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The Effects of Cure Violence in The South Bronx and East New York, Brooklyn

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DENORMALIZING VIOLENCE

A Series of Reports from the
John Jay College Evaluation
of Cure Violence Programs
in New York City

The Effects of Cure Violence in the South
Bronx and East New York, Brooklyn

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Introduction

New York City launched its first Cure Violence program—which uses community outreach to interrupt violence—in 2010 with funding from the U.S. Department of Justice. Today, there are 18 programs around the city. This report examines two of them: Man Up! Inc. in East New York, Brooklyn; and Save Our Streets South Bronx. Each of the two neighborhoods was compared with another neighborhood that had similar demographics and crime trends but no Cure Violence program. As detailed in this report, the comparisons provide promising evidence that the public health approach to violence reduction championed by Cure Violence may be capable of creating safe and healthy communities.

The Research and Evaluation Center at John Jay College of Criminal Justice ([JohnJayREC](#)) began an evaluation of Cure Violence in 2012 with support from the New York City Council. Researchers visited program sites and interviewed staff about the Cure Violence model. They also assembled data about violent incidents in the city from the New York City Police Department (NYPD) and the New York State Department of Health (DOH). Between 2014 and 2016, the study team also conducted annual surveys of young men living in a dozen neighborhoods, some with and some

without Cure Violence programs. During the study period, New York City's various Cure Violence programs received financial and administrative support from the Mayor's Office of Criminal Justice, the city's Department of Health and Mental Hygiene, the New York City Council, New York State's Division of Criminal Justice Services, and the Robert Wood Johnson Foundation of Princeton, New Jersey.

New York City neighborhoods operating Cure Violence programs show steeper declines in acts of gun violence and the expression of pro-violence social norms compared with similar neighborhoods not operating Cure Violence programs. Researchers analyzed crime rates, violent injuries, and social attitudes about violence in four matching areas of New York City. The presence of Cure Violence in a community was associated with significant improvements in public safety.

