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SMART Approaches to Reducing Gun Violence

Smart Policing Initiative Spotlight on Evidence-Based Strategies and Impacts

March 2014

Anthony A. Braga, Daniel W. Webster, Michael D. White, and Hildy Saizow

Smart Policing Initiative
Spotlight Report

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Published March 2014

SMART Approaches to Reducing Gun Violence

The Highlights

Despite significant decreases in crime nationwide, America continues to experience criminal gun violence at extraordinarily high levels—more than 11,000 individuals are murdered by firearms and 75,000 are treated for nonfatal gunshot wounds at hospitals annually, and these incidents are certainly undercounted in our statistics. Beyond the devastating toll measured in injuries and loss of life, gun violence also imposes a heavy burden on our standard of living, from increased fear and reduced quality of life to depressed property values. While the public tends to focus its attention on mass shootings, the most common forms of gun violence occur on a daily basis involving gang members, violent youth, and others involved in crime. As a result, local police departments are in a strategic position on the front lines poised to curb or even prevent gun crime, injuries, and deaths. In response, a number of departments are experimenting with new, evidence-based strategies and tactics aimed at addressing the chronic and pervasive gun violence problem. Yet, the question remains: Can the police effectively reduce and prevent gun crimes and associated violence?

The Smart Policing Initiative (SPI) emerged on the law enforcement landscape in 2009. With SPI, the Bureau of Justice Assistance (BJA) sought to identify effective and efficient solutions to chronic local crime problems, including gun violence. This program provides a valuable opportunity for local police agencies to partner with academic researchers and rigorously assess whether gun violence reduction strategies have the intended effects on crime, violence, and communities. Indeed, nine of thirty-five SPI-funded police agencies nationwide have targeted gun violence as part of their Smart Policing Initiatives (Boston, MA; Los Angeles, CA; Baltimore, MD; Joliet, IL; Las Vegas, NV; Cambridge/Somerville/Everett, MA; Kansas City, MO; Rochester, NY; and East Palo Alto, CA). This Spotlight report reviews the common strategies that police have employed across those nine sites. These evidence-based strategies, which reflect core tenets of the SPI, are grounded in a risk-focused framework that recognizes the importance of targeting efforts on the places, people, and times at greatest threat of violence. The common strategies identified for implementation in the nine SPI sites include:

- Targeting persistent gun violence hot spots
- Targeting prolific offenders in persistent hot spots
- Employing new technologies and advanced crime analysis
- Engaging a wide range of collaborative partners
- Conducting advanced problem analysis

We prepared the Gun Violence Spotlight to further the national conversation on the gun violence problem and to provide a resource for local officials seeking to make informed, evidence-based decisions regarding their prevention, intervention, and suppression efforts. Though many of the SPI projects are ongoing, several sites have produced important findings, derived through rigorous research methodologies, which indicate that their interventions have effectively reduced gun violence:

- Boston's problem-oriented strategy focusing on micro-level hot spots reduced aggravated assaults by more than 15 percent, violent crime by more than 17 percent, and robberies by more than 19 percent.
- Baltimore's strategy of targeted enforcement within selected crime hot spots reduced homicides by 27 percent; and a related focused deterrence intervention reduced non-fatal shootings in one neighborhood by 40 percent.
- Baltimore's Gun Offender Registry reduced gun-related re-offending risks among participants by 92 percent.
- Los Angeles' LASER initiative, which combined place and offender strategies with the use of criminal intelligence data, reduced homicides by more than 22 percent per month in the target division (Newton), and gun crimes by 5 percent in each reporting district of the target division.[1]

The Boston, Baltimore, and Los Angeles findings are certainly encouraging, and they strongly suggest that the SPI has generated significant declines in gun crime and related violence. Results for other SPI sites will be forthcoming in the near future. This Spotlight identifies a number of next steps for addressing gun violence, most notably the development of supply-side approaches that disrupt illicit gun supply lines and combat illegal gun sales.

This report is a collaborative effort of BJA at the federal level; local police agencies that have stepped outside traditional boundaries to partner with academic researchers; and CNA, the technical assistance provider for SPI. We believe police executives, local decision makers, community members, and others concerned with gun violence will find this report helpful, even instructive, as they seek new and more effective ways to reduce gun violence, improve public safety, and save lives.

[1] The aforementioned SPI sites all employed sophisticated research designs with comparison areas. In each case, the crime declines in the SPI target areas far exceeded declines in the comparison areas.

Smart Approaches to Reducing Gun Violence: Smart Policing Initiative Spotlight On Evidence-Based Strategies and Impacts

Anthony A. Braga, Daniel W. Webster, Michael D. White, and Hildy Saizow

Introduction

Gun violence exacts an incredible toll in communities throughout the United States. Criminal gun violence is responsible for over 11,000 deaths per year,[1] more than 75,000 individuals treated for nonfatal gunshot wounds at hospitals,[2] and at least 460,000 nonfatal victimizations.[3] The extraordinary high rate of gun violence in the United States is very unusual for a high-income, democratic nation. For example, the firearm homicide rate in the United States is nearly 20 times higher on average than that of other high-income Western democracies.[4] A recent study estimated that the total cost of gun violence in America in a single year reaches $172 billion, including both direct (medical care; criminal justice costs, etc.) and indirect costs (fear, reduced quality of life, and depressed property values).[5] The threat of such violence imposes a heavy burden on our standard of living, not only on groups that have the highest victimization rates, but on entire communities. In our cities, the rate of gun violence, particularly youth gun violence, remains very high. Given the magnitude of the firearms violence problem in the United States, law enforcement has been challenged to develop effective strategies to prevent gun violence.

> **A Critical Link to Gun Violence**
> Much of the devastating toll of urban gun violence can be linked to a small number of high-rate offenders committing shootings at specific places and times.

Much of the devastating toll of urban gun violence can be linked to dynamics and situations generated by a small number of high-rate offenders committing shootings

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[1] National Center for Injury Control and Prevention. Fatal Injury Reports. Web-based Injury Statistics Query and Analysis System (WISQARS).Accessed October 1, 2013.

[2] National Center for Injury Control and Prevention. Nonfatal Injury Reports. Web-based Injury Statistics Query and Analysis System (WISQARS). Accessed October 1, 2013.

[3] J. Truman, L. Langton, and M. Plantey. *Criminal Victimization, 2012*. NCJ 243389. Bureau of Justice Statistics, U.S. Department of Justice. October 2013.

[4] Erin G. Richardson and David Hemenway. "Homicide, suicide, and unintentional firearm mortality: comparing the United States with other high-income countries, 2003." *Journal of Trauma– Injury Infection & Critical Care* 70, no. 1, Jan. 2011: 238-243.

[5] Ted R. Miller. *The Cost of Firearm Violence*. Children's Safety Network Economics and Data Analysis Resource Center, at Pacific Institute for Research and Evaluation. December 2012.
http://www.childrenssafetynetwork.org/cost-gun-violence

at specific places and times. For instance, fewer than 5 percent of Boston's street corners and block faces generated 74 percent of fatal and non-fatal shootings between 1980 and 2008, with the most-active 65 locations experiencing more than 1,000 shootings during this time period.[6] The bulk of Boston shootings take place immediately after school dismissal and during the weekend evening hours, and tend to increase during summer months.[7] In 2006, roughly one percent of Boston youth between the ages of 15 and 24 participated in gangs, but these gangs generated more than half of all homicides, and gang members were involved in roughly 70 percent of fatal and non-fatal shootings as either a perpetrator and/or a victim.[8]

> ### The Risk-Focused Approach
> Current evidence suggests police should focus gun violence prevention actions on the places, times, and people who pose the highest risks to public safety. This risk-focused approach is the guiding principle for Smart Policing strategies.

The available evidence from Boston and other places suggests that police can enhance their crime prevention potency by employing a risk-focused approach that targets the places and people that represent the greatest threat of violence. For example, there is empirical evidence that police programs focused on reducing illegal gun possession, carrying, and use in high-risk places at high-risk times generate significant reductions in gun violence.[9] The Kansas City Gun Experiment examined the gun violence prevention effects of proactive patrols focused on gun recoveries in a high gun violence beat.[10] The quasi-experimental evaluation revealed that the gun-focused patrols resulted in a 65 percent increase in gun seizures and a 49 percent decrease in gun crimes in the target beat area; gun seizures and gun crimes in the comparison beat area did not change significantly.[11] These gun violence reduction gains were achieved without displacing gun violence into adjoining beats. Moreover, the community strongly supported the intensive patrols and perceived an improvement in the quality of life in the treatment neighborhood.[12] Replication

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[6] Anthony A. Braga, Andrew V. Papachristos, and David M. Hureau. "The Concentration and Stability of Gun Violence at Micro Places in Boston, 1980–2008." *Journal of Quantitative Criminology* 26, no. 1, Mar. 2010: 33–53.

[7] Anthony A. Braga. *Gun Violence Among Serious Young Offenders*. Problem-Oriented Guides for Police

Series, Problem-Specific Guide Number 23. U.S. Department of Justice, Office of Community Oriented Policing Services. Washington, DC. 2004.

[8] Anthony A. Braga, David Hureau, and Christopher Winship. "Losing Faith? Police, Black Churches, and the Resurgence of Youth Violence in Boston." *Ohio State Journal of Criminal Law* 6, no. 1, Fall 2008: 141–172.

[9] Lawrence W. Sherman. "Reducing Gun Violence: What Works, What Doesn't, What's Promising." *Criminal Justice* 1, no.1, 2001: 11-25.

