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Department of Justice

FOR IMMEDIATE RELEASE
THURSDAY, JANUARY 21, 1988

NIJ
(202) 724-7782

From 53 to 79 percent of the men arrested for serious offenses in 12 major U.S. cities tested positive for illicit drugs, Attorney General Edwin Meese III announced today. The new Drug Use Forecasting system conducted the urine tests on a sample of more than 2,000 arrestees between last June and last November.

"Overwhelming evidence now exists that links drug use to criminal activity," the Attorney General said.

Most of those tested were charged with such street crimes as burglary, grand larceny and assault. The sample contained relatively few men charged with drug sales, drunk driving or disorderly conduct. All tests were voluntary and anonymous.

"The program's purpose is to track drug use trends among urban defendants suspected of dangerous crimes," the Attorney General said. "It does not reflect drug consumption among the general population.

"We now have timely base-line statistics for detecting trends in drug use by criminal suspects across the nation. This valuable barometer will have important implications for public safety. This is most useful. It fits in well with our other strategies for drug control, including prevention and treatment."

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The testing, which is continuing, is sponsored by the National Institute of Justice, the principal criminal justice research agency in the Department of Justice within the Office of Justice Programs (OJP). The program is cofunded by the Bureau of Justice Assistance within OJP.

"Any increased drug use among offenders would represent an increased peril to the public," Meese said. "Other Institute-sponsored research interviews with California prison and jail inmates found, for example, that heroin addicts committed 15 to 20 times more serious offenses than did non-users. Users of drugs other than heroin committed five times more robberies and burglaries than did non-users."

The Drug Use Forecasting (DUF) system measures drug use in the Borough of Manhattan in New York City; Washington, D. C.; Orleans Parish (New Orleans), Louisiana; San Diego County, California; Marion County (Indianapolis), Indiana; Maricopa County (Phoenix), Arizona; Los Angeles; Houston; Chicago; Detroit; Fort Lauderdale, Florida; and Multnomah County (Portland), Oregon. The cities were chosen to represent various regions of urban America.

The Institute will sample new arrestees four times each year and analyze the trends. During the coming year at least 18 cities are expected to participate.

(MORE)

Los Angeles, Detroit and Chicago recently joined the program. Miami, Dallas and Philadelphia are expected to do so in the near future.

Shortly following arrest, the men in the 12-city program were tested for 10 drugs: cocaine, heroin, marijuana, methadone, methaqualone, phencyclidine (PCP), Valium, Darvon, amphetamines ("speed") and barbiturates. The most frequently found illegal drugs were marijuana, cocaine, heroin, PCP and amphetamines. Much less frequently encountered were methaqualone, Valium, Darvon and barbiturates.

The percentages of those arrested who tested positive for any drug, including marijuana, from last June through last November are shown in the left column; percentages for those testing positive for cocaine are shown in the right column:

New York	79%	63%
Washington, D.C.	77	52
San Diego	75	44
Chicago	73	50
New Orleans	72	45
Portland, Oregon	70	31
Los Angeles	69	47
Detroit	66	53
Fort Lauderdale	65	46
Houston	62	43

(MORE)

Indianapolis	60	11
Phoenix	53	21

"Drug abuse by criminal suspects far exceeds the estimated use in the general population, where it appears to be leveling off," Meese noted. "Among criminal defendants, however, it seems to be increasing."

The tests have shown that among those arrested in New York City cocaine use has almost doubled during the last three years and it has more than tripled in the District of Columbia. These are rates from two to nine times higher than in the general population as estimated by the National Institute on Drug Abuse.

Much can be done at the local level once specific drug abuse patterns are defined, the Attorney General said.

"There has been encouraging experience with street enforcement strategies against drug dealing and with the routine testing of those on pretrial release," he said.

"As the Drug Use Forecasting system results are reported in each city," he said, "local officials can develop specific tactics to counter the drugs of choice and the drug marketing strategies prevalent in their communities."

Meese said the data's worth is already being proven.

