

Evaluation of Baltimore's *Safe Streets* Program

Effects on Attitudes, Participants' Experiences, and Gun Violence



JOHNS HOPKINS
BLOOMBERG
SCHOOL of PUBLIC HEALTH

Center for the Prevention of Youth Violence

**Evaluation of Baltimore's *Safe Streets* Program:
Effects on Attitudes, Participants' Experiences, and Gun Violence**

Daniel W. Webster, ScD, MPH

Jennifer Mendel Whitehill, PhD

Jon S. Vernick, JD, MPH

Elizabeth M. Parker, MHS

Johns Hopkins Center for the Prevention of Youth Violence
Johns Hopkins Bloomberg School of Public Health
Baltimore, MD

January 11, 2012



JOHNS HOPKINS
BLOOMBERG
SCHOOL *of* PUBLIC HEALTH

Protecting Health, Saving Lives—*Millions at a Time*

Table of Contents

Executive Summary	2
I. Background.....	6
II. Implementation of Baltimore’s <i>Safe Streets</i> Program	7
III. Program Effects on Violence, Attitudes, and Participants’ Experiences	11
<i>A. Program Effects on Gun Violence.....</i>	11
Data and Measures	12
Data Analysis.....	13
Findings on Program Effects on Gun Violence	14
Discussion of Findings on Program Effects on Gun Violence	22
<i>B. Attitudes and Norms Concerning Gun Violence.....</i>	25
Methods	25
Research Design	25
Measures and Data Collection	25
Data Analysis.....	26
Findings on Youth Attitudes.....	27
Exposure to <i>Safe Streets</i> Program.....	27
Neighborhood Differences in Youths’ Attitudes Supportive of Gun Violence	28
Discussion.....	30
<i>C. <i>Safe Streets</i> Program Participants’ Experiences</i>	32
Research Methods.....	32
Findings on Participants’ Experiences.....	33
Involvement with the <i>Safe Streets</i> Program.....	34
Referrals for Services.....	36
Conflict Mediations	38
Effects on Program Participants’ Lives	39
<i>IV. Summary Conclusions from the Evaluation of <i>Safe Streets</i></i>	40
Acknowledgements	42
References.....	43

EXECUTIVE SUMMARY

Background

In 1995, Dr. Gary Slutkin of the University of Illinois at Chicago developed the *CeaseFire* program to reduce youth violence associated with firearms. *CeaseFire* is a multifaceted intervention involving several different components. Most notably, street outreach workers – often former gang members – develop relationships with high risk youth in high crime urban areas. Outreach workers serve as positive role models for the young people, steering them to resources such as job or educational training. Special outreach staff called violence interrupters work to identify and resolve potentially dangerous conflicts before they escalate into shootings. In addition, the program organizes community responses to shootings and attempts to change social norms surrounding shootings, sending the message that using a gun to resolve conflict is unacceptable. An independent evaluation by researchers at Northwestern University found strong evidence that the program led to significant reductions in gun violence. A grant from the U.S. Department of Justice enabled the Baltimore City Health Department (BCHD) to attempt to replicate Chicago's *CeaseFire* in Baltimore under the name *Safe Streets*.

Evaluation

The evaluation has four major components: 1) a review of implementation data for the program; 2) an analysis of the effects of the program on homicides and nonfatal shootings; 3) a community survey of attitudes toward gun violence; and 4) interviews with *Safe Streets* program participants to ascertain their perceptions of the program's effects on their lives.

Program Implementation

BCHD solicited proposals from community based organizations interested in implementing the program in some of Baltimore's most violent neighborhoods. *Safe Streets* was initially launched in the McElderry Park neighborhood of East Baltimore in June 2007 and in the Union Square neighborhood of Southwest Baltimore in August 2007. However, the Union Square community group experienced substantial problems implementing the program, failing to establish a stable group of outreach workers until March 2008. But program implementation problems continued and Union Square's contract was discontinued in July 2008. Additional program sites were added later. Elwood Park's program was fully implemented as of March 2008, Madison-Eastend as of January 2009, and Cherry Hill as of January 2009.

Program staff were required to keep standard records of their activities including detailed information about each incident mediated by outreach staff. Monthly totals and conflict mediation forms were reported to BCHD and shared with the research team. After the initial months of enrolling participants, program sites had 35 to 60 participants connected with outreach workers at any given time and recorded 127 to 271 participant contacts per month.

A key approach to reducing violence was for program outreach workers to mediate conflicts between individuals or groups in attempt at reaching a nonviolent resolution. From July 2007 through December 2010, *Safe Streets* outreach workers mediated 276 incidents. Nearly 9

out of 10 (88%) of these incidents involved individuals with a history of violence and 75% involved gang members. Weapons were at the scene in nearly two thirds of the incidents. Based on these conditions and other factors, outreach workers thought that 84% of the situations in which they intervened would have either “very likely” (59.5%) or “likely” (24.6%) led to a shooting. Outreach workers considered the situation to have been successfully resolved (avoiding serious violence) in 69% of the incidents and at least temporarily resolved in an additional 23% of the cases. The average number of incidents mediated per month ranged from 1.2 in Madison-Eastend to 4.0 in McElderry Park. Cherry Hill mediated an average of 3.2 incidents per month and Elwood Park mediated 1.4 incidents monthly.

Program Effects on Homicide and Nonfatal Shootings

We obtained data from the Baltimore Police Department for homicides and nonfatal shootings from January 1, 2003 to December 31, 2010. We compared changes in the number of homicide and nonfatal shooting incidents per month in the intervention neighborhoods with high-crime comparison areas (police posts) without the intervention. To be a comparison area, the police post must have been in the top 25% among all posts for the number of homicides and nonfatal shootings from 2003 to 2006. Regression models were used to control for several possible confounders including measures of police initiatives directed at reducing neighborhood gun violence, arrests for weapon and drug violations, and baseline levels of homicide and nonfatal shootings.

In Cherry Hill, *Safe Streets* was associated with statistically significant reductions of 56% in homicide incidents and 34% in nonfatal shootings. Program effects in the three East Baltimore sites varied. McElderry Park did not experience a homicide during the first 22 months of program implementation (prior homicide levels in the area and citywide trends projected five homicides in McElderry Park for that period without the intervention). However, homicides increased during the period when program supervisors and staff also concerned themselves with a new *Safe Streets* site in bordering Madison-Eastend where gang violence surged. During the months McElderry Park’s program was running without the near-by Madison-Eastend program, homicides were 53% lower than would have been expected without the intervention. However, there were no program effects on homicides or nonfatal shootings in McElderry Park during the months when Madison-Eastend’s program was operating. Both Elwood Park and Madison-Eastend’s *Safe Streets* interventions were associated with statistically significant reductions in nonfatal shootings (-34% and -44%, respectively). However, homicides were nearly three times higher than would have been expected during the 18-month period the program was in operation in Madison-Eastend. There was also evidence that positive programs extended into areas bordering the neighborhoods that implemented *Safe Streets*.

Totaling statistically significant program effects across all the program sites and border posts we estimate that the program was associated with 5.4 fewer homicide incidents and 34.6 fewer nonfatal shooting incidents during 112 cumulative months of intervention post observations. There would have been more than 10 additional homicide incidents prevented had there not been significant increases in Madison-Eastend and in the area bordering Elwood Park that coincided with program implementation.

Youths' Attitudes About Gun Violence

To assess the effects of *Safe Streets* on attitudes about the appropriateness of using a gun to resolve conflicts, we conducted surveys in three Baltimore neighborhoods – McElderry Park, Union Square, and Oliver. A first wave of surveys was conducted in November/December 2007 – after implementation had begun in McElderry Park but prior to a largely failed program implementation in Union Square. Oliver, which had unsuccessfully applied for *Safe Streets* funding, served as another nonintervention comparison neighborhood with baseline levels of gun violence similar to that of McElderry Park. For the second wave of surveys, conducted in Spring 2009, we excluded Union Square due to implementation problems which led to discontinuance of the program.

For each survey wave, young men ages 18 to 24 were recruited on the street and in public places to complete a brief, anonymous, self-administered survey. The survey contained hypothetical scenarios based on common sparks for shootings. One set of survey questions asked whether the respondent thought it was okay to either “threaten” or “shoot” the antagonist. Another set of questions asked respondents whether they thought their friends would think it was okay to threaten or shoot the antagonist in the same situations.

For survey Waves 1 and 2, youth in McElderry Park were much less likely than youth in the other neighborhoods to believe that it was okay to use a gun to resolve disputes in our scenarios. In fact, youth in McElderry Park were 4 times more likely to have the lowest level of support (“little or no”) for using violence than were youth in Union Square. Regression models showed that Wave 1 respondents in McElderry Park were less likely to support using guns to settle disputes ($p < .001$) after controlling for confounders. In the models for Wave 2, McElderry Park respondents were less likely to be in the “strong” support for gun violence category ($p < .001$), but there was no longer a significant neighborhood difference for being in the “moderate” support category.

Program Participants' Experiences and Views of Program Impact

In May 2011, we conducted anonymous interviews with program participants in Cherry Hill and McElderry Park to learn about their experiences with *Safe Streets*. Outreach staff provided information about the survey to each adult (age 18+) program participant and directed those who were interested to come to the program office at designated times when research interview staff would be available to conduct interviews. A total of 32 program participants in Cherry Hill and 33 in McElderry Park were interviewed.

As the *Safe Streets* program envisions, program participants are at high risk. Nearly half of program participants (48%) had ever been shot at.

Program outreach workers appear to be important parts of the lives of these young people. Two-thirds of participants saw their outreach worker 3 or more times per week; for three-quarters of participants, these meetings lasted an average of more than 1 hour. Outreach workers provided program participants with various types of assistance. Participants who sought assistance reported that outreach workers helped with activities including: finding a job (88%);

job interviewing skills (75%); job training (63%); getting into a school or GED program (95%); and resolving family conflicts (100%).

Outreach workers also helped the majority (52%) of program participants settle an average of two disputes. Twenty-eight percent of these disputes involved guns and 91% avoided violence. Overall, 80% of program participants reported that their lives were “better” since becoming program participant of *Safe Streets*.

Conclusions

Safe Streets was implemented in four of Baltimore’s most violent neighborhoods, engaging hundreds of high-risk youth, promoting nonviolence through community events, and mediating over 200 disputes with the potential to lead to a shooting. The program was associated with less acceptance for using guns to settle grievances in the one intervention neighborhood where attitudes were studied. Program participants reported benefiting from their connections to outreach workers in numerous ways that could be protective against future involvement in violence.

Three of the four program sites experienced large, statistically significant, program-related reductions in homicides or nonfatal shootings without having a counter-balancing significant increase in one of these outcome measures. Both program sites where *Safe Streets* was linked to large reductions in homicides mediated about three times as many disputes per month than did the other two program sites. Future efforts should focus on understanding and improving program implementation and discovering the conditions under which the program can be most effective in reducing violence.

I. Background

Gun violence is the most significant threat to the health and safety for many urban youth in the United States. Among males ages 15 to 24 years, homicide is the leading cause of death for Blacks and the second leading cause of death for Hispanics.¹ Nine out of 10 of these deaths are from gunfire.² For every youth murdered with a gun, there are about four additional youths who suffer nonfatal gunshot wounds resulting from criminal assaults.³

Ethnographic research has shown that many urban youth believe that gun carrying in high-crime neighborhoods is common, and that the “code of the street” or social norm is to be willing to respond with lethal violence if threatened.^{4,5} Many young males living in high-crime neighborhoods also believe that they are expected to retaliate, with potentially lethal means, if they are blatantly disrespected. Failure to do so entails risk not only to one’s perceived masculinity and social status, but also for future victimization.^{4,5,6} These attitudes and perceptions pose a significant challenge to efforts to curtail gun violence among urban youth.

Youth gun violence has historically been viewed as something that should be dealt with principally through policing and criminal justice responses. Many law-enforcement-focused interventions emphasize enhanced deterrence. An example is Boston’s *Operation Ceasefire* program which combines enhanced penalties, efforts to increase risk of arrest and prosecution, direct communication about enhanced risks of gun offending, and opportunities to receive services or other assistance (e.g., job training) that provide an alternative to a life a crime. This approach appears to have reduced youth homicides in Boston⁷ and replications have shown success in a number of cities including Indianapolis,^{8,9,10} Chicago,¹¹ and Lowell, Massachusetts.¹²

Public health researchers and practitioners have advocated for new approaches to the prevention of youth gun violence which draw upon lessons learned from successful efforts to address public health and safety problems. There are diverse perspectives about which public health approaches would be most effective in preventing youth gun violence – some focusing on reducing the availability of firearms¹³ and others focusing on changing behaviors.¹⁴

Applying lessons learned from public health efforts to prevent the spread of infectious diseases, Dr. Gary Slutkin developed *CeaseFire* – a public health program to prevent shootings involving youth by changing behaviors, attitudes, and social norms most directly related to gun violence. The program targets communities with some of the highest rates of gun violence and contracts with community-based organizations that are best positioned to work with high-risk youth in those areas. Youth outreach workers identify and build trusting relationships with youth ages 15 to 24 years who are at the greatest risk of being involved in gun violence. Specifically, the program targets youth with a history of violence or involvement in street activities associated with violence (i.e. gangs, drug trade). Outreach workers help direct these youth toward paths that