Gun Violence Trends Before and After the Opening of Two Cure Violence Programs

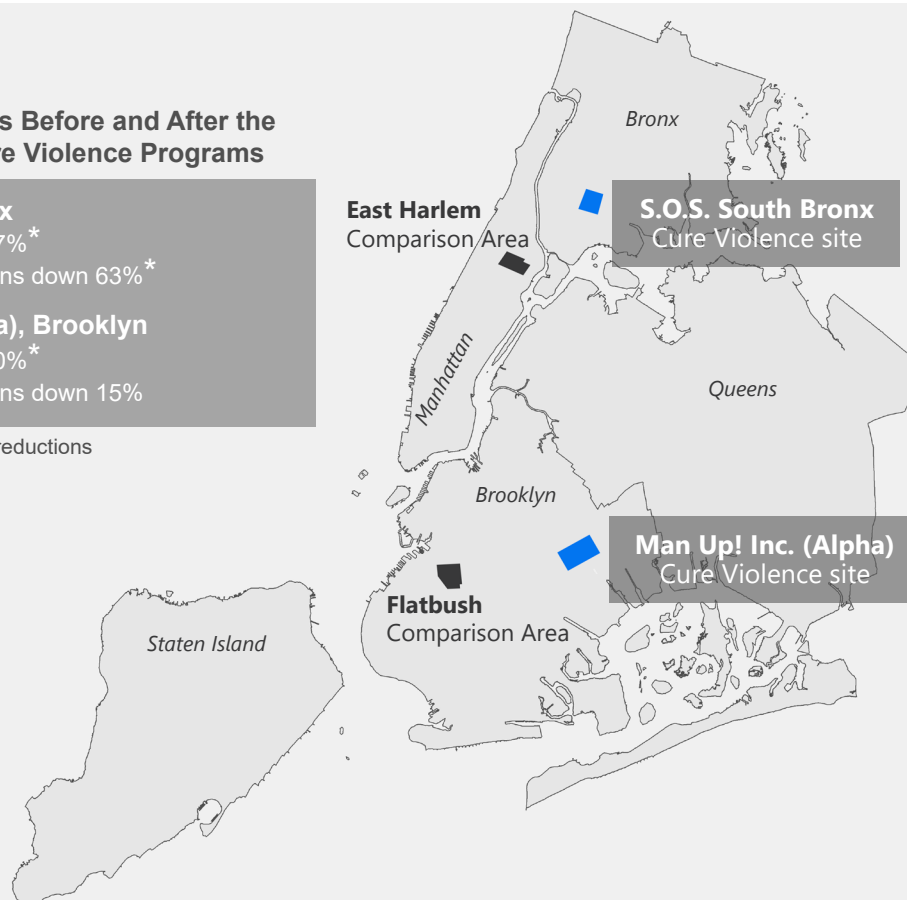
S.O.S. South Bronx

Gun injuries down 37%*
Shooting victimizations down 63%*

Man Up Inc! (Alpha), Brooklyn

Gun injuries down 50%*
Shooting victimizations down 15%

* Statistically significant reductions



Cure Violence in New York City

Cure Violence is a neighborhood-based, public-health oriented approach to violence reduction. The program relies on the efforts of community-based “outreach workers” and “violence interrupters” in neighborhoods that are the most vulnerable to gun violence. These workers use their personal relationships, social networks, and knowledge of their communities to dissuade specific individuals and neighborhood residents in general from engaging in violence. When Cure Violence strategies are implemented with high levels of fidelity, the program may theoretically begin to “denormalize” violence in entire communities (Butts et al. 2015).

As of 2016, New York City’s Cure Violence programs employed approximately 130 workers, including two dozen program managers and directors, at least 15 supervisors, and more than 80 front-line workers. Before joining Cure Violence, staff members typically undergo a 40-hour training workshop by the National Cure Violence training team, which is based in Chicago.

Additional training sessions are provided in New York City by locally based trainers. During their training, Cure Violence workers learn about active listening, conflict mediation, suicide prevention, and motivational interviewing tactics as well as procedures for record keeping and database management. Staff members at some Cure Violence programs, including those operated by the Center for Court Innovation in New York City, receive additional training in human resources policy, organizational management, and staff supervision techniques.

East New York, Brooklyn

Man Up! Inc. is the host organization for two Cure Violence programs in East New York, Brooklyn, NY. In 2010, the agency began to implement the Ceasefire model, which was renamed Cure Violence by its Chicago founders. Later, Man Up! Inc. received additional funding through grants from New York State, New York City’s Young Men’s Initiative, and the New York City Council. This funding allowed the organization to provide additional services, such as legal advocacy and job readiness programming.

Man Up! Inc. operates two Cure Violence programs in Brooklyn. This study examines the agency’s “Alpha” site, or Man Up! Inc. (A), located in the 75th Precinct of the New York City Police Department. The program’s catchment is bordered by Cozine Avenue, Pennsylvania Avenue, Linden Boulevard, and Ashford Street. Participants in the program

Table

1 Characteristics of Participants in Two Cure Violence Programs

Map Up! Alpha: East New York, Brooklyn

Age	2013	2014	2015	2016
12 - 17	16%	7%	5%	5%
18 - 20	33%	15%	21%	20%
21 - 24	40%	43%	38%	40%
25+	10%	34%	35%	34%
Gender				
Male	96%	98%	97%	90%
Female	3%	2%	3%	7%
Race/Ethnicity				
Black	93%	87%	89%	94%
Latino	6%	13%	10%	3%

Save Our Streets (S.O.S.): South Bronx

Age	2013	2014	2015	2016
12 - 17	2%	2%	4%	4%
18 - 20	39%	35%	20%	23%
21 - 24	50%	47%	68%	65%
25+	9%	16%	8%	8%
Gender				
Male	85%	93%	95%	88%
Female	15%	7%	5%	11%
Race/Ethnicity				
Black	75%	83%	62%	57%
Latino	22%	17%	38%	42%

Data Source:

Administrative databases of New York City programs.

Note:

Percentages may not add to 100% because missing category is omitted from table.

are mostly 21 years of age or older and they are overwhelmingly male (Table 1).

Staff members at Man Up! Inc. (A) (hereafter referred to simply as Man Up! Inc.) are mostly males between the ages of 29 and 50, with an average age of 43. Most workers grew up and currently live in their program’s catchment area. The majority of staff members report having been engaged in community work or activism prior to joining the team. Approximately half the staff members describe themselves as once belonging to a street group (gang, clique, or crew), as a formerly incarcerated person, or both.

Table

2 Respondent Awareness of Cure Violence Program

	Man Up! (A) East New York			S.O.S South Bronx		
	2014	2015	2016	2014	2015	2016
Cure Violence Public Education Messaging						
Recognized at least one public message	93%	96%	92%	90%	92%	90%
Recognized all public messages	29%	27%	10% *	39%	33%	48%
Average number of times seeing public messages in the past year	6.6	7.3	7.3 *	7.0	7.1	6.9
Cure Violence Staff Outreach Efforts						
Recognized at least one staff member	79%	69%	84%	53%	58%	64% *
Recognized all staff members	44%	34%	52%	14%	9%	15%
Average number of times communicating with staff in the past year	5.9	4.2	4.4 *	5.4	4.3	4.5

* Significant difference from year 1 to year 3 (Chi-square: $p < .05$).