"The San Diego Criminal Justice Council has created a subcommittee to develop policy and intervention programs for drug

(MORE)

abusers in the county jail," he said. "In Arizona the results have inspired plans for statewide pretrial testing.

"I was in Arizona recently, and I was told that the testing program's results encouraged the Arizona Supreme Court Committee on Drug Testing to start a similar survey of juveniles. Moreover, the state legislature passed significant drug abuse legislation that includes a prerelease, pretrial drug testing plan."

The testing in the dozen U.S. cities found wide differences in the number of users who tested positive for two or more drugs. The percentages were as follows:

Washington, D.C.	60%
San Diego	45
New Orleans	38
Chicago	37
New York	36
Portland, Oregon	33
Los Angeles	32
Detroit	31
Houston	24
Phoenix	22
Fort Lauderdale	18
Indianapolis	17

(MORE)

Those who tested positive for multiple drugs usually showed marijuana as one of the substances. However, in three cities -- New York, Washington and San Diego -- at least 20 percent of those arrested were found to be positive for two or more drugs other than marijuana.

Other findings from the research include:

--Cocaine use has surpassed that of marijuana in New York City and the District of Columbia.

--Heroin remains a significant and continuing problem (10 percent or more) in New York, Washington, Detroit, San Diego, Chicago, Portland, and Los Angeles. In New York one in four arrested persons were found to have heroin in their bodies.

--The use of barbiturates, methaqualone, Valium, Darvon and illegal methadone in most of the cities was less than previously surmised. However, methadone was found in 10 percent of the tests in New York, and Valium was found in 13 percent of the Indianapolis samples. (In some instances these drugs may have been legally prescribed.)

--Amphetamine use may be substantially higher than reported in the test results. The Institute included only amphetamine positives that were likely to have resulted from illicit use. Unconfirmed amphetamine positives, possibly resulting from over-the-counter medicines, were

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not reported. About one-half of the total amphetamines positives were confirmed as likely illicit.

--Regional variation in drug preferences implies that intervention programs need to be tailored to each city's specific drug problem.

"These results are being received by the participating jurisdictions as a call to action," Meese said. "At the national level the system can serve as an effective indicator of the effectiveness of law enforcement, education and treatment efforts to reduce drug abuse and crime."

Participation rates by the arrested men approached under the program were high in all cities. More than 90 percent of all defendants who were asked agreed to be interviewed, and more than 80 percent of these voluntarily provided a urine sample.

Trend results will be derived from quarterly samples of 250 arrestees at each site.

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88-010 (DOJ)

87-236 (OJP)

After hours contact: Stu Smith (301) 983-9354

National Institute of Justice

James K. Stewart, Director
(202) 724–2942

Drug Use Forecasting (DUF)

a program of the National Institute of Justice cofunded by the Bureau of Justice Assistance

January 1988

National Institute of Justice

DRUG USE FORECASTING—(DUF)

PURPOSE

- To provide each city with information for:

  Detecting drug epidemics earlier;

  Planning allocation of law enforcement resources;

  Determining treatment and prevention needs;

  Measuring the impact of efforts to reduce drug abuse and crime.

- To provide national level estimates of illicit drug abuse in offenders.

- To track and forecast national drug use trends.