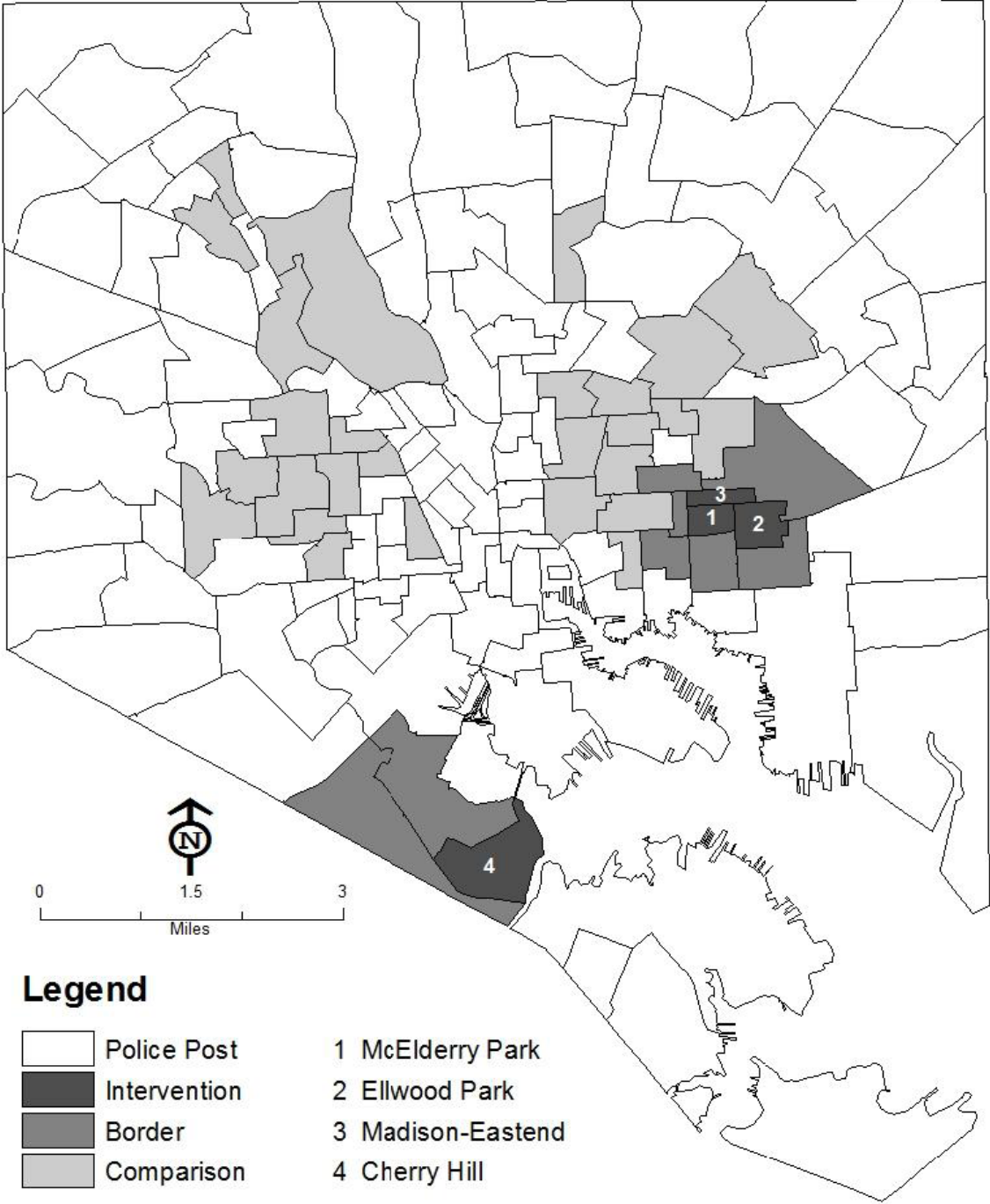
should reduce their risk of involvement in violence by connecting them with educational and job opportunities and serving as positive role models. Outreach staff typically work during evening hours, when most shootings occur, and position themselves so that they can directly intervene in conflicts that have the potential to lead to shootings. When disputes arise, outreach workers try to separate the individuals involved and help them to appreciate the negative consequences of using violence. They offer nonviolent alternatives that, ideally, leave each party's status intact. Some outreach staff take on roles as "violence interrupters" and devote all or nearly all of their time to identifying and mediating conflicts between individuals or gangs. Conflict mediation is but one way the program attempts to promote social norms that eschew violence. Community organizers mobilize target communities by planning monthly events designed to bring the community together, promote nonviolence, and provide positive activities for youth.¹⁵

An evaluation of *CeaseFire* in Chicago found that the program was associated with significant reductions in shootings and retaliatory homicides in four of seven intervention neighborhoods studied.¹⁶ When program implementation was interrupted as a result of funding cuts, shootings increased in the affected areas.¹⁷ Encouraged by preliminary data on the effects of *CeaseFire*, the Baltimore City Health Department, with support from the Mayor's Office, sought funding to bring the program to Baltimore under the name of *Safe Streets*. This report presents data on the implementation of the program in Baltimore and estimates its impact on gun violence, youths' attitudes about the acceptability of using guns to settle disputes, and the lives of high-risk youth participants.

II. Implementation of Baltimore's *Safe Streets* Program

In 2007, the Baltimore City Health Department (BCHD) obtained a \$1.6 million grant from the U.S. Department of Justice to replicate Chicago's *CeaseFire* program. BCHD worked closely with the Chicago Project for Violence Prevention (CPVP) team that designed and manages *CeaseFire*, to learn the program model, develop a request for proposals from community groups to implement the program, and recommend the community groups to be funded. CPVP staff also provided extensive training to the community groups implementing the program. The requests for proposals to implement the program had very specific requirements to ensure that the *CeaseFire* program model was implemented appropriately. Community group applicants had to implement the program in a neighborhood within the top 25% for the number of homicides and non-fatal shootings, had to be able to hire ex-offenders as outreach workers, and had to comply with staffing and monthly reporting requirements based upon the *CeaseFire* model.

Figure A. Map of Baltimore Police Department's posts with *Safe Streets*, border posts, and comparison posts indicated.



The first contract to implement *Safe Streets* was awarded to Living Classrooms Foundation to conduct the program in the McElderry Park neighborhood in East Baltimore.

Some program activities began in McElderry Park in late June 2007. In 2008, Living Classrooms Foundation was funded to expand *Safe Streets East* to two neighborhoods bordering McElderry Park – Elwood Park (starting in February) and Madison-Eastend (starting in November). Finally, in November 2008, a *Safe Streets* program site was initiated in the South Baltimore community of Cherry Hill by Family Health Centers. Funding was discontinued in the summer of 2010 for the Elwood Park and Madison-Eastend program sites.

BCHD also funded a program site in 2007, giving a contract to Communities Organized to Improve Life (COIL) to implement *Safe Streets* in the Union Square neighborhood located in Southwest Baltimore. According to BCHD staff and CPVP consultants, COIL experienced significant difficulties implementing the program. For example, COIL did not assemble a stable group of outreach workers until March 2008. Even then, BCHD concluded that COIL did not fully implement the program model and discontinued their contract in July 2008. Due to these difficulties with program implementation, the evaluation did not examine program effects in Union Square.

Program staff, including managers, at each program site received extensive training from CPVP prior to implementing the program. Many went to Chicago to see the *CeaseFire* program firsthand and CPVP staff came to Baltimore for week-long trainings. The RFP specified that each site would operate with a site director, a violence prevention coordinator responsible for community mobilization, four full-time-equivalent outreach worker positions, and an outreach supervisor. However, the three program sites clustered together in East Baltimore shared a single office (located in McElderry Park), director, outreach supervisor, and violence prevention coordinator. Although each of the three East Baltimore sites were staffed with outreach workers, during parts of 2008 and 2009, some outreach staff from McElderry Park were asked to work in Elwood Park and especially in Madison-Eastend where the program had to contend with a lot of gang conflicts and violence.

Program staff were required to keep records of their activities including the number of participants (clients of outreach workers), in-person contacts with participants, community events held, the number of people attending each event, community responses to shootings, and incidents mediated. Monthly totals were reported to BCHD and shared with the research team. Table 1 presents monthly averages for each site and year the program has been implemented. Some differences across sites and time are worth noting. McElderry Park and Elwood Park had more program participants and in-person participant contacts per month than the other two sites. McElderry Park tended to have more people attending community events. The average number of incidents mediated per month was lowest in Madison-Eastend (1.2) and Elwood Park (1.4) and notably higher in Cherry Hill (3.2) and McElderry Park (4.0). The number of mediations conducted in McElderry Park varied considerably between 2007 and 2010 with the highest number of mediation occurring during the times before and after the other East Baltimore

program sites were in operation.

Table 1. Monthly averages for program implementation data by program site by year, 2007-2010.

	2007	2008	2009	2010	Total
McElderry Park					
Program participants	-	36.1	50.4	59.5	48.7
In-person contacts with participants	-	134	153	271	186
Incidents mediated	3.8	2.7	1.9	7.7	4.0
Community events	1.7	1.2	1	1.7	1.4
Attendees at community events	250	216	176	187	207
Elwood Park					
Program participants	-	53.3	61.7	36.3*	53.3
In-person contacts with participants	-	196	279	180*	226
Incidents mediated	-	0.8	0.8	3.7*	1.4
Community events	-	0.8	1	0.8*	0.9
Attendees at community events	-	122	100	99*	109
Madison-Eastend					
Program participants	-	-	39.4	34.5*	37.8
In-person contacts with participants	-	-	152	168*	157
Incidents mediated	-	-	0.9	1.7*	1.2
Community events	-	-	1.2	0.8*	1.1
Attendees at community events	-	-	119	110*	116
Cherry Hill					
Program participants	-	-	45.1	36.7	40.9
In-person contacts with participants	-	-	158	127	143
Incidents mediated	-	-	3.9	2.4	3.2
Community events	-	-	1.8	1.7	1.8
Attendees at community events	-	-	150	159	155

*Data for Jan.-June, 2010. Program ended 6/30/2010.

Outreach workers' mediations of high-stakes disputes with the potential to lead to shootings are the programmatic activities most directly relevant to the immediate reduction in gun violence. For this reason, we compiled data from each of the forms that program staff were required to complete after they mediate a dispute or other situation that could lead to a shooting. Table 2 presents data from 276 mediations performed by program staff from July 2007 through December 2010. Nearly 9 out of 10 (88%) of these incidents involved individuals with a history of violence and 75% involved gang members. Outreach workers reported that there were weapons at the scene in nearly two thirds of the incidents. Based on these conditions and other factors, outreach workers thought that 84.1% of the situations in which they intervened would have either "very likely" (59.5%) or "likely" (24.6%) led to a shooting had program staff not intervened. Outreach workers considered the situation to have been successfully resolved (avoiding serious violence) in 68.8% of the incidents and at least temporarily resolved in an additional 22.9% of the cases.

Table 2. Conflict mediation characteristics by program site, July 2007-December 2010 (N=276)

	McElderry Park	Elwood Park	Madison-Eastend	Cherry Hill	Total
	n (%)	n (%)	n (%)	n (%)	n (%)
History of violence	149 (89.2)	22 (100.0)	13 (92.9)	59 (80.8)	243 (88.0)
Gang members	135 (80.8)	19 (86.4)	7 (50.0)	46 (63.0)	207 (75.0)
Weapons on scene	110 (65.9)	18 (81.8)	7 (50.0)	41 (56.2)	176 (63.8)
Lead to shooting					
Very likely	101 (60.8)	14 (73.7)	11 (78.6)	31 (47.7)	157 (59.5)
Likely	44 (26.5)	4 (21.1)	2 (14.3)	15 (23.1)	65 (24.6)
Unlikely	21 (12.7)	1 (5.3)	1 (7.1)	19 (29.2)	42 (15.9)
Resolution of conflict					
Resolved	125 (74.0)	13 (59.1)	13 (92.9)	41 (55.4)	192 (68.8)
Temporary	30 (17.8)	7 (31.8)	1 (7.1)	26 (35.1)	64 (22.9)
Ongoing	2 (1.2)	2 (9.1)	0	2 (2.7)	6 (2.2)
Unknown	12 (7.1)	0	0	5 (6.8)	17 (6.1)
Total mediations	167	22	14	73	276

There were some noteworthy differences across program sites. Gang members and weapons were less likely to be involved and outreach staff were less inclined to think the incident had the potential to lead to a shooting in the incidents mediated in Cherry Hill than was the case with the other three program sites. Full resolution was believed to have been reached more commonly in the incidents in McElderry Park (74.0%) than was the case in Cherry Hill (55.4%). For incidents in which the outreach worker deemed the situation as either “very likely” or “likely” to have led to a shooting had there been no mediation, the number of mediations judged to have been successfully resolved per month was highest for McElderry Park (2.5), followed in order by Cherry Hill (0.8), Madison-Eastend (0.7) and Elwood Park (0.3).

III. Program Effects on Violence, Attitudes, and Participants’

Experiences

The primary aims of the research were to estimate the effects of Baltimore’s *Safe Streets* program on: 1) gun violence; 2) attitudes and perceived norms about the acceptability of using guns to respond to disputes and provocations; and 3) aspects of the lives of program participants most relevant to their avoiding gun violence.

A. Program Effects on Gun Violence

Research Methods

Data and Measures

For this component of the evaluation, the primary outcomes of interest were homicides and nonfatal shootings (NFS). We obtained data on these outcomes from the Baltimore Police Department (BPD). The program was designed to be implemented within the boundaries of a police post (precinct) and eligibility required that the post (neighborhood) was in the top quartile of police posts for number of homicides and nonfatal shootings during the three years prior to the program's launch. Therefore, we focused the study on the police posts in the top quartile for gun violence during the pre-intervention period as well as on the police posts which bordered the posts where *Safe Streets* was implemented. We created a monthly panel dataset for homicides and NFS incidents for each of these 45 police posts for the period January 1, 2003 through December 31, 2010. One intervention area which encompassed most of the Madison-Eastend neighborhood was not bounded by police post borders but made up of parts of three different police posts. For incidents in this area, we created a composite "post" to represent the Madison-Eastend program neighborhood. For each incident occurring in any of the three posts overlapping the neighborhood, we determined whether or not it occurred in the intervention neighborhood. We used the number of homicide and NFS incidents as outcome measures as opposed to the number of victims because single incidents with a very large number of victims can skew the data and estimates of program impact.

Direct exposure to the program was measured using dichotomous variables (program operating = 1, no program = 0) for each program site. We did not assume that the program would have the same effect in each program site based on what was known about the difference in context and implementation across the sites; therefore, separate intervention variables were examined for each site. In most cases, each program site needed one to three months before substantial program activities were taking place. We did not consider a program site fully active and "turn on" the program indicator variable until there were at least 20 program participants or at least two incidents had been mediated by program staff. We used program implementation data for client enrollment and contacts as well as mediations conducted to establish the first month when there was significant program activity. For McElderry Park, full program implementation was measured for 42 months, July 2007 through December 2010. There was evidence that outreach staff and supervisors in McElderry Park diverted their energies somewhat to attend to conflicts in Madison-Eastend and Elwood Park based on conflict mediation data and interviews with program managers. Therefore, in separate models, we assessed the effects of McElderry Park's program when the program activities were also taking place in Madison-Eastend and when that site was not in operation. Elwood Park's program was coded as fully implemented for 28 months, March 2008 through June 2010. Madison-Eastend's program was

in place for 18 months, January 2009 through June 2010, and Cherry Hill's program was implemented for 24 months, January 2009 through December 2010.

