

# The crime prevention value of hot spots policing

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This paper reviews the available research evidence on the effectiveness of hot spots policing programs in reducing crime and disorder. The research identified five randomized controlled experiments and four non-equivalent control group quasi-experiments evaluating the effects of hot spots policing interventions on crime. Seven of nine selected evaluations reported noteworthy crime and disorder reductions. Meta-analyses of the randomized experiments revealed statistically significant mean effect sizes favoring hot spots policing interventions in reducing citizen calls for service in treatment places relative to control places. When immediate spatial displacement was measured, it was very limited and unintended crime prevention benefits were associated with the hot spots policing programs. The results of this review suggest that hot spots policing is an effective crime prevention strategy.

*El valor de la estrategia policial de las «zonas calientes» en la prevención de la delincuencia.* Este artículo revisa la evidencia de investigación disponible en relación con la efectividad de los programas de actuación policial de 'zonas calientes' en la reducción de la delincuencia y el gamberrismo. Se identificaron cinco experimentos controlados aleatorizados y cuatro diseños cuasi-experimentales con grupos de control no equivalentes. Siete de los nueve estudios seleccionados informaron de reducciones significativas en el delito y el gamberrismo. El meta-análisis realizado reveló que esta estrategia policial disminuye de modo significativo las llamadas a la policía de los vecinos. También se observó que el desplazamiento del delito derivado de este programa era mínimo, y que aparecieron efectos beneficiosos no esperados en las zonas donde se implementó. Se concluye que la estrategia policial de la 'zona caliente' es efectiva en la prevención de la delincuencia.

The hot spots perspective suggests that police can reduce crime by focusing their limited resources on the small number of places that generate a majority of crime problems (Sherman and Weisburd, 1995; Eck and Weisburd, 1995). Although police have long recognized the importance of concentrating their enforcement efforts on high-activity crime areas (Wilson, 1967; Gay, Schell and Schack, 1977), the emergence of hot spots policing can be generally traced to empirical, theoretical and technological innovations in the 1980s and 1990s (Weisburd and Braga, 2003). As computerized database and crime mapping technology developed, a series of empirical studies revealed that crime clusters in very discrete small places, such as specific addresses or street blocks (Pierce, Spaar and Briggs, 1988). For example, in Minneapolis, roughly 5% of the addresses generated about 50% of citizen calls for service to the police (Sherman, Gartin and Buerger, 1989). A wide range of theoretical advances supporting the development of problem-oriented policing (Goldstein, 1990) and situational crime prevention (Clarke, 1997), such as the rational choice perspective (Cornish and Clarke, 1986), routine activity theory

(Cohen and Felson, 1979), and environmental criminology (Brantingham and Brantingham, 1991), suggested that crime was concentrated at hot spot locations due to place characteristics, features, and use. Collectively, this body of evidence called on the police to focus their efforts on these high-risk places.

Policing crime hot spots has become a common police strategy for reducing crime and disorder problems in the United States. A recent Police Foundation report found that 7 in 10 departments with more than 100 sworn officers reported using crime mapping to identify crime hot spots (Weisburd, Mastrofski, McNally, Greenspan and Willis, 2003). Police departments have used a variety of focused interventions, such as directed patrols, proactive arrests, and problem-oriented policing, to produce significant crime prevention gains at high-activity crime places (see, e.g. Braga, 2002; Eck, 1997, 2002; Weisburd and Eck, 2004). The United States National Academy of Sciences' Committee to Review Police Policy and Practices concluded that «a strong body of evidence suggests that taking a focused geographic approach to crime problems can increase the effectiveness of policing» (Skogan and Frydl, 2004, p. 247). This paper presents the most recent findings of a systematic review of the research evidence on the crime prevention value of hot spots policing (see Braga, 2001, 2005). This updated study was conducted as part of an ongoing effort by the Campbell Collaboration's Crime and Justice Group to review research evidence on criminal justice policy interventions ([www.aic.gov.au/campbellcj/](http://www.aic.gov.au/campbellcj/)).

