



National Institute of Justice

Research in Brief

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Issues and Findings

Discussed in this Brief: A research project to help refine the understanding of the dynamics of homicide in U.S. cities. The project examines the extent to which demographic trends, economic conditions, drug use and drug markets, changes in firearms use, and the response of law enforcement agencies appear to be associated with changes in homicide rates over time. The data were gathered in the summer of 1996 for the period 1985–1994 in eight cities. These cities were chosen for the strength of their homicide trends—that is, homicide rates in the study cities followed clear trends. Therefore, the findings cannot be generalized to other cities or to the Nation as a whole.

Key issues: In recent years, sharp declines in homicides have been recorded in some major U.S. cities. Researchers and analysts have attributed these declines to a variety of factors, such as demographic changes, changes in drug market stability, new police strategies, and improved economic conditions. However, not all cities are experiencing this downward trend, and focusing on national trends may mask a complex picture. This report attempts to link homicide rates with specific social, economic, and demographic influences.

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A Study of Homicide in Eight U.S. Cities: An NIJ Intramural Research Project

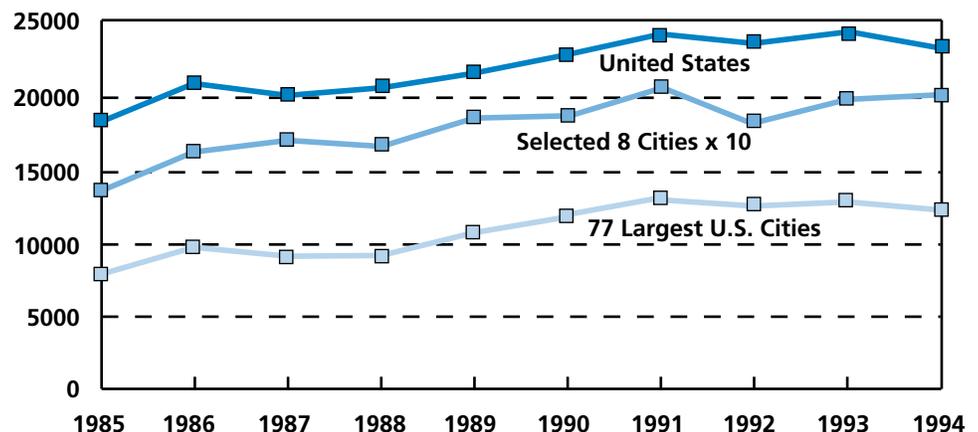
In recent years, sharp declines in homicide rates have been recorded in some major U.S. cities. For example, the homicide rate in New York City dropped 53 percent between 1991 and 1996. Policymakers, researchers, and the media have attributed such declines to a variety of factors, including demographic shifts, drug market stabilization, and increased police visibility. Such declines were not universal, however; some cities experienced increases and others little change. To help refine the understanding of homicide and violence in U.S. cities, the National Institute of Justice (NIJ) initiated a series of intramural research projects.

This report summarizes an eight-city study that examined the relationships between shifts in environmental factors

(e.g., economic conditions) and situational factors (e.g., drug use) and increases and decreases in homicide rates. The study also examined whether changes in the responses of the criminal justice system appeared to be related to changes in the homicide rates in these cities. The eight cities were selected because their homicide rates were the strongest examples of selected trends. Therefore, the findings reported here cannot be generalized to other cities or to the Nation as a whole.

As shown in exhibit 1, the annual number of homicides in the United States in 1994 (23,310) represented only a modest decrease from 1990 (23,440) and was significantly higher than the 1985 figure (18,980).¹

Exhibit 1: Homicides in the United States, 77 largest U.S. cities, and 8 study cities



Note: For the eight study cities, totals were multiplied by 10 so that the variation in the trend could be seen.

Issues and Findings

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Key findings: The research examined three broad domains: environmental, situational, and criminal justice system influences. Key findings in these areas include the following:

- Homicides in which the victim and offender were intimates or related made up a relatively small portion of all homicides, but a sizable portion of female homicides.
- Guns appeared to be increasingly preferred as the means of homicide, regardless of whether the homicide rate in a city was increasing or decreasing.
- Homicide rates corresponded closely with cocaine use levels measured among the adult male arrestee population.
- Young black males, particularly those 18 to 24 years old, were greatly overrepresented among homicide victims compared to their representation in the general population.

This project also identified topics for future inquiry:

- The links between guns, emergency medical services, and mortality rates.
- The spatial and temporal distribution of homicide, including the link between public housing and homicide.
- The effects of changes in law enforcement practices on homicide.
- The influence of economic conditions on homicide trends for all large U.S. cities.