We hypothesized that any positive effects of the program in the target area may also spill over into neighborhoods bordering the program sites. Gun violence has been shown to spread similarly to an infectious disease.¹⁸ Program participants and others exposed to the program cross boundaries of adjacent neighborhoods. To the degree that program effects on attitudes and norms follow those living in the program neighborhoods, there could be reductions in gun violence in border neighborhoods. We measured indirect program exposure on police posts bordering the program sites in the same way that we measured direct program exposure, with variables indicating whether or not *Safe Streets* was implemented in an adjacent post.

Data Analysis

Program effects were estimated using negative binomial regression models appropriate for modeling outcomes represented as counts in which the variance is greater than the mean.¹⁹ Generalized estimating equations were used to adjust the standard errors of the estimates to account for the clustering of the data by police post.²⁰ These models contrasted changes in the target communities with changes in communities that did not have the program while controlling for baseline levels of gun violence and law enforcement activities directed at controlling violence in specific neighborhoods. Prior research has shown that deployment of special units to suppress illegal gun possession tends to significantly reduce gun violence.²¹ Studies of policing tactics directed at illegal drug markets have shown that such tactics tend to increase violent crime²² or have no impact on violence.²³ We controlled for the effects of the deployment of BPD's Violent Crime Impact Section (VCIS)* into "hot spots" for shootings, which began in the summer of 2007, and Project Exile call-ins† in the regression models using dichotomous explanatory variables indicating whether or not those activities occurred in a particular police post during a given month. We also controlled for the number of arrests for drug- and weapons (possession only) offenses in the previous month in each post. Using the number of weapons and drug arrests in the previous month avoids problems of endogeneity and distinguishes the effects of enforcement activities from the criminal activities (illegal weapon and drug possession).

* VCIS are specialized detective units deployed to specific geographic areas of the city with some of the highest rates of gun violence. These units use a variety of tactics including tracking individuals in these areas who have a history of gun violence, arresting individuals illegally carrying firearms, and serving as a deterrent to violence.

† Project Exile is a collaboration between local, state, and federal law enforcement to target the most violent offenders for federal prosecution. Periodically, Project Exile focuses on a specific high-crime area and "calls in" individuals residing in those areas who would be eligible for federal prosecution for crimes involving guns, drugs, and/or violence. At these group call-ins, law enforcement officials not only signal their intentions to arrest and prosecute these individuals if they violate the law, but also offer services and assistance to help them to avoid involvement in crime.

The regression models controlled for differences in baseline levels of homicides and NFS for each post by using an indicator variable for each post. Controlling for trends in gun violence in non-intervention posts is important because *Safe Streets* was first implemented in McElderry Park during a time when the city was experiencing a sharp decline in homicides and, to a lesser extent, NFS. We controlled for changes in unmeasured determinants of gun violence operating in Baltimore's most violent neighborhoods (e.g., citywide law enforcement initiatives focused on reducing gun violence, drug market forces, gang activities) with indicator variable for year. Because there are seasonal fluctuations in gun violence, we also controlled for calendar month with a set of indicator variables for each month with January as the reference. Regression coefficients were exponentiated (e^β) so that they can be interpreted as adjusted incident rate ratios (IRR) – the rate of the program sites relative to the rate in the nonintervention comparison neighborhoods – and percent changes associated with the program.

Even after the standard errors of regression coefficients are adjusted to account for the lack of independence and clustering of the data by police post, spatial autocorrelation of model residuals can bias standard errors and tests of statistical significance. We used Moran's I statistic, a common test of spatial autocorrelation, to test whether model residuals for each year and month were spatially correlated.²⁴ There was little evidence of spatial autocorrelation in the model residuals.

Findings for Program Effects on Gun Violence

Table 3 shows the means and standard deviations for the outcome variables and non-dichotomous control variables during the pre-intervention period (January 1, 2003 – June 30, 2007). Homicides and nonfatal shooting incidents were more common in the intervention areas than in the nonintervention comparison areas despite limiting the analyses to police posts in the top quartile in the number of homicides and shootings. Weapon and drug arrests were much higher in McElderry Park than in the other sites or in the comparison posts. Although we controlled for baseline differences as well as for variations in arrests for weapons and drugs, these baseline differences led us to examine the sensitivity of our estimates of program effects by running a set of regressions in which we included as comparisons only the 10 nonintervention posts with the highest combined number of homicide and NFS incidents during the pre-intervention period.

Table 3. Baseline monthly means and standard deviations for outcome and control variables for program sites, police posts bordering program sites, and nonintervention comparison posts.

	Homicide Incidents	Non-Fatal Shooting Incidents	All Incidents (Homicide + NFS)	Drug Arrests	Weapon Arrests
	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)	Mean (SD)
Safe Streets - McElderry Park	0.32 (0.61)	0.72 (0.88)	1.02 (0.61)	41.48 (14.86)	0.85 (1.05)
Posts Bordering McElderry Park	0.09 (0.31)	0.18 (0.43)	0.25 (0.51)	8.78 (5.94)	0.20 (0.51)
Safe Streets - Elwood Park	0.35 (0.68)	0.94 (1.00)	1.24 (1.16)	29.35 (10.36)	0.56 (0.84)
Posts Bordering Elwood Park	0.07 (0.26)	0.24 (0.51)	0.29 (0.59)	10.38 (6.84)	0.29 (0.73)
Safe Streets - Madison-Eastend	0.28 (0.49)	0.93 (1.04)	1.17 (1.11)	29.37 (11.23)	0.52 (0.69)
Posts Bordering Madison-Eastend	0.18 (0.42)	0.38 (0.65)	0.52 (0.76)	17.71 (12.41)	0.43 (0.83)
Safe Streets - Cherry Hill	0.28 (0.49)	0.93 (1.04)	1.17 (1.11)	29.37 (11.23)	0.52 (0.69)
Posts Bordering Cherry Hill	0.31 (0.57)	0.59 (0.92)	0.88 (1.05)	14.47 (10.21)	0.43 (0.86)
Comparison Posts	0.27 (0.52)	0.59 (0.77)	0.82 (0.52)	23.84 (14.49)	0.48 (0.85)

Figures 1, 3, 5, and 7 present moving averages for homicide incidents for each of the *Safe Streets* sites and monthly means for the police posts that did not receive the program. While there is no general pattern or trend evident for homicides among the nonintervention posts, an abrupt decline is evident from July 2007 through March 2008. Abrupt declines in homicides can also be observed following the implementation of the program in McElderry Park and Cherry Hill in Figures 1 and 7. In Madison-Eastend, there was great variation in homicide levels during the pre-intervention period; during the intervention period, homicide levels increased above comparison post levels (Figure 5). A gradual downward trend can be seen for NFS among the nonintervention posts beginning in the summer of 2007 in Figures 2, 4, 6, and 8. Although there is more volatility in the intervention posts' time-series for NFS, the number of NFS incidents appears to be lower in each of the intervention posts except for McElderry Park.

Figure 1. Moving averages for homicide incidents in McElderry Park vs comparison posts.

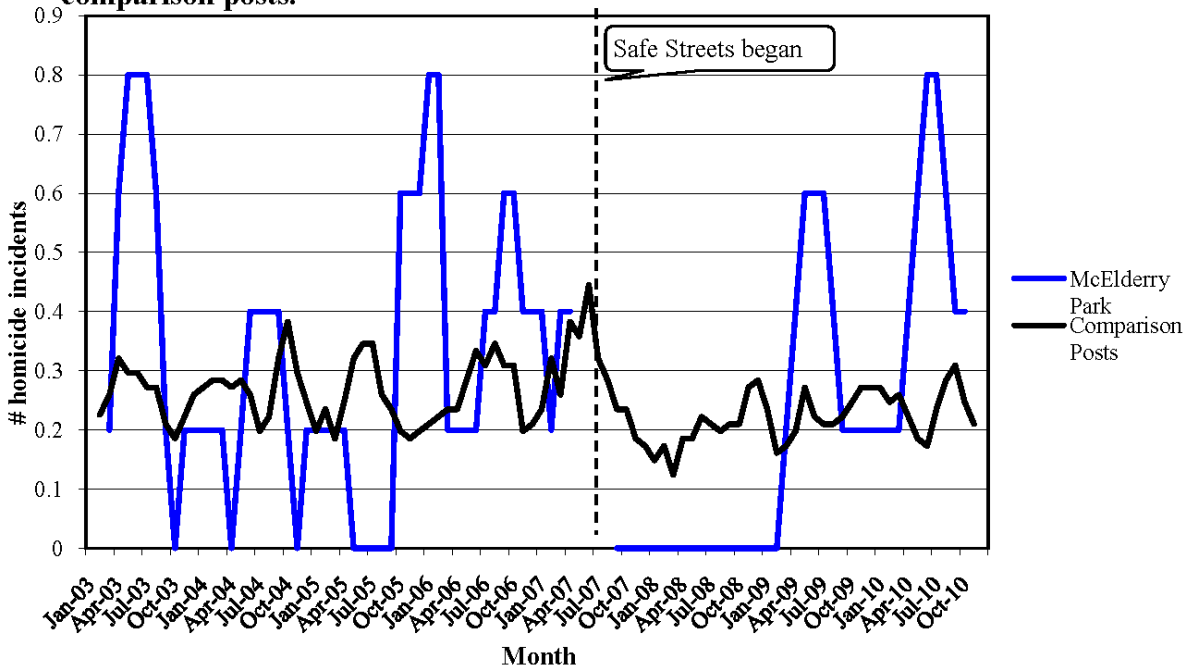


Figure 2. Moving averages for non-fatal shooting incidents in McElderry Park vs comparison posts.

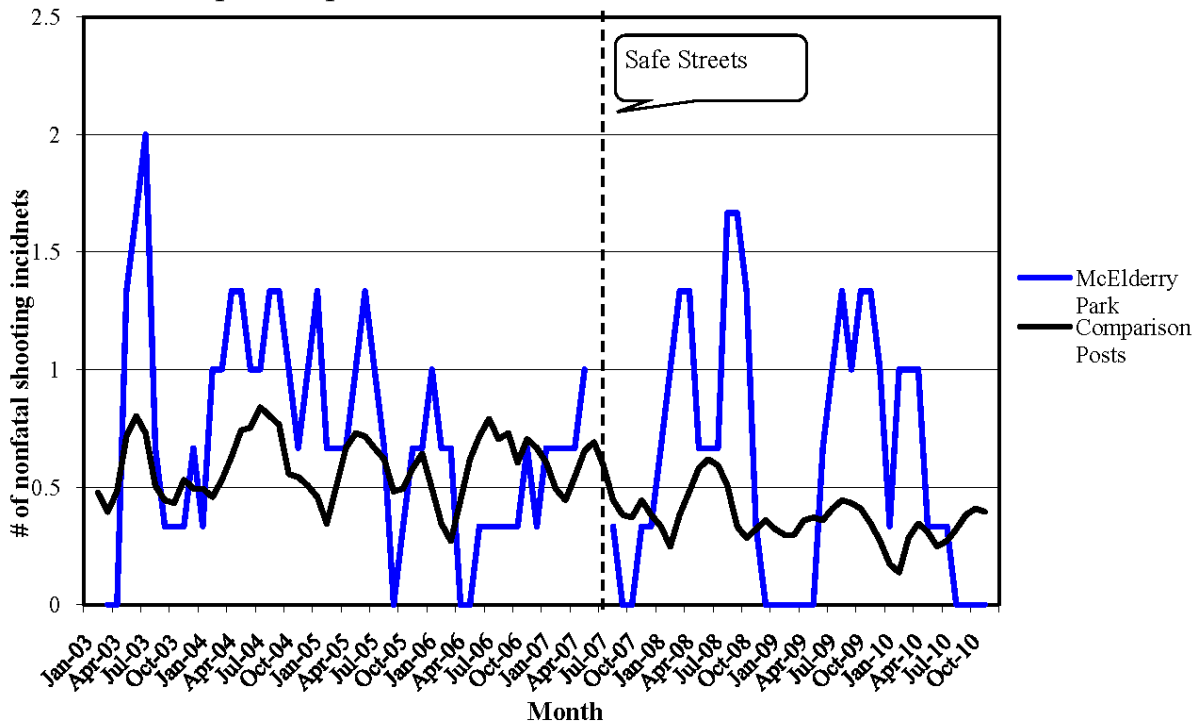


Figure 3. Moving averages for homicide incidents in Ellwood Park vs comparison posts.

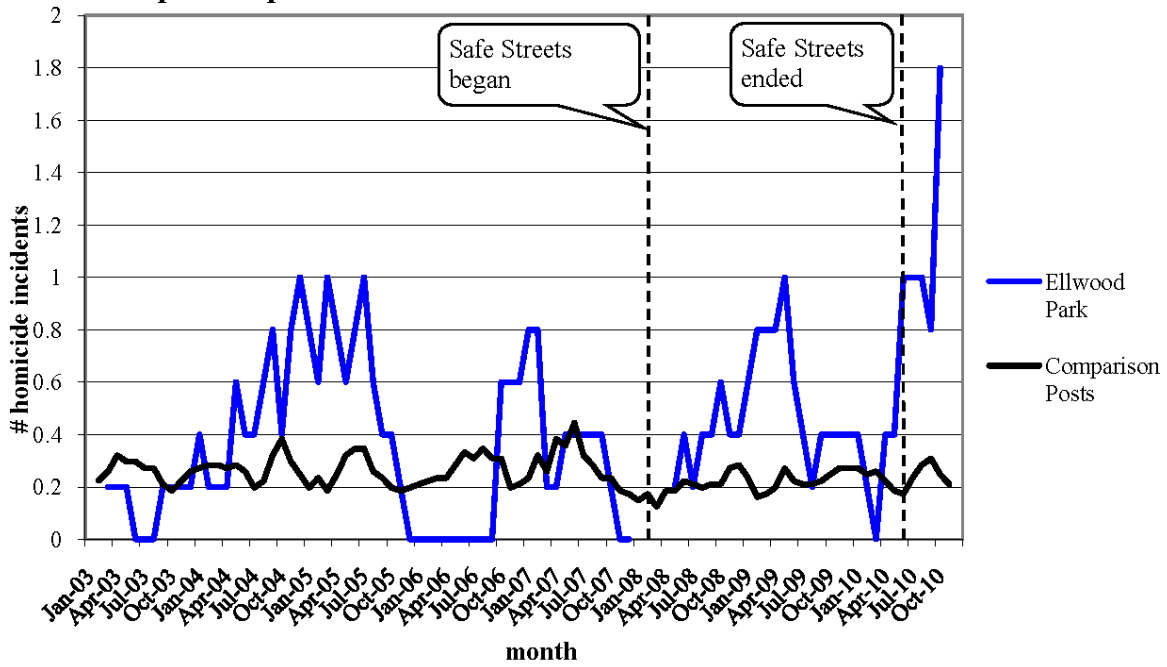


Figure 4. Moving averages for non-fatal shooting incidents in Ellwood Park vs comparison posts.