## Method

*Selection of evaluations*

In selecting hot spots policing evaluations, the following criteria were used:

- 1) This review was limited to studies that used a no-treatment control group design involving before and after measures. In eligible studies, crime places that received the hot spots policing intervention were compared to places that experienced routine levels of traditional police service. The comparison group study had to be either experimental or quasi-experimental (nonrandomized) (Campbell and Stanley, 1966; Cook and Campbell, 1979).
- 2) The units of analysis were crime hot spots or high-activity crime «places.» As Eck (1997) suggests, «a place is a very small area reserved for a narrow range of functions, often controlled by a single owner, and separated from the surrounding area... examples of places include stores, homes, apartment buildings, street corners, subway stations, and airports» (p. 7-1). All studies using units of analysis smaller than a neighborhood or community were considered. This constraint was placed on the review process to ensure that identified studies were evaluating police strategies focused on the small number of locations that generate a disproportionate amount of crime in urban areas.
- 3) To be eligible for this review, interventions used to control crime hot spots were limited to police enforcement efforts. Suitable police enforcement efforts included traditional tactics such as directed patrol and heightened levels of traffic enforcement as well as alternative strategies such as aggressive disorder enforcement and problem-oriented policing with limited situational responses and limited engagement of the public. Eligible problem-oriented policing initiatives must engage primarily traditional policing tactics such as law enforcement actions, informal counseling and cautioning, and referrals to other agencies. Problem-oriented policing programs that involved multiple interventions implemented by other stakeholders such as community members, business owners, or resident managers, were not considered.
- 4) Eligible studies had to measure the effects of police intervention on officially recorded levels of crime at places. Appropriate measures of crime included crime incident reports, citizen emergency calls for service, or arrest data. Other outcomes measures such as survey, interview, social observations, physical observations, and victimization measures used by eligible studies to measure program effectiveness were also coded and analyzed. Particular attention was paid to studies that measured crime displacement effects and diffusion of crime control benefit effects. Policing strategies focused on specific locations have been criticized as resulting in displacement (see Repetto, 1976). More recently, academics have observed that crime prevention programs may result in the complete opposite of displacement—that crime control benefits were greater than expected and «spill over» into places beyond the target areas (Clarke & Weisburd, 1994).

*Searching strategies*

As described in earlier iterations of this review (Braga, 2001, 2005), the following four search strategies were used to identify studies meeting the selection criteria:

- 1) Searches of on-line social science and legal databases using the following search terms: hot spot, crime place, crime clusters, crime displacement, place-oriented interventions, high crime areas, high crime locations, targeted policing, directed patrol, crackdowns, and enforcement swamping.
- 2) Searches of narrative and empirical reviews of literature that examine the effectiveness of police interventions on crime hot spots (e.g. Eck, 1997, 2002; Sherman, 1990, 1997).
- 3) Searches of bibliographies of police crime prevention efforts and place-oriented crime prevention programs (e.g. Braga, 2002; Sherman, 2002), and two existing registers of criminal justice randomized experiments (Weisburd, Sherman and Petrosino, 1990; Turner et al., 2003).
- 4) Contacts with leading researchers to identify recently completed studies or in press papers.

These search strategies complemented each other in the identification of eligible hot spots policing studies. For example, if an eligible study existed that did not appear in one of the on-line databases, contacts with leading researchers and searches of existing bibliographies were likely to discover the study in question. All published and unpublished studies were considered for this review. In the first iteration of the review (Braga, 2001), each on-line database was searched as far back as possible. However, since hot spots policing is a very recent development in crime prevention, the search strategies described above should be sufficient to identify all relevant studies. In the second iteration of the review, the on-line databases were searched for the new evaluations published between 2001 and 2003 (Braga, 2005). An updated search will be completed in 2006.

## Results

*Identified Evaluations*

The search strategies identified a total of nine evaluations of the effects of hot spots policing interventions on crime. Five of the selected studies used randomized experimental designs (evaluations 1 - 5, listed below) and four used non-equivalent control group quasi-experimental designs (evaluations 6 - 9). The nine eligible studies included in this review:

- 1) Minneapolis Repeat Call Address Policing (RECAP) Program (Sherman, Buerger and Gartin, 1989).
- 2) Minneapolis Hot Spots Patrol Program (Sherman and Weisburd, 1995).
- 3) Jersey City Drug Markets Analysis Program (DMAP) (Weisburd and Green, 1995).
- 4) Jersey City Problem-Oriented Policing at Violent Places Project (Braga et al, 1999).
- 5) Kansas City Crack House Police Raids Program (Sherman and Rogan, 1995a).
- 6) Kansas City Gun Project (Sherman and Rogan, 1995b).
- 7) St. Louis Problem-Oriented Policing in Three Drug Market Locations Study (Hope, 1994).
- 8) Houston Targeted Beat Program (Caeti, 1999).