January 1988

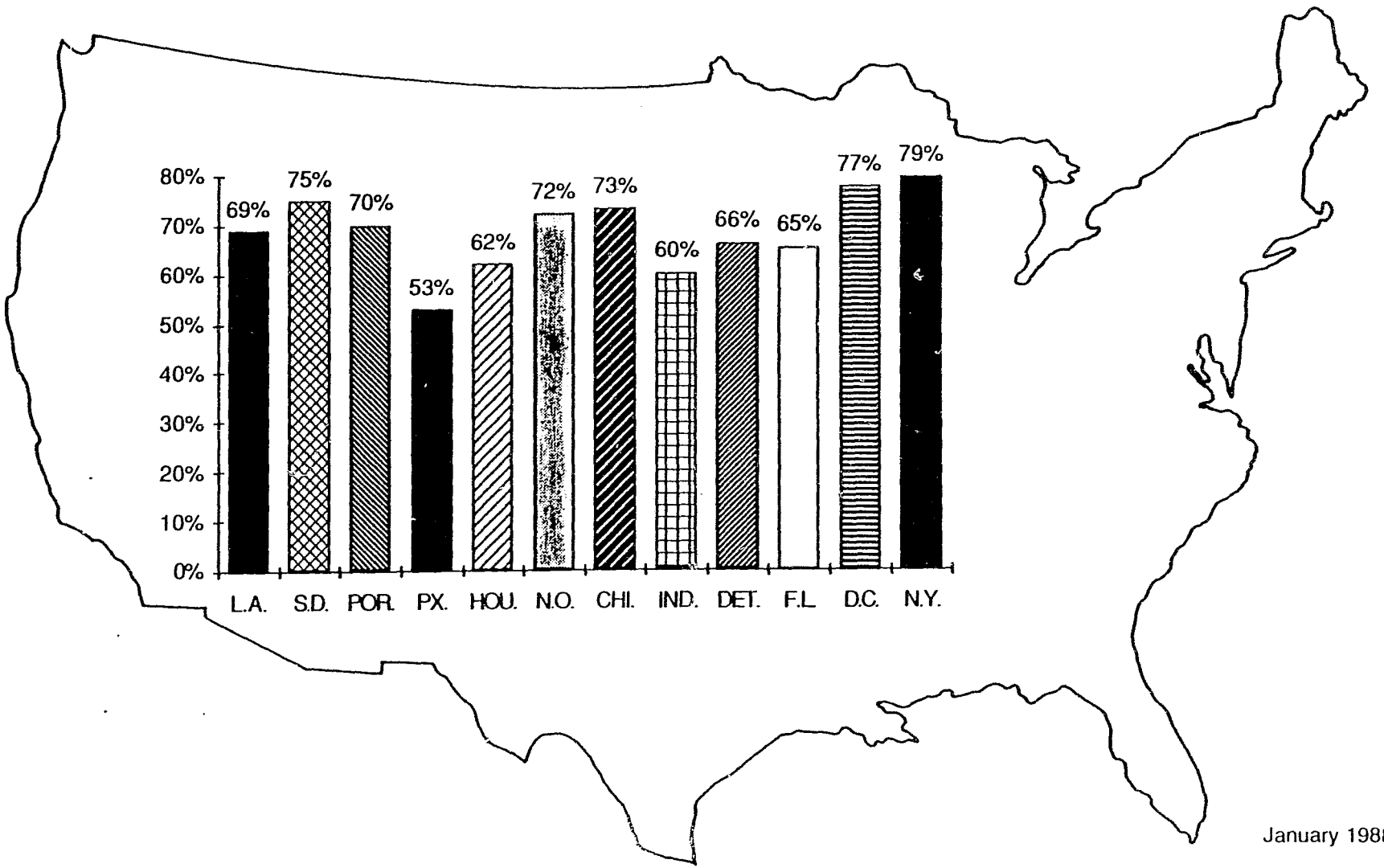
DUF methods

- Voluntary interviews and urine specimens obtained from male arrestees in the largest cities;
- 200 new arrestees sampled every three months;
- Persons primarily charged with nondrug felony offenses;
- Response rates consistently high: 95 percent of arrestees agree to interview, over 80 percent of these provide a specimen;
- Specimens analyzed by New York State Laboratory or Pharmchem;
- Females and juveniles to join DUF in 1988 in 25 cities.