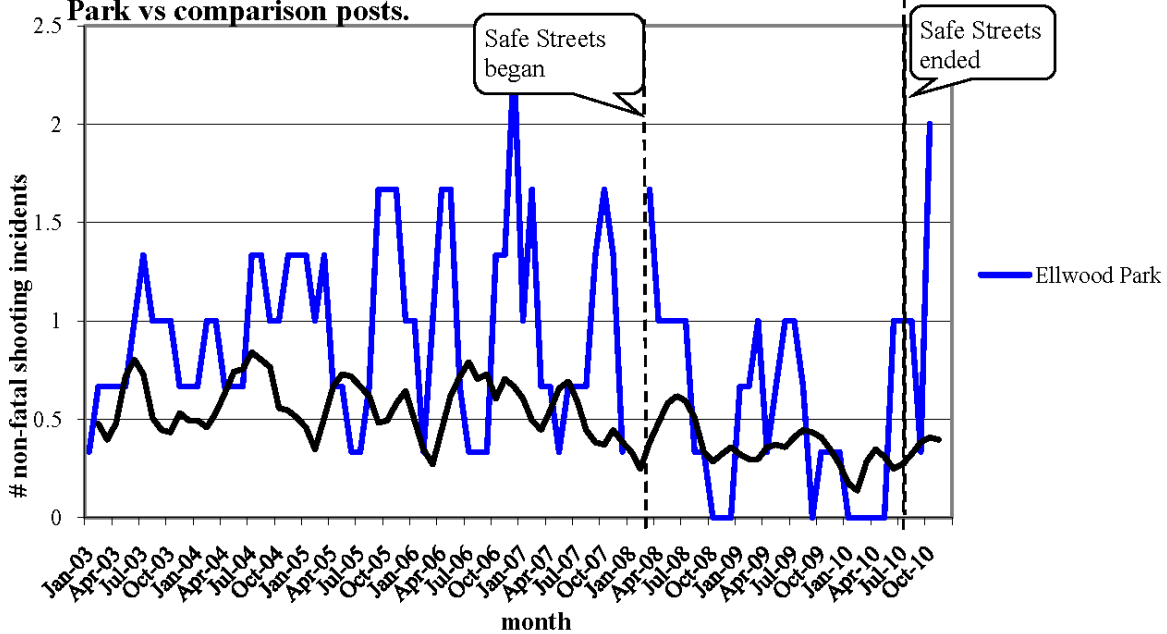


Figure 5. Moving averages for homicide incidents in Madison-Eastend vs. comparison posts.

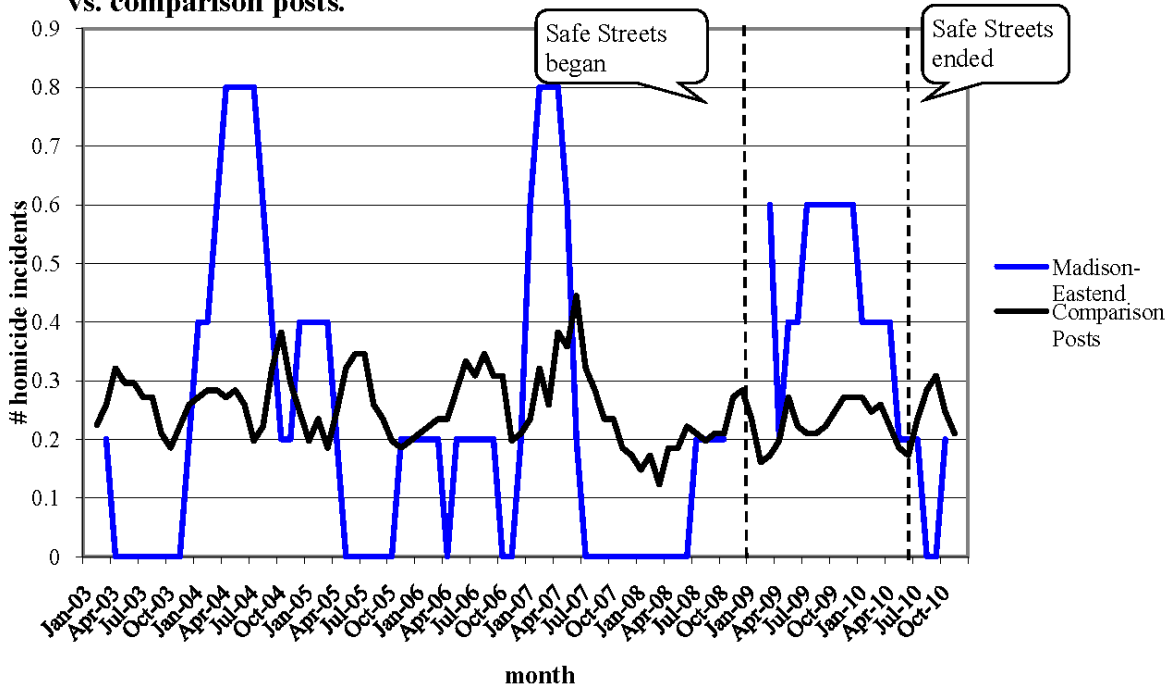


Figure 6. Moving averages for non-fatal shooting incidents in Madison-Eastend vs comparison posts.

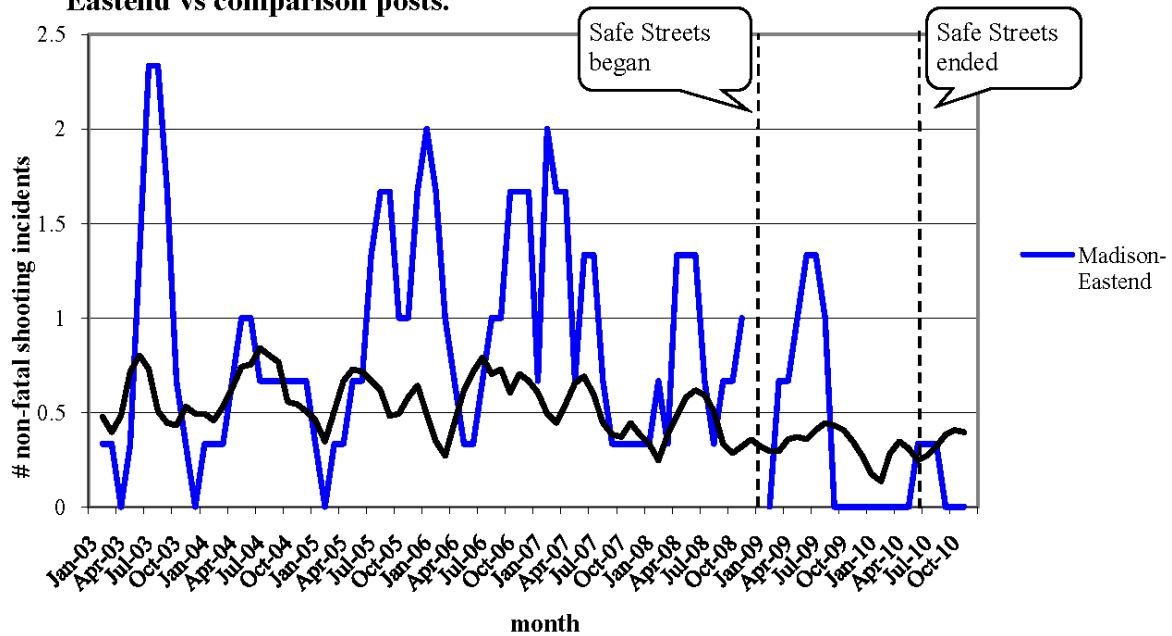


Figure 7. Moving averages for homicide incidents in Cherry Hill vs comparison posts.

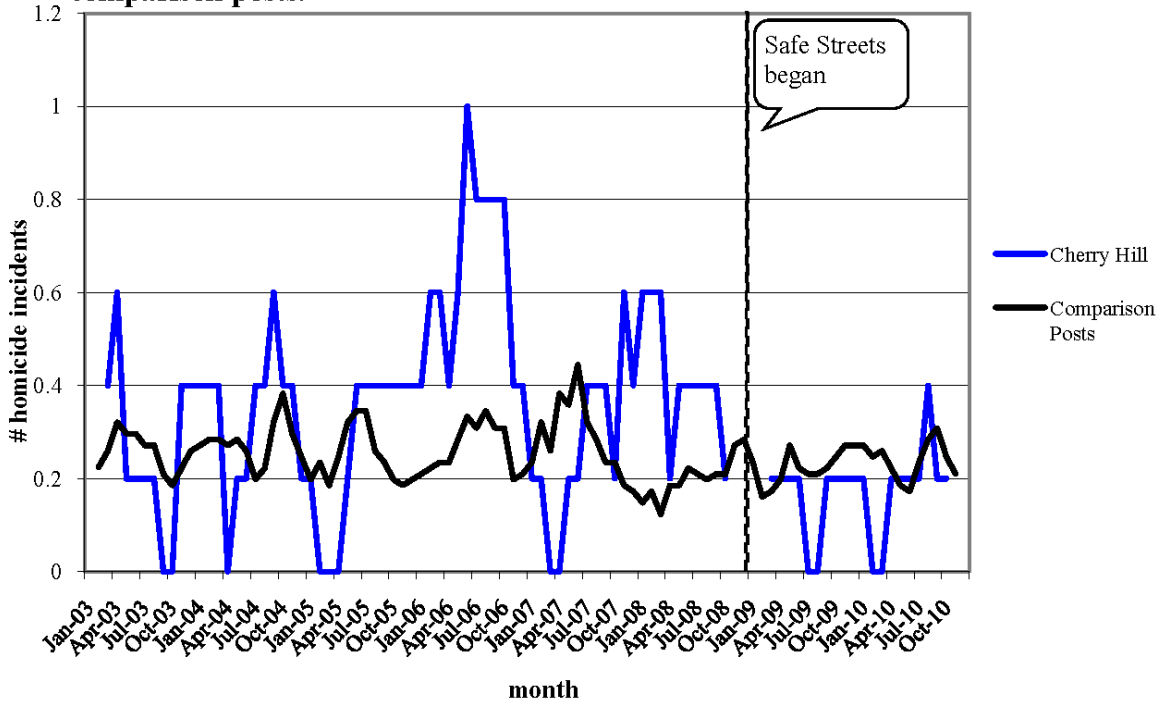
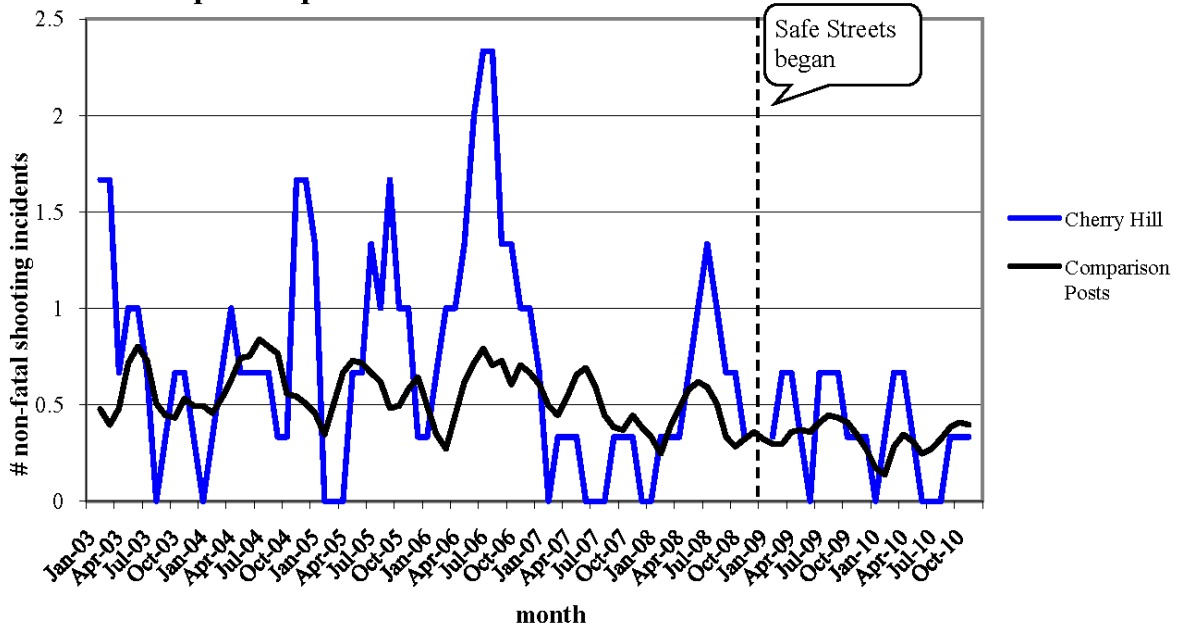


Figure 8. Moving averages for non-fatal shooting incidents in Cherry Hill vs comparison posts.



Estimates of program effects from the regression models are presented in Table 4. Program effects were most consistent across outcomes for Cherry Hill where the program was associated with a 56% reduction in homicide incidents ($p < .001$) and a 34% reduction in NFS

incidents ($p < .001$). When homicide and NFS events are combined, Cherry Hill's *Safe Streets* program was associated with a 45% decrease in these key outcomes ($p < .001$).

Table 4. Estimates of *Safe Streets* effects on homicides and nonfatal shootings from regression models.

