

Reducing Homicide Risk in Indianapolis between 1997 and 2000

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ABSTRACT *Rates of homicide risk are not evenly distributed across the US population. Prior research indicates that young males in disadvantaged urban neighborhoods are particularly vulnerable to lethal violence. The traditional criminal justice response to violent crime in the urban context has the potential to exacerbate problems, particularly when broad-based arrest sweeps and general deterrence initiatives are the standard models used by law enforcement. Recent studies suggest that alternative intervention approaches that use both specific deterrence combined with improving pro-social opportunities has shown promise in reducing violent crime in these high-risk contexts. This paper examines the changes in homicide patterns for the highest-risk populations in Indianapolis after a “pulling levers” intervention was implemented in the late 1990s to address youth, gang, and gun violence. Multilevel growth curve regression models controlling for a linear trend over time, important structural correlates of homicide across urban neighborhoods, and between-neighborhood variance estimates showed that homicide rates involving the highest-risk populations (i.e., actors 15 to 24 years old) were most likely to experience a statistically significant and substantive reduction after the intervention was implemented (IRR=0.48, 95% CI=0.29–0.78). Among male actors in this age range, Black male homicide rates (IRR=0.41, 95% CI=0.25–0.70) and White male rates (IRR=0.38, 95% CI=0.15–0.79) declined substantially more than homicide rates involving actors outside the 15 to 24 years age range (IRR=0.95, 95% CI=0.54–1.69). In addition, neighborhoods where specific, community-level strategies were implemented had statistically significant and substantive high-risk homicide rate declines. We conclude that further extension of the pulling levers framework appears warranted in light of the recent findings. Alternative justice strategies that rely on the threat of sanctions coupled with strengthening social service provisions, as well as risk communication aimed at high-risk individuals, appears to hold significant promise as a means to reduce lethal violence.*

KEYWORDS *Youth homicide, Young males, Deterrence, Pulling levers, Multilevel growth curve analysis, Public policy*

INTRODUCTION

Homicide was the fifth leading cause of death for persons aged 10 to 60 years old between 1999 and 2005, which resulted in the premature loss of life for over 110,000 people in this age range.¹ It is important to note that homicide risk was not evenly distributed among the US population. The average annual homicide rate over this period was roughly 7.8 per 100,000 for those in the 10- to 60-year age

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population.² Comparatively, homicide was the second leading cause of death for persons aged 15 to 24 years, and the at-risk homicide rate for members in this group was roughly 26.1 per 100,000 population.

Disaggregating by race, we find that homicide is far and away the leading cause of death for young Black males aged 15 to 24 years, with more than twice as many fatal outcomes than the second leading cause of death for this specific group (unintentional injury).² The national average at-risk homicide rate for young Black males was 85.0 per 100,000. Among young White males aged 15 to 24 years, homicide is the third leading cause of death with an expected national rate of 74.8 per 100,000 population. These risk-based statistics are consistent with incident data indicating that homicides are also severely and disproportionately more likely to involve young male actors.³ While sobering, these contextual figures do not begin to capture the cumulative harm that homicide has on the lives of the families of both victims and offenders, as well as the people who reside in violent, often poverty-stricken, and mostly urban neighborhoods.⁴

In response, policy-driven punitive approaches of justice (e.g., enhanced sentence guidelines, three strikes law, and mandatory minimum sentences) have led to dramatic increases in the US prison population.⁵ This reaction has helped create a tautological nexus in the urban landscape where high-risk and vulnerable populations, often marred by conditions of physical and social disorder, become marginalized and more at risk for drug use, drug sales, and other criminal activities.⁶⁻⁹ Even where there is evidence that increased incarceration is associated with a crime reduction effect,^{10,11} these approaches often lead to augmented cumulative harm.^{12,13}