Target audience: Federal, State, and local law enforcement agencies; multijurisdictional and inter-agency task forces; police homicide units; mayors; city councils; emergency service providers; criminal justice researchers.

Exhibit 1 also displays homicide data from the 77 largest U.S. cities (those with a population of 200,000 or more) and the 8 cities, chosen from those 77, that were the focus of this study. (See “Study Methodology: Selecting the Cities.”) These 77 cities are home to approximately 20 percent of the U.S. population, but they accounted for approximately 50 percent of all homicides in the country during the study period. In over half of these cities, both the number of homicides and the homicide rate per 100,000 residents increased from 1990 to 1994.

The researchers designing the study formulated several hypotheses about factors that might be affecting homicide rates in U.S. cities. These hypotheses were grouped into three major categories, or domains: environmental factors, situational factors, and criminal justice system factors. (See “Study Methodology: Defining and Examining the Domains.”) The findings related to each of these domains are summarized below.

T Study Methodology: Selecting the Cities

To select the eight cities for the study, the researchers began with 77 cities that had populations greater than 200,000 at any time during the 10-year period 1985–1994,^a identifying the mean annual number of homicides and the mean annual homicide rate (number per 100,000 residents) in each city. They eliminated those cities that fell below the median in either of those categories, focusing on the 32 cities with the largest numbers and rates of homicide.

Using regression analysis, the researchers categorized the pattern of each city’s homicide rate between 1985 and 1994 into one of four trends: decreasing linear, decreasing quadratic, increasing linear, and increasing quadratic. Linear trends are those in which the homicide rates generally move in one direction, upward or downward. Quadratic trends change direction once over the relevant period; thus, a decreasing quadratic trend is marked by an increase followed by a decrease, and an increasing quadratic trend is marked by a decrease followed by an increase. In some cities, the homicide rates showed considerable year-to-year

variation; because of the limited data series, no attempt was made to fit these rates to more complex curves. Those cities where homicide rates did not follow one of the four trend types were categorized as following no trend.

In contrast to the national trend in homicide rates (decreasing quadratic, as shown in exhibit 1), only 9 of the 32 cities had a decreasing trend (2 linear, 7 quadratic). Fourteen of the 32 cities exhibited an increasing homicide trend (13 linear, 1 quadratic); 9 could not be categorized and were deemed to show no clear trend for this time period. Within each category of trend, the researchers selected the two cities with the strongest trend^b (however, only one city showed an increasing quadratic trend). The researchers also chose one city that showed no trend. The eight cities—Atlanta, Detroit, Indianapolis, Miami, New Orleans, Richmond, Tampa, and Washington, D.C.—are shown in exhibit 2, along with their annual homicide rates and identified trend lines.

^a Initially, 78 cities with population over 200,000 were included in the dataset. However, Uniform Crime Report data were not available for Wichita, Kansas, so that city was excluded from consideration.

^b Richmond was chosen instead of St. Louis because other researchers are currently studying homicide in St. Louis.

Homicide and Environmental Factors

The environmental domain includes the social context within which homicide and violence occur. It contains a set of societal forces that are typically beyond any individual’s control, such as demographics, employment rates, and available programs and services (other than those under the jurisdiction of the criminal justice system). The investigations into many areas of this domain proved inconclusive because of conflicting reports from respondents and the lack of data. No solid link could be identified between homicide rates and such factors as income distribution, education level,

or household type. On the other hand, employment levels and poverty seemed somewhat related to homicide trends. Also, in cities with decreasing homicide trends, intimate and family homicides decreased more than other homicides. Social and public services, including emergency medical services and domestic violence programs, were viewed as effective in curtailing homicides, even though some respondents suggested that improved services were unable to overcome the tide of violence.

Demographics and homicide.

Victimization rates for black males in the 18–24 age group were substantially higher than rates for any other

age-gender-race group—and during the study period those rates increased in all cities. For example, in Tampa in 1993, black males ages 18–24 comprised 1.2 percent of the city’s population, but 28 percent of the city’s homicide victims. Expressed as a ratio (percentage of homicide victims in this group divided by percentage of overall population in the group), black males ages 18–24 in Tampa were 24 times more likely to be murdered than would have been expected based on their representation in the population. Exhibit 3 shows the “overrepresentation ratio” among three age groups of black males in each of the eight cities for the 10 years of the study. In some

