. In many cases, crime reduction programs fail to be effective because of poor implementation rather than the principles of the program being at fault. A process evaluation helps to determine if there were issues with the program's execution that may explain why it was not a success; alternatively, it can identify the particular features of the program that were responsible for the program's success.

In a process evaluation, the key questions to ask include:

- ✔ What resources were required to achieve the impact?
- ✔ Did activities go as expected?
- ✔ What alterations were made to the implementation?
- ✔ Who did and who did not cooperate in the activity and why?

Chainey et al. (2023) included a process evaluation in their analysis of a four-city hot spots policing program in Argentina. The differences in the impact in each city was associated with differences in the implementation of these programs.

Section 7 provides a link to a publication with more details about how to conduct a process evaluation.



**STRENGTHENING
AND ACHIEVING
SUSTAINABLE IMPACT**

This section describes how hot spots policing can be strengthened by conducting additional analysis, by adapting patrol deployment plans, and by complementing hot spots policing with other forms of proactive policing.

STRENGTHENING ANALYSIS

TARGETING THE RIGHT PLACES AT THE RIGHT TIMES

Section 5 provided information on how to monitor and evaluate the impact of hot spots police patrols. Continuous monitoring and evaluation should identify whether the hot spots policing program is having an impact, and whether the areas being targeted are the places that should continue to be targeted. Hot spots by their nature are areas where crime concentration has persisted for some time because of the favorable conditions for crime to occur at these locations. A good continuous monitoring process will identify if any new locations where conditions conducive to crime have appeared (e.g., a new shopping mall) and if any large-scale displacement of crime has occurred (see Sections 1, 3, and 4 for information about displacement). If a continual monitoring process is not in place, it is then necessary to either perform the analysis steps described in Section 4 or conduct an evaluation of the hot spots policing program using the techniques described in Section 5. Completing this analysis will identify if the right places are being targeted at the right times.

IDENTIFYING AREAS WHERE CRIME LEVELS HAVE CHANGED

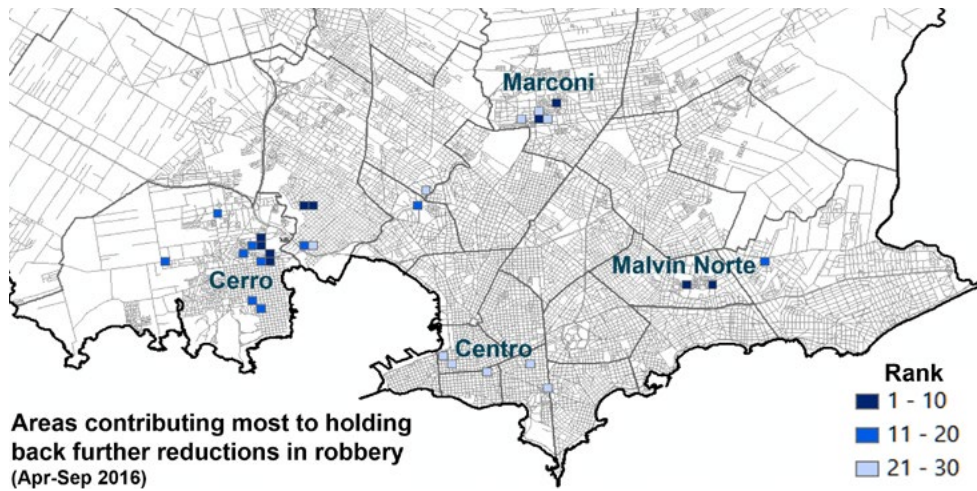
Several advanced analysis techniques can be used to identify areas where the change in crime levels has been most apparent. The results from using these techniques can identify the specific areas where a hot spots policing program can be improved. Two useful analysis techniques are the S Index and the Offense Dispersion Index.