*Table 1*  
Hot spots policing experiments and quasi-experiments

Study	Treatment	Hot spot definition	Research design*
Minneapolis (MN) RECAP Sherman, Buerger, and Gartin (1989)	Problem-oriented policing interventions comprised of mostly traditional enforcement tactics with some situational responses  1 year intervention period  Integrity of treatment threatened by large caseloads that outstripped the resources the RECAP unit could bring to bear	Addresses ranked by frequency of citizen calls for service divided into commercial and residential lists; the top 250 commercial and top 250 residential addresses were included in experiment	Randomized experiment; control and treatment groups were each randomly allocated 125 commercial and 125 residential addresses  Differences in the number of calls to each address from a baseline year to the experimental year were compared between treatment and control groups
Minneapolis (MN) Hot Spots Sherman and Weisburd (1995)	Uniformed police patrol; experimental group, on average, experienced twice as much patrol presence  1 year intervention period  Breakdown in the treatment noted during the summer months	110 hot spots comprised of address clusters that experienced high volumes of citizen calls for service, had stable numbers of calls for over two years, and were visually proximate	Randomized experiment; control and treatment groups were each randomly allocated 55 hot spots within statistical blocks  Differences of differences between citizen calls in baseline and experimental years, comparing control and experimental groups
Jersey City (NJ) DMAP Weisburd and Green (1995)	Well-planned crackdowns followed by preventive patrol to maintain crime control gains  15 month intervention period  Slow progress at treatment places caused intervention time period to be extended by 3 months	56 drug hot spot areas identified based on ranking intersection areas with high levels of drug-related calls and narcotics arrests, types of drugs sold, police perceptions of drug areas, and offender movement patterns	Randomized experiment; control and treatment groups were each randomly allocated 28 drug hot spots within statistical blocks  Differences of differences between citizen calls during 7 month pre-test and post-test periods, comparing control and experimental groups
Jersey City (NJ) POP at Violent Places Braga et al (1999)	Problem-oriented policing interventions comprised of mostly aggressive disorder enforcement tactics w/ some situational responses  16 month intervention period  Initial slow progress at places caused by resistance of officers to implement intervention	24 violent crime places identified based on ranking intersection areas with high levels of assault and robbery calls and incidents, and police and researcher perceptions of violent areas	Randomized experiment; 24 places were matched into like pairs based on simple quantitative and qualitative analyses; control and treatment groups were each randomly allocated 12 places within matched pairs  Differences of differences between a number of indicators during 6 month pre-test and post-test periods, comparing control and experimental groups
St. Louis (MO) POP in 3 Drug Areas Hope (1994)	Problem-oriented policing interventions comprised of mostly traditional enforcement tactics with some situational responses  9 month intervention period  No threats to the integrity of the treatment reported	Subjective selection of POP efforts made at 3 hot spot locations comprised of specific addresses associated with street-level drug sales	Quasi-experiment with non-equivalent control group; changes in citizen calls at hot spot addresses location were compared to changes in calls at other addresses on the block as well as other blocks in surrounding areas  Simple trend analyses including 12 month pre- and 6 month post- intervention periods
Kansas City (MO) Crack House Raids Sherman and Rogan (1995a)	Court authorized raids on crack houses conducted by uniformed police officers  Intervention period was the day of the raid  All but 7 cases received randomly assigned treatment as assigned  No threats to the integrity of the treatment reported	207 blocks with at least 5 calls for service in the 30 days preceding an undercover drug buy; sample was restricted to raids on the inside of residences where a drug buy was made that was eligible for a search warrant	Randomized experiment; Raids were randomly allocated to 104 blocks and were conducted at 98 of those sites; the other 109 blocks did not receive raids  Differences of differences analytic design; pre-post time periods were 30 days before and after raid for experimental blocks, and 30 days before and after controlled buy at treatment block for control blocks
Kansas City (MO) Gun Project Sherman and Rogan (1995b)	Intensive enforcement of laws against illegally carrying concealed firearms via safety frisks during traffic stops, plain view, and searches incident to arrest on other charges  29 week intervention period  No threats to the integrity of the treatment reported; Two phases of patrols reported due to shifts in grant funding	8 by 10 block target beat selected by federal officials for Weed and Seed grant  Enforcement actions targeted at hot spots in beat identified by computer analyses	Quasi-experiment with non-equivalent control group; target beat matched to a control beat with nearly identical levels of drive-by shootings  Difference of means comparing weekly gun crimes between intervention period and 29 week pre-test period  Time series analyses of weekly gun crimes for 52 week before-after period  Analysis of variance models with one extra pre year and post year to examine changes in homicides and drive-by shootings for both patrol phases

\* The control group in each study received routine levels of traditional police enforcement tactics.