Exhibit 2: Annual homicide rates for study cities, 1985–1994

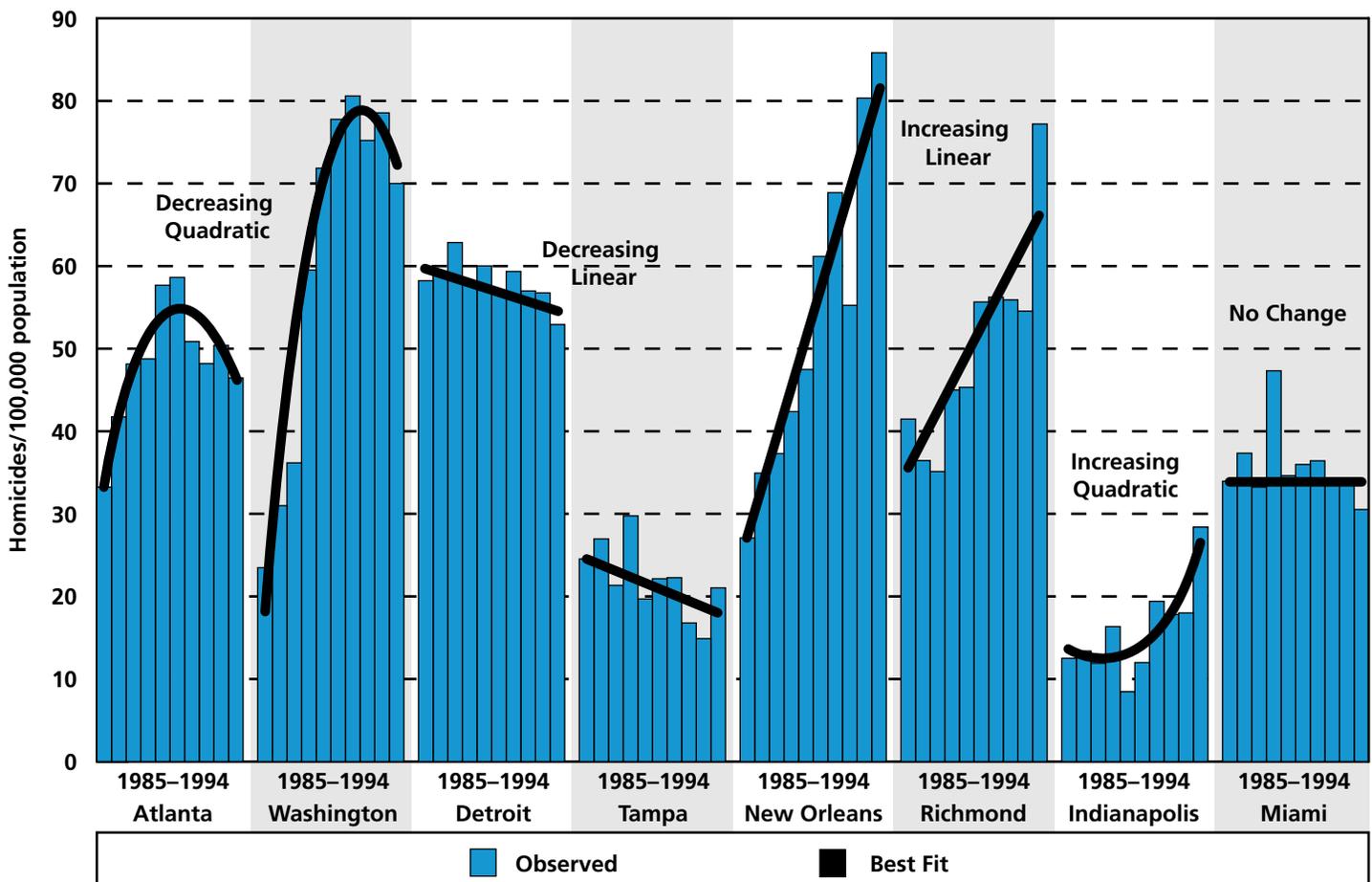
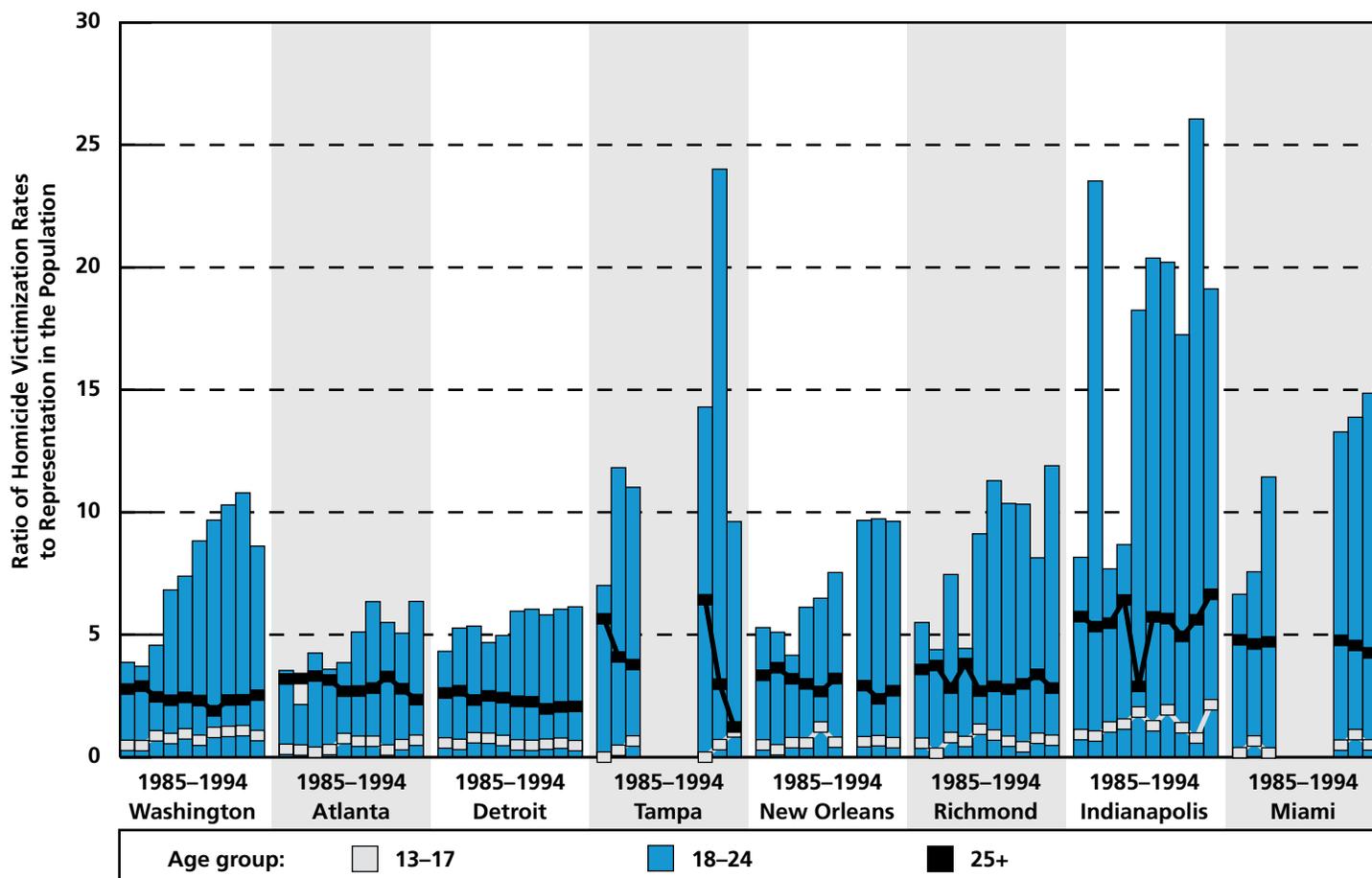