- ✔ The **S INDEX** (developed by Andresen, 2009) is a technique for measuring the degree of similarity between two observations (e.g., geographic patterns of crime before the implementation of a hot spots policing program and geographic patterns of crime during the period of program implementation). The S Index varies between 0 and 1. The closer the S Index value is to 1, the more similar (stable) the pattern (i.e., the overall pattern of crime has not changed). The S Index test also identifies areas where the change in crime has been significant. This means it can also be useful for identifying areas where an increase in crime has taken place, as well as identifying areas where the decrease in crime has been significant. Using the results from the S Index test can therefore help identify new areas for the hot spots policing program to target. The S Index can be applied using free software, details of which are provided in Section 7.

- ✔ The **OFFENSE DISPERSION INDEX**, or ODI (developed by Ratcliffe, 2010), is an analytical technique that identifies, during a period of crime increase, if a small number of areas were responsible for the increase or if the increase is a spreading (emergent) problem. For a period when crime has gone down (e.g., during the implementation period of a hot spots policing program), the ODI can also be useful for identifying those areas that are holding back further decreases. That is, it can help pinpoint areas that are being targeted by hot spots police patrols but have not experienced decreases in crime, and identify areas of possible crime displacement. The ODI ranges from 0 to 1, with values close to 0 indicating that the change in crime is associated with only a small number of areas. The ODI can be calculated using free software called the Dispersion Calculator (see Section 7 for additional information). The Dispersion Calculator also identifies the areas that are most responsible for any crime increase or, during a period of crime decrease, those areas that have not experienced decreases in crime. The example below illustrates the use of this technique in Montevideo to assist in strengthening the city's hot spots policing program; although crime had decreased as a result of the program, the Dispersion Calculator identified areas where crime had increased. This included a small number of specific areas that were already part of the hot spots policing program and other areas where there had been no hot spots patrol deployment. This

analysis was then used to improve the police patrols in the specific hot spots that were already targeted (such as by making changes to the patrol routes), and to identify other specific areas that should be included in the hot spots policing program.

Map 6.1: Areas in Montevideo Where Robberies Increased



Source: Spencer Chainey.

Note: The map highlights and ranks areas in Montevideo where robberies increased at a time when robberies generally decreased across the city after the implementation of PADO. The ranking of areas (by the level of crime increase) was used to prioritize where the hot spots policing program could be improved.

THE CRIME CONCENTRATION DISPERSION INDEX (CCDI)

The CCDI is an advanced technique that determines whether, after a recent period of crime increase, a new hot spots policing program should be targeted at the pre-existing areas of high crime concentration, or if the program should additionally consider other emerging hot spots. The CCDI uses an output from the Dispersion Calculator to make a comparison between the areas that are most responsible for a crime increase and the areas of high crime concentration.

One study used the CCDI in Rio de Janeiro and Duque de Caxias, two cities in Brazil that had experienced significant increases in robberies. The results showed that in Duque de Caxias, the increase was very much contained within pre-existing hot spots (i.e., hot spots that had just become even hotter), but in Rio de Janeiro the increase was associated with a combination of pre-existing hot spots getting hotter and new hot spots emerging. Results from the CCDI can then be used to consider where best to target hot spots police patrols for the program to be effective. In the case of Rio de Janeiro, that would be to areas of high crime concentration and new emerging hot spots. In Duque de Caxias, only the areas of high crime concentration would need to be targeted by the hot spots policing program (Chainey & Monteiro, 2019).

IDENTIFYING SHORT-TERM SPATES OF CRIME

Hot spots are persistent areas of high crime concentration; however, shorter-term spates of crime often occur, and can involve a relatively large number of crimes in a small area over a short period of time. These patterns of crime are referred to as “near repeats.” That is, following a recent incident, other crimes take place soon after and in close proximity to the first offense.