[10] Lawrence W. Sherman and Dennis Rogan. "Effects of Gun Seizures on Gun Violence: 'Hot Spots' Patrol in Kansas City." *Justice Quarterly* 12, no. 4, Dec. 1995: 673-694.

[11] Sherman and Rogan, 1995.

[12] James Shaw. 1995. "Community Policing Against Guns: Public Opinion of the Kansas City Gun Experiment." *Justice Quarterly* 12, no. 4, Dec. 1995: 695-710.

programs in Indianapolis [13] and Pittsburgh [14] showed similar gun violence reduction effects.

> **Focused Deterrence Has an Impact**
> A recent review of focused deterrence strategies (also known as pulling levers) found these interventions were associated with significant reductions in gun violence.

Alternatively, a number of jurisdictions have experimented with "pulling levers," which are focused deterrence strategies to prevent gun violence by high-risk people. [15] Briefly, focused deterrence strategies (offender notification meetings or call-ins) seek to change offender behavior by understanding the underlying crime-producing dynamics and conditions that sustain recurring crime problems and implementing a blended strategy of law enforcement, community mobilization, and social service actions targeted at specific groups of high-risk individuals.[16] Direct communication of increased risks of incarceration and the availability of social service assistance to target groups and individuals is a defining charac-

teristic of focused deterrence programs. A recent systematic review of the crime control efficacy of focused deterrence strategies found that these interventions were consistently associated with significant reductions in gun violence.[17]

While it is helpful to categorize types of police interventions by whether they are primarily focused on places or offenders, in practice, these gun crime prevention strategies overlap. For example, when police are deployed to prevent gun violence in particular places, they will often focus their attention on controlling the illegal gun behaviors of particular individuals within those locations. When police focus their efforts on preventing gun violence by likely offenders, such as gang members, they will sometimes focus their attention on places such as gang turf and drug market areas frequented by these individuals. The distinction between a focus on offenders and a focus on places matters less than the evidence presented here that the police can prevent gun crime by strategically focusing on identifiable risks. Notably, the risk-focused framework serves as a guiding principle for a growing body of evidence-based strategies that effectively prevent or reduce gun violence, and law enforcement agencies around the United States are increasingly turning to this body of knowledge to

[13] Edmund F. et al. "Reducing Firearms Violence Through Directed Police Patrol." *Criminology & Public Policy* 1, no. 1, Nov. 2001:119-148.

[14] Jacqueline Cohen and Jens Ludwig. "Policing Crime Guns." In Jens Ludwig and Philip J. Cook, eds. *Evaluating Gun Policy* Washington, DC: Brookings Institution Press, 2003. 217-250.

[15] Anthony A. Braga, David M. Kennedy, and George Tita. "New Approaches to the Strategic Prevention of

Gang and Group-Involved Violence." In C. Ronald Huff, ed. *Gangs in America*. Third edition. Thousand Oaks, CA: Sage Publications, 2002.

[16] David M. Kennedy. *Deterrence and Crime Prevention: Reconsidering the Prospect of Sanction*. London, U.K.: Routledge, 2008.

[17] Anthony A. Braga and David L. Weisburd. "The Effects of Focused Deterrence Strategies on Crime: A

Systematic Review and Meta-Analysis of the Empirical Evidence." *Journal of Research in Crime and Delinquency* 49, no. 3, 2012: 323–358.

address gun violence in their local communities.

THE SMART POLICING INITIATIVE AND GUN VIOLENCE

Law enforcement agencies' reliance on this portfolio of evidence-based practices represents an emerging paradigm shift in policing that is embodied in the Bureau of Justice Assistance's Smart Policing Initiative (SPI). The SPI, which began in June 2009, sought to expand the identification or confirmation of effective, efficient solutions to chronic local crime problems. BJA expected that this result could be achieved by encouraging police and criminal justice scholars to work together to test solutions that were informed by crime science theories, assessed with sound evaluation methods, and galvanized by the sense of urgency

with which law enforcement agencies approach their responsibilities. To date, BJA has provided more than $14.4 million to 35 local law enforcement agencies conducting 38 SPI projects.[18]

Over the last four years, Smart Policing agencies have targeted a range of local crime problems, from quality-of-life issues to homicide. Nine of the 35 funded agencies have targeted gun violence as part of their Smart Policing Initiative. Some of these sites have completed their projects and have demonstrated positive impacts in their communities. Other sites have just gotten underway and results are expected in 2014-2015. The sites addressing gun violence include Boston, MA; Las Vegas, NV; Los Angeles, CA; Kansas City, MO; Baltimore, MD; Rochester, NY; Joliet, IL; East Palo Alto, CA; and Cambridge/Somerville/Everett, MA.[19]

Table 1 provides a summary of the sites, their core evidence-based strategies, and the expected date for evaluation results. The approaches implemented by these sites are diverse and run the full gamut of evidence-based strategies.[20] Some have employed hot spot and place-based

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[18] Several sites have received SPI funding twice. BJA and its technical assistance provider, CNA, have developed a number of mechanisms to ensure wide dissemination of the SPI results to law enforcement agencies throughout the United States and abroad.

[19] The Cambridge/Somerville/Everett SPI involves a collaborative project among the three police departments.

[20] A number of other sites have targeted crimes that may involve firearms, such as robbery (e.g., Palm Beach, FL, and Cincinnati, OH). This spotlight focuses attention on the SPI sites that specifically targeted gun violence. Moreover, several of the sites are described in multiple sections because they implemented strategies reflective of more than one core SPI tenet.

Table 1. Smart Policing Sites and Expected Dates for Evaluation Results

Site	SPI Core Strategies	Expected Date for Results
Phase 1 (2009-2011)		
Boston	Hot spots; Problem solving	Currently available
Los Angeles	Offender-focused in hot spots	Currently available
Phase II (2010-2012)		
Baltimore	Offender-focused in hot spots	Currently available
Joliet	Intelligence-Led Policing, Collaboration	Expected in 2014
Phase III (2011-2013)		
Las Vegas	Hot spots	Expected in 2014
Cambridge/Somerville/ Everett	Collaboration	Expected in 2014
Phase IV (2012-2014)		
Kansas City	Offender-focused in hot spots, Collaboration	Expected in 2015
Rochester	Problem solving	Expected in 2015
East Palo Alto	Technology	Expected in 2015

Strategies, while others have focused on offender-based approaches, such as focused deterrence (e.g., "pulling levers"). Many have employed problem-oriented policing approaches, and technology has frequently played a central role in SPI interventions (e.g., crime analysis, Shot-Spotter™). Importantly, the risk-focused approach is a common element across these sites.

THE IMPACT OF SPI ON GUN VIOLENCE TO DATE

Though many of the projects described above are on-going, several sites have produced important findings related to implementation and impact (see Table 2). For example, the Boston SPI team assessed the impact of their problem-

oriented, hot spot intervention (the Safe Streets Teams) and found that the strategy was associated with a 15.4 percent reduction in the number of aggravated assaults, a 17.3 percent reduction in the total number of violent index crimes, and a 19.2 percent reduction in the number of robberies (with no evidence of displacement or diffusion).[21] The Baltimore SPI team, which used a combination of focused deterrence, targeted enforcement (the Violent Crime Impact Section, or VCIS), and a Gun Offender Registry (GOR), found that their intervention was associated with reduc-

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[21] Anthony A. Braga, David M. Hureau, and Andrew V. Papachristos. "An ex post facto evaluation framework for place-based police interventions." *Evaluation Review* 35, no.6, 2011: 592–626.

Table 2. The Impact of Smart Policing on Gun Violence

SPI Site	Impact
Boston	
Aggravated assaults	15.4% reduction*
Violent crime	17.3% reduction*
Robbery	19.2% reduction*
Baltimore	
Homicide (VCIS)	27.3% reduction*
Non-fatal shootings (Exile, NW)	39.8% reduction*
GOR offending risk (gun crimes)	92.0% reduction*
Los Angeles	
Gun crimes	5.2% reduction (per month)*
Homicide	22.6% reduction (per month)*
*statistically significant p<.05	

tions of 27.3 percent in homicides and 15.1 percent in nonfatal shooting incidents. Moreover, the focused deterrence strategy was associated with a nearly 40 percent reduction in non-fatal shootings in one neighborhood, and the Gun Offender Registry was estimated to have reduced participants' risk of involvement in gun crimes by 92 percent.

The Los Angeles SPI team implemented a blended targeted offender/hot spots strategy called Operation LASER. The intervention was associated with a 22.6 percent reduction in homicides per month in the target division, as well as a 5.2 percent reduction in gun crimes per month in each reporting district of the target division. Notably, two of the aforementioned evaluations received a score of "4" (out of 5) on the Maryland Scale of Scientific Methods (Boston, Los Angeles), indicating rigorous evaluation methodologies. [22] These findings are

What Works?

Smart Policing interventions in Boston, Baltimore, and Los Angeles have successfully reduced gun violence. Boston used a problem-oriented, hot spots strategy. Baltimore used a combination of targeted enforcement, focused deterrence, and an innovative gun offender registry. Los Angeles used a blended targeted offender/hot spots strategy with enhanced crime intelligence.

[22] Sherman, et al., developed the Maryland Scale of Scientific Methods as part of the 1997 report to Congress, "Preventing Crime: What Works, What Doesn't, What's Promising." The scale rates a study's overall internal validity on a 1 to 5 point range, with 1 representing the weakest design and 5 the strongest. The key factors influencing a study's rating are: the level of control over other variables; the potential for measurement error; and the statistical power of the analysis. For more information see Sherman, L., D.C. Gottfredson, D.L. MacKenzie, J. Eck, P. Reuter, and S.D. Bushway. "Preventing Crime: What Works, What Doesn't, What's Promising." National Institute of Justice, Research in Brief, July 1998.

strong evidence that the SPI interventions in Boston, Baltimore, and Los Angeles have been successful in reducing gun violence. For more detail on the site evaluations, see Appendix A in this spotlight and www.smartpolicinginitiative.com/SPIsites. Evidence from additional SPI sites will be available in 2014-2015.