Data Source:

John Jay College Research and Evaluation Center.

Staff members spend a significant portion of their work hours walking around the neighborhood and interacting with residents to keep up with street lore and any emerging rumors about the possibility of violence. The monthly amount of time devoted to this neighborhood canvassing has consistently averaged about 48 hours per worker since 2013, according to activity data from the city's centralized Cure Violence database. Workers distribute anti-violence public messaging materials, such as stickers and pins, while walking the catchment area.

Man Up! Inc. staff members are well known among the young men living in the catchment area. According to John Jay College's annual surveys of the New York Cure Violence programs (known to respondents as the *NYC-Cure* study), approximately 80 percent of East New York males ages 18-30 recognize at least one staff member from Man Up! and two-thirds (66%) recognize all of the staff members. Personal communication with violence interrupters and outreach workers from Man Up! Inc. is also common, with about 4.5 contacts per month among those survey respondents who recognize at least one staff member (Table 2).

South Bronx

Save Our Streets (S.O.S.) South Bronx is one of four Cure Violence projects operated in New York City by the nonprofit Center for Court Innovation. The program's

catchment area is in NYPD's 40th precinct and is bordered by 147th Street and St. Ann's Avenue to the south and 156th Street and Union Street to the north. There are three public housing developments—known as the Adam, Moore, and Saint Mary's Park communities—within the program's catchment area.

S.O.S. South Bronx staff members are young men between the ages of 27 and 49, with an average age of 41. All staff members report that they grew up in the neighborhood, and more than half currently live there. A majority of staff members were formerly incarcerated and about half report having been members of street groups in the past. All workers at S.O.S. South Bronx report having participated in some community work or activism prior to joining the Cure Violence team.

Like all Cure Violence workers, S.O.S. South Bronx staff members spend much of their time—about 82 hours per month—canvassing the catchment area. Program participants are mostly young males between the ages of 21 and 24. After only one year of full implementation, more than half the young male residents who participated in the surveys recognized at least one S.O.S. South Bronx staff member and most (90%) had seen at least one public education message around the neighborhood, either a poster, button, or sign.

Table

3 Characteristics of Cure Violence Sites and Comparison Sites

	Cure Violence Site	Comparison Site	Cure Violence Site	Comparison Site
	Man Up! (A) East New York	Flatbush	S.O.S South Bronx	East Harlem
Total Population ¹	9,433	15,906	13,733	10,866
Pct. Identifying as Black Only	76%	88%	28%	31%
Pct. Identifying as Latino Only	21%	6%	68%	59%
Median Income ¹	\$37,282	\$41,294	\$22,455	\$21,872
Not Employed/Not Seeking Job ¹	56%	46%	59%	70%
Women-Led Households ¹	79%	69%	76%	73%
Less Than High School ¹	35%	19%	44%	46%
Age and Sex				
Male, Ages 15 - 24 ¹	11%	7%	8%	10%
Female, Ages 15 - 24 ¹	7%	5%	8%	7%
Gun Violence Rate per 10,000				
Shooting Victimitizations ²	0.49	0.52	0.49	0.58
Gun Injuries ³	0.65	0.35	0.48	0.43

Data Sources:

1) U.S. Census, American Community Survey 2013; 2) City of New York Police Department; 3) New York State Department of Health (SPARCS).

Note:

Man Up! is a Cure Violence affiliate with two locations in New York City. This study examines only the first of those locations: Man Up! Alpha (or A). Baseline gun violence rates in the two intervention areas are calculated using three years of data before the programs launched. Gun violence rates in two comparison areas are examined over the same time.

Methods

This study used a quasi-experimental design to estimate the effects of Cure Violence on neighborhood violence. Using police, hospital, and survey data, researchers created two measures of gun violence (monthly counts of shooting victimizations and gun injuries requiring medical attention) and two measures of social norms related to violence among young male residents ages 18 to 30 (willingness to use violence in petty conflicts and serious conflicts).

All data were available for the two neighborhoods with Cure Violence programs (East New York and South Bronx) and two comparison neighborhoods (Flatbush, Brooklyn and East Harlem, Manhattan), which had similar demographics and crime trends but no Cure Violence programs (Table 3).

The two Cure Violence sites were selected for this study because they were in constant and consistent operation throughout the study period. The comparison areas were selected based on their similarities to the Cure Violence areas in socioeconomics, gun violence rates, and levels of pro-violence social norms detected during the first year of surveys in 2014.