Studies of these patterns suggest that these other crimes that take place nearby and soon after a previous offense are most likely to have been committed by the same offender who committed the first offense in the series. This series of crimes may be short-lived (it may stop after a week), but if a pattern of near repeats can be identified, this could help strengthen the hot spots policing program by paying increased attention to the areas where other incidents may soon more likely occur. Near repeats can be identified using software. (See Section 7 for information about the Near Repeat Calculator.) The analysis of near repeats can help identify the extent to which the pattern exists, and where incidents are most likely to occur. For hot spots policing purposes, the results of a near repeat analysis can identify if areas where police currently patrol are likely to soon experience other offenses that are part of the series, and can in turn ensure that patrols in these areas are particularly active for the next few days. If near repeat offenses appear to frequently take place in areas where the hot spots patrols are not present, this may identify opportunities for strengthening the existing patrol deployment arrangements by dedicating a team of hot spots patrol personnel to areas where near repeat offenses are most likely to occur. Section 7 provides links to additional information on the use of near repeat analysis.

STRENGTHENING THROUGH ADAPTATIONS TO THE HOT SPOTS POLICING PROGRAM

Described below are several steps that can be taken to strengthen a hot spots policing program. However, first it is important to allow sufficient time—usually at least three months—for the program to operate and for an evaluation of its impact to be generated. The results from this evaluation can then be used to identify potential ways to improve the hot spots policing program.

REVIEWING THE PROGRAM

As described in Section 4, crime reduction programs often fail to be effective because of poor implementation rather than the principles of the program being at fault. If a hot spots policing program is not having an effect on crime levels, a useful first step is to review how the program is operating. For example, if the program is working well in some locations but is not having an impact in others, it is useful to review any differences in operations between these two areas. This could involve reviewing the supervision of patrols in these areas, conducting observation visits of the patrols to ensure they are patrolling in the way that is required, and speaking to hot spots patrol officers to get their opinions about why they think the program is not working in certain areas.

REVIEWING POLICE RESOURCING LEVELS

One of the most difficult challenges in implementing a hot spots policing program is determining the right number of police patrols to deploy to crime hot spots to ensure that the patrols have an impact on crime. Patrol resources are the main cost of any hot spots policing program, so staffing levels should be reviewed periodically to determine the optimal level required to maximize their impact on reducing crime. Experimenting with the number of police patrols to deploy should include a well-designed evaluation program to determine how this resourcing influences the impact of the hot spots policing program.

If a hot spots policing program has proved successful, assuming an impact evaluation has been conducted and has identified that the program is working, experimenting with different levels of police patrols in different areas could be useful to observe how these changes influence changes in crime. For example, if the hot spots policing program consists of deploying 20 pairs of foot patrol officers to 20 patrol areas, it would be useful to experiment by keeping the same deployment levels in half of these areas and reducing levels in the other patrol areas. In these latter areas, perhaps only 5 pairs of foot patrols would be deployed rather than 10, with the 5 pairs being responsible for 2 patrol areas and rotating between these areas. This means the same 10 areas still receive police patrols but with half the dosage level. Experimenting in this manner will determine the optimal patrol levels that are required for decreasing crime, and can be a particularly valuable measure to determine when cuts in police budgets are anticipated.

If a hot spots policing program has not resulted in decreases in crime, it may be useful to experiment with increasing the patrol resourcing levels to measure impact. This could begin by piloting an increase in the number of police patrol officers in certain areas. For example, if the hot spots policing program consists of deploying police to 20 patrol areas, it could be useful to increase deployment levels in half of these while keeping the same levels in the other half. Alternatively, if no extra resources are available, it may be necessary to identify the 10 highest crime concentration areas out of the 20 existing patrol areas and double the resourcing levels in these 10 areas by removing the police patrols from the other areas. In the 10 areas where the police patrols have increased, this may mean deploying patrols

more precisely to specific areas (e.g., rather than one pair of patrols operating across six street segments, two pairs of patrols may now operate across three street segments), or increasing the times of day when the patrols are present (e.g., instead of 6 p.m. to midnight, 4 p.m. to 1 a.m.). Experimenting in this manner will help determine the patrol resourcing levels that are required to reduce crime, and support any requests and budgeting for additional resources.