KEY STRATEGIES FOR SUCCESSFULLY TARGETING GUN VIOLENCE

Despite the diversity in approaches among the nine SPI sites that have targeted gun violence, several common strategies have emerged from the experiences of those sites. The strategies include targeting persistent gun violence hot spots; targeting prolific offenders in persistent hot spots; employing new technologies and advanced crime analysis; engaging a wide range of collaborative partners; and conducting advanced problem analysis. These strategies are core tenets of SPI, and a discussion of SPI sites' activities in these areas offers important insights regarding the mosaic of approaches that can effectively combat gun violence.[23] The next section describes in detail how SPI sites have implemented strategies reflective of each of these core

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[23] Given the nature of this spotlight, descriptions of specific SPI sites are necessarily brief. Moreover, sites often engage in activities that represent multiple themes; but in the interest of space, only 2 or 3 sites are described for each theme. For more detail on strategies, evidence, and experiences from SPI sites, see:
http://www.smartpolicinginitiative.com/SPIsites.

SPI tenets.

> **SPI Strategies for Reducing Gun Violence**
> - Target persistent gun violence hot spots
> - Target prolific offenders in persistent hot spots
> - Employ new technologies and advanced crime analysis
> - Engage a wide range of collaborative partners
> - Conduct advanced problem analysis

I. Targeting Persistent Hot Spots

Several SPI sites have targeted gun violence through a place-based approach that uses geographic analysis of gun crime data to identify specific, persistent hot spots. The site-specific strategies employed by the Boston and Las Vegas SPI sites are described below.

Boston

In Boston, the yearly number of fatal and non-fatal shootings had increased by 133 percent, from 162 in 2000 to 377 in 2006. Most of the shootings were concentrated in a small number of gun violence hot spots in Boston's disadvantaged, predominantly minority neighborhoods of Dorchester, Mattapan, and Roxbury. In 2009, the Boston Police Department (BPD) received SPI funding to examine the stability and persistence of gun violence in the city and to evaluate the impact of their intervention efforts. The Boston SPI began with a 28-year longitudinal

analysis of gun-related crime and violence.

Figure 1. Spatial Distribution of Micro-Places with High Concentrations of Street Robberies in Boston
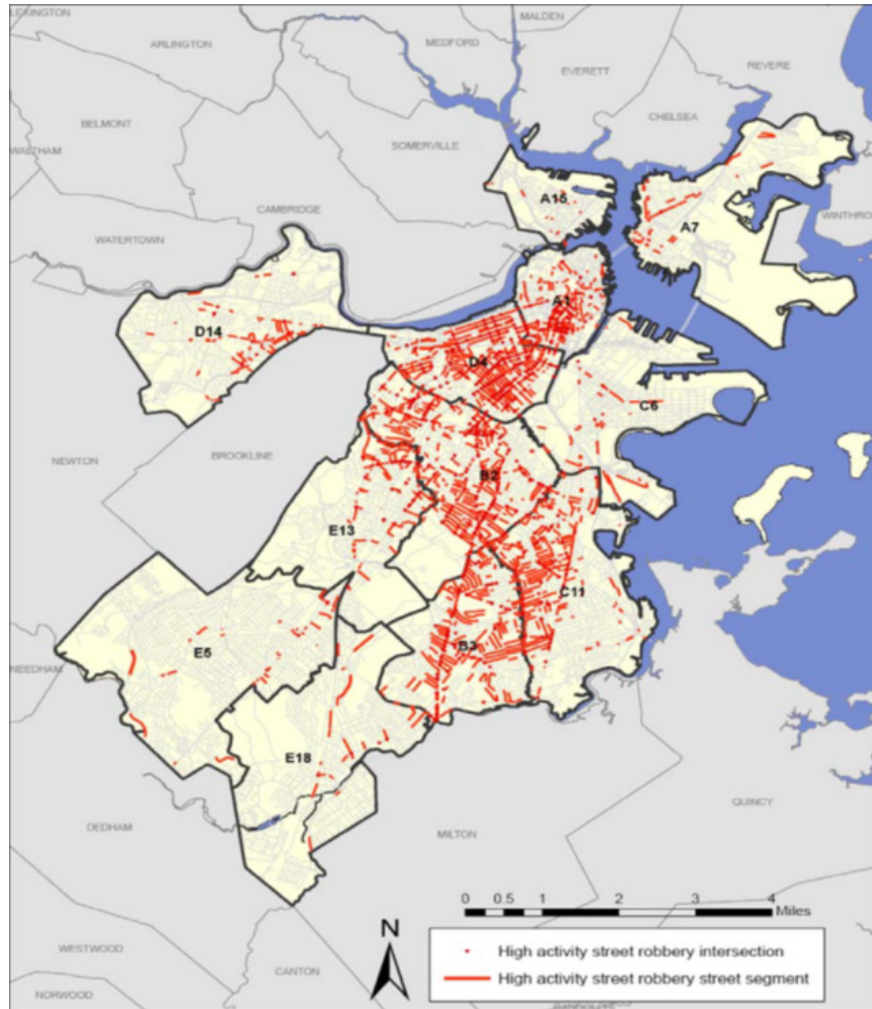
gathered police data on all reported robberies (142,213) and all injurious shooting events (7,602) from 1980 to 2008, and then geocoded each crime event to the appropriate intersection or street segment (the street sections in between two intersections. [24] The analysis demon-

To accomplish this task, the team strated remarkable stability and concentration among gun crime micro hot spots. From 1980 to 2008, 88.5 percent of the street units in the city did not experience a single shooting event. However, 269 street units experienced from five to nine shooting events, and 65 street units experienced 10 or more shooting events. Figure 1 displays the concentration of street robberies in Boston.

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[24] The researchers identified 18,155 street segments and 10,375 intersections in Boston.

In response to the increase and concentration in gun violence, the Boston Police Department developed a targeted strategy to address gun crime in the most violent areas of the city. BPD identified 13 long-term, violent crime hot spots and created Safe Street Teams (SSTs) to work in each of the identified areas. The SSTs, each of which consisted of a sergeant and six patrol officers, were responsible for employing community and problem-oriented policing techniques to identify and address recurring problems in the targeted areas. The SSTs employed hundreds of crime reduction strategies in the targeted hot spots, resulting in significant decreases in violent crime. The Boston SPI experience contributes to the growing body of research documenting the effectiveness of both hot spots and problem-oriented policing. See section V below for a description of the SST problem solving activities, and Appendix A for the methodology and results from the Boston SPI impact evaluation.

Las Vegas

Though the violent crime rate in Las Vegas dropped steadily from 2007 to 2010 (from 1,017.1 per 100,000 residents to 893), gun violence has remained well above both the national average and the average for agencies serving more than one million residents (www.fbi.gov/about-us/cjis/ucr/crime-in-the-u.s). Much like Boston, violent crime is not spread evenly throughout the city, and there are specific neighborhoods which have remained persistent hot spots for violence and gun

crime. [25] The Las Vegas Metropolitan Police Department (LVMPD) received SPI funding in 2012 to address these violent crime hot spots using proactive saturation patrol with an existing unit called the Mobile Crime Saturation Team (MCSAT). MCSAT is a mobile team of officers who rapidly respond to neighborhoods impacted by violence, gun crime, and related disorder. MCSAT consists of 24 officers (two squads of 12 officers) who engage in primarily proactive, self-initiated policing. Reflecting the spirit of SPI, the Las Vegas team used advanced geospatial analysis to identify 24 persistent hot spots spread across the eight command areas covering the city.

The Mobile Saturation Team was assigned to the hot spots for 60-day deployments during 2012 and the first six months of 2013. The SPI officers proactively patrolled three hot spots during each 60-day period before rotating to the next set of three hot spots.[26] Much like saturation patrol and order maintenance

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[25] Las Vegas is much less dense than Boston and, as a result, the hot spots identified in the Las Vegas analysis were significantly larger than the Boston micro hot spots (e.g., usually multiple square blocks).

[26] Deployment period 1 in 2012 occurred as follows: March/April (3 hot spots), May/June (3 hot spots), July/August (3 hot spots), and September/October (3 hot spots). For the second deployment period, the MCSAT lost half of its personnel due to re-assignments resulting from budget cuts (12 officers instead of 24). The second deployment (with 12 officers) occurred from November/December 2012, January/February 2013, March/April 2013, and May/June 2013 (three hot spots targeted in each 60-day window). The MCSAT generated significant activity each week. For example, during the week of February 24 through March 2, 2013, the team generated 16 felony arrests, 33 misdemeanor arrests, 26 wanted person arrests, 70 citations, 11 Field Investigation (FI) cards, 116 vehicle stops, and 97 person stops.

strategies in New York and other cities, the Las Vegas SPI team focuses heavily on gun crimes and gun confiscation. Every week the LVMPD holds a planning meeting with representatives from the relevant units including Gangs, Robbery, Auto Theft, Property Crimes, Command Intelligence, and Patrol. The meeting focuses on emerging crime trends, particularly trends related to gun violence. The MCSAT Team Lieutenant attends the briefings and adjusts the team activities accordingly. The Crime Analysis Unit in LVMPD generates a weekly firearm density map based on shots fired, guns seized, and gun crimes including homicide, robbery, and aggravated assault. This map helps direct the unit's activities within the treatment hot spots, and preliminary results suggest that MCSAT has been successful in getting guns off the streets. The evaluation of the Las Vegas SPI, which will compare violence, gun crime, and disorder across treatment and control hot spots, is ongoing.