Exhibit 3: *Disproportionate homicide victimization of black males, 1985–1994*



cities, the overrepresentation increased over time, regardless of the overall trend of homicides in that city.

Domestic violence and homicide.

To evaluate the relationship between domestic violence and homicide, data from the Federal Bureau of Investigation’s Supplemental Homicide Reports (SHR) were examined.² The victim-offender relationship codes were sorted into three categories:

- Family member (by blood or marriage) or romantic intimate.³
- Person known to the victim, but not a family member or intimate.
- Person not known to the victim (a stranger).

Homicides in which the victim and offender were related or intimate made up a relatively small portion of homicides in the study cities; however they accounted for a sizable portion of female-victim homicides. Exhibit 4 shows the average number of homicides committed in each study city by someone related to or intimate with the victim. In cases where the victim-offender relationship was reported, roughly 50 percent of female victims were killed by family members or other intimates; in contrast, fewer than 20 percent of male victims were killed by family members or other intimates. (However, the victim-offender relationship was not reported for a large num-

ber of the homicides in several cities.) In Atlanta, Detroit, and Tampa, improvements in domestic violence services may have played a role in the observed declines in homicides committed by family members or intimate partners.

Employment levels and homicide.

Census data from 1980 and 1990 were used to assess the relationship between economic factors, such as employment levels, and changes in homicide rates.⁴ In New Orleans and Richmond, employment declined among black males, while homicide increased; a similar pattern was observed in Washington, D.C., and Atlanta. In Tampa, employment increased at least slightly for all

Exhibit 4: Intimate or family homicides, by victim gender, 1985–1994

City	Females Killed by Intimate or Family Member			Males Killed by Intimate or Family Member			All Victims Killed by Intimate or Family Member		
	Average Number	Percent of Victims	Percent of Victims With Known VOR	Average Number	Percent of Victims	Percent of Victims With Known VOR	Average Number	Percent of Victims	Percent of Victims With Known VOR
Atlanta	11.7	31	51	14.8	9	16	26.5	13	23
Detroit	17.9	17	29	28.6	6	11	46.5	8	14
Indianapolis	5.9	40	56	7.3	13	17	13.2	19	25
Miami	7.7	37	60	4.7	4	10	12.3	10	21
New Orleans	10.7	28	48	12.4	6	16	23.1	9	23
Richmond	4.7	27	45	3.5	4	8	8.2	8	15
Tampa	4.3	30	62	3.7	8	13	8.0	13	22
Washington, D.C.	6.7	15	44	7.3	2	12	14.0	4	18

Key: VOR = Victim-Offender Relationship

groups, while homicide decreased—again supporting a potential link between employment and homicide.

Emergency medical services and homicide. Respondents in several cities suggested that improvements in emergency medical services (EMS) probably dampened homicide rates that might otherwise have been worse. All EMS directors interviewed attested to the increased burden placed on EMS by the increased use and power of guns. In one city, for example, the increase in firearm damage was illustrated by the average number of gunshot wounds per shooting victim, which increased from 1.1 to 2.4 in a 5-year period (1991–1995).

Homicide and Situational Factors

The situational domain is the context within which homicide and violence occur. This context is generally directly related to an individual’s behavior. Drug use and the availability and use of firearms were of particular interest. Although gang activity has also been suggested as a major factor in

violence, the cities chosen did not have large gang problems.

Drugs and homicide. The respondents in cities with declining homicide rates rated the problems associated with drugs just as highly as those in cities with stable or increasing homicide rates. Most respondents appeared to develop their impressions about drug problems from law enforcement efforts and national trends, rather than from locally available drug use indicators. Crack cocaine was, by far, the

drug that respondents most commonly associated with community violence, although marijuana markets were cited as emerging sources of violence in Washington and Richmond. Data from the Drug Use Forecasting (DUF) program (see “Monitoring Arrestee Drug Use”) validate this perception.

Six of the eight cities in this study gather DUF data: Atlanta, Detroit, Indianapolis, Miami, New Orleans, and Washington. As shown in exhibit 5, cocaine use levels among the adult