Outcome Measures

Gun injuries are measured using data from the New York Statewide Planning and Research Cooperative System (SPARCS), a longitudinal and comprehensive data reporting system managed by the New York Department of Health. Hospitals throughout the state report comprehensive data about every patient visit, including demographic characteristics, diagnoses, and treatments.

SPARCS data account for every outpatient, inpatient, and emergency department admission in the state. The research team extracted patient records for all New York City residents who visited any hospital in the city between 2005 and 2016 for reasons that included a non-self-inflicted gunshot wound. Each record was geocoded using the patient's home address through Geosupport Desktop Edition, a customized geocoding package that processes geographic information for New York City only.

Shooting victimization data from the NYPD's Office of Management, Analysis, and Planning (OMAP) measure all incidents in which a person was hit by gunfire in New York City between 2006 and 2016. Each observation is geocoded at the mid-block level and contains time of occurrence (year, month, day, and time of day), as well as the perpetrator's characteristics if available. The study analyzed incident records from 2009 and later because that is when complete geocodes became consistently available from NYPD.

Shooting victimization data from NYPD and gun injury data from the state department of health were spatially joined (aggregated) to each study site to create a file of monthly counts of events. NYPD data used mid-block geocoordinates to tag the approximate location of an incident, while SPARCS data specified the patient's reported address at the time of each hospital admission.

Using JohnJayREC's own survey data, the research team created two composite indices of pro-violence social norms. The indices were based on survey respondents' self-reported willingness to use violence in 17 hypothetical scenarios involving varying levels of provocation and conflict. Exploratory Factor Analysis identified two sets of items that grouped together into two indices: 1) petty disputes over intimate partners and other trivial situations ($\alpha = 0.6985$); and 2) serious disputes over threats to family members, money, debt, and acts of disrespect ($\alpha = 0.8968$).

Analysis

After identifying the best available comparison area in New York City for each of the two Cure Violence neighborhoods, the study examined multi-year trends in gun violence and expressed norms about violence to test whether conditions improved after the introduction of Cure Violence in a community. The research team conducted separate interrupted time-series analyses for each measure of gun violence and treatment effects regression models for the two measures of pro-violence social norms in all four study areas: two treatments and two comparisons.

Using Autoregressive Integrated Moving Average (ARIMA) interrupted time-series analysis for all four intervention and comparison areas, the research team analyzed monthly trends in gun violence from 2005 to 2016 for gun injuries, and 2009 to 2016 for shooting victimizations. This type of time-series analysis accounts for prior trends and seasonality (higher number of events during summer months). Accounting for prior trends in violence is critical to any study of a place-based intervention given that violent events do not happen in isolation and are often the result of retaliatory violence (Boyle et al. 2010).

Researchers relied on a four-part strategy to construct the best ARIMA models for each study area. First, and arguably the most important step, was to assess that data values did not significantly change over time (mean, variance, and autocorrelation), known as stationarity (Chatfield 2004). Results from the stationarity test (unit root test) on the pre-intervention periods revealed that outcomes used in the study (monthly shooting victimization and gun injury rates) were constant over time in the four study areas prior to the implementation of the programs.

Second, researchers estimated ARIMA processes to identify the best fitting model for each of the four sites by selecting the autoregressive, integrated, and moving average terms. Third, goodness-of-fit measures (i.e., Akaike information criterion and Bayesian information criterion scores) were inspected to select the final model. Finally, residual values (differences between observed and expected values) were examined for normality and independency using diagnostics measures (Ljung and Box 1978).

To estimate changes in pro-violence social norms among samples of respondents in neighborhoods with and without Cure Violence programs (Table 4), researchers used treatment effect regression models with an interaction term (survey wave X treatment) ranging from zero to three. Each model controlled for time (–), treatment (+), respondent's age (–), current employment (–), being personally "shot at" or stabbed (+), police encounters (i.e., "stop & frisk" searches) (+), perceptions of safety (–), trust in police and other public safety organizations (–), trust in community institutions (–), seeing or hearing guns in the neighborhood (+), reporting typical bedtime after 2 a.m. (+), witnessing threats on social media platforms (+), and site-specific effects using a series of dummy variables.

Social Norms

The presence of Cure Violence in a neighborhood was associated with greater reductions in social norms that support violence when compared with similar neighborhoods without Cure Violence programs (Table 5). Young men living in neighborhoods with Cure Violence programs expressed fewer violence-endorsing norms over time in hypothetical scenarios involving both petty and serious disputes.

Respondents' propensity to use violence in hypothetical scenarios declined over time and across all areas for serious disputes, but the decrease was steeper in neighborhoods with Cure Violence programs (33% vs. 12%). Propensity to use violence in petty disputes declined significantly only in Cure Violence areas (down 20%).