II. Targeting Prolific Offenders in Persistent Hot Spots

Several SPI sites have combined place-based and offender-focused strategies by targeting "hot people in hot places." Examples include the Los Angeles, Baltimore, and Kansas City sites.

Los Angeles

Gun crimes in Los Angeles were also concentrated in a small number of locations. For example, of the 1,135 reporting districts in Los Angeles, about 6 percent accounted for 30 percent of the gun-related crimes in the city, and a number of these violent reporting districts were concentrated in and around the Newton Division—the target Division for the Los Angeles Police Department (LAPD) SPI. Using gun incident crime and arrest data from 2006 to 2011, LAPD Crime Analysts identified five large hot spot corridors (e.g., long, narrow thoroughfares) for gun crimes in the Newton Division. Once the target areas were identified, the Los Angeles SPI team developed their intervention strategy, called Los Angeles' Strategic Extraction and Restoration Program (Operation LASER). LASER involves both location- and offender-based strategies (e.g., directed patrol, specific missions, enhanced surveillance), but the centerpiece of the initiative involves the creation of a Crime Intelligence Detail (CID) composed originally of two sworn officers and one crime analyst (a third officer was added to the Detail in January 2012). The CID's primary mission centers on the creation of *Chronic Offender Bulletins*, which contain detailed information about prolific offenders. The CID unit gathers data daily from each patrol shift in the Newton Division, as well as from the bicycle unit, foot patrol, and Parole Compliance Unit (PCU) at Newton. CID also conducts daily reviews of all Field Identification Cards (FI), Citations, Release from Custody Forms (RFC), Crime Reports, and Arrest Reports from each of these entities, and then identifies and ranks potential chronic offenders based on pre-deter-

mined criteria. This data-driven approach includes the use of *Palantir*, a powerful analytical computer platform that allows CID to quickly access and search multiple databases.

If an individual meets the prolific offender criteria, CID prepares a *Chronic Offender Bulletin*. The bulletin contains pertinent information on the individual, such as description, physical idiosyncrasies (e.g. scars, tattoos), gang affiliation, prior crimes committed, parole or probation status, and locations where the individual was stopped in or near the Newton Division. The bulletins are disseminated to all supervisors, officers, and detectives via an internal computer drive that only sworn personnel can use. Each *Chronic Offender Bulletin* is then placed into an online folder based on the location of where the individual was stopped (usually the Reporting District) in the Newton Division. The bulletins, which are updated every three months, are accessible through the officers' patrol car computers. Officers use the bulletins to search for, identify and arrest offenders, based on known locations, physical descriptions, etc. From July 2011 through June 2012, CID created 124 *Chronic Offender Bulletins*. By August 2012, 87 of the 124 identified chronic offenders (70 percent) had been arrested at least once. See Appendix A for a review of the impact of LASER on gun violence.

Baltimore

Annual rates of homicide and nonfatal shootings in Baltimore had remained persistently high from 2003 to 2007. The city routinely experienced approximately 600 nonfatal shootings and 275 homicides each year. The origins of the Baltimore SPI can be traced back to early 2007, when the Baltimore Police Department (BPD) initiated a series of evolving evidence-based strategies that targeted gun violence. In 2011, BPD received SPI funding to support and evaluate their gun violence reduction efforts. The first strategy involves targeted enforcement and suppression by officers in the Violent Crime Impact Section (VCIS). VCIS detectives are deployed to pre-selected crime hot spots, and they focus their efforts on building cases against specific gun offenders in those targeted enforcement zones. In 2010, for example, VCIS conducted 40 major enforcement initiatives, eight major wiretap investigations, and executed 1,505 search and seizure warrants.

The second element of the Baltimore SPI is called Project Exile, which is a focused deterrence strategy employed in the same target areas. Exile identifies offenders for "call-ins" to deliver the deterrence message, and based on offenders' responses, either provides social services to the offender or begins building cases for federal prosecution. During the project evaluation period, the SPI team held three offender call-in meetings.

The final element of the Baltimore SPI is a Gun Offender Registry (GOR). Modeled after the New York City registry, the Baltimore GOR requires all individuals convicted of gun crimes to register with

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the police department. The registered gun offenders are required to check in every

six months, and they are subject to

Figure 2. Number of Gun Offender Registry Home Checks by Month, Baltimore SPI

Key: F= February, M=March, A= April, and N=November
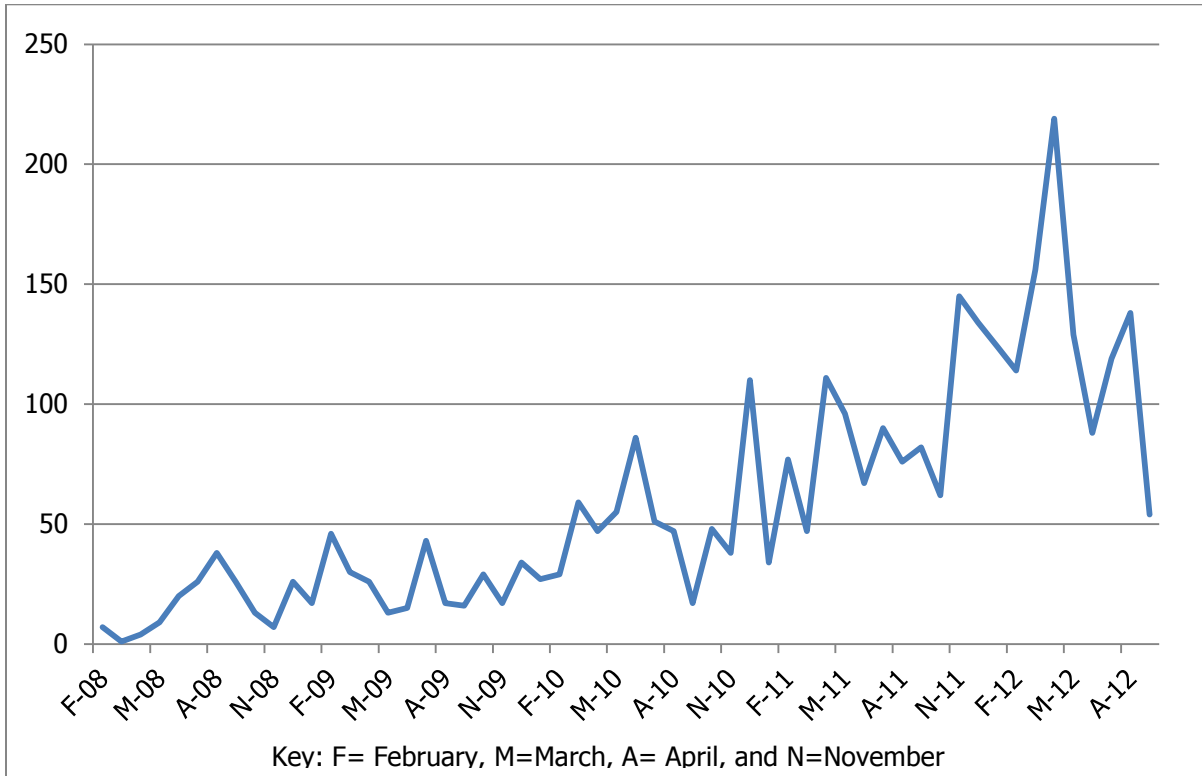
periodic home visits by police officers. The GOR began in January 2008, and as of August 1, 2011, 571 offenders had been registered in the program. During the first two years of the program, the Baltimore PD averaged 25 to 50 home checks per month; but by late 2011, the number of monthly home checks routinely exceeded 100 (peaking at 219 in April 2012— see Figure 2). See Appendix A for a discussion of the impact of the Baltimore SPI on gun violence.

Kansas City

During 2008 through 2011, Kansas City, Missouri, experienced violent crime and

homicide rates that were far above the national average. The national homicide rate per 100,000 citizens has ranged from 4.7 to 5.4; during that same time, the Kansas City homicide rate per 100,000 citizens ranged from 23.4 to 25.5. And similar to other cities, violence and gun crime in Kansas City occurs dispro-portionately in persistent hot spots. In particular, crime analysis has shown that there is a 13-square-mile section that represents approximately 4 percent of the city's geographic area but generates 47 percent of the city's murders.

In response to these crime trends, key stakeholders created Kansas City's No

Violence Alliance (KC NoVA), a collaborative offender-focused approach grounded in the "pulling levers" strategy (see section IV for more detail on the key partnerships that define KC NoVA). KC NoVA was launched in 2013, at approximately the same time the Kansas City Police Department was selected by BJA as a Smart Policing site. The overall goal of KC NoVA is to reduce violence and gun crime. To better understand the nature and scope of this problem, the SPI team employs advanced social network analysis using official offense data, field interview forms, and gang data. The analysis identifies a social deviant network that depicts the connections between individuals. The analysis begins with an identified list of target offenders. In Kansas City, the initial target list of offenders included those who were suspects in murders, shootings, or other serious assaults. The team examined all formal police contacts with each of these initial offenders to identify their associates (e.g., who had been arrested or stopped with the initial offender). The team then performed the same analysis with the newly identified associates, resulting in a social network that includes three layers of offenders: the initial target offenders, the target offenders' associates, and the associates of the target offenders' associates.