Freudenberg contends that criminal justice agencies should improve health and social service for current and prior inmates, emphasize community reintegration, support research and evaluation, and utilize alternatives to incarceration.¹⁴ One such alternative approach, the “pulling levers” intervention, was introduced in Boston in the mid-1990s. The strategy was designed to reduce violent crime by using a deterrent-based message targeted specifically at high-risk offenders while also relying on the involvement of pro-social groups to provide desisting offenders access to legitimate opportunities (e.g., employment, housing, mentorship, community service, and drug treatment).¹⁵⁻¹⁷ Results from the Boston initiative were impressive, where time series analyses indicated a statistically significant reduction of 63% in the monthly number of youth homicides in the city following the intervention, controlling for the potential of trends that may have influenced the data, changes in unemployment, size of the youth population, adult homicide victimization trends, and youth drug activity as measured by arrests.¹⁵

Research shows that homicide is often the product of “rational decision-making” usually committed by groups of participants who engage in violence as a way to solve problems that arise in certain situations or environments.¹⁸ Thus, the literature indicates that increasing perceived risks (i.e., specific deterrence) for continued violence combined with positive reintegration and social support for compliance (i.e., desisting from high-risk activities such as gun carrying or association with criminal subgroups) holds promise as a mechanism to reduce homicide.^{16,18,19}

The Indianapolis Strategy

Responding to record high homicide rates in the late 1990s, officials in Indianapolis replicated the Boston initiative.²⁰ Table 1 catalogs the specific components of the

TABLE 1 Specific phases of the Indianapolis pulling levers initiative from 1997–2000

Stage	Key components, strategies, and timelines
Identification	<p>December 1997: Initial meeting of policy makers to discuss the growing homicide problem. While most large US cities were experiencing reductions in homicide rates, Indianapolis was suffering from a record increase in lethal violence.</p> <p>January 1998: Working group meeting results in decision to replicate the Boston initiative in Indianapolis.</p> <p>March 1998: Initial incident reviews revealed that homicides were being driven by young males, as both victims and offenders, involved with groups of chronic, violent, and high-risk offenders.</p> <p>January 1999: First (of 30 total) pulling levers notifications with groups of chronic offenders. Several criteria for selecting high-risk offenders to participate in notification hearings were employed, including: current probation or parole status, extensive criminal histories, and prior gun charges.</p>
Implementation	<p>February and March 1999: Pulling levers notification meetings held in three violent crime areas (beats B61, B62, and B63) that served as the target neighborhoods</p> <p>April 1999: Brightwood arrests were made and used as an illustration regarding the credibility of the deterrent message communicated at subsequent call-in and notification meetings.</p> <p>September 1999: First pulling levers notification held at a male juvenile detention facility. Particular emphasis was focused on notifying young, male, high-risk juveniles that participation in group and gang violence had high likelihood of victimization or serious prison sentences. Heavy importance was placed on pro-social resources.</p> <p>April 2000: First pulling levers notification with domestic violence offenders.</p>
Community outreach	<p>April and May 1998: Task force team members met with a number of area middle- and high schools, emphasizing the increased cost of gun violence and also promoting upcoming, legitimate summer activities and resources.</p> <p>January 1999: Neighborhood leaders, social service providers, and ex-offender mentors recruited to participate in pulling levers meetings.</p> <p>June 1999: Initial newsletter detailing the program was distributed to community and neighborhood leaders where meetings were held.</p> <p>September 1999: Presentations were made at schools across the city.</p> <p>June 2000: Initial impact results presented to working group.</p>

pulling levers intervention that relied on a three-stage process similar to a health-based approach: identification, implementation, and outreach.

In the identification stage, which predominantly took place in 1997–1998, high-risk groups of individuals were identified through a rigorous investigation involving law enforcement, local and federal prosecution, probation and parole, social service providers, and key community actors.^{15,21} However, the identification and investigation phases were not used primarily for prosecution, but rather were intended to be used as leverage against chronic offenders who could potentially be persuaded to discontinue high-risk behavior, in particular, illegal gun carrying and use. A series of risk communication strategies involving face-to-face meetings were

intended to facilitate a “turning point” where individuals were notified that future violent offending would lead to severe sanctions. Desistance, in contrast, would gain access to social and community service opportunities (e.g., drug treatment programs, job training and placement provisions, housing, and mentorship).