PATROLLING PERSISTENT HIGH-CRIME AREAS AND AREAS WHERE SPATES OF CRIME OCCUR

Hot spots policing involves targeting police patrols to areas where crime has previously persisted at high levels. As discussed above, an analysis of near repeats can help identify if an area experiences many spates of crime. If high levels of near repeats are present and police resources are available, it could be useful to dedicate a small team of hot spots police patrol officers to the specific task of patrolling areas where these near repeat crimes are predicted to occur. This will require patterns of near repeats to be reviewed at least every three days by an analysis unit, with the results informing where best to deploy this team of hot spots patrols. That is, rather than this small team of patrol officers being deployed to persistent hot spots, they are deployed to areas where there appears to be a spate of crimes, in the attempt to prevent any additional crimes from occurring. This adaptation of the hot spots policing program would result in the patrols being even more proactive, responding to recent patterns as well as persistent patterns of crime, and could help bring about further decreases in crime.

STRENGTHENING WITH SUPPORT FROM OTHER FORMS OF PROACTIVE POLICE ACTIVITY

Hot spots policing falls into a category of policing approaches that are described as proactive (NASEM, 2018). Table 6.1 summarizes the strengths and weaknesses of other forms of proactive policing.

Although hot spots policing has been shown to decrease crime, most of these evaluations have focused on short-term periods of often no longer than three months. Very few studies have examined the effect of these programs over longer periods; however, those that have suggest that hot spots policing programs that operate for a long duration can generate sustained decreases in crime (Chainey & Estevez-Soto, 2022; Koper et al., 2021). However, one study that examined changes in crime after a hot spots policing program stopped showed that crime soon returned to levels that were observed before the intervention (Sorg et al., 2013). To strengthen the impact of a hot spots policing program, other forms of proactive policing activity are recommended that can work alongside a hot spots policing program—in particular, problem-oriented policing and focused deterrence strategies. If programs involving other types of interventions are implemented alongside a hot spots policing intervention, it is important to properly document these other interventions and think carefully about how and where these interventions will be implemented. If they are implemented only in the areas where hot spots police patrols are operating, then the impact of the hot spots policing intervention should be considered as a combined activity. If both interventions (hot spots policing and the other intervention) are implemented in the treatment areas and the other type of intervention is also

implemented in the control areas, then the impact of the hot spots policing intervention should be interpreted as being conditional on having the other intervention in place. That is, the impact would be the marginal effect of the hot spots policing component of the program in addition to the effect of any other type of intervention. It is important to take these additional components into consideration when designing the evaluation of the hot spots policing intervention and when interpreting its results.

PROBLEM-ORIENTED POLICING (POP)

Problem-oriented policing is a process through which crime problems are considered, responded to, and assessed for their impact. In this sense, the process encourages the police to examine a collective number of incidents that relate to the problem, rather than just responding to one incident after the next in isolation. A POP approach recognizes that enforcement, arrest, and investigation are important responses for trying to decrease crime but also encourages consideration of alternative activities that may have a better impact (such as employing disruption strategies, reducing repeat victimization, and establishing community engagement programs).

A POP approach assumes that the conventional responsibilities of the police still exist—namely the need to respond to incidents and investigate crime—but that the police function is broader than merely enforcing the law and performing activities after a crime has been committed. A “problem” can involve any combination of crime and disorder issues, be they high or low in number, serious or less serious incidents, or related to organized crime or individual opportunistic behavior. A key aspect of problem-oriented policing is to understand the problem specifically, so that tailored and targeted responses can then be determined. Understanding how police should respond to problems requires more than merely knowing what conduct is unlawful; it also requires understanding the other interests at stake, qualifying whether the responses to use are likely to be effective, and considering the consequences of the chosen activities. In combination with hot spots policing, POP approaches have been found to offer a more durable solution for decreasing crime (Hinkle et al., 2020). When hot spots policing is combined with problem-oriented policing, the impact on reducing crime

has also been found to be greater than with hot spots policing alone (Taylor et al., 2011). The hot spots patrols can work to decrease crime by deterring offending behavior, while POP activity complements the patrols by addressing the underlying causes that make the area conducive to crime. Section 7 provides references to additional materials on problem-oriented policing.