National Institute of Justice

POSITIVE FOR ANY DRUG, INCLUDING MARIJUANA

(Male arrestees, June–November, 1987)



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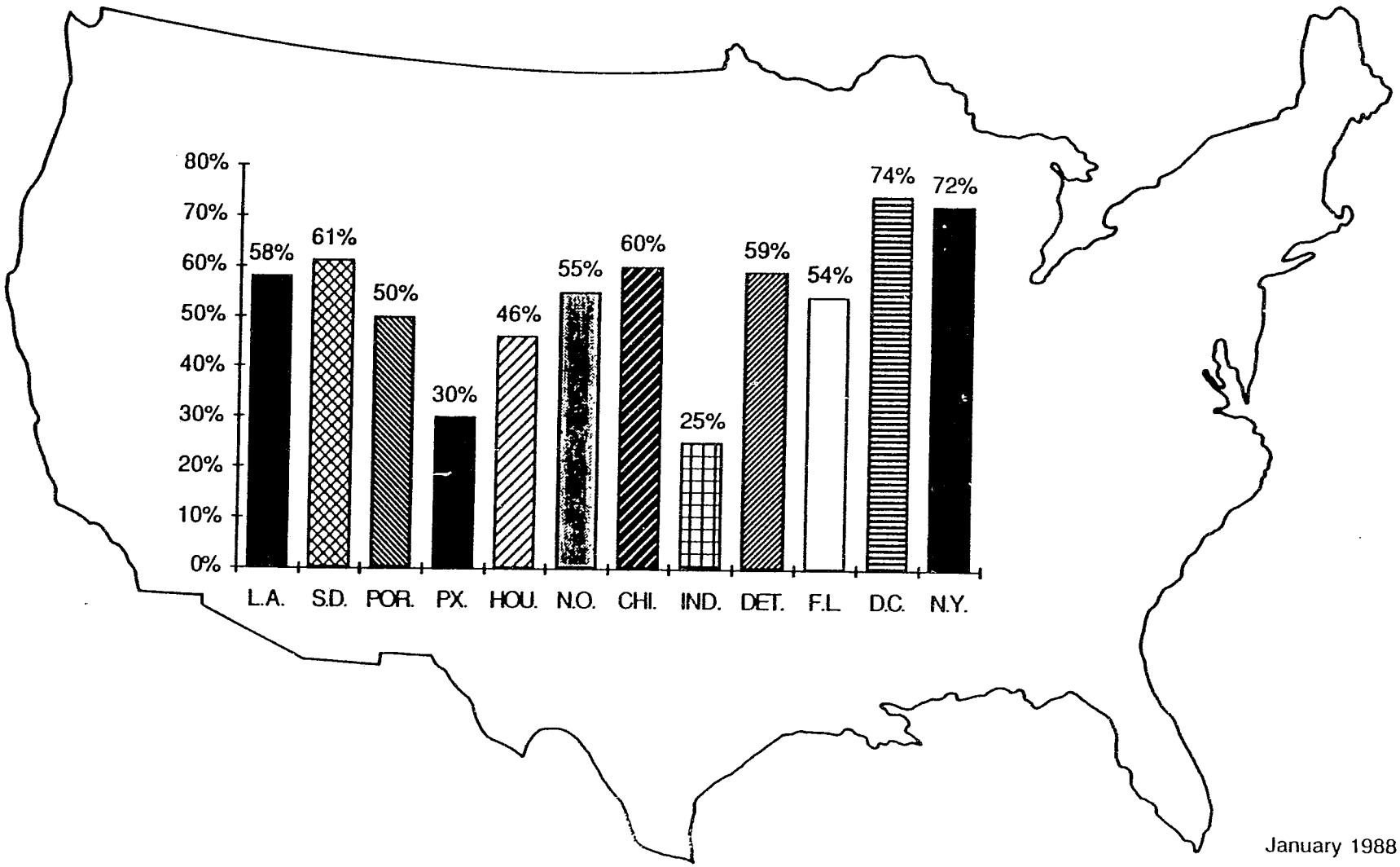
National Institute of Justice

POSITIVE FOR ANY DRUG, EXCLUDING MARIJUANA

(Male arrestees, June–November, 1987)