*Table 1 (continued)*  
Hot spots policing experiments and quasi-experiments

Study	Treatment	Hot spot definition	Research design*
Houston (TX) Targeted Beat Program  Caeti (1999)	Patrol initiative designed to reduce Index crimes in 7 beats.  3 beats used «high visibility patrol» at hot spots  3 beats used «zero tolerance» policing at hot spots  1 beat used a problem-oriented policing approach comprised of mostly traditional tactics to control hot spots  2 year intervention period  3 «high visibility» patrol beats managed by one substation experienced police resistance to the program	7 highest crime beats were selected for this program  Enforcement actions targeted at hot spots in beats identified by computer analyses	Quasi-experiment with non-equivalent control groups; target beats were matched to non-contiguous comparison beats through cluster analysis and correlations of Census data  Difference of means in reported crime were used to evaluate program effects for 3 year pre-intervention and 2 year intervention period
Beenleigh (AUS) Calls for Service Project  Criminal Justice Commission (1998)	Problem-oriented policing interventions comprised of mostly traditional enforcement tactics with some situational responses  6 month intervention period  No threats to the integrity of the treatment reported	Two groups of 10 addresses that experienced the highest volume of calls during separate six month periods	Quasi-experiment with non-equivalent control group. Beenleigh, a lower income suburb with a population of 40,000, was matched to similar Brown Plains suburb  Simple time series analyses of total monthly calls for service in 5 month pre-test, 6 month intervention, and 3month post-test periods  19 pre/post no control case studies

\* The control group in each study received routine levels of traditional police enforcement tactics.

9) Beenleigh Calls for Service Project (Criminal Justice Commission, 1998).

*The effects of hot spots policing on crime and disorder*

Noteworthy crime reductions were reported in seven of the nine selected studies (see table 2). The strongest crime control gains were reported in the Jersey City POP at Violent Places experiment and the Kansas City Gun Project quasi-experiment. In the Jersey City POP experiment, the enforcement problem-oriented policing strategy resulted in statistically significant reductions in total calls for service and total crime incidents, as well as varying reductions in all subcategories of crime types, in the treatment violent crime hot spots relative to controls (Braga et al, 1999, pp. 562-563). Analyses of systematic observation data collected during the pre-test and post-test periods revealed that social disorder was alleviated at 10 of 11 treatment places relative to controls (Braga et al, 1999, p. 564).<sup>1</sup> Non-experimental systematic observation data collected pre-test and post-test at treatment places suggested that physical disorder was alleviated at 10 of 11 treatment places (Braga et al, 1999, p. 564).<sup>2</sup> Pre-test and post-test interviews with key community members suggested that community perceptions of places improved at 7 of 12 treatment places (Braga, 1997, pp. 235-236). Proactive patrols focused on firearm recoveries in the Kansas City quasi-experiment resulted in a statistically significant 65% increase in gun seizures and a statistically significant 49% decrease in gun crimes in the target beat area; gun seizures and gun crimes in the comparison beat area did not significantly change (Sherman and Rogan, 1995b, p. 684). A separate non-equivalent control group quasi-experiment examined community reaction to the Kansas City intervention and

found that the community strongly supported the intensive patrols and perceived an improvement in the quality of life in the treatment neighborhood (Shaw, 1995).

The Minneapolis Hot Spots Patrol experiment revealed that roughly doubling the level of patrol in crime hot spots resulted in modest, but significant, reductions in total calls for service, ranging from 6% to 13%, in treatment places relative to control places (Sherman and Weisburd, 1995, p. 643). Moreover, systematic observations of the hot spots suggested that disorder was only half as prevalent in treatment hot spots as compared to control hot spots (Sherman and Weisburd, 1995, p. 643). The Jersey City DMAP experiment suggested that well-planned crackdowns followed by patrol maintenance resulted in significant reductions in disorder calls for service at the treatment drug hot spots relative to controls (Weisburd and Green, 1995, pp. 723-726). Similarly, the St. Louis POP quasi-experiment found that the enforcement problem-oriented policing strategy was associated with varying degrees of reductions in total calls for service at all three high-activity drug locations; these reductions were greater than any reductions observed in other blocks and intersections in the surrounding areas (Hope, 1994, pp. 17, 21, 26). The Kansas City Crack House Raid experiment reported modest decreases in citizen calls for service and crime offenses at treatment blocks relative to controls that decayed within two weeks of the raids (Sherman and Rogan, 1995a, pp. 770-776).