A rolling implementation occurred throughout the city in 1999. In February and March 1999, criminal justice officials and community groups delivered community-based notification meetings to high-risk groups identified in the investigation phase as being criminally active and as residing in one of the three adjacent target areas. In essence, this component involved a dual focus. Risk communication was intended to have a citywide impact as the message spread among networks of individuals involved in high-risk activities such as drug dealing, gun carrying, and gang-related behaviors. At the same time, there was a specific focus on high-risk target neighborhoods and individuals involved in the notification meetings, who were disproportionately drawn from these neighborhoods. In addition, the focused prosecution of a drug-selling gang believed to be responsible for a disproportionate amount of violence took place in April 1999. The harsh sanctions levied against a group known as the “Brightwood gang” became part of the risk communication strategy delivered in a series of subsequent notification meetings with gang- and youth-specific groups that were currently involved in the criminal justice system (e.g., those on probation, parole, or in youth-detention facilities). In essence, this component of the strategy was intended to have a citywide impact in terms of reducing the likelihood of offending and victimization among the highest-risk individuals. The message emphasized the risks faced by the meeting attendees for continued violence: being a victim of a homicide or being incarcerated. Illustrations of homicide victims and of convicted felons serving long prison sentences for gun-related offenses, typically of people that the attendees were likely to know, were used to personalize the message.

In the community outreach phase, the specific focus was on increasing collaboration and communication between criminal justice officials, community leaders in high-crime neighborhoods, faith-based community leaders, social service providers, ex-offender groups, and Indianapolis educators.²² Feedback was consistently shared between the criminal justice working group and community leaders responsible for implementing the intervention. Thus, the intervention moved from a traditional law enforcement strategy to a multi-agency and community-oriented approach.

Prior Indianapolis Evaluations

The initial impact assessment of the Indianapolis intervention, through the use of a quasi-experimental research design and autoregressive integrated moving average (ARIMA) time-series models comparing homicide trends across six additional Midwestern cities, found that only Indianapolis experienced a statistically significant and substantive reduction in homicide at the turn of the century.²⁰ Prior research also indicated that perceptions increased among local parolees and probationers that the criminal justice system was indeed more effective in responding to violent crime after this specific period.²³

One of the limitations of the prior Indianapolis evaluations has been the use of aggregated “citywide” homicide trend analyses that have yet to focus on: (1) specific, high-risk populations across different Indianapolis neighborhoods and (2) at-risk homicide changes in the target communities where many of the neighborhood-based intervention strategies were specifically concentrated. The primary aim

of the current examination was to assess the unique changes in homicide patterns involving the highest-risk populations with an additional emphasis that focused on the changes in homicide patterns in the target communities after the implementation of the Indianapolis pulling levers strategy. Study results have the potential to inform both public health research and public policy.

METHODS

Study Design

We used a longitudinal study design with city-level neighborhood data to examine changes in homicide patterns among the highest-risk populations as well as homicide trends in three target neighborhoods relative to other neighborhoods. The purpose of our study was to better assess the potential impact of the pulling levers intervention while controlling for other important correlates that could have influenced high-risk homicide changes over time and across different Indianapolis neighborhoods.

Data and Measures

Data were collected as part of a National Institute of Justice (NIJ)-funded study of the Indianapolis Violence Reduction Partnership (IVRP), a multi-agency strategy aimed at reducing homicide and firearms violence in Indianapolis. Incident data were coded by researchers during bi-monthly homicide incident reviews conducted by the Indianapolis Police Department (IPD). All homicides that occurred between January 1997 and December 2000 (total $n=408$) were included in the analysis. The outcome variables were the number of annual homicide events, while the unit of analysis was Indianapolis neighborhoods designated as police beats. All incidents, as well as census measures, were aggregated to IPD police beats ($n=50$) using geometric integration techniques (i.e., the cumulative proportion of census block groups housed within each police beat). In terms of a standardized comparison, on average, there were 3.2 census tracts (a more commonly utilized neighborhood unit) per police beat. Risk-specific population information as well as neighborhood contextual indicators were culled from the 2000 decennial US Census to police beat boundaries.