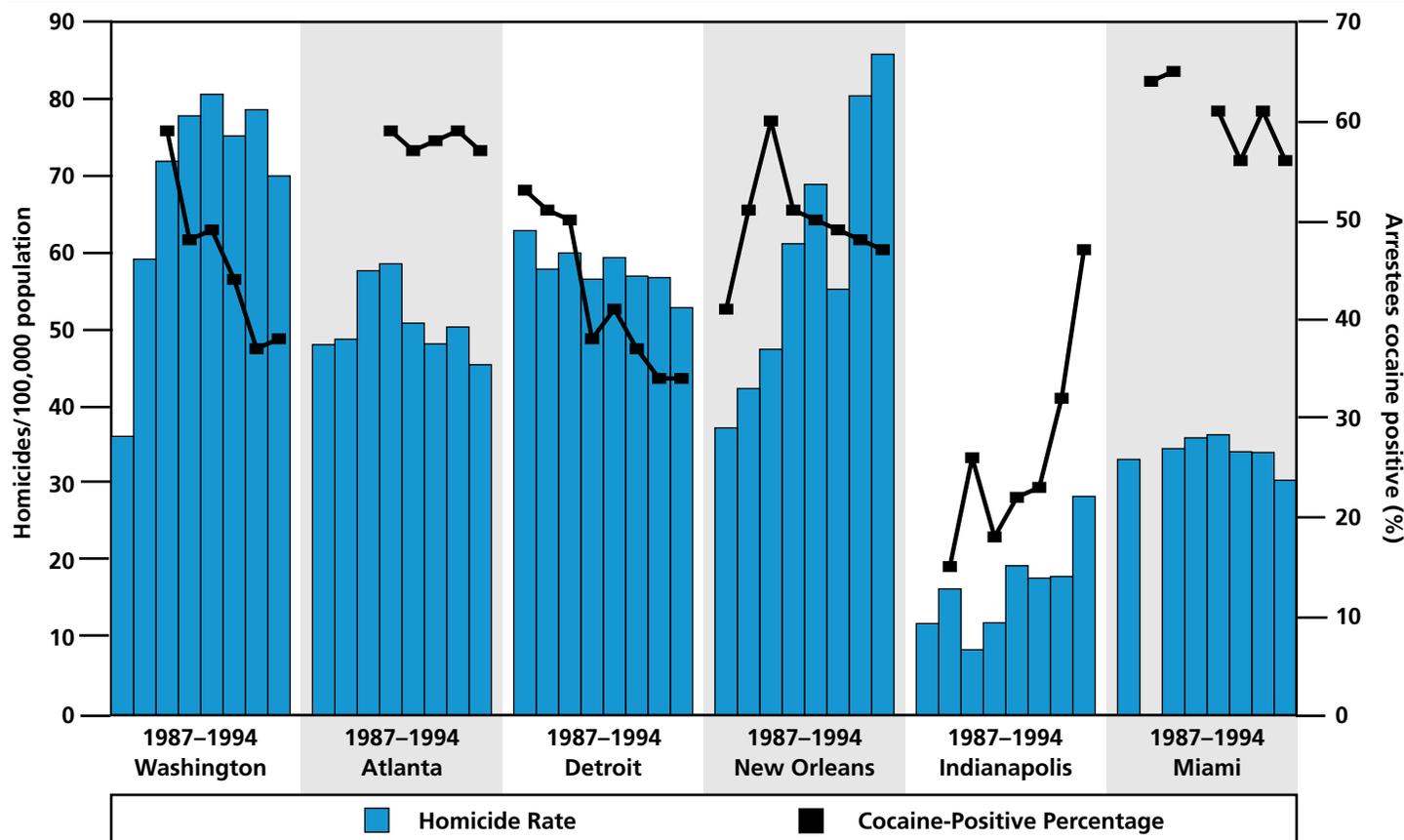
Monitoring Arrestee Drug Use

Since 1987 the National Institute of Justice’s (NIJ) Drug Use Forecasting (DUF) program has gathered information on drug use from arrestees in 23 U.S. cities. The data are obtained quarterly through in-jail interviews with arrestees. The DUF interview has fewer than 30 questions and solicits major demographic and descriptive data, including age, gender, race or ethnicity, level of education, living arrangements, source and amount of income, marital status, drug treatment

history, and recent criminal behavior. Self-reports of recent drug use (within the last 72 hours) are corroborated through analysis of a urine specimen that is tested for 10 drugs.

The DUF program has recently been replaced by the Arrestee Drug Abuse Monitoring (ADAM) program, which is designed to improve sampling and to serve as an enhanced research platform. NIJ hopes to expand the ADAM program to 75 U.S. cities, as well as to other countries.

Exhibit 5: Homicide rates and cocaine-positive percentages among male arrestees, 1987–1994.



male arrestee population correlated quite closely with homicide rates in five of the six DUF cities. As positive cocaine test rates increased, homicide rates also increased; as cocaine prevalence rates decreased, homicide rates decreased. (In New Orleans, this was not true in the 1990s, but it was true in the latter half of the 1980s.) Cocaine use in these cities was most prevalent among arrestees ages 25 and older. However, in two cities (Atlanta and Indianapolis), cocaine use was increasing among the juvenile population during portions of the study period. This could be a warning sign of future drug-related problems in those communities.⁵

Drugs other than cocaine were not consistently associated with commu-

nity violence and homicide, either in interviews or in data analysis. Washington and Detroit seemed to show a relationship between heroin use and homicide. However, closer analysis showed that most arrestees testing positive for heroin also tested positive for cocaine; it seems, therefore, that heroin users in those cities are largely a subset of cocaine users and not a separate cohort.

Based on the information given in interviews and on data analyses, the relationship between cocaine use and violence appears to be due to characteristics of crack market participation. In particular, crack cocaine markets are typically outdoor markets, and established relationships between customers and dealers are less likely than

in some other drug markets, making violent confrontations between buyers and sellers more likely. Furthermore, the effects of crack are short lived, so users are often looking for another “hit” within minutes. Thus, crack users are more likely than other drug users to remain in the market area, further increasing the likelihood of violence.