	<i>Homicide Incidents</i>		<i>Nonfatal Shootings</i>		<i>Homicides + Nonfatal Shootings</i>	
	<u>IRR</u>	<u>p-value</u>	<u>IRR</u>	<u>p-value</u>	<u>IRR</u>	<u>p-value</u>
Safe Streets - McElderry Park - phase 1 ^a	0.47	<.001	1.05	.395	0.90	.038
Safe Streets - McElderry Park- phase 2 ^b	0.90	.436	1.15	.064	1.02	.713
Posts Bordering McElderry Park	0.72	.310	0.82	.464	0.76	.143
Safe Streets - Elwood Park	1.11	.306	0.66	<.001	0.94	.229
Posts Bordering Elwood Park	1.55	.005	0.92	.814	1.17	.507
Safe Streets - Madison-Eastend	2.70	<.001	0.56	<.001	1.01	.887
Posts Bordering Madison-Eastend	1.04	.916	0.48	.030	0.77	.379
Safe Streets - Cherry Hill	0.44	<.001	0.66	<.001	0.55	<.001
Posts Bordering Cherry Hill	0.52	<.001	0.53	<.001	0.55	<.001
Violent Crime Impact Section deployment	0.76	.097	0.85	.127	0.84	.027
Project Exile call-ins – Northwest Baltimore	0.82	.542	0.56	<.001	0.65	<.001
Project Exile call-ins – Northwest Baltimore	0.97	.881	0.83	.250	0.94	.635
Illegal weapon possession arrests, lagged 1 month	1.03	.408	1.03	.329	1.03	.252
Drug offense arrests, lagged 1 month	1.00	.587	1.00	.798	1.00	.668

^a First 16 months of full implementation before addition of Madison-Eastend as border intervention site and last 6 months after Madison-Eastend's program was discontinued.

^b 18 months when supervisors and some outreach staff working in Madison-Eastend *Safe Streets* site, in addition to Elwood Park.

Models also control for police post baseline means, calendar month, and changes in nonintervention posts.

IRR = incidence rate ratio. IRR=1 indicate no change, IRR < 1 indicate decrease in risk, IRR > 1 indicate increase in risk.

p-value = probability that the true IRR = 1.

Program effects at the three sites in East Baltimore were varied. When the total effects of McElderry Park's *Safe Streets* program was estimated for the entire intervention period, the program was associated with a 26% decrease in homicide incidents and a 22% increase in NFS incidents. However, estimates of McElderry Park's program effects were not constant throughout the study period. For the time periods when program staff and managers were not also attending to Madison-Eastend (August 2007 – November 2008 and July – December 2010), the program was associated with a 53% reduction in homicides ($p < .001$), no statistically significant change in NFS, and a 10% reduction in the combined measure of homicides and NFS incidents ($p = .038$). But during the months when McElderry Park and Madison-Eastend's programs were both being implemented out of the McElderry Park office, the program in McElderry Park was associated

with a 10% reduction in homicides that was not statistically significant, and a 15% increase in NFS incidents that approached statistical significance ($p=.064$).

Safe Streets in Elwood Park was associated with no statistically significant change in homicide incidents and a 34% reduction in NFS ($p<.001$). Homicide incidents in Madison-Eastend during the 18 months of full implementation were estimated to be 2.7 times higher than would have been anticipated without the intervention ($p<.001$), yet the program was linked with a 44% decrease in NFS ($p<.001$). When homicide and NFS incident were combined, neither Elwood Park's program or Madison-Eastend's program had statistically significant effects.

Estimates of program effects on bordering neighborhoods were similar to the effects in the intervention neighborhoods. Police posts bordering Cherry Hill experienced beneficial spill-over effects on homicide incidents (-48%, $p<.001$). Estimates for program effects on posts bordering Elwood Park suggest detrimental spill-over for homicide incidents (+55%, $p=.005$); however, these effects were counterbalanced by Elwood Park's program's beneficial effects on NFS in its border posts (-52%, $p=.030$).

Across all the program sites and border posts, these statistically significant estimates of program impact, both negative and positive, translate into 5.4 fewer homicide incidents (2.8 in the intervention areas and 2.6 in the border areas) and 34.6 fewer nonfatal shooting incidents (17.1 in the intervention areas and 17.5 in the border areas) during 112 cumulative months of intervention post observations. There would have been more than 10 additional homicide incidents prevented had there not been significant increases in Madison-Eastend and in the area bordering Elwood Park associated with program implementation.

The Baltimore Police Department's deployment of its Violent Crime Impact Section (VCIS) was associated with reductions in homicide incidents (-24%, $p=.097$) and NFS (-15%) that were not statistically significant; however, VCIS's effect on the combined measure of homicide plus NFS incidents (-16%, $p=.027$) was statistically significant. The Project Exile call-in in Northwest Baltimore was linked with a 44% reduction in NFS ($p<.001$) and a 35% reduction in homicide plus NFS incidents ($p<.001$). However, there were no statistically significant effects associated with the call-in that occurred in West Baltimore. Lagged measures for the number of arrests for the possession or distribution of illegal drugs and for arrests for illegal possession of weapons were not predictive of the number of homicide or NFS incidents within a police post. Estimates for year fixed effects reveal a downward shift in NFS incidents beginning in 2008 – a year when many gun-offender focused law enforcement efforts were initiated or ramped up – that intensified through 2010.[‡]

[‡] The IRRs for each year with 2003 as the reference were: 1.22 for 2004, 1.02 for 2005, 1.13 for 2006, 0.91 for 2007, 0.85 for 2008, 0.80 for 2009, and 0.60 for 2010.

When we repeated our analysis with only the 10 comparison posts with the highest numbers of homicide and NFS incidents during the pre-intervention period, the estimates of program effect were very similar to the estimates produced when all 29 nonintervention comparison posts in the top quartile of homicides plus nonfatal shooting incidents were used.

Analyses of program implementation data indicate that the sites with significant reductions in homicide incidents had three times as many conflict mediations per month through the end of 2009 than did the sites where homicides increased. Furthermore, extended periods with no homicides were preceded by relatively large numbers of mediations.

Discussion of Findings for Program Effects on Gun Violence

There is strong and consistent evidence that *Safe Streets* was associated with significant decreases in homicide and NFS incidents in Cherry Hill. There is also compelling evidence that *Safe Streets* saved lives in McElderry Park, especially during the first two years of program implementation. Implementation data suggest that conflict mediations – many involving large numbers of well-armed gang members – may have been important in the prevention of homicides in both McElderry Park and Cherry Hill. These two program sites conducted far more conflict mediations per month than did the two sites which experienced increases in homicides.

Madison-Eastend experienced a large spike in homicides when *Safe Streets* was implemented in the area while simultaneously experiencing a significant (-44%) decline in NFS incidents associated with the program. These estimates of program impact may be less reliable than the other estimates because there were only 18 months of full program operation in that location. We can think of no reason why program activities could have led to more homicides in those areas. However, one possible reason for the positive association between the program and homicides is that the conditions which led the city to decide to implement the program in those areas at the time (e.g., growing gang involvement and gang-related violence) may have heightened by the time the program was put into place. Baltimore police described to news reporters an intense feud between drug-selling gangs during the intervention period; at least one of these gangs was based in the general area of Madison-Eastend and surrounding areas. The feud had allegedly involved abductions of gang leaders' family, murders, and retaliatory violence during the time when the program was first being implemented. The gang feud boiled over on July 27, 2009 when 18 people were shot in a single day, 12 at a barbeque in Madison-Eastend.²⁵ The intensity of that gang feud and the targeting of family members may have made it difficult for outreach staff to influence actions taken by the gangs. The relatively low number of mediations performed in Madison-Eastend and Elwood Park – the intervention neighborhoods where homicides did not decline following program implementation - might reflect unwillingness on the part of certain gangs to consider nonviolent alternatives to settling their grievances under the circumstances at that time.

Safe Streets East faced considerable challenges in Elwood Park and Madison-Eastend in addition to the intense gang feud. Unlike Cherry Hill and McElderry Park, these communities lacked strong neighborhood organizations to support the program. These sites also lacked a *Safe Streets* office within the neighborhood because east side outreach staff worked from an office in McElderry Park. Unlike Cherry Hill, the three sites in East Baltimore shared a site director, outreach supervisor, and violence prevention community coordinator.

Some might infer that *Safe Streets* had no net effects on gun violence in the East Baltimore neighborhoods where it was implemented because the program was not associated with a change in the measure of homicide plus NFS incidents except for a 10% reduction during the initial and final months of program implementation in McElderry Park. Such an inference would be based on the assumptions that homicides and nonfatal shootings are nearly identical in their causes and preventability and that the program should therefore have similar effects on both lethal and nonlethal gun violence. However, we found that homicides and NFS did not follow identical trajectories within Baltimore's most violent neighborhoods. Many homicides are planned acts that could potentially be interrupted if outreach workers learn of the plans before the acts are carried out.²⁶ If NFS are more likely than homicides to involve spontaneous acts of violence, then outreach workers' ability to intervene or "interrupt" nonfatal shootings may be more limited than is the case for homicides.

We suspect that the mixed effects on homicides and NFS among the three East Baltimore program sites may be due to differences among the neighborhoods in program implementation and illegal gun carrying practices. As noted above, there were no homicides in McElderry Park for nearly two years immediately following a large number of mediations conducted by outreach workers. Many of these mediations involved gangs that are well equipped and presumably willing to carryout lethal violence under some circumstances. Outreach workers in Elwood Park and Madison-Eastend, in contrast, mediated very few conflicts involving gangs and were unable to prevent increases in homicides. McElderry Park was the only intervention neighborhood which did not experience a reduction in NFS following program implementation. It also had 60% more illegal weapon arrests during the pre-intervention study period than the other neighborhoods studied. If the higher number of weapon arrests in McElderry Park reflects a greater propensity to keep and carry firearms compared to other neighborhoods, this may have limited the program's effectiveness in reducing NFS.

Differences aside, we estimated statistically significant program-related reductions in at least one of the two measures of gun violence in all four neighborhoods where *Safe Streets* was implemented. In only one of these neighborhoods was there a statistically significant increase in a measure of gun violence associated with program implementation and that increase was observed over for the shortest interval of program duration (18 months). Significant program-related reductions in gun violence were also observed in areas bordering *Safe Streets* sites.

These reductions were accomplished in some of the city's most violent neighborhoods and were evident soon after program implementation.

As with any non-experimental study, our estimates of program effect could be biased by unmeasured factors that were related to the place and time of program implementation as well as to gun violence. We sought to minimize any such potential biases by limiting our study to police posts which were in the top quartile (75th-100th) percentile for the number of homicides and nonfatal shootings, a prerequisite to being eligible to compete for funds to implement the program. Selection bias can skew estimates of program effects if the program is only implemented in neighborhoods with exceptional capacity and motivation to address gun violence (because they are the most competitive in the open bidding process for program funds). However, while the organizations selected in the open competition for funding demonstrated strong capacity for implementing a program of this type, three of the four *neighborhood locations* for the program were selected more on the basis of need than for their capacity. Living Classrooms Foundation, which ran the program in McElderry Park, Elwood Park, and Madison-Eastend, had worked in East Baltimore, but not worked in these specific neighborhoods prior to *Safe Streets*. They were asked to work in these neighborhoods by city officials primarily because those neighborhoods were considered to be in greatest need of the program.

It is possible that our estimates of program impact are biased by failure to control for unmeasured confounders. However, our analytic strategy controls for conditions other than *Safe Streets* that seem most likely to explain changes in gun violence within the intervention areas during the study period – the implementation of key law enforcement initiatives intended to curb gun violence that were focused on discrete areas, arrests for weapon and drug-related offenses, baseline differences in the levels of gun violence across police posts, trends in gun violence in non-intervention areas, and calendar month. Virtually all of the police posts in the top quartile for gun violence during 2003-2006 that were studied were areas with concentrated socioeconomic disadvantage and were likely to be similarly affected by citywide initiatives such as Baltimore's Gun Offender Registry ordinance and Maryland's Parole and Probation's Violence Prevention Initiative which enhanced monitoring of those at greatest risk of committing gun violence. Thus, while we cannot rule out the possibility that our estimates of program impact are biased by unmeasured confounders, we do not believe that unmeasured confounders pose a serious threat to the validity of the findings.

B. Attitudes and Norms Concerning Gun Violence

Methods

Research Design

The planned research design was a 2-by-2 factorial approach with cross-sectional samples at baseline and 12 to 18 months after the launching of *Safe Streets* in the first two intervention communities (McElderry Park and Union Square). We selected a non-intervention comparison neighborhood (Oliver) which was unsuccessful in its application for *Safe Streets* funding, had gun violence levels comparable to the intervention communities, and is geographically close to McElderry Park. But a short interval between site selection and program implementation, an extended period for IRB review and approval, and difficulty with recruiting data collectors from the communities where we would be surveying, delayed the first survey wave until November-December 2007. This was five to six months after the launch of the program in McElderry Park, but before program implementation had begun in Union Square. The second wave of survey data were collected from new community samples in the Spring of 2009, about 17 months after the first survey wave. Union Square was dropped from the second wave of the survey due to the program implementation problems mentioned above.

Measures and Data Collection

Men who were familiar with one or more of the study neighborhoods were hired and provided with extensive training on data collection procedures. In each community, for each survey wave, young men between the ages of 18 and 24 were recruited on the street and in public places (e.g., parks) to participate in an anonymous, self-administered survey. (The survey was limited to males because males account for over 90% of firearm violence offenders in Baltimore.) Surveys were collected primarily in the late afternoon and early evening on both weekdays and weekends. To achieve geographic balance in our sample, neighborhoods were split into halves and a similar number of surveys were collected from each half. To protect the confidentiality of the data, we attached 3-inch “blindings” to the sides of clipboards that respondents used to complete the questionnaires, and instructed respondents to put the completed surveys in an envelope and seal it before returning it to the data collectors. Respondents were also given the option of listening to the survey on a CD player with headphones. In Wave 1, a total of 174 surveys, 58 from within each of the three neighborhoods, were collected with complete data; 209 declined to participate. In Wave 2, there were 120 completed surveys, 60 in each of the two neighborhoods, and 48 declined to participate.