The preliminary analysis demonstrated a strong degree of social relationships and familiarity within defined groups of individuals. These preliminary analyses were utilized to identify offenders to target for focused deterrence strategies, based on their importance (or centrality) to the network. The Kansas City SPI is still in the early stages of implementation, but the team has completed several important interventions. In January 2013, the SPI team carried out an enforcement demonstration that targeted 17 known offenders identified through the social network analysis. In April 2013, the team held their first offender call-ins (three were held throughout the day). Invitations were sent to more than 120 individuals and 38 attended the call-ins. Individuals received three basic messages at the call-in: (1) violence cannot be tolerated; (2) further violence will be met with certain and severe consequences from law enforcement; and (3) those who want help to change will receive it. A range of social services were available to the call-in attendees including education, job training, and substance abuse training. Attendees were also asked to deliver the deterrent message to their associates. A few weeks after the call-in, the KC NoVA leaders, including the Chief of Police, County Prosecutor, US Attorney, and head of the Alcohol, Tobacco and Firearms (ATF) office, made home visits to offenders who had ignored their invitation to the call-in, and the leaders delivered the same messages in-person. Last, in May 2013 the Kansas City Police and BATF completed a 10 month undercover operation that targeted violent felons who carry guns. The operation resulted in 61 arrests and the seizure of more than 220 firearms. The Kansas City SPI team will

continue to re-examine the social networks in upcoming months, which will result in additional offender call-ins and focused deterrence interventions.

III. Technology and Advanced Crime Analysis

Several SPI sites have embraced new technologies and sophisticated crime analysis (or both) to address gun violence. The experiences of Joliet, IL, and East Palo Alto, CA, are described below.

Joliet

The city of Joliet, Illinois, has a population of approximately 150,000, and like many other cities across the U.S., Joliet experienced decreasing crime rates from the late 1990s through the early 2000s. Despite overall reductions in crime, gun-related crime remained persistently high. In 2010, the Joliet Police Department documented, on average, a shooting incident (homicide, aggravated battery with a firearm, aggravated or reckless discharge of a firearm) every two days.[27] Moreover, the clearance rate for gun offenses had dropped to under 20 percent, in large part because of residents' unwillingness to provide information to police. As part of their Smart Policing Initiative, the Joliet Police Department developed an intelligence-based, rapid response strategy called the Strategic Tactical Deployment (STD) Program. The

centerpiece of the STD program involves weekly geographic analysis of gun crime and related offenses including homicides, shootings, weapon seizures, and armed robberies, as well as information regarding persons on probation and parole (see Figure 3 on page 19). The Compstat-like meetings are attended by Joliet supervisory and command staff, crime and intelligence analysts, and representatives from probation and parole.

Based on the weekly analysis, the Joliet SPI team identifies specific hot spots, and STD resources are deployed to those areas. STD deployments typically occur on weekends and involve one or two additional units proactively patrolling the identified hot spot (STD units are not required to answer routine calls for service). STD officers are provided with a map and are required to complete an STD Activity Summary Report that captures all officer activity during each shift. The STD activeity reports are reviewed at subsequent STD weekly meetings to measure officer productivity and document program impact. The near real-time analysis of gun violence, and the deployment of department resources based on that analysis, is a prototypical example of intelligence-led policing.[28] See section IV for a discussion of the Joliet SPI team collaboration with probation and parole.

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[27] For a description of the Joliet SPI, see Lombardo, R.M. and Sommers, I. 2013. *Violence Reduction in Joliet, Illinois: An Evaluation of the Strategic Tactical Deployment Program.* Chicago: Loyola University.

[28] Intelligence-led policing, as described here, involves a strategic approach where data and crime analysis are employed to direct police operations. The Kansas City SPI team's use of social network analysis described above also represents a clear example of intelligence-led policing. For more information on intelligence-led policing, see **Ratcliffe, JH. 2008.** *Intelligence-Led Policing.* **Cullompton, Devon: Willan Publishing.**

Figure 3. Weekly Gun Crime Analysis to Determine STD Areas, Joliet SPI
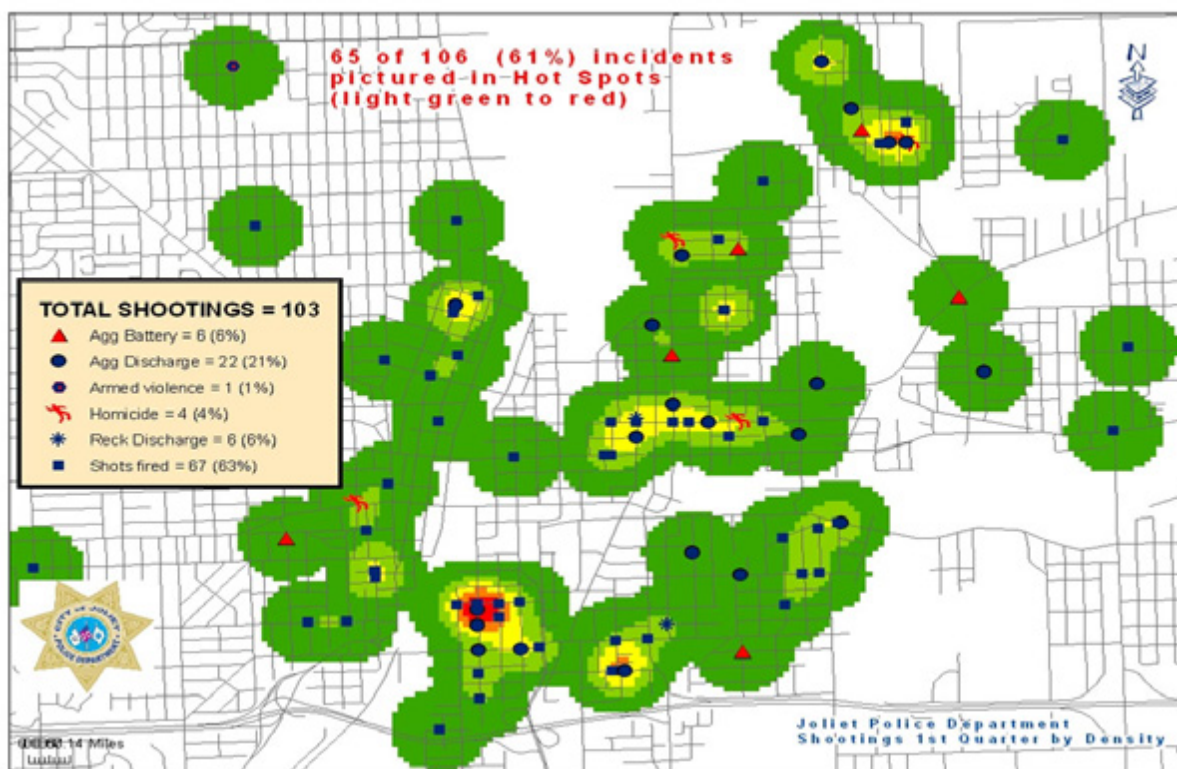
East Palo Alto

East Palo Alto, located in the San Francisco Bay Area, covers approximately 2.5 square miles and has a population of just fewer than 29,000 people. Despite its small size, East Palo Alto has experienced persistently high rates of violent crime. In 2012, for example, East Palo Alto's violent crime rate was 1,058 per 100,000, which is approximately two and a half times the California state average. Moreover, the city's homicide rate has consistently been three or more times higher than the state average. Much of the violence in East Palo Alto is tied to guns. Each year the city receives calls for service for approximately 600 shooting incidents (or nearly 12 per week).

In 2012, the East Palo Alto Police Department received funding through the Smart Policing Initiative to address gun violence in their city through the use of a gunshot location and detection system, called ShotSpotter™. East Palo Alto deployed ShotSpotter citywide at the beginning of 2009. Like many other agencies, East Palo Alto originally deployed the system as a tool to enhance rapid police response to shooting incidents. When a gunshot occurs within a coverage area, the system detects, locates, and identifies the sound, and the information is immediately transmitted to dispatchers

before any 911 calls for service are received. Prior research on ShotSpotter has found the technology to be effective in detecting and locating shots fired,[29] as the system provides police with a more comprehensive understanding of the volume and nature of shootings in their jurisdiction.

As part of their Smart Policing Initiative, the East Palo Alto team is expanding the use of ShotSpotter technology beyond the traditional reactive, rapid response tool. The East Palo Alto team will use ShotSpotter as a place-based strategy for shooting incident investigation, problem solving, and crime prevention efforts. The SPI team will use 4.5 years of ShotSpotter data to identify two to four shooting hot spots in the city. Based on the shooting hot spot analyses, the East Palo Alto SPI team will design specific problem-oriented policing (POP) strategies and tactics to be deployed in those areas. Examples of interventions include, but are not limited to, special enforcement teams being deployed in the hot spots for the highest activation times; the utilization of Crime Prevention Through Environmental Design (CPTED); the development of gun violence reduction plans in partnership with property owners and residents of hot spot locations; and other POP strategies for precise locations identified in the designated hot spots. The design, launch, and sustained application of these specific

responses will be recorded, monitored, and evaluated by the research partner. The East Palo Alto SPI team's strategy centers on targeted use of technology, data-driven decision making, and reliance on evidence-based practices (hot spots and problem-oriented policing). The East Palo Alto SPI, which is still in the planning and analysis phase, will offer valuable insights on the potential value of gunshot detection technology for reducing gun violence.