The results of the Houston Targeted Beat quasi-experiment must be interpreted with caution. The key analytic measures of effectiveness were comparisons of pre-test and post-test differences (as measured by t-tests) in reported crime incidents at treatment beats relative to control beats (Caeti, 1999, pp. 319-322). However, the research did not examine the differences of

<i>Table 2</i> Results of hot spots policing experiments and quasi-experiments			
Study	Crime outcomes	Other outcomes	Displacement diffusion
Minneapolis (MN) RECAP Sherman, Buerger, Gartin (1989)	No statistically significant differences in the prevalence of citizen calls for service	None	Not measured
Minneapolis (MN) Hot Spots Sherman and Weisburd (1995)	Modest, but statistically significant reductions in total crime calls for service ranging from 6% to 13%	Systematic observations of crime and disorder were half as prevalent in experimental as in control hot spot	Not measured
Jersey City (NJ) DMAP Weisburd and Green (1995)	Statistically significant reductions in disorder calls for service in treatment drug markets relative to control drug markets	None	Examined displacement and diffusion effects in two-block catchment areas surrounding the treatment and control drug places and replicated the drug market identification process  Little evidence of displacement; analyses suggest modest diffusion of benefits
Jersey City (NJ) POP at Violent Places Braga et al (1999)	Statistically significant reductions in total calls for service and total crime incidents  All crime categories experienced varying reductions; statistically significant reductions in street fight calls, property calls, narcotics calls, robbery incidents, and property crime incidents	Observation data revealed that social disorder was alleviated at 10 of 11 treatment places relative to control places  Non-experimental observation data revealed that physical disorder was alleviated at 10 of 11 treatment places  Non-experimental interviews with key community members in target locations suggest no noteworthy improvements in citizen perceptions of places	Examined displacement and diffusion effects in two-block catchment areas surrounding the treatment and control drug places  Little evidence of immediate spatial displacement or diffusion
St. Louis (MO) POP in 3 Drug Areas Hope (1994)	All 3 drug locations experienced varying reductions in total calls  Regression analysis suggested that reductions on blocks where drug locations were located were greater than other blocks and intersections in surrounding areas	None	Compared trends in calls at targeted addresses to trends in calls at other addresses on same block  Location 1- significant displacement into surrounding addresses; Location 2- no displacement or diffusion; Location 3- no displacement or diffusion
Kansas City (MO) Crack House Raids Sherman and Rogan (1995a)	Modest decreases in citizen calls and offense reports that decayed in two weeks	None	Not measured
Kansas City (MO) Gun Project Sherman and Rogan (1995b)	65% increase in guns seized by the police; 49% decrease in gun crimes	Separate pre/post quasi-experiment surveying citizens opinions of KC gun project suggests citizens were aware of the project, generally supported the intensive approach, and perceived an improvement in the quality of life in treatment neighborhood	Displacement tests using pre/post difference in means and ARIMA time series analyses were conducted in 7 contiguous beats  No significant displacement into specific beats; 2 beats showed significant reductions in gun crimes
Houston (TX) Targeted Beat Program Caeti (1999)	Aggregated experimental beats experienced significant reductions in auto theft, total Part I Index crimes, and total Part I suppressible (robbery, burglary, auto theft) index crimes relative to aggregate control beats  3 «zero tolerance» beats experienced mixed results; certain reported crimes decreased in particular beats  3 «high visibility» beats experienced reductions in a wide variety of Index crimes  Problem solving beat experienced no significant decrease relative to control beat	None	Simple pre/post analyses of reported crimes in beats contiguous to treatment beats  No evidence of significant displacement; contiguous beats surrounding 3 target areas (problem-solving beat, 2 zero-tolerance beats) experienced possible diffusion of benefits in particular reported crimes
Beenleigh (AUS) Calls for Service Project Criminal Justice Commission (1998)	No noteworthy differences in total number of calls between Beenleigh and Brown Plains areas  Noteworthy reductions in calls reported by non-experimental pre/post impact assessments in 16 of the 19 case studies	None	Not measured

differences between treatment and control areas. As such, the quasi-experimental analyses did not directly measure whether observed changes in treatment beats were significantly different from observed changes in control beats. Reported significant reductions in treatment beats relative to non-significant decreases and any increases in reported crime can be interpreted with some confidence. However, conclusions that the program did not work in treatment beats with reported significant crime reductions relative to control beats with significant crime reductions were not justified. It was completely possible that the observed significant reductions in the treatment beats were significantly greater than the significant reductions in control beats.