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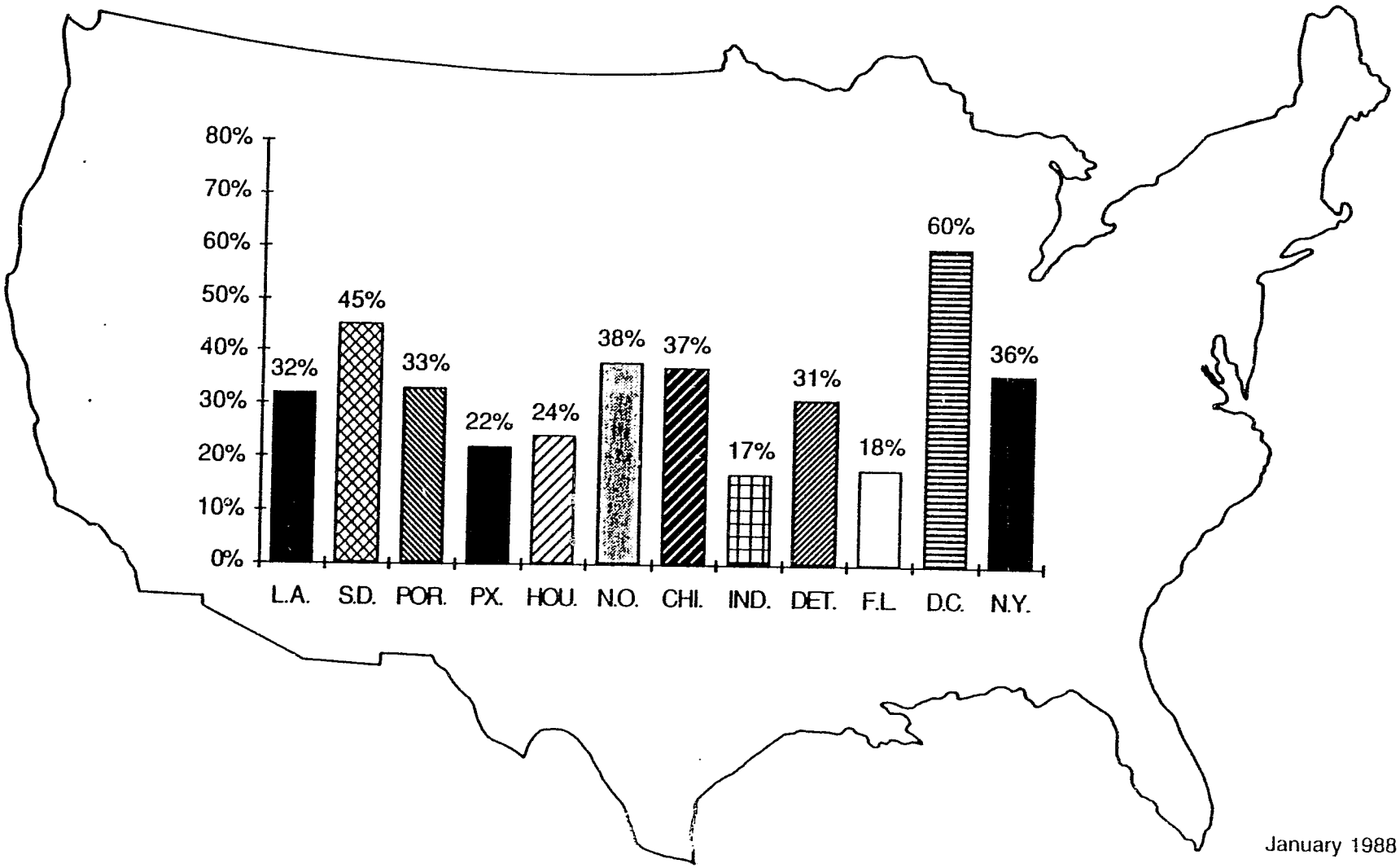
National Institute of Justice

POSITIVE FOR 2+ DRUGS, INCLUDING MARIJUANA

(Male arrestees, June–November, 1987)