Outcome Variables (Level 1). The specific selection criteria for the different outcome variables captured the age, race, and gender of victims and the suspects who were involved in homicide incidents, where each incident represents a unique homicide victim. *Black male* homicides were the total number of annual events that involved Black males aged 15 to 24 years as either the victim or suspect in a given homicide incident. The same risk-specific numerator criteria were employed for 15 to 24-year-old *White male* incidents, 15 to 24-year-old *Black female* incidents, and 15 to 24-year-old *White female* incidents. For trend comparison purposes, we also include an additional outcome for *all other types of homicides* (i.e., all homicide incidents that did not involve 15 to 24-year-old actors).

While risk-specific events involving actors aged 15 to 24 years were not necessarily mutually exclusive (inter-racial or inter-gender homicides), this was the case in roughly 73.7% of events. In addition, an outcome that captures the number of risk-specific events involving both victims and suspects has the potential to

“double-count” the same actors (e.g., a suspect in one incident who is a victim in another incident or a suspect in multiple incidents). A detailed review of the data indicated this was an issue in less than 0.1% of all of the cases examined here. We also incorporated an *exposure variable* in each model to create standardized rates, which were population-specific (i.e., the population of 15 to 24-year-old Black males, Black females, White females—and White females, and the remaining population residing in a given neighborhood).

Time Varying Predictors (Level 1). The *intervention* measure is a dichotomous variable that captures the pre-intervention period in the time series as years 1997 and 1998 (0) and the post-intervention period as years 1999 and 2000 (1) since the first pulling levers notification meeting occurred in January 1999 and continued throughout the city throughout 2000 (refer to Table 1 for more detail).

Consistent with time-series regression models,²⁴ we also controlled for the potential influence of a linear trend that may have taken place over the period examined here (i.e., a “regression to the mean” in homicide incidents) that had the potential to bias study results. Thus, a *trend* variable was created as a sequential measure capturing the beginning through the end of the time series to control for this potential influence: (1) 1997, (2) 1998, (3) 1999, and (4) 2000.

Neighborhood Level Predictors (Level 2). We included several neighborhood-level measures likely to influence homicide rates across different urban Indianapolis neighborhoods, guided by classic studies that have identified robust structural covariates of youth crime and more specifically homicide rates across geography and over time.^{25,26} *Male divorce rate* was measured as the percent of males aged 15 years and older residing in a neighborhood who had been previously married and were divorced. *Residential stability* captured the percent of neighborhood residents who had resided in their current home for 5 years and longer. *Concentrated disadvantage* was a weighted factor score (eigenvalue>2.80, overall factor loadings>.70) that included the following items: the percent of unemployed adults, percent of population living in poverty, female-headed households, and percent African American.²⁷

Three adjacent neighborhoods (police beats B61, B62, and B63) comprised the *target area* where community-level pulling levers notification meetings occurred in February and March 1999. These neighborhoods had exceedingly high rates of youth homicide in the identification period of the program, and specific emphasis was placed on incorporating positive social community support combined with the deterrent-based message given by the criminal justice working group during the community notification process.

Statistical Analyses

Growth curve regression analysis relying upon hierarchical generalized linear modeling estimation was used to assess changes in risk-specific homicide patterns over time.²⁸ The annual homicide counts were treated as repeated measures nested within neighborhoods at level 1. The *intervention* variable capturing the pre/post-intervention period and the *trend* variable controlling for a potential linear trend in the homicide data were included as dynamic (i.e., time variant) variables at level 1 in order to provide neighborhood-specific estimates over time. The outcome in each

regression model was the number of population-specific homicides requiring a Poisson sampling distribution with a correction for over-dispersion (variance > mean) as evidenced in the distribution of the outcome variables seen in Table 2. Each model was population-specific in that the given count of homicides was transformed into an expected homicide rate through a natural logarithmic function. Incorporating the exposure variable allowed interpretation of the left-hand side of the level 1 equation as the log homicide rate per 10,000 at-risk population.²⁸ All measures at level 2 (*percent male divorced*, *residential stability*, and *concentrated disadvantage*) were grand-mean centered in order to control for unique between-neighborhood differences likely to impact homicide rates. Cross-level interaction terms capturing the interaction between the changes in risk-specific homicide trends in the *target* neighborhoods over the *intervention* period were also examined. Multilevel generalized linear models with random intercepts were estimated using HLM software (Version 6.02a).²⁹ All risk-specific regression estimates were converted (through exponentiation) into incident rate ratios (IRR) with 95% confidence intervals (95% CI).