The survey questions were designed to elicit youths’ attitudes and perceived peer norms regarding gun violence. Brief hypothetical scenarios were presented that were based on common situations that high-risk, urban youth reported in prior research as being “sparks” for shootings.⁵

Five survey items asked whether the participant thought it was okay to either “threaten” with a gun or “shoot” the antagonist in these scenarios. They were coded on an ordinal scale: no=0, maybe=1, and yes=2. Participants were then presented with the same five scenarios again, and asked whether they thought *their friends* would think it was okay to either threaten with a gun or shoot the antagonist in these situations. Responses were summed over the five scenarios for the threatening-with-a-gun response and the five scenarios for the shooting response to create global measures of attitudes supportive of using guns to settle disputes. Cronbach’s alpha measure of internal reliability for this 10-item additive scale was .86. Missing data on items that make up the scale led us to drop 7 cases in McElderry Park and 5 cases in Oliver for the second wave of survey data.

To gauge participants’ level of risk, we asked three additional questions: 1) Have you ever been arrested? 2) Have you ever been shot or shot at? and 3) Has a brother or sister of yours ever been shot or shot at? We refined all of the questions and verified that they were relevant, understandable, and non-threatening by consulting members of the youth advisory committee of the Johns Hopkins Center for Adolescent Health. Subjects received a \$10 gift card from a local merchant for participating in the survey. The survey procedures were approved by the IRB of the Johns Hopkins Bloomberg School of Public Health.

Data Analysis

Bivariate differences between neighborhoods on categorical variables were assessed for each survey wave using Pearson’s chi-square statistic. The distribution of the measure of support for using guns to settle disputes was skewed with more than a fifth of the cases having total values (summed over all 10 questions) of 0 or 1 and the remaining distribution being approximately normal. As a result, we tested differences between neighborhoods on this scale using Mann-Whitney’s U statistic and Kruskal-Wallis’s H statistic which are non-parametric tests of differences between groups in the distribution of a variable.

Identifying an appropriate model for the measure of support for using guns to settle disputes was challenging because its distribution – with or without common transformations - was inconsistent with the distributional assumptions for linear and count regression models. A three-level ordered outcome variable based on respondents’ values on the measure of support for using guns to settle disputes was created – “little or no support” (values ≤ 2), “moderate support” (3 to 9), and “high support” (10 or more). Multinomial logistic regression was used to model the odds of being in either the moderate support or high support for gun violence group relative to being in the little or no support reference group. Explanatory variables included neighborhood exposure to *Safe Streets* (McElderry Park), age, history of prior arrest, gun violence victimization, and perceptions of friends’ support for using gun violence to settle disputes. Theory on social norms suggests that a youth’s attitudes about the appropriateness of resorting to

gun violence to settle disputes is linked with their perceptions of their peers' attitudes about gun violence.¹

Findings on Youth Attitudes Concerning Violence

Survey respondents faced relatively high risks for gun violence. McElderry Park and Oliver experienced an average of one shooting every month during the 4.5 years prior to McElderry Park's implementation of *Safe Streets*. About half of the respondents reported that they had been shot or shot at, and nearly half had a sibling who had been shot or shot at. More than sixty percent in each neighborhood had been arrested (Table 5). In survey Wave 1, there were no statistically significant differences across the three neighborhoods with respect to respondents' age, history of arrest, or prior exposure to gun violence. However, youths participating in the second survey wave in the intervention neighborhood (McElderry Park) were more likely to have been arrested and to have had a sibling victimized by gun violence than those in the comparison neighborhood (Oliver).

Table 5. Neighborhood comparisons on risk factors for gun violence by study wave.

	<i>Safe Streets</i>		No intervention		No intervention		signif.
	McElderry Park		Union Square		Oliver		
	%	n/N	%	n/N	%	n/N	
Ever been shot or shot at							
Wave 1	50.0	29/58			62.1	36/58	.369
Wave 2	47.2	25/53	51.7	30/58	40.0	22/55	.454
Sibling ever shot or shot at							
Wave 1	43.1	25/58			53.4	31/58	.537
Wave 2	56.6	30/53	48.3	28/58	30.9	17/55	.007
Ever arrested							
Wave 1	72.4	42/58			70.7	41/58	.322
Wave 2	88.7	47/53	60.3	35/58	58.2	32/55	.002
	mean	(SD)	mean	(SD)	mean	(SD)	
Respondent age (years)							
Wave 1	20.9	(1.9)			20.5	(2.1)	.321
Wave 2	21.1	(2.1)	20.3	(2.0)	20.9	(2.1)	.635

Exposure to Safe Streets Program

Youth in Oliver reported some exposure to program components in the second survey wave, but youth in McElderry Park were more likely to report receiving help from a *Safe Streets* outreach worker to settle a conflict peacefully (41.5% vs. 20.0%). Forty-three percent of youth surveyed in McElderry Park and 31% in Oliver reported observing a *Safe Streets* outreach worker help someone else settle a conflict peacefully (Table 6).

Table 6. Exposure to *Safe Streets* activities by neighborhood measured at second survey wave.

<i>Safe Streets</i> exposure	<i>Safe Streets</i> McElderry Park		No intervention Oliver		signif.
	%	n/N	%	n/N	
Saw community response to a shooting	49.1	26/53	52.7	29/55	.703
Saw “Stop Shooting” poster	67.9	36/53	50.9	28/55	.072
Had <i>Safe Streets</i> help peacefully settle a beef	41.5	22/53	20.0	11/55	.015
Saw <i>Safe Streets</i> help someone else peacefully settle a beef	43.4	23/53	30.9	17/55	.179

Neighborhood Differences in Youths’ Attitudes Supportive of Gun Violence

Table 7. Neighborhood comparisons on mean ranks on support for using guns to respond under circumstances common to shootings involving urban youth, survey wave 1 and 2.

Support for using guns to settle disputes	<i>Safe Streets</i>	No Intervention	No Intervention	signif.*
	McElderry Park	Union Square	Oliver	
Survey Wave 1				
composite score mean rank	75.2	102.0	85.3	.015
little or no support	24 (41.4%)	6 (10.3%)	14 (24.1%)	.004
moderate support	19 (32.8%)	29 (29.9%)	28 (48.3%)	
high support	15 (25.9%)	23 (39.7%)	16 (27.6%)	
Survey Wave 2				
composite score mean rank	48.2		60.6	.037
little or no support	19 (35.8%)		16 (29.1%)	.021
moderate support	22 (41.5%)		13 (23.6%)	
high support	12 (22.6%)		26 (47.3%)	

Measures for attitudes supportive of using guns to settle disputes for each neighborhood in survey waves 1 and 2 are presented in Table 7. In both survey waves, youth in the intervention neighborhood of McElderry Park were less likely than youth in the other neighborhoods to believe that it was okay to use a gun to resolve disputes that are common “sparks” for gun violence. In survey wave 1, the most significant difference between neighborhoods was between McElderry Park (mean rank = 75.2 out of 174, mean = 5.34) and Union Square (mean rank = 102.0, mean = 7.97). Youth in McElderry Park were 4 times more likely to be in the “little or no support” for gun violence group than were youth in Union Square (41.4% vs. 10.3%). In survey wave 2, support for using guns to settle disputes in McElderry Park (mean = 5.70) was similar to wave 1, and was much lower than in the comparison neighborhood of Oliver, where mean support for gun violence increased between survey waves from a mean of 6.40 to 8.42. Youth reported that they perceived greater support for using guns to settle disputes among their peers; but these perceptions did not vary by neighborhood in either survey wave (Table 8).

Table 8. Neighborhood comparisons on mean ranks on perceptions of peers’ support for using guns to respond under circumstances common to shootings involving urban youth, survey wave 1 and 2.

Peers’ support for using guns to settle disputes	<i>Safe Streets</i> McElderry Park	No Intervention Union Square	No Intervention Oliver	signif.*
Survey Wave 1				
Composite score mean rank	92.1	92.4	78.0	.209
Little or no support	10 (17.2%)	5 (8.6%)	17 (29.3%)	.054
Moderate support	21 (36.2%)	26 (44.8%)	16 (27.6%)	
High support	27 (46.6%)	27 (46.6%)	26 (43.1%)	
Survey Wave 2				
Composite score mean rank	55.0		57.9	.634
Little or no support	8 (14.5%)		9 (15.8%)	.750
Moderate support	16 (29.1%)		13 (22.8%)	
High support	31 (56.4%)		35 (61.4%)	

Model estimates from the multinomial logistic regressions with the first wave of survey data indicate that McElderry Park youth were far less likely to support using guns to settle disputes compared to the reference community of Oliver (aOR = 0.18, p<.001 for moderate support; aOR=0.14, p<.001 for strong support) after controlling for potential confounders (Table 9). Perceptions of friends’ support for gun violence and having been shot or shot at were positively associated with support for using guns to settle disputes.

Table 9. Estimates from multinomial logistic regression on 3-level ordinal measure of support for using guns to settle disputes for survey wave 1.

Explanatory variable	Category of support for gun violence	aOR ¹	95% CI for aOR	Wald	signif.
McElderry Park/ <i>Safe Streets</i>	some support	0.18	0.07 – 0.46	12.9	<.001
	strong support	0.14	0.04 – 0.41	12.3	<.001
Respondent age	some support	1.15	0.92 – 1.44	1.57	.210
	strong support	1.23	0.96 – 1.59	2.60	.107
Ever been shot or shot at	some support	1.50	0.45 – 4.19	0.59	.442
	strong support	2.96	0.88 – 9.96	3.09	.079
Sibling ever shot or shot at	some support	1.82	0.68 – 4.88	1.41	.236
	strong support	1.33	0.42 – 4.20	0.24	.625
Ever arrested	some support	0.50	0.19 – 1.33	1.94	.164
	strong support	0.49	0.15 – 1.60	1.38	.239
Perception of friends’ support for using guns to threaten	some support	1.21	1.09 – 1.34	13.5	<.001
	strong support	1.46	1.46 – 1.66	33.8	<.001

¹ aOR = adjusted odds ratio – “little or no support” is reference group

The estimates of program effect produced with the second wave of survey data for the risk of having strong support for using guns to settle disputes was nearly identical to those

produced with the first wave of survey data (aOR = 0.13, p=.008, Table 10). However, wave 2 data showed no neighborhood differences in the risk of having moderate support for gun violence. When the neighborhood intervention indicator variable was replaced with measures of exposure to program components shown in Table 2 no program exposure measure was independently associated with attitudes supportive of using guns to settle disputes (data not shown).

Table 10. Estimates from multinomial logistic regression on 3-level ordinal measure of support for using guns to settle disputes for survey wave 2.

Explanatory variable	Category of support for gun violence	aOR ¹	95% CI for aOR	Wald	signif.
McElderry Park/ <i>Safe Streets</i>	some support	0.99	0.30 – 3.31	0.00	.989
	strong support	0.13	0.03 – 0.59	6.98	.008
Respondent age	some support	0.96	0.85 – 1.08	0.59	.442
	strong support	0.98	0.92 – 1.04	0.52	.469
Ever been shot or shot at	some support	1.66	0.54 – 5.10	0.77	.380
	strong support	2.62	0.72 – 9.53	2.14	.143
Sibling ever shot or shot at	some support	0.90	0.28 – 2.86	1.41	.236
	strong support	2.59	0.65 – 10.4	1.80	.625
Ever arrested	some support	1.89	0.52 – 6.88	0.94	.333
	strong support	2.64	0.58 – 12.0	1.58	.209
Perception of friends’ support for using guns to threaten	some support	1.06	0.97 – 1.16	1.71	.191
	strong support	1.28	1.13 – 1.44	16.3	<.001

¹ aOR = adjusted odds ratio – “little or no support” is reference group

Discussion of Program Effects on Attitudes

Chicago’s *CeaseFire* program has been demonstrated to reduce gun violence in high-crime neighborhoods in Chicago.¹⁶ Data described earlier in this report indicate that the *Safe Street* program was associated with a significant reduction in homicides in Baltimore’s McElderry Park neighborhood. McElderry Park went without a homicide for nearly two years following the program’s implementation, although prior trends would have predicted 5 to 6 homicides during that period. The logic model for this intervention indicates that reductions in gun violence will be facilitated, in part, through changes in attitudes and norms about the appropriateness of using guns to settle grievances.

The findings from the community survey of youth suggest that Baltimore’s *Safe Streets* program may have contributed to a reduction in tolerance for gun violence among youth in McElderry Park. In both survey waves – one 5 to 6 months following program implementation and the other 17 months later – young men in McElderry Park were much less likely than young men in comparison communities to have high levels of support for using gun violence to settle disputes, after controlling for other factors associated with attitudes about gun violence. These lasting differences were apparent, although youth in McElderry Park in the second survey wave

had greater pre-existing risks for gun violence than in the comparison neighborhood and some youth in the comparison area had some exposure to the program.

If the program did decrease the acceptability of using guns to resort to violence among youth in McElderry Park, the youth themselves may not have fully grasped this change. Youth in each of the neighborhoods studied tended to think that their friends were much more accepting of using guns to settle grievances than they themselves were. Indeed, the youth in this study may have an exaggerated perception of their peers' acceptance of the legitimacy of "the code of the street" and this misperception may perpetuate social norms supportive of gun violence. Such misperceptions of peers' beliefs and behavior have been shown to contribute to attitudes that support risky behavior such as binge drinking among youth.²⁷ Given the strong positive relationship we observed between youths' perceptions of their friends' acceptance of using gun violence to respond to disputes and their own opinions, future efforts designed to promote nonviolent social norms should consider strategies intended to correct youths' misperceptions that most of their peers support using guns to settle conflicts.

The community survey component of the evaluation has several limitations that affect our ability to make causal inferences about the effects of the program. Studies that are able to control for pre-intervention measures on the outcomes of interest are less vulnerable to threats to internal validity than is the case for studies like ours that lack true baseline measures. Unfortunately, we were unable to collect data prior to the beginning of the program, in part, because there was little time between McElderry Park's selection as a *Safe Streets* site and the launching of the program.

Selection bias threatens the internal validity of quasi-experimental designs because intervention groups may differ from their comparisons in an important way that is reflected by the fact that the intervention group chose to implement the program whereas the non-intervention group(s) did not. In this study, however, all three neighborhoods studied had applied to implement the *Safe Streets* program. Each neighborhood was eligible to receive funding for the program due to their comparably high rates of gun violence. One of the comparison neighborhoods (Union Square) actually had been selected to implement the program, but was unable to implement the program model at the time of the study. Ironically, no neighborhood group actually located within the area where the program was implemented, McElderry Park, applied for the funding. An organization that works in other parts of East Baltimore applied and was asked by the city to implement the program in McElderry Park, largely because it experienced some of the highest rates of gun violence in East Baltimore. Thus, the intervention community in this study would, if anything, be expected to have youth with a greater tolerance for gun violence, more buy-in to the "code of the street," and less pre-existing community capacity for preventing violence compared with the nonintervention comparison neighborhoods.