Guns and homicide. Most homicides in all eight cities were committed with firearms. Guns were used in more than 80 percent of the homicides in each city for at least 1 year of the study period. The percentage of homicides attributable to guns steadily increased in every study city, even in those with decreasing homicide trends. Thus, while firearms are increasingly seen

as the weapon of choice, the gun homicide trend does not seem related to the overall homicide trend. Respondents in all sites expressed concern about the levels of gun violence. Many cited the lack of a comprehensive local strategy to combat gun violence, similar to the strategies that have targeted drug use. Some interviewees recognized Federal efforts as being particularly helpful.

The Criminal Justice Domain

The focus on the criminal justice domain included law enforcement, the courts, prosecution, and corrections, as well as joint task forces and multi-jurisdictional efforts. This line of inquiry was established to explore the impact that criminal justice policies

and practices might have on homicide trends.

Policing and homicide. Respondents in all cities reported that law enforcement resources were being used more efficiently than in the past. All cities reported targeting police efforts to “hot spots,” as well as developing community-oriented policing practices. Some cities have implemented mandatory arrest policies for domestic violence, and others have some form of preferred arrest policy (that is, the officer must explain why an arrest was not made). However, in most of the cities, all these programs were started too recently to judge their impact on homicide trends during the 10-year period that ended in 1994.

Clearance rates and homicide.

Combining all eight cities, there is a strong negative correlation between annual homicide clearance rates and the annual number of homicides committed during the same year (see exhibit 6). Looking at individual cities, this negative relationship is statistically significant for Miami, New Orleans, Richmond, and Washington, D.C.; Atlanta, Indianapolis, and Tampa show similar, but nonsignificant, trends.

The negative correlation between clearance rates and homicide counts seen in these cities may be due to clearance rates affecting homicide, homicide affecting clearance rates, or both. To clarify the relationship, researchers computed the correlation

Study Methodology: Defining and Examining the Domains

In addition to studying the extant homicide data for these cities, the researchers conducted site visits and interviews. Since they were attempting to identify factors that might have affected homicide rates during the years of the study period (1985–1994), they organized the questions for the interviews around three sets of factors, or structural domains:

- Environmental factors—including economic conditions, demographic changes, local policies and service programs (not administered by criminal justice agencies), and prevention programs.
- Situational factors—including drug market stability, extent and type of drug use, availability and lethality of handguns, and presence of gangs and gang activity.

- Criminal justice system factors—including policing practices, interagency and multijurisdictional task forces, likelihood of punishment (actual and perceived), and the incapacitation of young, crime-prone males.

Teams of three researchers—one specializing in each domain—conducted the site visits during the summer of 1996.* During the 3-day visits, team members interviewed individuals and representatives from various agencies and offices, such as the following:

- Officials—U.S. Attorney, police chief, sheriff, prosecutor, public defender, mayor, city manager, chief judge, coroner.
- Federal agencies—Bureau of Alcohol, Tobacco and Firearms; Drug Enforcement

Administration; Federal Bureau of Investigation.

- Local agencies and service providers—police drug, gang, homicide, and juvenile units; probation office; public housing administration and security; school administration and security; emergency medical services; community outreach and domestic violence intervention groups.

Some respondents were interviewed by more than one team member; for example, representatives from the police gang unit were interviewed by both the researcher focusing on criminal justice issues and the researcher focusing on the situational domain. After every site visit, each researcher wrote a summary of the interview findings; these findings were reviewed by both the team leader and an outside expert in the particular domain.

* The hypotheses underlying each domain and the instruments used in the interviews are available from the project director.

between clearance rates and 1-year lagged homicide counts (for example, correlating clearance rates in 1985 with homicide counts in 1986). The pattern of results strongly resembled that between homicide and clearance rates within a given year. For at least some of the eight cities, decreased clearance rates one year were followed by increased homicide counts the next year. One plausible interpretation is that perpetrators were emboldened by the decreased probability of being caught. The cities in which this relationship held were those cities that experienced rapid homicide growth throughout the timeframe (New Orleans and Richmond) or for part of the timeframe, followed by decreases (Atlanta and Washington, D.C.). Comments from those interviewed in these cities supported the belief that offenders did not expect to be caught.

Law enforcement cooperation and homicide. Multijurisdictional task forces and cooperative efforts, including those that involved Federal agencies, were viewed as highly effective mechanisms for addressing criminal activities. Identified advantages of such programs included the ability to

cut across geographic and bureaucratic boundaries, to dedicate staff resources, and to select the most appropriate charges and prosecution methods. Respondents in most cities reported excellent relations between Federal and local authorities when cooperating on task forces and special issues.