RESULTS

Figure 1 displays the bivariate changes in risk-specific homicide patterns before and after the pulling levers intervention. Homicides involving actors aged 15 to 24 years declined from 28.8 to 12.8 per 10,000 at-risk population, which varied by specific demographic groups. Regarding target neighborhood changes, homicide rates for 15 to 24-year-olds declined from 150.9 to 33.5 between pre- and post-intervention periods. Comparatively, all other homicide incidents across the entire city experienced a more modest reduction declining from 2.0 to 1.7 per 10,000 of the remaining population.

Table 3 displays the hierarchical growth curve regressions that models the changes in population-specific homicide rates. Regarding statistically significant estimates and controlling for the potential impact of a linear trend over time at level 1 as well as important structural correlates of homicide across Indianapolis neighborhoods at level 2, homicides that involved actors between the ages of 15 and 24 years were 48% (95% CI=0.29–0.78) of the rate in the post-intervention period relative to the pre-intervention period. In addition, the cross-level interaction estimate showed that target area homicides were 67% (95% CI=0.56–0.82) of their pre-intervention rate. Finally, neighborhoods with higher levels of concentrated disadvantage had significantly higher 15 to 24-year-old homicide rates (IRR=1.63, 95% CI=1.12–2.38) across the entire city.

Disaggregating by race and gender, 15 to 24-year-old Black male homicides in the post-intervention period were 41% (95% CI=0.25–0.70) of their earlier rate, and the target area rates were also lower (IRR=0.56, 95% CI=0.26–1.22). A very similar statistically significant rate reduction was seen in 15 to 24-year-old White male homicides (IRR=0.38, 95% CI=0.15–0.79) across the entire city and the post-intervention estimate was 81% (95% CI=0.37–1.35) of the pre-intervention target area homicide rate.

In addition, Black and White female homicide rates also declined substantially (estimated IRR=0.44 and IRR=0.56, respectively), but these estimates missed the statistical significance threshold when controlling for other important factors. Comparatively, homicides involving the remaining Indianapolis population also experienced a statistically significant reduction with an estimated post-intervention rate 95% (95% CI=0.54–1.69)

TABLE 2 Descriptive statistics

Measures	Mean	Standard Deviation	Min	Max
Dependent variables				
All 15 to 24-year-old homicides	1.11	1.32	0	8
15 to 24-year-old homicides in target areas*	1.75	1.54	0	5
15 to 24-year-old Black male homicides	1.07	1.41	0	8
15 to 24-year-old White male homicides	0.15	0.39	0	3
15 to 24-year-old Black female homicides	0.13	0.36	0	2
15 to 24-year-old White female homicides	0.05	0.21	0	1
All "other" Indianapolis homicides	0.53	0.86	0	5
Exposure variables (rate functions)				
15 to 24-year-old population	1,056.4	558.5	241	3,026
15 to 24-year-old population in target areas ^a	1,149.8	250.9	834	1,417
15 to 24-year-old Black male population	214.3	180.1	68	750
15 to 24-year-old White male population	270.7	206.9	71	972
15 to 24-year-old Black female population	212.2	191.0	77	787
15 to 24-year-old White female population	278.1	266.8	33	1,468
Remaining Indianapolis population	5,806.5	2,811.3	1,307	12,416
Time varying (level 1) predictors				
Intervention	0.50	0.50	0	1
Trend	2.50	1.12	1	4
Neighborhood (level 2) predictors				
Disadvantage	0.21	0.99	-2.14	1.99
Male divorce rate	13.50	4.07	5.86	25.09
Residential stability	48.09	11.81	15.26	69.96
Target area	0.61	0.24	0	1

*Specific to the three target areas and the 15 to 24-year-old population

of the pre-intervention rate and that target area homicides did not significantly decline over this period for the remaining population under the age of 15 years and over the age of 24 years. Also, results indicated that homicides involving the remaining Indianapolis population experienced a marginally significant ($p < .10$) linear trend reduction (IRR = 0.90, 95% CI = 0.66–1.36) between 1997 and 2000.