These findings were consistent with prior research. Milam and colleagues, for example, examined changes in attitudes toward violence in two Baltimore neighborhoods and found similar results. There were significant improvements (43%) in attitudes among residents of a community after the introduction of Cure Violence compared with a control community (13%) (Milam et al. 2016).

In New York City, the explanatory power of Cure Violence on attitudes was stronger for serious disputes, but the presence of Cure Violence programs appeared to have an even stronger association with petty disputes. Regression results suggested that the willingness of respondents to use violence in resolving petty disputes would not likely have declined as much over time (as it did for serious disputes); the relative size of the change appeared to be due to the presence of Cure Violence (Table 6). This indicates that Cure Violence programs may be capable of reducing the incidence of petty disputes before they escalate to more serious disputes, which would lead to a lower overall incidence of gun violence in communities.

Table

4 Survey Respondents (N = 2,266)

	Cure Violence			Comparison		
	2014	2015	2016	2014	2015	2016
Age						
18 - 20	45%	30%	30%	25%	30%	28%
21 - 24	33%	39%	37%	36%	34%	38%
25 - 30	22%	31%	33%	39%	36%	34%
Less Than High School	23%	25%	13%	23%	21%	25%
Not Currently in School	63%	69%	71%	70%	66%	67%
Unemployed	59%	50%	45%	51%	41%	32%
Prior Victimizations						
Shot at	43%	37%	36%	39%	36%	32%
Stabbed	18%	20%	17%	23%	16%	13%
Contact with Police						
"Stop & frisk'd" at least once in previous year	79%	77%	69%	73%	60%	55%
Answered at Least One Prior NYC-Cure Survey	--	24%	39%	--	17%	34%

Data Source:

John Jay College Research and Evaluation Center.

Table

5 Respondent Support for Violence in a Range of Hypothetical Scenarios

	Mean Score on Index of Violence Support			Percent Change
	2014	2015	2016	
Serious Disputes				
Cure Violence Sites	5.29	3.72	3.56	- 33%*
Comparison Sites	3.97	3.70	3.47	- 12%*
Petty Disputes				
Cure Violence Sites	2.14	1.67	1.71	- 20%*
Comparison Sites	1.78	1.73	1.70	- 5%

* Significant difference from year 1 to year 3 (t -test: $p < .05$).

Data Source:

John Jay College Research and Evaluation Center.

Table

6 Treatment Effects on Social Norms in Support of Violence as Measured with Hypothetical Scenarios

Response to Serious Disputes								
Year	Cure Violence			Comparison Sites			Analysis of Difference	
	Mean	SE	n	Mean	SE	n	Actual Difference	Expected Trend
2014	5.04	0.04	372	3.98	0.03	369	1.06 **	5.04
2015	4.15 *	0.04	353	3.67 *	0.03	360	0.47 **	4.73
2016	3.34 *	0.04	364	3.49 *	0.03	356	- 0.15 **	4.55
Treatment Effect							- 1.21	R ² = 0.33

Response to Petty Disputes								
Year	Cure Violence			Comparison Sites			Analysis of Difference	
	Mean	SE	n	Mean	SE	n	Actual Difference	Expected Trend
2014	2.08	0.02	372	1.78	0.01	369	0.30 **	2.08
2015	1.82 *	0.01	353	1.72 *	0.01	360	0.10 **	2.02
2016	1.63 *	0.01	364	1.71 *	0.01	357	- 0.09 **	2.02
Treatment Effect							- 0.39	R ² = 0.11

* Significant difference from previous year ($p < .05$).

** Significant differences between Cure Violence and Comparison sites ($p < .05$).

Data Source:
John Jay College Research and Evaluation Center.

Note:

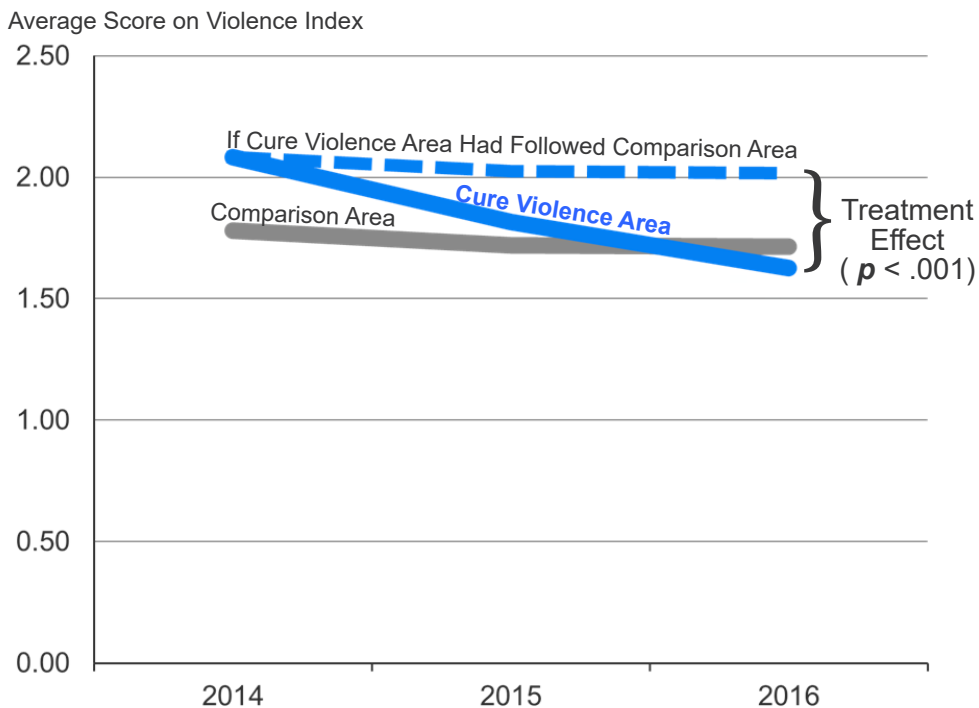
Each table represents the results of a regression analysis. Mean coefficients are the predicted values of each social norm index controlling for time (-), treatment (+), respondent's age (-), current employment (-), being personally "shot at" or stabbed (+), police encounters (i.e., "stop & frisk") (+), perceptions of safety (-), trust in police and other public safety organizations (-), trust in community institutions (-), seeing or hearing guns in the neighborhood (+), reporting typical bedtime after 2 AM (+), witnessing threats on social media platforms (+), and site-specific effects using a series of dummy variables.

Young men living in neighborhoods with Cure Violence programs reported sharper reductions in their willingness to use violence compared with young men in similar areas without programs. Regression models explained 33 percent of the total variance in norms related to serious disputes and 11 percent of total variance in norms related to petty disputes. While norms also shifted in areas without Cure Violence, the differences in the shifts were significant and favored the intervention areas.

When displayed graphically, the results show the treatment effect of Cure Violence on social norms. In both petty conflicts (Figure 1) and serious conflicts (Figure 2), the young male respondents in Cure Violence neighborhoods demonstrated steeper declines in their support for violence. By 2016, the attitudes and norms of respondents in Cure Violence areas had fallen below the levels reported by respondents in comparison areas without Cure Violence.

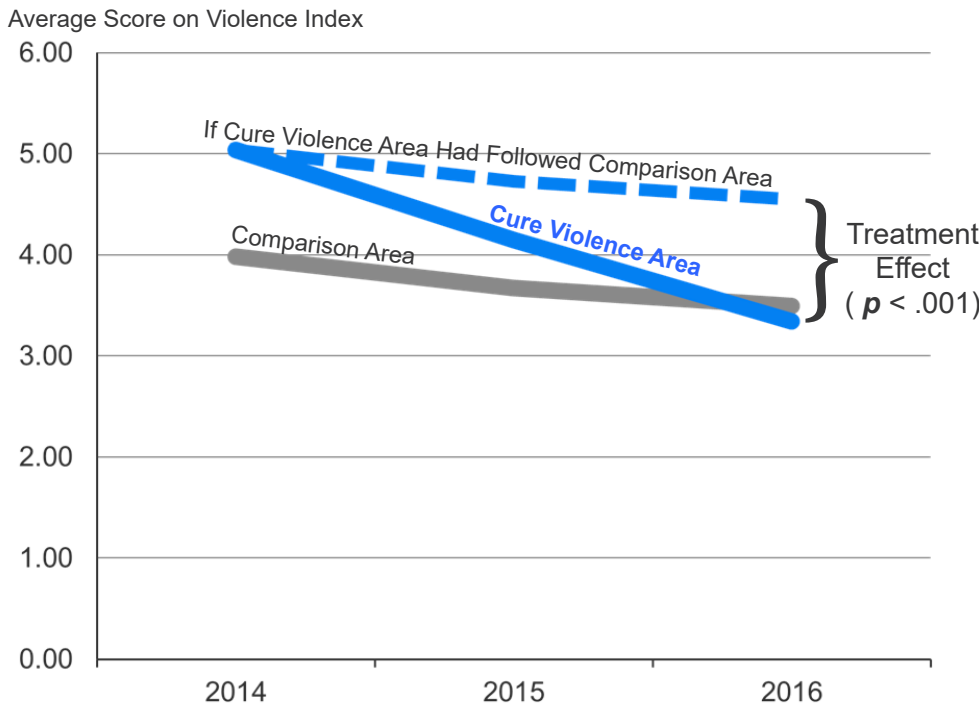
Figure

1 Treatment Effect on Social Norms Supporting the Use of Violence in Hypothetical **Petty Disputes**



Figure

2 Treatment Effect on Social Norms Supporting the Use of Violence in Hypothetical **Serious Disputes**



Data Source: John Jay College Research and Evaluation Center.