IV. Collaboration

Gun violence can often cross jurisdictional boundaries given the mobility of gangs, criminal networks, and prolific offenders. Efforts to address gun violence are more likely to be successful if they are regional and involve collaboration with important stakeholders. Stakeholders can include other criminal justice agencies, private sector businesses, residents, and social service providers. The collaborative efforts of the Joliet, IL, Kansas City, MO, and Cambridge/Somerville/Everett, MA, sites are described in this section.

Joliet

The Joliet Strategic Tactical Deployment (STD) program is primarily a place-based strategy that targets gun offense hot spots based on weekly analysis of specific gun-related crimes. However, the Joliet SPI team also recognized the importance of identifying high-risk offenders, especially those already under some form of community supervision. On average, 2,000

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[29] Lorraine G. Mazerolle et al. *A Field Evaluation of the ShotSpotter Gunshot Location System: Final Report on the Redwood City Field Trial.* Final Report submitted to the National Institute of Justice.1999.

people are sentenced to probation in Will County, Illinois, every year, the majority of who reside in Joliet. Due to large caseloads, probation officers perform only two or three home visits a year for the vast majority of these individuals. Moreover, there are approximately 600 parolees living within the Joliet city limits at any given time. As a result, the Joliet SPI team incorporated an offender-based strategy with a focus on at-risk offenders already under community supervision. Representatives from the Will County Probation Department and the Parole Division of the Illinois Department of Corrections attended weekly STD crime analysis meetings and exchanged information on high-risk individuals under their supervision.

The weekly STD meetings opened a line of communication between the Joliet Police and Will County Probation, and broke down "silos" that, in the past, had prevented information exchange. In fact, during the first eight months of the SPI, Joliet police and Will County Probation exchanged information on more than 200 occasions—from reviewing recent police contacts with probationers to sharing intelligence about suspected criminal activity. Street officers and detectives have been able to use probation and parole information to assist in their shooting investigations; and police officers have become "additional, around-the-clock, eyes for probation and parole authorities" (Lombardo and Sommers, 2013:54).

Agents from the Parole Division of the Illinois Department of Corrections (IDOC)

routinely share information about newly released parolees, and they have partnered with the Joliet SPI team to conduct unannounced parole compliance checks. From May 2011 to March 2012, Joliet police and IDOC collaborated to conduct five parole compliance sweeps, each targeting from 10 to 20 parolees. The targets of compliance checks are typically chosen by the Joliet SPI team based on their knowledge of gun violence and gun activity in the city. Other examples of the SPI police/probation and parole partnership include the following:

- Gang-involved parolees and probationers were identified, monitored, and cross-checked regarding potential involvement in shooting incidents.

- Top ten lists of problem individuals were collectively created, increasing information sharing among participating agencies.

- Joliet police notified probation and parole of problem probationers and parolees, thus enabling them to attend STD meetings and share additional information on these persons.

- Probation and parole officers were made aware of current crime hot spots in Joliet, thereby increasing probation and parole officer safety.

- Joliet police officers accompanied probation officers when they confiscated weapons after a court conviction, thereby reducing the number of weapons available on the street.

- Probation and parole violations were used to apprehend suspects and witnesses in homicide and shooting investigations, increasing the probability that they may provide information once they were in custody.
- Joliet police officers cooperated in building cases on parolees and probationers who had violated the terms of their supervision.

The probation/parole collaboration is a central feature of the Joliet SPI. The partnership has increased the accountability of community supervision, enhanced cooperation and information sharing among the agencies, and contributed to more effective crime control in Joliet.[30]

Kansas City

The centerpiece of the Kansas City SPI is a collaborative partnership called KC NoVA. KC NoVA aims to bring the community and law enforcement together to actively communicate and engage to reduce violence through the focused deterrence model. The partnership is managed by a governing board consisting of the Chief of Police, County Prosecutor, Mayor, Special Agent-in-Charge for the ATF, Director of Probation and Parole, and the Chancellor of the University of Missouri-Kansas City (UMKC). This group sets the agenda for the larger

strategies of the initiative, but the day-to-day operations are managed by a working group consisting of members of the Kansas City Police Department (captain, sergeant, and two detectives), an intelligence analyst from the ATF, probation and parole officers, the research partner from UMKC, and a representative from the prosecutor's office. Other partners in KC NoVA include the Kansas City Crime Commission, federal law enforcement agencies, and local social service agencies (Greater Kansas City Local Initiatives Support Group).

The Kansas City SPI team employs social network analysis to identify offenders who are engaged in violence or who are associates of violent offenders. The collaborative KC NoVA team has at their disposal a full range of interventions, from arrest and federal prosecution to intensive probation and parole supervision. Individuals who are on the periphery of the network (i.e., are not as heavily involved in violent crime) are also targeted, but for different reasons. They are offered social services and case management to help them transition away from crime and become productive members of society (e.g., anger management, life skills, job training, substance abuse treatment, housing, and transportation).

The success of the focused deterrence model hinges on collaborative partnerships that extend far beyond law enforcement and draw on the community, social service agencies, and other key

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[30] For more information on police/probation partnerships, see Parent, D. and Snyder, B. 1999. *Police-Corrections Partnerships*. Washington DC: National Institute of Justice; Worrall, J. and Gaines, L. 2006. The effect of police-probation partnerships on juvenile arrests. *Journal of Criminal Justice* 34, 579-589.

stakeholders.[31] Though the Kansas City SPI is still in the early stages of implementation, the collaborative partnerships are extensive and reflect the spirit of SPI.

Cambridge/Somerville/Everett

Over the last few years, gang and gun violence have persisted in three local cities in the Boston area: Cambridge, Everett, and Somerville. Anecdotally, crime analysts and detectives from these neighboring agencies have determined that a number of the suspects in shootings across the three jurisdictions have affiliations or linkages with one another. Unfortunately, there has been no common system from which data can be retrieved and analyzed by law enforcement personnel in each of the three Massachusetts agencies, and the lack of a regional application to share intelligence regarding this problem has hindered the investigation of these cross-jurisdictional gun offenders.

In 2012, the three police departments— Cambridge, Everett, and Somerville— were jointly awarded SPI funding from BJA. The Cambridge Police Department serves as the lead agency, but all three agencies are deeply integrated into the SPI project. The Cambridge/Somerville/ Everett SPI collaboration has focused primarily on developing mechanisms for intelligence sharing and crime analysis among the agency partners. The logistics of cross-jurisdictional crime mapping and analysis have proven to be very complex, as the agencies use different CAD/RMS systems and have different technical capacities and different degrees of expertise. As a result, the team has held several training workshops to develop a uniform strategy for multi-agency crime analysis. The SPI team has also begun exploring the use of predictive analytics to identify high-risk offenders and high-risk locations across the three jurisdictions. The team members have been working with their research partner and experts at MIT to employ a predictive algorithm to identify at-risk locations and offenders. The partnership with MIT has also produced crime pattern detection algorithms that can assist crime analysts in identifying crime patterns across jurisdictions. The SPI team will employ evidence-based strategies to reduce gun violence, most notably focused deterrence strategies (e.g., offender call-ins). For example, in August 2013, the Cambridge/Somerville/Everett SPI team identified their first group of offenders targeted for a call-in, including 15 offenders from Cambridge, and 5 or 6 from both Everett and Somerville (11 are on probation). The SPI partnership has held two Community Outreach meetings (i.e., call-ins) as a pilot test with a specific group of offenders in order to determine the appropriate process for incorporating three separate jurisdictions and their social service

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[31] For examples of other successful focused deterrence projects, see Kennedy, D.M.; Braga, A.A.; & Piehl, A.M. 2001. *Reducing gun violence: The Boston Gun Project's Operation Ceasefire.* Washington, DC: National Institute of Justice; and http://www.smartpolicinginitiative.com/library-and-multimedia-resources/crime/focused-deterrence-high-point-north-carolina

providers, community members, and police personnel. The first Community Outreach meeting with the designated regional impact players will take place in early 2014.

The Cambridge/Somerville/Everett Smart Policing Initiative is first and foremost about collaboration. It is important to note the size of these jurisdictions in order to understand the importance of collaborating and sharing of intelligence. Cambridge is 6.4 square miles with a population of over 100,000. Somerville is 4.2 square miles with a population of 80,000. And Everett is 3.5 square miles with a population of 45,000. These cities are contiguous to each other and are involved in incidents with several of the same offenders, each in their own jurisdiction. The goal of the project is to reduce cross-jurisdictional crime, and the SPI partnership is allowing the team to overcome the traditional barriers between law enforcement agencies. Such barriers have traditionally weakened the effectiveness of law enforcement responses to crime and have prevented officers from identifying important patterns in offending that bridge jurisdictional boundaries. As the project develops, the Cambridge/Somerville /Everett SPI will provide important insights on the challenges of multi-agency crime analysis, as well as the development, implementation, and evaluation of cross-jurisdictional interventions targeting gun violence.

V. Intensive Problem Solving

Intensive problem solving, most commonly the SARA model (scanning, analysis, response, and assessment) has been a central feature of gun violence reduction strategies in many sites, most notably Boston, MA, and Rochester, NY.

Boston

Boston Safe Street Teams (SSTs) employed the SARA model in the 13 targeted hot spots. All team members completed in-service training that focused both on the SST program specifically and problem-oriented policing more generally. SST officers were required to engage community members and local merchants in identifying and responding to problems. The teams sought to modify the place characteristics, situations, and dynamics that promoted violence in the 13 targeted hot spots. The Boston SPI team reviewed the weekly reports submitted by the 13 SST sergeants to the deputy superintendent who oversees the program. The SPI team also interviewed the SST sergeants and made regular visits to the SST target areas. The team identified 396 distinct problem-solving activities that SST officers had implemented in the 13 targeted areas.