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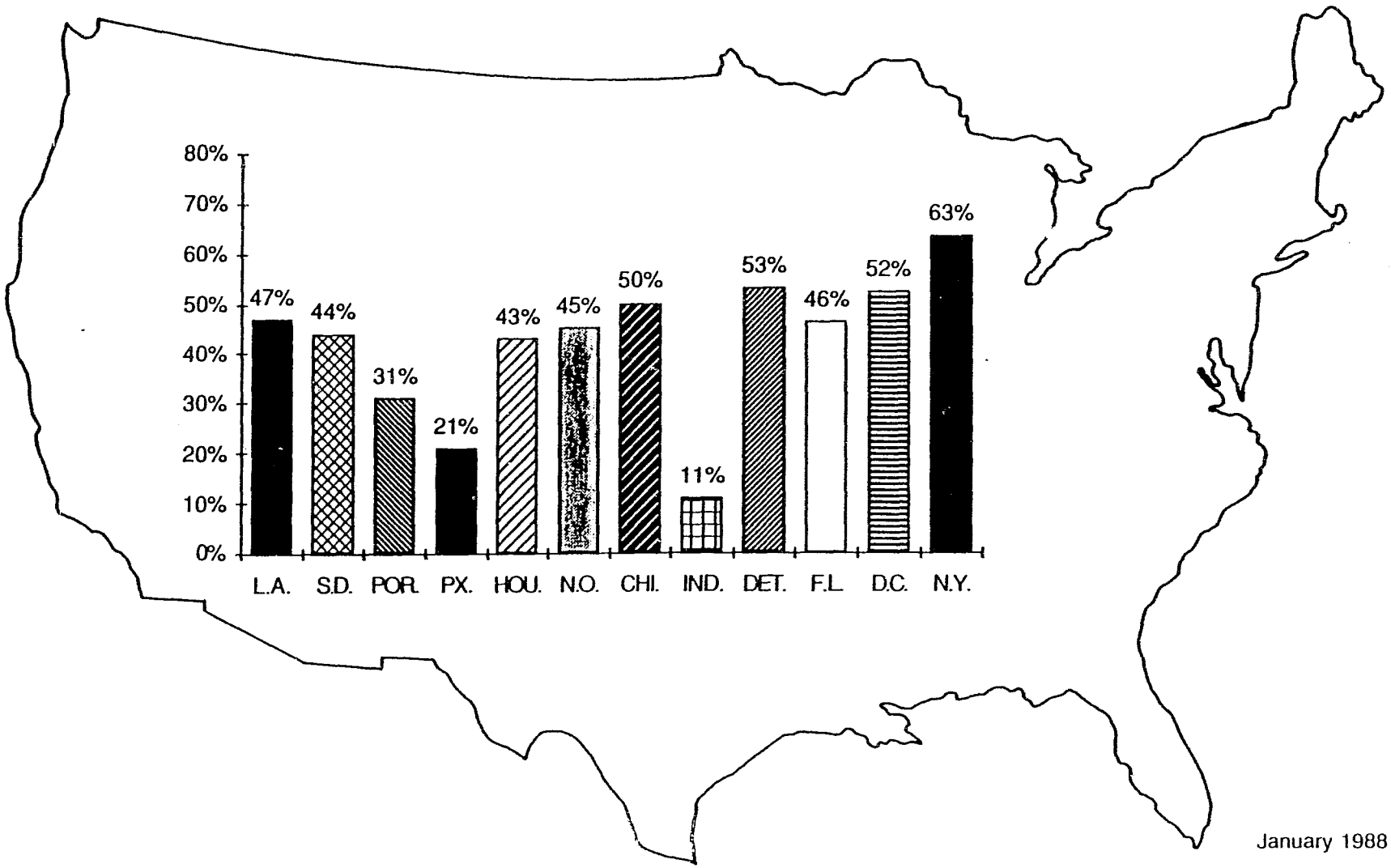
National Institute of Justice

POSITIVE FOR COCAINE

(Male arrestees, June–November, 1987)