This was consistent with our finding that pre-existing risk factors for gun violence, history of arrest and gun violence victimization, were higher in McElderry Park than in Oliver.

Recruitment of youth to participate in the survey did not employ randomization, which could introduce sampling biases. However, efforts were made to collect data from all parts of each neighborhood on both weekdays and weekends. Due to the relatively small size of the neighborhoods, our survey team was able to cover the entire neighborhoods. Thus, it seems unlikely that youth willing to be surveyed did not have an opportunity to do so. The two survey waves were in different seasons, wave 1 in the winter and wave 2 in the spring, which is likely to explain why wave 1 had higher refusals per completed on-street survey than did wave 2. Concerns about potential sampling biases may be lessened by the fact that the estimates of the independent association between the program and lower risk of youth having high support for gun violence were consistent across the two waves of survey data.

The findings from our community survey of youth provide reason for optimism that attitudes presumed to be ingrained among youth in many inner-city neighborhoods that are believed to be important in sustaining endemically high rates of gun violence in those neighborhoods can be impacted by using strategies commonly used in public health programs. Program outreach workers can serve as role models who demonstrate alternatives to the “code of the street” by modeling and encouraging nonviolent resolution of disputes. Further research should assess whether the *CeaseFire* model or other similar approaches can have long-standing positive effects in other communities on youths’ attitudes and social norms regarding gun violence.

C. *Safe Streets* Program Participants’ Experiences

Research Methods

In May 2011, we conducted anonymous interviews with program participants in Cherry Hill and McElderry Park to learn about their experiences with *Safe Streets*. Outreach staff provided information about the survey to each young adult (age 18+) program participant and directed those who were interested to come to the program office at designated times when research interview staff would be available to conduct interviews. Survey participants were compensated with a \$25 gift card for participating in the survey.

Findings for Program Participants' Experiences

A total of 65 *Safe Streets* program participants ages 18 years or older participated in the survey of participants' experiences attitudes regarding the *Safe Streets* program. Thirty-two were from Cherry Hill and 33 were from McElderry Park. Respondent characteristics are presented in Table 11. Respondents were between the ages of 18 and 37 years. Most were male (91%) and had completed some high school (51%) or were high school graduates (35%). Only a third (34%) of the respondents reported having a job where they were paid and of those, 64% reported full-time employment and 32% reported part-time employment.

Table 11: Program participant characteristics by Safe Streets site

		Cherry Hill n= 32 (%)	McElderry Park n= 33 (%)	Total N= 65 (%)
Age (years)	18-24	68.8 (22)	84.8 (28)	76.9 (50)
	25-30	28.1 (9)	12.1 (4)	20 (13)
	31-37	3.1 (1)	3 (1)	3.1 (2)
Sex	Male	87.5 (28)	93.4 (31)	90.8 (59)
	Female	12.5 (4)	6.1 (2)	9.2 (6)
Race	Black	96.9 (31)	94 (31)	95.4 (62)
	Other race	3.1 (1)	6 (2)	4.6 (3)
Last grade/year of school completed	Grades 1 through 8	0	3 (1)	1.5 (1)
	Grades 9, 10, or 11	50 (16)	51.5 (17)	50.8 (33)
	Grade 12 or GED	43.8 (14)	27.3 (9)	35.4 (23)
	Trade or vocational school	6.3 (2)	6.1 (2)	6.2 (4)
	College 1 to 3 years (Some college or technical school)	0	9.1 (3)	4.6 (3)
	College 4 years or more	0	3 (1)	1.5 (1)
Employed for wages	No	65.6 (21)	66.7 (22)	66.2 (43)
	Yes	34.4 (11)	33.3 (11)	33.9 (22)
Hours of employment	Full-time	72.7 (8)	54.6 (6)	63.6 (14)
	Part-time	27.3 (3)	36.4 (4)	31.8 (7)
	Hours are unpredictable	0	9 (1)	4.6 (1)
Ever been shot at	No	53.1 (17)	51.5 (17)	52.3 (34)
	Yes	46.9 (15)	48.5 (16)	47.7 (31)
Immediate family member ever been shot at	No	25 (8)	54.6 (18)	40 (26)
	Yes	71.9 (23)	42.4 (14)	56.9 (37)
	Refused	3.1 (1)	0	1.5 (1)
	Don't know	0	3 (1)	1.5 (1)

As the *Safe Streets* program envisions, the population of program participants is clearly high risk; close to half (48%) of the respondents reported that they had been shot at and almost 60% reported that a sibling had been shot at.

Involvement with the *Safe Streets* Program

The *Safe Streets* program and its outreach workers in particular appear to be important parts of the lives of program participants. Most of the *Safe Streets* participants became part of the program through a referral from a *Safe Streets* outreach worker (55%), heard about it on the street (20%), or through a referral from a friend (12%). Close to three-quarters (71%) of the respondents have worked with only one outreach worker since becoming a program participant and they interact with him or her quite often (Table 12).

Since becoming a *Safe Streets* program participant, 66% of respondents reported seeing their outreach worker three or more times per week and 30% of respondents reported seeing their outreach worker once or twice per week. When program participants meet with their outreach worker, 20% of respondents reported spending more than two hours together, 55% of respondents reported spending between one to two hours together, and 22% reported spending 15 minutes to 59 minutes together. Part of the time outreach workers spend with their program participants is in the program participants' homes. More than three-quarters (77%) of respondents reported that their outreach worker visits them in their homes. Of those, 60% reported that their outreach worker does this several times a month and 30% reported that their outreach worker does this one to two times a month.

Program participants had substantial contact with *Safe Streets* outside of their outreach workers as well. Nearly all (92%) had attended a *Safe Streets* community event such as a cookout or movie night in the past year. Three-quarters (75%) had attended a shooting response in the past year.

Table 12: Program participant relationships with OW and involvement with Safe Streets by site

		Cherry Hill n= 32 (%)	McElderry Park n= 33 (%)	Total N= 65 (%)
Became program participant through:	Friend referral	12.5 (4)	12.1 (4)	12.3 (8)
	Relative referral	0	6.1 (2)	3.1 (2)
	Someone I was locked up with referred me	0	3 (1)	1.5 (1)
	Referral from probation/parole officer	0	3 (1)	1.5 (1)
	Referral from Safe Streets outreach worker	50 (16)	60.6 (20)	55.4 (36)
	Heard about it on the street	34.4 (11)	6.1 (2)	20 (13)
	Other	3.1 (1)	6.1 (2)	4.6 (3)
	Referral from Safe Streets outreach worker & Heard about it on the street	0	3 (1)	1.5 (1)
Worked with OW other than current OW	No	65.6 (21)	75.8 (25)	70.8 (46)
	Yes	34.4 (11)	24.3 (8)	29.2 (19)
Frequency of visits with OW	3 or more times a week	75 (24)	57.6 (19)	66.2 (43)
	Once or twice a week	25 (8)	33.3 (11)	29.2 (19)
	2 or 3 times a month	0	3 (1)	1.5 (1)
	Once a month or less	0	3 (1)	1.5 (1)
	Never see him/her	0	3 (1)	1.5 (1)
Duration of visits with OW	Less than 15 minutes	0	3 (1)	1.5 (1)
	15 to 59 minutes	28.1 (9)	15.2 (5)	21.5 (14)
	1 to 2 hours	53.1 (17)	57.6 (19)	55.4 (36)
	More than 2 hours	18.8 (6)	21.2 (7)	20 (13)
	Never see him/her	0	3 (1)	1.5 (1)
OW visited participant in home	No	25 (8)	21.2 (7)	23.1 (15)
	Yes	75 (24)	78.8 (26)	76.9 (50)
Frequency of OW home visits	Several times a month	58.3(14)	59.3 (16)	58.8 (30)
	1-2 times a month	25 (6)	33.3 (9)	29.4 (15)
	Not that often	16.7 (4)	7.4 (2)	11.8 (6)
In past 12 months, attended a SS sponsored event	No	9.4 (3)	6.1 (2)	7.7 (5)
	Yes	90.6 (29)	93.9 (31)	92.3 (60)
Frequency of attendance	2 or more times a month	55.2 (16)	58.1 (18)	56.7 (34)
	Once a month	27.6 (8)	29 (9)	28.3 (17)
	Once every 2 or 3 months	17.2 (5)	12.9 (4)	15 (9)
In past 12 months, attended a shooting response	No	18.8 (6)	30.3 (10)	24.6 (16)
	Yes	81.3 (26)	69.7 (23)	75.4 (49)
Frequency of attendance	Almost every time there's a shooting in my neighborhood	42.3 (11)	40.9 (9)	41.7 (20)
	Sometimes I go to them	42.3 (11)	40.9 (9)	41.7 (20)
	Rarely	15.4 (4)	18.2 (4)	16.7 (8)

Referrals for Services

Safe Streets outreach workers make referrals for services, which include assistance with employment, education, housing, mental health, and substance abuse, among other services. Referrals for services are presented in Table 13. Assistance in finding employment is a particularly relevant issue for *Safe Streets* program participants. Since becoming part of the program, 75% of respondents reported needing help finding a job, and of those, 86% spoke with their outreach worker about it. Among respondents who reported needing help finding employment, 88% said *Safe Streets* helped them find a job opening, 76% said *Safe Streets* helped them prepare a job application or resumé, 75% said *Safe Streets* helped them prepare for a job interview, and 63% said *Safe Streets* helped them get training for a job. Another important issue for program participants is education. More than a third (37%) of respondents reported needing help getting into school or a GED program. Of those, 92% spoke with their outreach worker about it and 95% said their outreach worker was able to help them with this.

Program participants also reach out to their outreach workers for assistance in addressing mental health-related problems. Specifically, one-third (32%) of respondents reported needing help dealing with their emotions. Among those, 95% spoke with their outreach worker about it and 100% said their outreach worker was able to help them with this. About 40% of respondents reported having flashbacks, lasting anxiety, feeling constantly on edge, or nightmares after experiencing or witnessing violence. Of those, 71% spoke with their outreach worker about it and 94% said their outreach worker was able to help them with this.

While outreach workers are able to make referrals for substance abuse assistance, few program participants reported actually seeking help for drug or alcohol abuse. Fewer than 10% of respondents reported needing a drug rehab program, though among those who did, 80% spoke with their outreach work about it and 100% said their outreach worker was able to help them with this. Similarly, one program participant reported needing an alcohol rehab program, however he did not talk with his outreach worker about this.

Table 13: Program participant referrals for services by Safe Street site

		Cherry Hill n= 32 (%)	McElderry Park n= 33 (%)	Total N= 65 (%)
Needed to get a job	No	12.5 (4)	33.3 (11)	23.1 (15)
	Yes	84.4 (27)	66.7 (22)	75.4 (49)
	Don't know	3.1 (1)	0	1.5 (1)
Talked to OW about it	No	7.4 (2)	27.3(5)	14.3 (7)
	Yes	92.6 (25)	77.3 (17)	85.7 (42)
SS helped find a job opening	No	7.4 (2)	18.2 (4)	12.2 (6)
	Yes	92.6 (25)	81.8 (18)	87.8 (43)
SS helped prepare application or resumé	No	18.5 (5)	31.8 (7)	24.5 (12)
	Yes	81.5 (22)	68.2 (15)	75.5 (37)
SS helped get ready for job interview	No	24 (6)	27.3 (6)	25.5 (12)
	Yes	76 (19)	72.3 (16)	74.5 (35)
SS took participant to job interview	No	76 (19)	59.1 (13)	68.1 (32)
	Yes	24 (6)	40.9 (9)	31.9 (15)
SS helped get job training	No	40.7 (11)	31.8 (7)	36.7 (18)
	Yes	59.3 (16)	68.2 (15)	63.3 (31)
Needed to get into school or GED program	No	62.5 (20)	54.6 (18)	58.5 (38)
	Yes	31.3 (10)	42.4 (14)	36.9 (24)
	N/A	6.3 (2)	3 (1)	4.6 (3)
Talk to OW about it	No	10 (1)	7.1 (1)	8.3 (2)
	Yes	90 (9)	92.9 (13)	91.7 (22)
OW able to help	No	0	7.7 (1)	4.6 (1)
	Yes	100 (9)	92.3 (12)	95.4 (21)
Needed help dealing with emotions	No	59.4 (19)	75.8 (25)	67.7 (44)
	Yes	40.6 (13)	24.2 (8)	32.3 (21)
Talk to OW about it	No	7.7 (1)	0	4.7 (1)
	Yes	92.3 (12)	100 (8)	95.2 (20)
OW able to help	Yes	100 (12)	100 (8)	100 (20)
Flashbacks, lasting anxiety, nightmares after seeing violence	No	53.1 (17)	66.7 (22)	60 (39)
	Yes	46.9 (15)	33.3 (11)	40 (26)
Talk to OW about it	No	38.5 (5)	18.2 (2)	29.2 (7)
	Yes	61.5 (8)	81.8 (9)	70.8 (17)
OW able to help	No	12.5 (1)	0	5.9 (1)
	Yes	87.5 (7)	100 (9)	94.1 (16)
Needed a drug rehab program	No	87.5 (28)	97 (32)	92.3 (60)
	Yes	12.5 (4)	3 (1)	7.7 (5)
Talk to OW about it	No	25 (1)	0	20 (1)
	Yes	75 (3)	100 (1)	80 (4)
OW able to help	Yes	100 (3)	0	100 (3)
Needed an alcohol rehab program	No	96.9 (31)	100 (33)	98.5 (64)
	Yes	3.1 (1)	0	1.5 (1)
Talk to OW about it	No	100 (1)	0	100 (1)
Needed to resolve a family conflict	No	56.3 (18)	78.8 (26)	67.7 (44)
	Yes	43.8 (14)	21.2 (7)	32.3 (21)
Talk to OW about it	No	0	0	0
	Yes	100 (14)	100 (7)	100 (21)
OW able to help	No	0	0	0
	Yes	100 (14)	100 (7)	100 (21)

Family conflict is another issue that program participants must deal with. One-third of respondents (32%) reported needing help resolving a family conflict. Among those, 100% spoke with their outreach worker about it and 100% said their outreach worker was able to help them with this.