ENHANCING HOT SPOTS POLICING WITH MUNICIPAL GOVERNMENT PUBLIC SAFETY IMPROVEMENTS IN BOGOTÁ⁶

In 2016, a hot spots policing program was implemented in Bogotá, similar in design to the program implemented previously in Medellín but with one exception. Although most of the treatment areas for the hot spots policing program (consisting of 756 street segments) received additional motorbike patrol presence, 75 of these street segments received both hot spots police patrols and improvements in municipal services. These municipal improvements included better and more frequent garbage collection and street lighting improvements, as well as street repairs.



Photo 6.1: Improvements in street lighting in Bogotá, Colombia.

Source: Spencer Chainey.

⁶ This case study draws from Blattman et al. (2021).

Although the hot spots patrols contributed to a citywide decrease of 5 percent in serious violence, in the areas that received a combination of the hot spots patrols and improvements in municipal services, all crimes decreased by 47 percent. This example illustrates the potential benefits of combining hot spots policing with local problem-solving (supported by other authorities) to reduce crime.

FOCUSED DETERRENCE

Focused deterrence is an approach in which selected high-risk offenders (prolific or particularly violent criminal offenders) receive concentrated attention and, simultaneously, are offered support to pursue alternative behavior. The approach applies a problem-oriented strategy to better understand the dynamics that produce crime, and implements a multi-agency and community response (Scott, 2017).

A focused deterrence approach (also known as a pulling levers approach) is based on the core principles of deterrence theory. This asserts that to discourage people from committing crime; (1) the risk of being caught must be high; (2) punishment must be swift, severe, and certain; and (3) these risks and punishments are known to would-be offenders. Instead of simply applying police enforcement crackdowns that make life more difficult for selected individuals, focused deterrence requires a multi-agency approach which includes supporting these selected individuals in pursuing non-criminal activities (such as legitimate employment). The focused deterrence approach originated as an initiative to address gun violence among youth gangs in Boston in the late 1990s, but the principles have since been applied more widely for dealing with issues such as knife crime, youth disorder, drug dealing, and domestic violence.

Table 6.1: Impacts of Forms of Proactive Policing Activities

Activity	Core principles	Evidence of impact
Hot spots policing	Focuses resources on locations where crime concentrates	<p data-bbox="792 275 1138 302">✓ Yes; X No; ? Insufficient evidence.</p> <p data-bbox="824 359 850 392">✓</p> <ul data-bbox="902 369 1286 737" style="list-style-type: none"> <li data-bbox="902 369 1286 579">• Produces good crime-reduction effects; however, once the activity has ended, there is the risk that crime returns to pre-intervention levels <li data-bbox="902 600 1286 737">• Does not simply displace crime but can also decrease crime in nearby areas
Broken windows policing	Involves attention to small and visible damage to property and minor disorder/misdemeanor offenses, which if not quickly rectified, attract more damage and other, more serious crime	<p data-bbox="824 772 850 806">X</p> <p data-bbox="824 842 850 875">✓</p> <ul data-bbox="902 779 1286 1220" style="list-style-type: none"> <li data-bbox="902 779 1286 989">• The use of broadly applied aggressive “zero tolerance” tactics for increasing arrests for minor offenses has little or no impact on crime <li data-bbox="902 1010 1286 1220">• If applied in a neighborhood-centered, problem-oriented manner to decrease disorder, it can result in short-term decreases in crime
Closed circuit television (CCTV)	Cameras increase an offender’s perceived risk of being identified or apprehended for criminal activity	<p data-bbox="824 1255 850 1289">X</p> <p data-bbox="824 1325 850 1358">✓</p> <ul data-bbox="902 1262 1286 1514" style="list-style-type: none"> <li data-bbox="902 1262 1286 1514">• Mixed results, offering modest decreases for vehicle-related crime, but very little (if any) impact on crimes against the person (e.g., violent crime, street robberies)
Community policing	Involves citizens in identifying and addressing public safety issues	<p data-bbox="824 1549 850 1583">X</p> <p data-bbox="824 1619 850 1652">?</p> <ul data-bbox="902 1556 1286 1766" style="list-style-type: none"> <li data-bbox="902 1556 1286 1766">• Studies do not identify a consistent crime-prevention benefit, though many evaluations have been weak in their design