Table 3 shows a summary of the different types of problem-solving activities across the 13 SST targeted hot spots. Each SST area received, on average, 30.5 interventions during the study period—

Table 3. SST-Implemented Problem-Oriented Policing Interventions

Team	Situational	Enforcement	Community/Social	Total
Orchard Park	44	19	20	83
Grove Hall	16	6	25	47
Codman Square (B3)	18	6	14	38
Upham's Corner	20	4	12	36
Eagle Hill	29	4	2	35
Codman Square (C11)	12	6	15	33
Bowdoin/Geneva	13	3	8	24
Franklin Field	9	6	7	22
Downtown Crossing	10	6	2	18
Heath/Centre Street	6	5	7	18
Lower Roxbury/S. End	8	5	2	15
Morton/Norfolk	5	2	7	14
Tremont/Stuart	5	7	1	13
Total	**195**	**79**	**122**	**396**
Mean	**15.0**	**6.1**	**9.4**	**30.5**

ranging from a high of 83 in Orchard Park to a low of 13 in Tremont/Stuart. Situational/environmental interventions were the most common (15.0 per SST area), followed by community/social interventions (9.4) and enforcement interventions (6.1). The number and type of interventions varied notably across the SST hot spots depending on the nature of the problems in each location, but the SSTs were clearly engaged in advanced problem solving. See Appendix A for a discussion of the effectiveness of the POP strategies employed by the Boston SSTs.

Rochester

Despite an overall violent crime rate that declined by approximately 16 percent from 2007 to 2011, the city of Rochester, NY, continues to struggle with high levels of firearm violence. In the last five years, Rochester had, on average, the highest homicide rate in the state of New York, the second highest firearm assault rate, the second-highest firearm homicide rate, and the second-highest overall shooting victim rate. In 2012, shootings in Rochester were up 52.4 percent from 2011. Analysis by Rochester police and their research partner at the Rochester Institute of Technology (RIT) has determined that many of these shootings involve retaliatory violence resulting from ongoing disputes. In 2012, the Rochester Police Department received SPI funding to intervene in retaliatory gun violence

through a problem-solving strategy involving violent dispute intervention.

The Rochester SPI, which is still in the initial planning and analysis phase, is grounded in the notion that ongoing retaliatory disputes are particularly ripe for crime prevention strategies. Programs that employ civilian "violence interrupters" to intervene in retaliatory disputes have, in the past, shown promise. The Rochester SPI builds on these successful programs by extending the violence interruption responsibility to those who are highly skilled in problem-solving, conflict resolution, and de-escalation of potentially violent encounters: the police. The Rochester SPI project has three objectives. First, the Rochester SPI team will improve their understanding of the scope and nature of violent retaliatory disputes through an in-depth analysis of three years of shooting data. The purpose of the analysis is to identify notable factors that increase the risk that a dispute will escalate into gun violence. The results from this analysis will allow the Rochester SPI to accomplish its second objective: to formalize and test a risk assessment instrument for police to identify and prioritize those disputes at highest risk for retaliatory violence. The Rochester team envisions a tool that will be completed on-scene by responding police officers and also will provide immediate, accurate information regarding the likelihood of retaliation. Real-time assessments of retaliatory violence potential will allow the police department to better allocate its limited resources to

those situations that represent the greatest threat of serious injury and loss of life.

The Rochester SPI team's third objective involves creating and evaluating a violent dispute intervention strategy that can be employed by police to defuse disputes and de-escalate the potential for violence. The team will develop intervention tactics drawn from existing "evidence-based" practices, including offender-based approaches, such as "lever-pulling" efforts to generate deterrence, targeted enforcement details on key disputants, and place-based approaches focusing on locations where retaliation is likely to occur. The Rochester program reflects the spirit of the Smart Policing Initiative project because it involves advanced problem analysis, data-driven decision making, and the application of "evidence-based" approaches in a novel way, focusing on the problem of violent retaliatory disputes.

REDUCING GUN VIOLENCE: LESSONS LEARNED AND NEXT STEPS

Given the threat that gun violence poses to public safety, it is appropriate that the Bureau of Justice Assistance is funding innovative local efforts to reduce gun violence. While SPI-funded agencies and their partners use a range of tools and strategies to curtail shootings, there are common themes. These projects fit the "smart" aspect of the SPI by their: 1) expanded collection and use of local data; 2) focus on high-risk individuals, places,

and times; and 3) use of strategies shown to be effective in prior studies. During a period when so many law enforcement agencies are grappling with budget cuts, it is imperative that they allocate resources and implement strategies based on the best available research.

> **Prevention as the New Norm**
> A focus on prevention should become the new norm and what we expect from law enforcement agencies.

Additionally, it is encouraging to see so many of the SPI projects using proactive strategies to reduce gun violence. Arresting offenders and gathering good evidence after a shooting occurs will always be a top priority for police, and some activities undertaken in the SPI should aid in better investigations of shootings (e.g., East Palo Alto's use of ShotSpotter, LAPD's Chronic Offender Bulletins). But most of the SPI activities are geared toward maximizing deterrence, removing illegal guns from the streets, and problem-solving in places, including adopting environmental changes. This focus on prevention should become the new norm and what we expect from law enforcement agencies.

Moreover, the use of state-of-the-art research methods to evaluate SPI interventions will improve our understanding of gun violence in communities and ways to prevent it. Examples from several SPI sites illustrate this point.

- Prediction can often facilitate prevention, thus the SPI is sup-porting MIT-researchers' development of algorithms to predict when, where, and who will most likely commit gun violence in and around Cambridge, Somerville, and Everett.
- Kansas City combines data from offenses, field interviews, and gang databases to conduct extensive social network analyses of the city's most dangerous criminals.
- Las Vegas uses advanced spatial analytics to identify hot spots for random assignment to their gun enforcement intervention versus non-intervention control— the gold standard for causal inference.
- Boston acted on research showing the enduring importance of micro-hot-spots— small areas with very high rates of crime—by using a combination of strategies focusing on situational/environmental and social conditions in addition to offender-focused enforcement actions. The Boston team used a quasi-experimental design and propensity score matching—an approach that can mimic random assignment to obtain similar study groups—to obtain the most appropriate comparison sites for estimating the counterfactual.

The results are not all in, but many of the SPI projects demonstrate success in reducing gun violence. In particular, results from Boston, Baltimore, and Los Angeles strongly suggest that SPI

interventions have successfully reduced gun-related violence (see Appendix A).

Next Steps for Addressing Gun Violence

There are a number of areas in need of further exploration by law enforcement, policy makers, and researchers. Police leaders should continue to move away from traditional reactive patrol to proactive strategies that intervene early-on before gun violence erupts or escalates (i.e., a focus on prevention).

> **Future Innovations in Gun Violence Prevention**
> - Proactive and prevention-oriented police strategies that provide early intervention
> - Conflict mediation strategies such as the Cure Violence public health model
> - Police partnerships with ATF to develop supply-side strategies targeting illegal gun sales

Demonstration projects should test more innovations designed to maximize deterrence, increase arrest and prosecution risks for illegal gun possession, expand illegal gun confiscation, and include partnerships with other agencies and community-based organizations. Given the tendency for urban gun violence to spread and escalate as a result of retaliatory violence, it is laudable for Rochester to attempt to staunch the problem through efforts to resolve disputes between gangs. The *Cure Violence* public health model for reducing gun violence has shown that it is possible to significantly reduce gun violence using former gang members to interrupt violence and mediate disputes.[32,33,34] However, this approach is contingent upon the disputants' trust of conflict mediators, something that will be difficult for police to earn.[35] Police may want to consider how they can best complement conflict mediations conducted by community-based organizations.

It is noteworthy that none of the SPI gun crime projects employ strategies to curtail illegal sales of firearms to criminals or underage youth. There have been relatively few local law enforcement agencies that have taken on illegal gun sales in any significant or systematic way. In a study in which one of the authors surveyed law enforcement officials in selected cities in states with laws requiring licensing and regulation of retail firearm sellers, most officials reported little or no activities directed at illegal gun sales and typically said that this was outside of their purview.[36] Yet with relatively weak

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[32] Wesley. G. Skogan et al. *Evaluation of Ceasefire-Chicago*. Chicago: Northwestern University, 2008.

[33] D. W. Webster et al. "Effects of Baltimore's *Safe Streets* Program on gun violence: a replication of Chicago's *CeaseFire* program. *Journal of Urban Health* 90, 2013:27-40.

[34] S. Picard-Fritsche and L. Cerniglia. "Testing a Public Health Approach to Gun Violence: Evaluation of Crown Heights Save Our Streets, a Replication of Chicago's *Cure Violence* Model." Center for Court Innovation, New York, 2013.

[35] J. M. Whitehill et al. "Interrupting violence: How the CeaseFire program prevents imminent gun violence through conflict mediation." *Journal of Urban Health*, Feb. 26, 2013. [Epub ahead of print].

[36] Daniel W. Webster , J. W. Vernick, and M.T. Bulzacchelli. "Effects of state-level firearm seller accountability policies on firearms trafficking." *Journal of Urban Health* 86, 2009: 525-537.

federal gun sales regulations and limited ATF resources, individuals who illegally transfer firearms currently face little risk unless state and local law enforcement join the ATF's efforts to combat illegal gun sales. [37]

The case for a supply-side ap-proach to combatting gun violence to complement enforcement efforts and discourage illegal gun possession is well supported by the empirical evidence on illegal gun market dynamics. [38] A growing body of research suggests police inter-ventions focused on specific illicit supply lines can disrupt the flow of new guns to criminals. [39] To date, however, there has been little scientific research examining whether such an approach reduces rates of gun crime. Building on the progress being made in SPI sites, it is time to develop experimental evidence on wheth-er police interventions designed to disrupt illegal gun markets can reduce gun violence.