In sum, the regression models presented here indicated that, after we controlled for important dynamic and structural influences over time and across Indianapolis neighborhoods, homicides involving the highest-risk populations (specifically White and Black males in the 15 to 24-year-old age range) declined at a far greater substantive rate than homicides involving all other populations between the pre- and post-intervention periods.

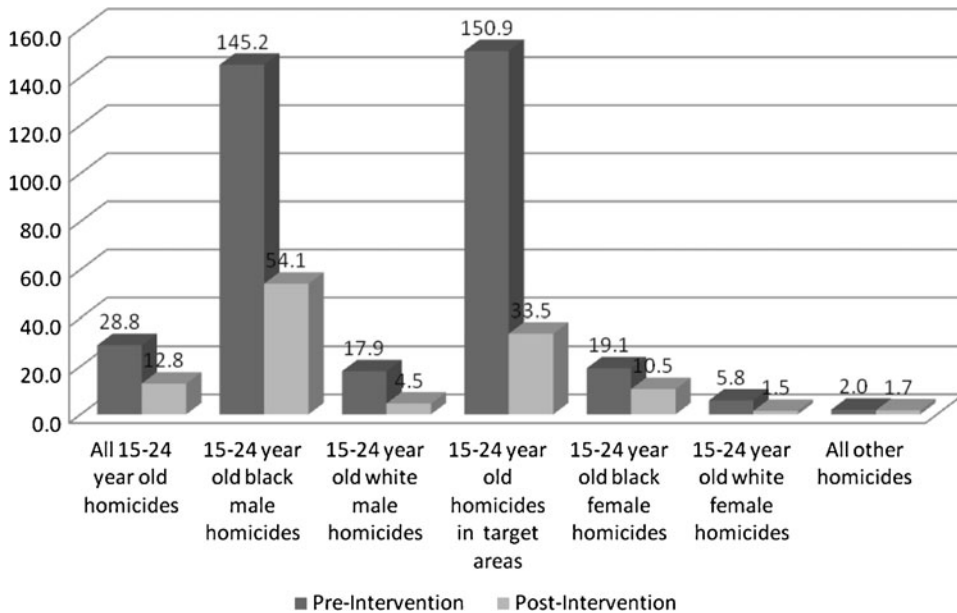


FIGURE 1. Homicide patterns by rate per 10,000 at-risk population.

DISCUSSION

Study Limitations

There are several important limitations with the current investigation. First, the current statistical models do not control for neighborhood level changes in unemployment due to data availability issues. Prior research suggests that higher levels of unemployment disrupt routine activity patterns in and near households (i.e., opportunity reduction theory) and thus geographic areas with higher unemployment actually experience significantly less homicide.²⁶ Importantly, trend data indicated that overall unemployment rates remained relatively stable in Indianapolis over the years examined here (i.e., an overall city rate between 2.7 and 3.8% of labor force unemployed) and thus were not likely to have a substantive influence on city-level homicide changes.³⁰ Similarly, we did not include a control for neighborhood levels of immigrant concentration, which classic social disorganization theory research has shown co-varies with crime across geographic space.^{25,27} Excluding these potential influencing correlates of homicide has the potential to bias study results. However, when specifically examining homicide as the outcome variable, research indicates that the measures we included are parsimonious predictors of homicide, which we believe minimizes model misspecification concerns.