Given these caveats, the Houston Targeted Beat quasi-experiment suggests that the aggregated treatment beats experienced significant reductions in auto theft, total Part I index crimes, and total Part I «patrol suppressible» crimes (robbery, burglary, and auto theft) relative to aggregated control beats. The three treatment beats where «zero tolerance» aggressive disorder policing was used to control hot spots experienced mixed reductions in Part I crimes relative to control beats; the three treatment beats where «high visibility» directed patrol was used to control hot spots experienced reductions in a wide variety of Part I crimes relative to control beats; the one treatment beat where an enforcement problem-oriented policing strategy was implemented to control hot spots did not experience noteworthy decreases relative to a control beat. The limits of the analytic framework preclude conclusions that certain types of policing strategies may be more effective in preventing crime in hot spots. Nevertheless, the results of this study can be broadly taken to support the position that focused police enforcement efforts can be effective in reducing crime at hot spots.

The Beenleigh Calls for Service quasi-experiment found no noteworthy differences in the total number of calls in the town of Beenleigh relative to the matched town of Brown Plains (Criminal Justice Commission, 1998, p. 25). However, simple non-experimental pre/post comparisons found noteworthy reductions in total citizen calls for service in 16 of 19 case studies included in the report. The research team concluded that the problem-oriented policing strategy enjoyed some success in reducing calls for service at the targeted locations, but due to the small scale of the project and limitations of the research design, these crime prevention gains were not large enough to be detected at the aggregate town level (Criminal Justice Commission, 1998, p. 28).

The Minneapolis RECAP experiment showed no statistically significant differences in the prevalence of in the prevalence of citizen calls for service at addresses that received the problem-oriented policing treatment as compared to control addresses (Sherman, Buerger and Gartin, 1989, p. 21). These results were probably due to the assignment of too many cases to the RECAP unit, thus outstripping the amount of resources and attention the police officers provided to each address (Buerger, 1993). Moreover, the simple randomization procedure led to the placing of some of the highest event addresses into the treatment group; this led to high variability between the treatment and control groups and low statistical power. Although the overall findings suggest that the RECAP program was not effective in preventing crime, a case study analysis revealed that several addresses experienced dramatic reductions in total calls for service (Buerger, 1992, pp. 1-6, 133-139, 327-331).

Due to inconsistent reporting of program effects in the quasi-experimental studies, only randomized trials were included in the

meta-analyses of program effects (the details of the meta-analyses are reported in Braga, 2005). Since all hot spots policing experiments used citizen calls for service as an outcome measure, the main effect size for each study was calculated based on the statistics reported for calls for service findings. The initial meta-analytic model examined the key reported outcome measure for each study (e.g. total calls for service in the Jersey City POP Experiment). When one key effect per study was considered, the meta-analysis revealed that hot spots policing interventions reduced citizen calls for service in the treatment places relative to the control places. The mean effect size for the hot spots policing intervention for the experimental studies was medium (.345) and statistically significant ( $P < .05$ ). When the RECAP study was not included in the meta-analysis due to methodological concerns, the mean effect size was large (.632) and statistically significant ( $P < .05$ ).

The sensitivity of these findings to the selection of one effect size per study was examined by conducting a meta-analysis of the mean effect sizes for all reported outcome measures within each study. Since individual reported outcome measures in each study were not statistically independent effects, a mean effect size was calculated based on all reported outcome measures within each study. In this second meta-analytic model, the mean effect size for all reported calls for service outcome measures favored a treatment effect. However, when RECAP was included, the mean effect size for all reported outcomes was smaller (.129) and not quite statistically significant at the .05 level ( $P = .0537$ ). When RECAP was not included in the meta-analysis, the model yielded a mean effect size for all reported outcomes that favored treatment (.231) and was statistically significant ( $P < .05$ ).