For example, working in partnership with the ATF and local police departments can quite possibly be effective at disrupting local gun markets, but only if they concern themselves with gathering the necessary intelligence and acting on it. The ATF's e-trace system, data analysts, and special agents can be valuable resources for local initiatives, and efforts could be focused on the guns recovered from individuals and groups responsible for a significant portion of the violence in hot spots for shootings. Incorporating data on purchasers of firearms recovered from these places and individuals into social network analyses, or extending intelli-gence gathering to identify key gun suppliers for criminals, could prove useful in disrupting the supply line of firearms to offenders. The ability to use better data and intelligence on illegal gun suppliers will vary depending on the strength of local and state gun laws. Law enforce-ment agencies operating in states with the most comprehensive systems of ac-countability (e.g., dealer licensing, licens-ing of handgun purchasers, private sales regulations) and the strongest penalties for violating gun sales laws will be most able to benefit from supply-side oriented gun law enforcement initiatives. [40]

[37] Anthony A. Braga and P. L. Gagliardi. "Enforcing federal laws against firearms traffickers: Raising operational effectiveness by lowering enforcement obstacles." In Daniel W. Webster and Jon S. Vernick, eds., *Reducing Gun Violence in America: Informing Policy with Evidence and Analysis,*. Johns Hopkins University Press, Baltimore, MD, 2013. 143-154.

[38] Anthony A. Braga et al. "Interpreting the Empirical Evidence on Illegal Gun Market Dynamics." *Journal of Urban Health*, 89, no.5, 2012: 779–793.

[39] Anthony A. Braga and Glenn. L. Pierce. "Disrupting illegal firearms markets in Boston: The effects of Operation Ceasefire on the supply of new handguns to criminals." *Criminology & Public Policy* 4, 2005:717-748; D. W. Webster et al. "Effects of police stings of gun dealers on the supply of new guns to criminals. *Injury. Prevention* 12, no. 4, 2006:225-230; and Daniel W. Webster, J. S. Vernick, and M. T. Bulzacchelli. "Effects of a gun dealer's change in sales practices on the supply of guns to criminals." *Journal of Urban Health* 83, 2006:778-787.

[40] Anthony A. Braga and Glenn. L. Pierce. "Disrupting illegal firearms markets in Boston: The effects of Operation Ceasefire on the supply of new handguns to criminals." *Criminology & Public Policy* 4, no. 4, 2005:717-48.

CONCLUSION

The experiences from nine SPI-funded law enforcement agencies offer important insights regarding effective approaches to reducing gun violence. The common approaches across the SPI sites offer a starting point for ongoing dialogue over next steps for enhancing prevention, intervention, and suppression efforts. This Spotlight also demonstrates the importance of developing the analytical and evaluation infrastructure required to sufficiently design and test proactive, risk-focused strategies (e.g., targeting the places, people, and times at greatest risk for violence). Moreover, the SPI's investment in data-driven, collaborative efforts to reduce gun violence will pay dividends beyond the boundaries of the neighborhoods targeted if the program spurs new ways of approaching public safety both within the funded agencies and in others inspired by SPI success stories. No single policy change is likely to swiftly bring the United States' unacceptably high rate of gun violence in line with that of other high-income nations. However, wide application of evidence-based strategies proven to significantly reduce gun violence, along with programs that promote decision-making based on improved data and analytic methods, would undoubtedly be a wise investment in public safety.

ABOUT THE AUTHORS

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Hildy Saizow, M.S., is a community crime prevention and anti-violence specialist and has worked in both the U.S and abroad on collaborative approaches to public safety. She currently works in Arizona, where she serves as President of Arizonans for Gun Safety, a nonprofit dedicated to reducing gun violence in Arizona communities. In this capacity,

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Appendix A: Descriptions of Outcome Evaluations in Boston, Baltimore, and Los Angeles

Boston

The Boston SPI assessed the impact of their problem-oriented, hot spot strategy (the Safe Streets Teams) through a quasi-experimental design with propensity score matching (statistically based matching of target sites to control/comparison sites) that compared 13 target areas with similar violent crime hot spots throughout the city. The results show that the SST strategy was associated with a 17.3 percent reduction in the total number of violent index crimes, a 19.2 percent reduction in the number of robberies, and a 15.4 percent reduction in the number of aggravated assaults. The analysis showed no evidence of significant displacement or diffusion effects as a result of the SST strategy. These findings are strong evidence that the SSTs have been successful in reducing gun violence in Boston.[41]

The results from the SST evaluation led the Boston Police Department to re-focus their efforts on homicide, particularly with regard to homicide clearance. In 2010, BPD detectives only cleared 38 percent of the city's 74 homicides. The bulk of Boston homicides are gang and drug-related, which are notoriously difficult to solve. In 2011, BPD received SPI funding to identify and adopt a business model for homicide investigation based on best practices and evidence based research. The Boston SPI homicide project involves a number of important information-gathering strategies, including consultation with approximately 15 U.S. law enforcement agencies regarding their clearance rates and homicide investigation procedures; consultation with Scotland Yard regarding its homicide investigation business model and structure; and a retrospective analysis of homicide investigations in Boston, 2006 to 2011, to identify factors related to clearance. Once these strategies are completed, the Boston SPI team will devise and adopt a new evidence-based business model for homicide investigation, which will be evaluated by their research partner through a rigorous methodological design. Results are expected in 2014.

Baltimore

The effects of VCIS deployment and Exile call-ins on gun violence within hot spots were estimated using monthly panel data for the period January 2003 through May 2012 for the 39 police posts in Baltimore with the highest numbers of homicides and nonfatal shootings during the baseline period (2003-2006). Regression models estimated program effects while

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[41] Anthony A. Braga, David M. Hureau, and Andrew.V. Papachristos. "An ex post facto evaluation framework for place-based police interventions." *Evaluation Review* 35, no. 6, 20ll: 592–626.

controlling for baseline levels of gun violence, annual city-wide fluctuations in gun violence, major neighborhood redevelopment, and implementation of Safe Streets—a community-based public health initiative to reduce gun violence modeled after Chicago's CeaseFire program.

VCIS deployment was associated with reductions of 27.3 percent in homicides and 15.1 percent in nonfatal shooting incidents, and a 17.8 percent reduction in a summed version of those two outcomes. The marginal effect of each VCIS detective deployed was a statistically significant 3 percent reduction in risk of a homicide within a police post per month, but no effect on nonfatal shootings was detected. Exile call-ins were not associated with changes in homicide incidents in the areas targeted; however, the Exile call-in conducted in Northwest Baltimore was associated with a 39.8 percent reduction in nonfatal shooting incidents. The vast majority of the persons on Baltimore's Gun Offender Registry (GOR) were placed on the registry as a result of a conviction for illegal possession of a firearm, though many had prior arrests or convictions for violent crimes. Fewer than 6 percent of the GOR offenders were on the registry as a result of a conviction for violent crimes committed with a handgun, in part because most offenders who were charged with committing a violent crime with a handgun were not convicted of a gun charge.

Overall recidivism for crimes involving firearms among the 1,903 offenders during the time they were on the GOR was low; 4.8 percent were subsequently charged with a gun offense, and 2.0 percent were charged with a violent crime committed with a firearm. Reoffending risks were compared for the group of offenders placed on the GOR for gun convictions during the first year the registry was in place (2008) with those of persons convicted of gun crimes during 2007 which did not lead to GOR placement. Reoffending for any type of charge and for violent crimes was twice as high in the 2007 disposition comparison group compared with the 2008 disposition GOR group (32.1 percent vs. 14.2 percent for any offense; 13.2 percent vs. 2.8 percent for violent crimes). Similarly, the likelihood of the 2008 GOR group being charged with a subsequent gun offense was much less common than was the case for the 2007 comparison group. Regression analyses controlled for offender age, gender, prior criminal history, and follow-up time estimated the GOR reduced offending risks by 77 percent for any crime and by 92 percent for gun crimes.

LOS ANGELES

The Los Angeles SPI team assessed the impact of Operation LASER using Interrupted Time-Series Analysis. In particular, the team analyzed monthly crime data for the Newton Division and 18 other divisions from January 2006 to June 2012. After the program was implemented, Part I violent crimes in the target division (Newton) dropped by an average of 5.4 crimes per month, and homicides dropped by 22.6 percent per

month—crime declines that did not occur in the other 20 LAPD divisions. [42] In a separate analysis using a panel study design, the SPI team focused on the impact of the SPI on gun crimes at the reporting district level (in Newton and other divisions). This analysis showed that Operation LASER resulted in a statistically significant 5.2 percent decrease in gun crime per month for every reporting district in the Newton Division. [43] Importantly, the crime declines did not occur in the other LAPD divisions, which provides strong evidence that Operation LASER caused the declines in the Newton Division.

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[42] Craig D. Uchida et al. "Los Angeles, California Smart Policing Initiative: Reducing gun-related violence through Operation LASER." *Smart Policing Initiative: Site Spotlight.* Bureau of Justice Assistance. U.S. Department of Justice. Washington, D.C.: U.S. Government Press, 2012.

[43] Craig D. Uchida and Marc L. Swatt. "Operation LASER and the effectiveness of hotspot patrol: A panel analysis." *Police Quarterly* 16, no.3, 2013: 287-304.