Focused deterrence	Attempts to deter crime among repeat/high-risk offenders by understanding crime-producing dynamics and implementing a multi-agency and community-mobilized response	✓	<ul style="list-style-type: none"> • Consistently found to have impact in decreasing gang violence, street crime driven by drug markets, and repeat individual offending • Short- and long-term sustained area-wide impacts on crime
Predictive policing	Uses sophisticated computer algorithms to predict where crime is likely to occur	?	<ul style="list-style-type: none"> • Currently, insufficient rigorous evidence to support a conclusion for or against the efficacy of crime prediction software, or on the impact of associated police response tactics
Problem-oriented policing (POP)	Examines the underlying causes of crime from which response activities are determined	✓ ?	<ul style="list-style-type: none"> • Produces good crime-reduction effects • Impacts after the activity has ceased are not known because of lack of evaluation
Stop and search (stop-question-frisk)	Involves legal engagement to stop, question, and search a person where there is reasonable suspicion for criminal activity	✓ X	<ul style="list-style-type: none"> • The focused use of stop and search to targeted places and high-risk repeat offenders has a short-term impact on decreasing crime, but there is an absence of evidence on long-term impacts • When implemented more generally, effects are mixed • Can have an undermining effect on police-community relations

Source: Adapted from NASEM (2018) and U.K. College of Policing (2023).



ADDITIONAL
RESOURCES

This section provides more details about some of the key additional resources available on hot spots policing. It includes links to further information about the impact of hot spots policing on reducing crime, guidance on analyzing hot spots, links to videos that depict the implementation stages for a hot spots policing program, further guidance on evaluation methods and techniques, and links to information about other forms of proactive policing that can complement a hot spots policing program.

CASE STUDIES

In addition to these resources, this practice guide includes an online appendix of three detailed case studies on hot spots policing in Latin America:

- ✔ **CASE STUDY 1, ARGENTINA:** *El programa de Policiamiento de Puntos Calientes en La Plata, Santa Fe, Morón y Tres de Febrero* [The Hot Spots Policing Program in La Plata, Santa Fe, Morón, and Tres de Febrero]
- ✔ **CASE STUDY 2, COLOMBIA:** *Intervenciones de policía en puntos calientes en Colombia: los casos de Medellín y Bogotá* [Hot Spots Policing Interventions in Colombia: The Cases of Medellín and Bogotá]
- ✔ **CASE STUDY 3, URUGUAY:** *La experiencia del Programa de Alta Dedicación Operativa en Uruguay* [The Experience of the High-Intensity Operations Program in Uruguay]

THE EVIDENCE ON HOT SPOTS POLICING

- ✔ **DOES HOT SPOTS POLICING HAVE MEANINGFUL IMPACTS ON CRIME? FINDINGS FROM AN ALTERNATIVE APPROACH TO ESTIMATING EFFECT SIZES FROM PLACE-BASED PROGRAM EVALUATIONS.** The results of a meta-analysis of hot spots policing programs. It examined 53 studies representing 60 tests of hot spots policing programs and suggested that hot spots policing generated statistically significant decreases in violent crime (19 percent), disorder/drug crimes (20 percent), and property crime (16 percent). <https://link.springer.com/article/10.1007/s10940-020-09481-7>
- ✔ **WHAT WORKS CENTRE FOR CRIME REDUCTION.** Details about hot spots policing from the What Works Centre for Crime Reduction (U.K. College of Policing). <http://whatworks.college.police.uk/toolkit/Pages/Intervention.aspx?InterventionID=46>
- ✔ **WHAT WORKS IN POLICING? HOT SPOTS POLICING.** A report from the Center for Evidence-Based Crime Policy (George Mason University, U.S.). <http://cebcp.org/evidence-based-policing/what-works-in-policing/research-evidence-review/hot-spots-policing/>