Second, more complete data would be useful in order to examine, from a longitudinal perspective, the actual linkage and dosage of social services and community programs offered to high-risk offenders who went through the notification hearings. That is, an analysis relying on offender-specific models rather than event-specific models would complement the current study. Third, a systematic investigation of the risk communication intervention and the risk perception on behalf of the recipients of the pulling levers message would benefit research in this area.³¹ Fourth, this type of intervention analysis is still somewhat

TABLE 3 Estimated incident rate ratios from HGLM growth curve Poisson regressions modeling risk-specific homicides (across Indianapolis neighborhoods between 1997 and 2000)

	All 15 to 24-year-old homicides	15 to 24-year-old BM homicides	15 to 24-year-old WM homicides	15 to 24-year-old BF homicides	15 to 24-year-old WF homicides	All other homicides
Fixed parameters						
Time varying predictors						
Intervention	0.48 (0.29–0.78) ^{***}	0.41 (0.25–0.70) ^{***}	0.38 (0.15–0.79) ^{**}	0.44 (0.10–2.84)	0.56 (0.16–1.94)	0.95 (0.54–1.69) ^{**}
Trend	0.96 (0.76–1.23)	0.94 (0.74–1.21)	0.86 (0.48–1.23)	0.91 (0.11–2.36)	0.67 (0.39–1.13) [*]	0.90 (0.66–1.36) [*]
Neighborhood predictors						
Disadvantage	1.63 (1.12–2.38) ^{**}	1.14 (0.98–1.36) ^{**}	1.38 (0.81–2.33) ^{**}	1.09 (0.68–1.46)	1.04 (0.12–3.49)	1.45 (0.99–2.41) [*]
Male divorce rate	1.01 (0.96–1.05)	1.03 (0.98–1.10)	1.05 (0.93–1.17)	1.07 (0.98–1.18)	0.98 (0.73–1.34)	1.04 (0.98–2.41)
Residential stability	1.01 (0.98–1.04)	1.01 (0.98–1.03)	0.99 (0.95–1.04)	0.98 (0.94–1.04)	1.04 (0.93–1.18)	0.99 (0.96–1.04)
Target area	2.61 (1.41–4.83) ^{***}	2.24 (1.47–3.39) ^{***}	2.85 (1.69–4.66) [*]	1.48 (0.41–5.33)	1.53 (0.42–4.04)	1.25 (0.24–6.98)
Cross-level interactions						
Target area ^{**} intervention	0.67 (0.56–0.82) ^{**}	0.56 (0.26–1.22) ^{**}	0.81 (0.37–1.35) ^{**}	–	–	0.95 (0.34–2.69)
Random parameters						
Between-neighborhood variance	0.40 (0.90) ^{***}	0.18 (0.34) ^{***}	0.11 (0.11) ^{***}	0.08 (0.05) ^{***}	0.04 (0.17) ^{***}	0.00 (0.00) ^{**}

Each model was population-specific. All models were based on a total of 200 observations at level 1 across 50 neighborhoods at level 2. Figures in parenthesis are the 95% confidence intervals (except in the case of the between neighborhood estimates where the number represents the level 1 standard error variance). *En dash* excluded from analysis due to model non-convergence [a total of only four female homicides (three BF, one WF) occurred in the target areas between 1997 and 2000].
^{*}*p*<0.10, ^{**}*p*<0.05, ^{***}*p*<0.01

susceptible to a “regression to the mean” issue given that the focus of the assessment included populations and communities where homicide rates were disproportionately high in the pre-intervention period. However, given that we controlled for a potential linear trend in the data and that a prior Indianapolis pulling levers evaluation relying on ARIMA time series models controlled for pre-trend mean and variance instability in homicide trends and only Indianapolis experienced a statistically significant reduction in overall homicide in the Midwest during this period,²⁰ this concern is somewhat tempered.

Finally, since the data are limited to a 2-year post-intervention period, we are constrained in the ability to assess long-term programmatic sustainability. However, according to the UCR, the number of homicides in Indianapolis remained stable between 2001 and 2006 with a range that leveled between 108 and 122 incidents per year.³ In 2007, IPD merged with Marion County Sheriff Department to become Indianapolis Metro Police Department and official sources of data changed, making the unit of analysis different for more recent trend comparison purposes. Also, a follow-up study that occurred in Indianapolis after 2000 indicated that sustained pulling levers efforts were employed in 2003 and 2004, with a 1-year follow-up through 2005.³² The results, however, are not directly comparable because the pulling levers intervention was altered to include a criminal justice-focused set of meetings emphasizing deterrence as well as a community-focused meeting emphasizing social support. A total of 540 additional probationers participated in the initiative, though this approach was more deterrence- or social support-specific (i.e., probationers were randomly assigned to each specific type of treatment rather than a combination of both, as was the case in the original meetings). Few differences in outcome were observed comparing the two types of meetings, but there was some indication that the pulling levers program became more routinized and somewhat less responsive to high-risk contexts (i.e., timely responses to violence occurring on the street). This may suggest challenges in sustaining this type of multi-agency, multi-sector intervention strategy over time.