Violent Acts

The study's analysis of shooting victimizations and gun injuries in all four neighborhoods also suggests that Cure Violence contributed to declining gun violence in the two intervention areas (Table 7).

Results of an ARIMA analysis show a significant break in the time series of gun injuries in both treatment sites as measured by patient visits to hospitals and emergency departments. In the South Bronx Cure Violence site, the analysis revealed significant declines in shooting victimizations, while shootings in East New York did not drop enough to reach statistical significance.

Smaller declines in both indicators were observed in the comparison sites, but none were significantly different from zero. This suggests that the presence of Cure Violence in intervention areas was associated with significant declines in gun violence that may not have occurred otherwise. The analysis suggests a meaningful treatment effect from the introduction of the Cure Violence programs.

The study's review of shooting victimizations and gun injuries suggests that Cure Violence may help to protect the public safety (Figure 3). Gun injury rates fell by half (50%) in East New York while the matched comparison area for East New York (Flatbush) experienced only a five percent decline in the same time period. The area of the South Bronx served by Cure Violence experienced strong and significant declines in both measures of gun violence: a 37 percent decline in gun injuries and a 63 percent reduction in shooting victimizations, compared with 29 and 17 percent reductions in the comparison area (East Harlem).

Of course, other factors could have contributed to these changes, including the efforts of law enforcement and various social service programs. The analyses in this study do not include data about all possible interventions. After controlling for an array of important variables, however, the presence of Cure Violence appears to be a significant influence on levels of community violence.

Table

7 Effects of Cure Violence on Gun Injuries and Shooting Victimizations in New York City Neighborhoods

Changes in Violence as Estimated with ARIMA	Cure Violence Sites		Comparison Sites	
	East New York	SE	Flatbush	SE
Gun Injuries ¹	- 0.032 *	0.012	- 0.002	0.009
Shooting Victimizations ²	- 0.006	0.021	- 0.009	0.015
	South Bronx	SE	East Harlem	SE
Gun Injuries ¹	- 0.065 *	0.029	- 0.012	0.011
Shooting Victimizations ²	- 0.033 *	0.016	- 0.009	0.022

* Significant difference over time. ARIMA parameters (p,d,q) for all sites were (0,0,0).

Data Sources:

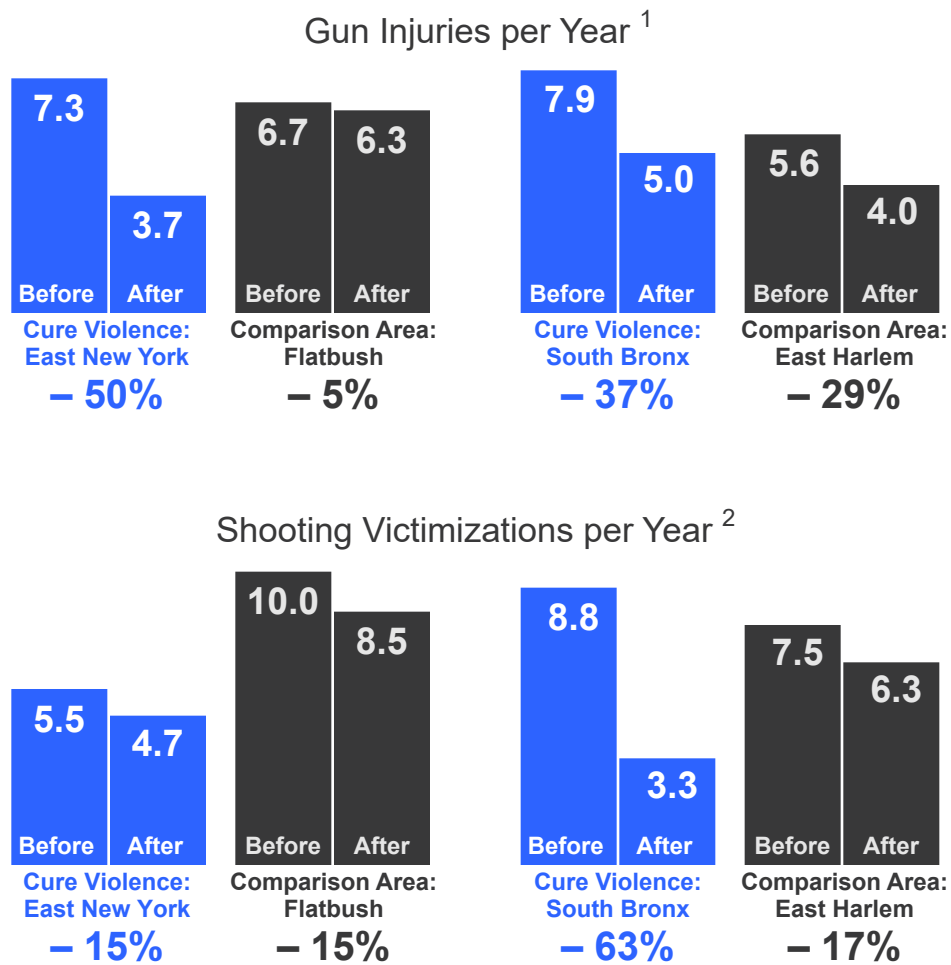
- 1) New York State Department of Health (SPARCS);
- 2) City of New York Police Department (NYPD).