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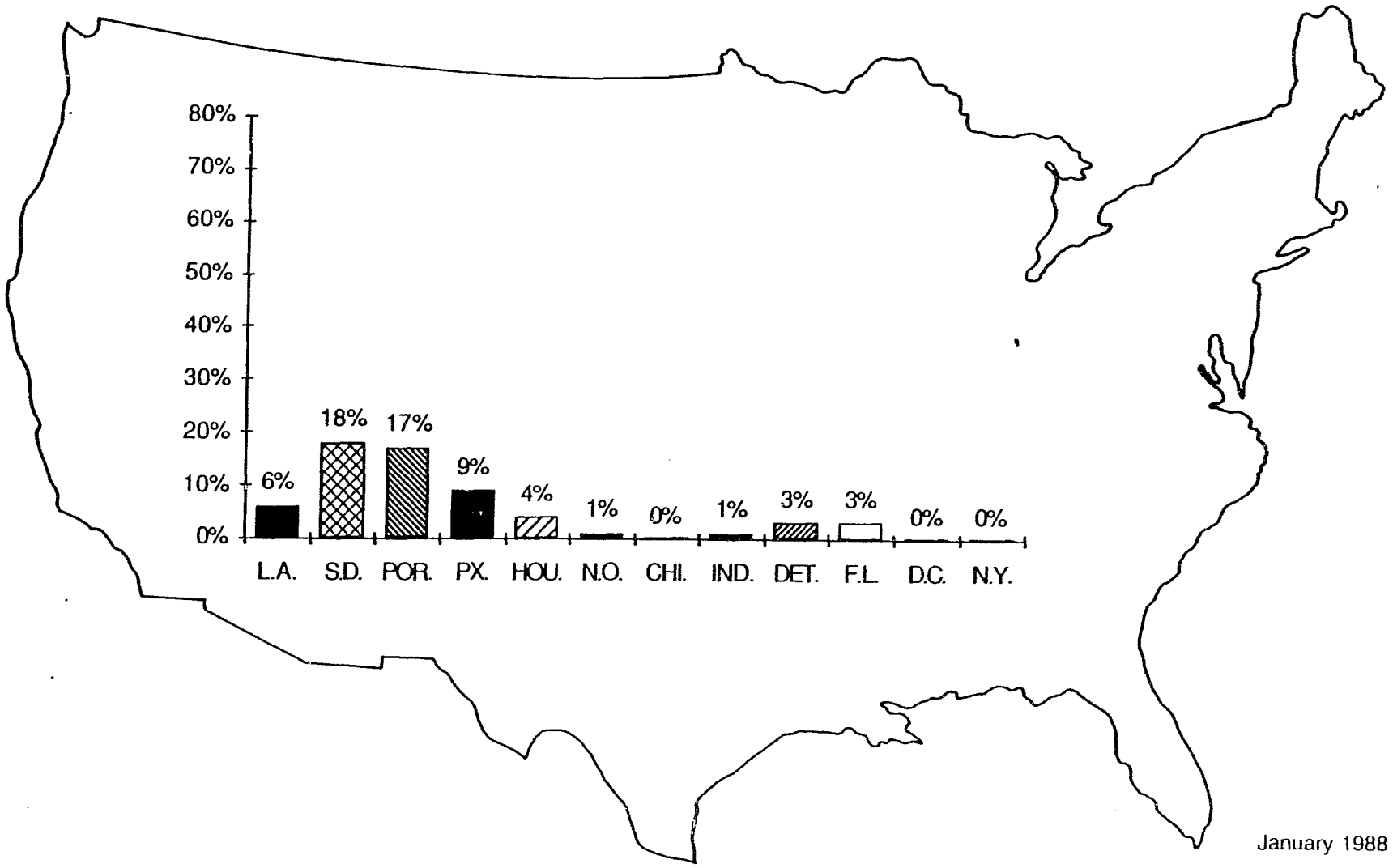
National Institute of Justice

POSITIVE FOR AMPHETAMINES

(Male arrestees, June–November, 1987)