#### *Displacement and Diffusion Effects*

Five studies examined whether focused police efforts were associated with crime displacement or diffusion of crime control benefits (see table 2). All five studies examined spatial displacement of crime into areas immediately surrounding the targeted hot spots. None of the five studies reported substantial immediate spatial displacement. Four studies suggested possible diffusion effects associated with the focused police interventions. The two Jersey City experiments used the most sophisticated methodologies to measure immediate spatial displacement and diffusion effects. In both experiments, the research teams examined the differences of differences in citizen calls for service in two block catchment areas surrounding treatment and control hot spot areas. The Jersey City POP at Violent Places experiment found little evidence of displacement in the catchment areas and reported significant decreases in total calls for service and disorder calls for service in the catchment areas.<sup>3</sup> The Jersey City DMAP experiment found significant decreases in public morals calls for service and narcotics calls for service in treatment catchment areas relative to controls. The Jersey City DMAP experiment also replicated the drug market identification process and found six new drug hot spots within two blocks of the treatment locations; this result suggests that some modest displacement may have occurred, but it could not be determined whether these new drug hot spots were the result of experimental squad actions, control squad actions, or would have developed naturally without any enforcement efforts (Weisburd and Green, 1995, pp. 730-731).

The Kansas City Gun quasi-experiment used before and after difference of means tests and ARIMA (Auto Regressive Integrated Moving Average) time series analyses to examine whether gun crimes were displaced into seven beats contiguous to the target beat. None of the contiguous beats showed significant increase in gun crime and two of the contiguous beats reported significant decreases in gun crimes. The Houston Targeted Beat quasi-experiment examined displacement and diffusion effects by conducting simple pre/post comparisons of reported Part I index crimes in beats contiguous to the treatment beats. The analyses revealed no overall evidence of displacement and contiguous beats surrounding three targeted beats (1 problem-oriented policing beat and 2 «zero tolerance» beats) experienced possible diffusion effects as several types of reported Index crimes decreased notably. The St. Louis POP at Drug Locations quasi-experiment assessed displacement effects by comparing trends in calls for service at targeted addresses to non-targeted addresses on the same block. Significant increases in calls for service at non-targeted addresses on the same block were reported in only one of the 3 analyses. The primary cause of the observed displacement was a shift in drug sales from a targeted apartment building to a similar non-targeted apartment building on the same block.

#### Discussion

Seven of nine selected evaluations reported noteworthy crime and disorder reductions. Methodological problems in the research and evaluation design probably accounted for the lack of crime prevention gains in the Minneapolis RECAP experiment. Nonetheless, a meta-analysis of key reported outcome measures revealed a medium statistically significant mean effect size favoring the effects of hot spots policing in reducing citizen calls for service in treatment places relative to control places. While the estimated program effects were not as large, additional meta-analyses consistently reported mean effect sizes in favor of the hot spots policing treatment when all reported outcomes measures and specific crime categories of citizen calls for service were examined. Five studies measured potential displacement and diffusion effects.

When immediate spatial displacement was measured, it was very limited and unintended crime prevention benefits were associated with the hot spots policing programs.

The results of this review support the position of the U.S. National Academies' Committee to Review Police Policy and Practices that hot spots policing represents an extremely promising new strategy for policing. Nonetheless, there is still much to be learned (see Weisburd and Braga, 2003). For example, our knowledge is too general and must be focused more on how specific policing strategies affect specific types of hot spots. The research to date has also ignored many of the potential social consequences of hot spots policing. While it is clear that crime prevention benefits can be gained from hot spots approaches, we need to know more about how they affect the lives of people who live in areas that are targeted. Finally, we need to focus more carefully on problems of displacement and diffusion. Spatial displacement appears to be a much less serious threat to the gains of hot spots policing than had been originally thought, and indeed the evidence suggests that diffusion of crime control benefits to areas nearby targeted places is more common. Nonetheless, we don't know enough about how other forms of displacement, such as changes in methods of crime commission affect the crime control benefits of hot spots approaches.

#### Notes

- <sup>1</sup> One case was excluded from these analyses because the observational data were inappropriately collected (Braga et al, 1999, p. 564).
- <sup>2</sup> One case was excluded from these analyses because it did not have any physical disorder in the pre-test and post-test periods (Braga et al, 1999, p. 564).
- <sup>3</sup> Property crime incidents experienced a significant increase while property crime calls for service did not significantly change in the treatments catchment areas relative to controls. The research team viewed this result as an artifact of the experiment rather than a substantive finding (Braga et al, 1999, pp. 567-569).

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