CONCLUSION

This paper investigated the potential effect of the Indianapolis pulling levers strategy at reducing levels of homicide among the highest-risk populations and in communities that were most susceptible to violent crime. Study findings indicated that homicides involving the highest-risk youth were those incidents that were most likely to witness major declines over the period examined here. In particular, homicides involving young Black as well as young White males experienced the greatest rate reductions after the pulling levers strategy was fully implemented.

These significant associations remained even after controlling for a linear trend over time as well as potential confounding structural influences across urban neighborhoods. Combined with prior research that indicates Indianapolis homicides experienced statistically significant declines relative to other Midwestern cities, the current investigation shows the homicide decline was not evenly distributed across the entire Indianapolis population. The fact that the pulling levers intervention was mainly directed at high-risk youth and prior violent offenders in disadvantaged and high-crime communities lends confidence to the conclusion that the intervention was a major driving force behind this decline in high-risk homicide rates.

Results suggest that the pulling levers intervention strategy not only provides a potential alternative to traditionally implemented, broad police sweeps targeted to reduce youth, gang, and gun violence, but also has the potential to reduce risk of homicide involvement for those most likely to be affected as both victims and perpetrators. Related to this issue, study results signify that homicides involving both young Black and White males experienced a similar incident rate ratio decline when controlling for other influences. The data also indicated that young Black males had a base rate of being involved in a homicide that was eight times that of young White males. The pulling levers approach inevitably included a specific focus that concentrated on such youths, but, moreover, the intervention was focused on all youths at risk of being involved in violence based on recognizing high-risk factors at both the individual and neighborhood levels in the identification stage of the strategy, which meant that the framework included a focus on both young Black and White males. Thus, bringing practitioners, researchers, and community members together in new ways can lead to a departure from often-failed approaches and holds significant promise from a public policy perspective.

Although crafted primarily by criminal justice officials working with social service providers and local neighborhood leaders, the pulling levers approach is essentially an urban public health intervention. Rather than simply relying on a reactive response to violence (e.g., broad arrest sweeps), the strategy begins with a careful analysis of homicides and shootings that follows the model of public health mortality reviews. Strategic interventions then center on the highest-risk individuals and contexts. Finally, a risk communication message focused on both risk and opportunity is directly communicated to high-risk individuals. If the risk reduction observed following the implementation of this strategy in Indianapolis, and in several additional locations that have implemented the approach,^{15,16,33,34} could be extended nationally and sustained, homicide may no longer represent one of the leading causes of death for high-risk young males.

Concentrated violence generates an enormous human and social toll, and the associated prison costs create significant strains for state budgets.³⁵ Alternative strategies such as the pulling levers intervention offers a more comprehensive and inclusive approach to violence prevention than simply relying on suppression and incarceration alone, which suffer from a number of fundamental flaws.^{6,13} By more tightly coupling the efforts among police, prosecution, corrections officials, local community members, as well as ex-offenders and social service providers, the highest-risk individuals are encouraged to participate in a healthier range of choices relative to behaviors associated with serious criminal offending. Also, neighborhood residents in high-crime areas are encouraged to participate in strengthening social capital and improving community involvement. The results from this study, taken in combination with prior pulling levers evaluations, suggest the need for further integration and research to assess the viability of this intervention approach in a variety of urban contexts.

ACKNOWLEDGMENT

This project was supported by Grant No. 2002-GP-CX-1003 awarded by the National Institute of Justice, Office of Justice Programs, US Department of Justice. Points of view in this article are those of the authors and do not necessarily represent the official position or policies of the US Department of Justice.

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