Conflict Mediations

A major component of the *Safe Streets* program is conflict mediation. Outreach workers, or other program staff, work to identify and resolve possible sources of conflict among people in the neighborhood, seeking to prevent those conflicts from escalating into shootings or other violence (Table 14). Almost two-thirds (62%) of respondents reported that they told their outreach worker about beefs or disputes that may lead to violence. A majority (52%) of respondents reported that an outreach had stepped in to try to settle a beef or dispute for them. Of those, 32% reported having outreach workers mediate one conflict and an additional 68% reported having outreach workers mediate two or more conflicts. When asked to describe one mediation, 25% of respondents reported that a gun was involved, 94% of respondents reported that violence was avoided at that time, and 100% of respondents reported that they had not had any violent encounters with that person or group since the dispute was mediated.

Table 14: Description of conflicts and mediations by Safe Streets site

		Cherry Hill n= 32 (%)	McElderry Park n= 33 (%)	Total N= 65 (%)
Tell OW about disputes that may lead to violence	No	40.6 (13)	36.4 (12)	38.5 (25)
	Yes	59.4 (19)	63.6 (21)	61.5 (40)
OW ever stepped in to settle dispute between participant and someone else	No	34.3 (11)	39.4 (13)	36.9 (24)
	Yes	50 (16)	54.6 (18)	52.3 (34)
	N/A	15.6 (5)	3 (1)	9.2 (6)
Number of mediations	1	31.3 (5)	33.3 (6)	32.4 (11)
	2	31.3 (5)	33.3 (6)	32.3 (11)
	3	18.8 (3)	5.6 (1)	11.8 (4)
	4	6.3 (1)	5.6 (1)	5.9 (2)
	5	0	11.1 (2)	5.9 (2)
	6-10	0	11.2 (2)	5.9 (2)
Guns involved in dispute 1	No	75 (12)	77.8 (14)	76.5 (26)
	Yes	25 (4)	22.2 (4)	23.5 (8)
Dispute 1 settled so that violence was avoided	No	0	11.1 (2)	5.9 (2)
	Yes	100 (16)	88.9 (16)	94.1 (32)
Had any violent encounters with that person/group since dispute 1 settled	No	100 (17)	100 (16)	100 (33)
	Yes	0	0	0
Guns involved in dispute 2	No	81.8 (9)	61.5 (8)	70.8 (17)
	Yes	18.2 (2)	38.5 (5)	29.2 (7)
Dispute 2 settled so that violence was avoided	No	18.2 (2)	16.7 (2)	17.4 (4)
	Yes	81.8 (9)	83.3 (10)	82.6 (19)
Had any violent encounters with that person/group since dispute 2 settled	No	100 (9)	100 (10)	100 (19)
	Yes	0	0	0

Overall, 32 respondents reported a total of 70 disputes where an outreach worker stepped in to mediate the conflict, including 28 in Cherry Hill and 42 in McElderry Park. When asked to describe up to three mediations in detail, 28% of the 32 respondents reported that a gun was involved, 91% reported that violence was avoided at the time of the conflict, and none reported subsequent violence stemming from the conflict that was mediated.

Effects on Program Participants' Lives

Overall, 80% of respondents reported that their lives were “better” since becoming a participant of the *Safe Streets* program (Table 15). Focusing on program participants’ relationships, 60% reported that their support system – having friends or family that can be counted on – is “better,” 62% reported that their relationships with family members are “better,” and 55% reported that their relationships with other young people in their neighborhoods are “better.” A majority of program participants also reported that their employment and educational situations had improved since becoming a participant of the *Safe Streets* program. Two-thirds of respondents reported that their job situation was “better” (62%) and 63% reported that their educational situation was “better.”

Table 15: Safe Streets program impact by Safe Streets site

		Cherry Hill n= 32 (%)	McElderry Park n= 33 (%)	Total N= 65 (%)
Overall, life since becoming a participant of SS is:	Worse	0	3 (1)	1.5 (1)
	About the same	12.5 (4)	21.2 (7)	16.9 (11)
	Better	87.5 (28)	72.7 (24)	80 (52)
	Don't know	0	3 (1)	1.5 (1)
Support system, having family/friends to count on is:	Worse	0	0	0
	About the same	50 (16)	30.3 (10)	40 (26)
	Better	50 (16)	69.7 (23)	60 (39)
Relationships with family members are:	Worse	3.1 (1)	0	1.5 (1)
	About the same	43.8 (14)	30.3 (10)	36.9 (24)
	Better	53.1 (17)	69.7 (23)	61.5 (40)
Relationships with people in neighborhood are:	Worse	0	6.1 (2)	3.1 (2)
	About the same	40.6 (13)	39.4 (13)	40 (26)
	Better	59.4 (19)	51.5 (17)	55.4 (36)
	N/A	0	3 (1)	1.5 (1)
Job situation is:	Worse	0	3 (1)	1.5 (1)
	About the same	31.3 (10)	33.3 (11)	32.3 (21)
	Better	65.6 (21)	57.6 (19)	61.5 (40)
	N/A	0	6.1 (2)	3.1 (2)
	Don't know	3.1 (1)	0	1.5 (1)
Educational situation is:	Worse	3.1 (1)	0	1.5 (1)
	About the same	40.6 (13)	30.3 (10)	35.4 (23)
	Better	56.3 (18)	69.7 (23)	63.1 (41)

IV. Summary Conclusions from the Evaluation of *Safe Streets*

This evaluation of Baltimore's *Safe Streets* program is the first rigorous evaluation of a replication of Chicago's *CeaseFire*. *Safe Streets* was fully implemented in four of Baltimore's most violent neighborhoods, engaging hundreds of high-risk youth and mediating over 200 disputes with the potential to lead to a shooting. The program was associated with less acceptance for using guns to settle grievances in the one intervention neighborhood where attitudes were studied in two waves of community surveys. Program participants are benefiting from their connections to outreach workers in numerous ways that are likely to be protective against involvement in violence. If the program participants or clients of the outreach workers were some of the highest risk youth in the *Safe Streets* intervention communities and those youths' behaviors and attitudes affect their peers (consistent with the evidence of peers' influence on youth violence), then the program can yield significant community-wide benefits for youth.

There was consistent evidence that the program led to large reductions in both homicides (-56%) and nonfatal shooting incidents (-34%) in Cherry Hill. Two other program areas experienced relatively large program-related reductions in one of the two measures of gun violence – McElderry Park (-26% for homicides for the entire intervention period) and Elwood Park (-34% for nonfatal shootings). The only program area experiencing a significant increase in a measure of gun violence was Madison-Eastend; but the large increase in homicides during the 18-month intervention there was countered by a statistically significant decrease in nonfatal shooting incidents. In addition, rather than displace the violence to near-by areas, the program appeared to have substantial protective effects for neighborhoods bordering the intervention neighborhoods.

Our estimates of *Safe Streets*' impact on gun violence are similar to Skogan and colleagues' estimates of *CeaseFire*'s effects on gun violence in Chicago. While gun violence declined in six of the seven Chicago neighborhoods implementing *CeaseFire*, the researchers only inferred causal links between the program and reductions in gun violence in four of the seven neighborhoods because the reductions in shootings in the three other *CeaseFire* neighborhoods were not significantly greater than those experienced in the matched comparison neighborhoods.

Despite inconsistent effects in some *Safe Streets* sites, the estimates from our regression analyses indicate that the program was associated with 5.4 fewer homicide incidents and 34.6 fewer nonfatal shooting incidents during 112 cumulative months of intervention observations across four sites. The estimate for the number of homicides prevented may understate the number of lives saved by the program because the estimate for the effects of Madison-Eastend's program translates into 5.7 additional homicide incidents in addition to 3.9 additional homicides linked to program implementation on the border areas surrounding Elwood Park's program. These estimated harmful program effects in these areas – particularly of this magnitude – strike us as improbable, and are more likely due to unfortunate coincidental timing of program implementation and the eruption of gang violence in that area of East Baltimore. Thus, the true number of homicides prevented by the program could be more than twice as high as our 5.4 estimate. Using survey data, economists have estimated that U.S. residents are willing to pay a cumulative \$1.2 million for every shooting that is prevented.²⁹ Given the high costs of treating serious gunshot wounds and the staggering costs of arresting, prosecuting, and incarcerating gun offenders, it seems likely that *Safe Streets* would produce substantially greater benefits than what it costs to implement the program.

Because gun violence extracts such enormous loss of life and social costs, efforts to prevent it should be high priorities, even when public and private resources are scarce. We believe the *CeaseFire* program model represents a very promising strategy for reducing gun violence and changing social norms surrounding violence. Future efforts should attempt to better understand and improve program implementation and discovering the conditions under which the *CeaseFire* program can be most effective.

Acknowledgements

Funding for this research was provided by a grant from the Centers for Disease Control and Prevention and contracts from the Baltimore City Health Department. The authors would like to thank the Baltimore Police Department for supplying crime incident and arrest data, the Baltimore City Health Department for supplying data on program implementation, and the organizations implementing the program (Living Classrooms Foundation and Family Health Centers of Baltimore) for assisting us recruiting program participants for our survey.

References

- ¹ National Center for injury Prevention and Control. Web-based Injury Statistics Query And Reporting System (WISQARS) Fatal injury Reports: Leading Causes of Death Reports. Centers for Disease Control and Prevention, Atlanta, April, 2009.
- ² Centers for Disease Control and Prevention. Web-based Injury Statistics Query And Reporting System (WISQARS) Injury Mortality Reports. Atlanta, Accessed July 20, 2011.
- ³ Centers for Disease Control and Prevention, National Center for Injury Prevention and Control. Web-based Injury Statistics Query and Reporting System (WISQARS) - Non-Fatal Injuries. <http://webappa.cdc.gov/sasweb/ncipc/nfirates2001.html>. Accessed July 20, 2011.
- ⁴ Anderson E. *The Code of the Street: Decency, Violence, and the Moral Life of the Inner City*. New York: WW Norton & Co., 1999.
- ⁵ Wilkinson DL. *Guns, Violence, and Identity Among African American and Latino Youth*. New York: LFB Scholarly Publishing, 2003.
- ⁶ Rich JA, Stone DA. The experience of violent injury for young African American men: the meaning of being a sucker. *Journal of General Internal Medicine* 1996;11(6): 77-82.
- ⁷ Braga AA, Kennedy DM, Waring EJ, Piehl AM. Problem-oriented policing, deterrence, and youth violence: an evaluation of Boston's Operation Ceasefire. *Journal of Research in Crime and Delinquency* 2001;38:195-225.
- ⁸ McGarrell E, Chermak S, Wilson J, Corsaro N. Reducing homicide through a "lever-pulling" strategy. *Justice Quarterly* 2006;23:214-231.
- ⁹ Corsaro N, McGarrell EF. Testing a promising homicide reduction strategy: reassessing the impact of the Indianapolis "pulling levers" intervention. *Journal of Experimental Criminology* 2009;5:63-82.
- ¹⁰ Corsaro N, McGarrell EF. Reducing homicide risk in Indianapolis between 1997 and 2000. *Journal of Urban Health* 2010;87:851-864.
- ¹¹ Papachristos A, Meares T, Fagan J. Attention felons: evaluating Project Safe Neighborhoods in Chicago. *Journal of Empirical Legal Studies* 2007;4:223-272.
- ¹² Braga AA, McDevitt J, Pierce GL. Understanding and preventing gang violence: problem analysis and response development in Lowell, Massachusetts. *Police Quarterly* 2006;9:20-46.
- ¹³ Hemenway D. *Private Guns, Public Health*. University of Michigan Press, 2004.
- ¹⁴ Prothrow-Stith D, Spivak H. *Murder Is No Accident: Understanding and Preventing Youth Violence in America*. Josey-Bass, 2003.
- ¹⁵ www.ceasefirechicago.org

- ¹⁶ Skogan WG, Hartnett SM, Bump N, Dubois J. *Evaluation of CeaseFire – Chicago*. Northwestern University, Evanston, IL, May 2008.
- ¹⁷ Ransford C, Kane C, Slutkin G. *CeaseFire Chicago: an analysis of the effects of a funding interruption on the CeaseFire intervention*. Presented at the annual meeting of the American Public Health Association, Philadelphia, November 2009.
- ¹⁸ Fagan, Jeffrey, Wilkinson, Deanna L. and Davies, Garth. “Social Contagion of Violence.” In: *The Cambridge Handbook of Violent Behavior*. Waldman, eds., Cambridge University Press, 2007.
- ¹⁹ Cameron AC, Trivedi PK. *Regression Analysis of Count Data*. Cambridge University Press, 1998.
- ²⁰ Zeger SL, Liang K-Y. Longitudinal data analysis for discrete and continuous outcomes. *Biometrics*, 1986;42:121-130.
- ²¹ Koper CS, E Mayo-Wilson. Police crackdowns on illegal gun carrying: a systematic review of their impact on gun crime. *Journal of Experimental Criminology* 2006;2:227-261.
- ²² Werb D, Rowell G, Guyatt G, Kerr T, Montaner J, Wood E. *Effect of Drug Law Enforcement on Drug-Related Violence: Evidence from a Scientific Review*. International Centre for Science in Drug Policy, Vancouver, BC, Canada, 2010.
- ²³ Mazerolle L, Soole DW, Rombouts S. Street-level drug law enforcement: a meta-analytical review. *Journal of Experimental Criminology* 2006;2:409-435.
- ²⁴ Anselin L. Local indicators of spatial association – LISA. *Geographical Analysis* 1995;27(2):93-115.
- ²⁵ Fenton J, Calvert S. 18 shootings stem largely from drug feud, police say: Two fatally shot, 16 wounded in shootings on day of mayhem on Baltimore's east side. *The Baltimore Sun* July 28, 2009.
- ²⁶ Felson RB, Messner SF. To kill or not to kill? Lethal outcomes in injurious attacks. *Criminology* 1996;34:519-545.
- ²⁷ Perkins HW. *The Social Norms Approach to Preventing School and College Age Substance Abuse*. San Francisco, CA: Jossey-Bass, 2003.
- ²⁸ Cook PJ, Ludwig J, Venketesh S, Braga AA. Underground gun markets. *The Economic Journal* 2007;117:F588-F618.
- ²⁹ Ludwig J, Cook PJ. The benefits of reducing gun violence: evidence from contingent-valuation survey data. *The Journal of Risk and Uncertainty* 2001;22:207-226.