Note:

East New York: Gun injury data were available for 72 months before and after Cure Violence implementation in the intervention area as well as in the comparison area. Shooting data were available for 24 months before and 72 months after Cure Violence implementation in the intervention area as well as in the comparison area.

South Bronx: Gun injury data were available for 96 months before and 48 months after Cure Violence implementation in the intervention area as well as in the comparison area. Shooting data were available for 48 months before and after Cure Violence implementation in the intervention area as well as in the comparison area.

3 Changes in Gun Injuries and Shooting Victimizations Before and After the Opening of Cure Violence Programs



Data Sources:

- 1) New York State Department of Health (SPARCS);
- 2) City of New York Police Department.

Note:

East New York: Gun injury data were available for 72 months before and after Cure Violence implementation in the intervention area as well as in the comparison area. Shooting data were available for 24 months before and 72 months after Cure Violence implementation in the intervention area as well as in the comparison area.

South Bronx: Gun injury data were available for 96 months before and 48 months after Cure Violence implementation in the intervention area as well as in the comparison area. Shooting data were available for 48 months before and after Cure Violence implementation in the intervention area as well as in the comparison area.

Conclusions

This study provides promising evidence that a public health approach to violence reduction may help to create safer and healthier communities. When compared with similar areas of New York City, gun violence rates declined significantly in two neighborhoods operating programs inspired by the Cure Violence model. In an area of East New York, Brooklyn, gun injuries fell 50 percent (from 44 to 22) following the implementation of a type of Cure Violence program. One South Bronx neighborhood experienced 35 shooting victimizations in the four years before Cure Violence opened, but just 13 in the first four years after the program launched. Finally, and perhaps most importantly, young men in neighborhoods with Cure Violence programs reported declining support for violence as a means of settling personal disputes, and the relative size of this change was better than it was among young men from similar neighborhoods without Cure Violence programs.

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Limitations

This study relied on a quasi-experimental design with a data-driven, but non-statistical matching strategy. The South Bronx and East Harlem areas were well-matched on most socioeconomic and crime indicators. East New York and Flatbush, on the other hand, were less than ideal matches, as gun violence rates and other indicators of socioeconomic disadvantage were somewhat different. Ideally, studies of community-level interventions should use stringent matching procedures (e.g., propensity scores) to detect differences between areas with and without interventions. This strategy would better account for potential confounding influences and allow for direct estimation of effects across neighborhoods.

The ARIMA models used in the study are only able to detect breaks in a single time-series (trend) and traditional regression tests, such as difference-in-difference, latent growth curve, or panel regression, were not possible in this study of community-level differences because of the small sample size (i.e., N=4).

At Time 1 in the comparison of social norms (2014), both Cure Violence neighborhoods showed higher scores on the survey index of support for violence. This was not unexpected, of course, because the selection of treatment areas was appropriately biased towards the neighborhoods most in need of intervention.

Finally, the research team began measuring social norms after the programs were already established in the two Cure Violence communities. Thus, the study lacks a true baseline (pre-intervention) measure of social norms. This weakness will be addressed in subsequent reports from the research team. A forthcoming report focuses on two other New York City Cure Violence sites where the Robert Wood Johnson Foundation provided funding for data collection in advance of the programs' launch.