GEOGRAPHIC REFERENCING AND ANALYSIS FOR HOT SPOTS POLICING

- ✔ **GEOCODING CRIME AND A FIRST ESTIMATE OF A MINIMUM ACCEPTABLE HIT RATE.** A research article providing details about geographic referencing (geocoding) of crime data. https://c9f7f7db-698e-4005-ac29-1f0d0866ad9e.filesusr.com/ugd/f5df24_e112d1453b-f44232bf8968f537c896d5.pdf
- ✔ **MAPPING CRIME: UNDERSTANDING HOT SPOTS.** A report by the U.S. National Institute of Justice, which includes examples of techniques. <http://discovery.ucl.ac.uk/11291/1/11291.pdf>

✔ **UNDERSTANDING CRIME: ANALYZING THE GEOGRAPHY OF CRIME.**

This book is a comprehensive guide that explains how to apply techniques for examining spatial and temporal patterns of crime, examines the analysis of crime with other spatial data, and includes techniques for evaluating the impact of geographically targeted interventions. <https://www.esri.com/en-us/esri-press/browse/understanding-crime-analyzing-the-geography-of-crime>

IMPLEMENTATION

✔ **IMPLEMENTING A HOT SPOTS POLICING PROGRAM IN MONTEVIDEO, URUGUAY [IN SPANISH]**

- https://www.youtube.com/watch?v=l_Wr7OpJIHk

✔ **IMPLEMENTING A HOT SPOTS POLICING PROGRAM IN SANTA FE, ARGENTINA.** These video clips [in Spanish] show features of the hot spots policing program that was implemented in the city in 2017.

- Getting buy-in: https://www.youtube.com/watch?v=wTeEsOr_r5s
- The analysis behind the process: <https://twitter.com/MinSegSF/status/910939773417787392>
- Hot spots police patrol training: <https://twitter.com/minsegsf/status/912093142928805889>
- Launching the hot spots policing program: https://m.facebook.com/story.php?story_fbid=1723564097676865&id=1118955648137716

EVALUATION

✔ **ASSESSING RESPONSES TO PROBLEMS: DID IT WORK?** A booklet on how to evaluate the impact of police response programs such as hot spots policing. The guide describes the benefits of conducting both impact and process evaluations. <https://popcenter.asu.edu/content/assessing-responses-problems-did-it-work-page-2>

- ✓ **IMPACT EVALUATION IN PRACTICE.** A comprehensive handbook on impact evaluation techniques. <https://publications.iadb.org/handle/11319/7844?locale-attribute=es>

ANALYSIS FOR STRENGTHENING HOT SPOTS POLICING

- ✓ **S INDEX.** Measuring the stability between two crime patterns. <http://www.sfu.ca/~andresen/spptest/spptest.html>
- ✓ **DISPERSION CALCULATOR** (and the ODI). Identifying areas that are most responsible for a crime increase or that are holding back further reductions in crime during a period of crime reduction. <https://www.jratcliffe.net/post/calculating-the-dispersion-when-crime-increases>
- ✓ **NEAR REPEAT ANALYSIS.** Using near repeat analysis to determine immediate areas of high crime risk. <https://www.esri.com/videos/watch?videoid=YdY-tl8rGYk&title=getting-started-with-predictive-policing-using-arcgis>

OTHER FORMS OF PROACTIVE POLICING

- ✓ **PROACTIVE POLICING: EFFECTS ON CRIME AND COMMUNITIES.** A report from the U.S. National Academies of Sciences, Engineering, and Medicine (NASEM) on the strengths and weaknesses of various proactive policing approaches. <https://www.nap.edu/catalog/24928/proactive-policing-effects-on-crime-and-communities>
- ✓ **UCL URUGUAY POP CENTER.** An online reference guide and details about problem-oriented policing in practice produced by University College London in its work with the Uruguay National Police. <https://www.centropop.org/>

✔ **FOCUSED DETERRENCE OF HIGH-RISK INDIVIDUALS.**

A problem-oriented guide on focused deterrence, which singles out selected high-risk offenders for concentrated law enforcement attention and social services. <https://bja.ojp.gov/library/publications/focused-deterrence-high-risk-individuals>

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