Some Federal programs received special recognition from the interviewees. Respondents in every city praised the effectiveness of the Organized Crime and Drug Enforcement Task Force, which is operated out of the U.S. Attorney’s Office. Other noteworthy Federal programs included Project LEAD (Bureau of Alcohol, Tobacco and Firearms), High-Intensity Drug Trafficking Area Program (Office of National Drug Control Policy), and Weed and Seed (Office of Justice Programs).

Witnesses and homicide. Two problems associated with witnesses to homicide were identified as impediments to the work of the criminal justice system. While community policing programs are having a positive effect on citizen involvement in fighting crime,

witness intimidation remains a significant barrier to gaining citizens’ cooperation in cases of violent crimes. Even though the respondents reported that few witnesses have been retaliated against, fear of reprisal is a powerful force for silence. Interviewees admitted that they do not have sufficient resources for their witness protection programs, that they cannot guarantee such protection, and that the problem is increasing.

Interviewees reported that a second factor affecting witness cooperation is that many homicide witnesses are themselves guilty of some crime. Naturally, these people are reluctant to come forward with information that could lead to self-incrimination. To secure the cooperation of these witnesses, authorities sometimes use the threat of sanctions to encourage the witnesses to make a statement.

Incapacitation and homicide. All cities reported changes in sentencing, probation, and parole practices during the study period. Interviews and some limited data analyses suggested support for incapacitation efforts. Additional data collection and analyses are planned.

Exhibit 6: Relationship Between Clearance Rate and Homicide Count

City	Homicide Clearance Rate and Same-Year Homicide Count (Spearman’s rho)	Homicide Clearance Rate and One-Year Lagged Homicide Count (Spearman’s rho)
All eight cities	-0.390**	-0.303**
Atlanta	-0.409	-0.488
Detroit	0.150	-0.103
Indianapolis	-0.406	-0.182
Miami	-0.542*	-0.315
New Orleans	-0.591*	-0.691**
Richmond	-0.482*	-0.409
Tampa	-0.274	0.322
Washington, D.C.	-0.704**	-0.693**

* $p < .05$; ** $p < .01$, one-tailed

Directions for Future Research

One goal of this project was to identify avenues for further inquiry. The findings of this research indicate that several topics warrant further exploration, including the following:

- The connection between guns, emergency medical services, and mortality rates.
- The connection between public housing and homicide, as part of a larger study of the spatial and temporal distribution of homicide.

- The connection between the incapacitation and incarceration of violence-prone populations and homicide rates.
- The connection between recently implemented community- and problem-oriented policing programs and violence trends in these study cities.

Further research efforts will analyze available data for all 77 cities with a population greater than 200,000. This research will describe homicide victimization and arrest trends for sub-populations, assess changes in types of homicide (for example, homicide among intimates or family members), and identify correlates of homicide (such as economic factors).

NOTES

1. Source: Federal Bureau of Investigation Uniform Crime Report data, National Criminal Justice Data Archive.

2. Source: Federal Bureau of Investigation Supplemental Homicide Report data for 1992, 1993, 1994, and 1995. Washington, D.C.: U.S. Department of Justice, Federal Bureau of Investigation.

3. This category contained the following 21 SHR relationships: boyfriend, girlfriend, husband, wife, common-law husband, common-law wife, homosexual partner, ex-husband, ex-wife, father mother, stepfather, stepmother, son, daughter, stepson, stepdaughter, brother, sister, in-law, and other family member.

4. In all eight study cities, a large percentage of residents are not in the labor force and would therefore be excluded from unemployment statistics. Therefore, the “percentage employed” was deemed a more useful indicator of employment levels in each city. These analyses treat the city as

the unit of analysis and do not incorporate within-city variation in the economic factors in question. This approach is not very sensitive, and failure to detect links between homicide and selected economic factors should not be seen as evidence that the links do not exist. In fact, preliminary analyses of within-city variation in economic factors strongly suggest a link to homicide. NIJ staff are conducting research to better assess this relationship.

5. The analyses in this study looked at homicide rates within city limits, while DUF data are sometimes collected from areas that do not conform to city boundaries. Thus, the populations may differ significantly, meaning the data should be compared cautiously.

Findings and conclusions of the research reported here are those of the authors and do not necessarily reflect the official position or policies of the U.S. Department of Justice.

The National Institute of Justice is a component of the Office of Justice Programs, which also includes the Bureau of Justice Assistance, the Bureau of Justice Statistics, the Office of Juvenile Justice and Delinquency Prevention, and the Office for Victims of Crime.

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