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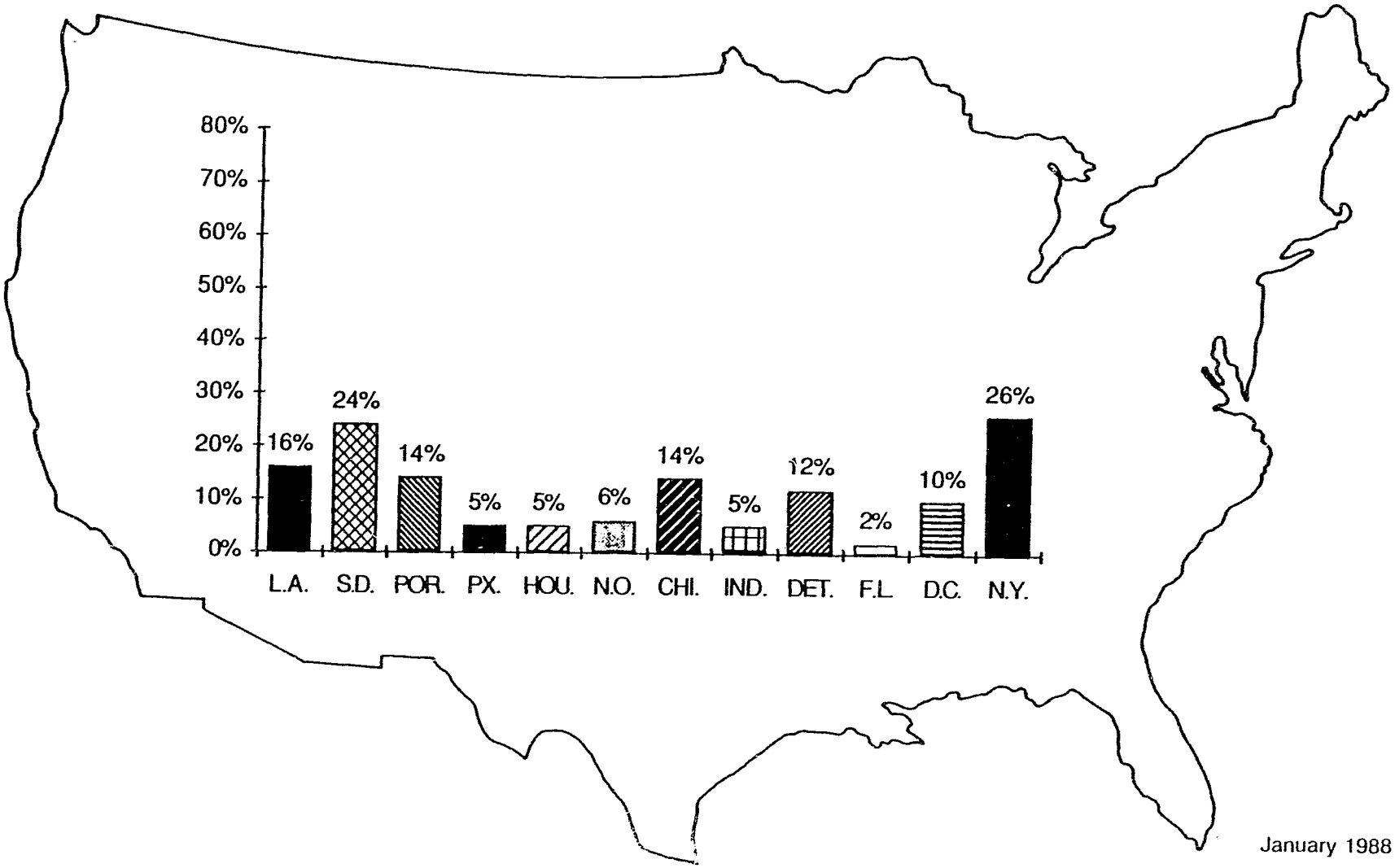
POSITIVE FOR OPIATES

(Male arrestees, June–November, 1987)



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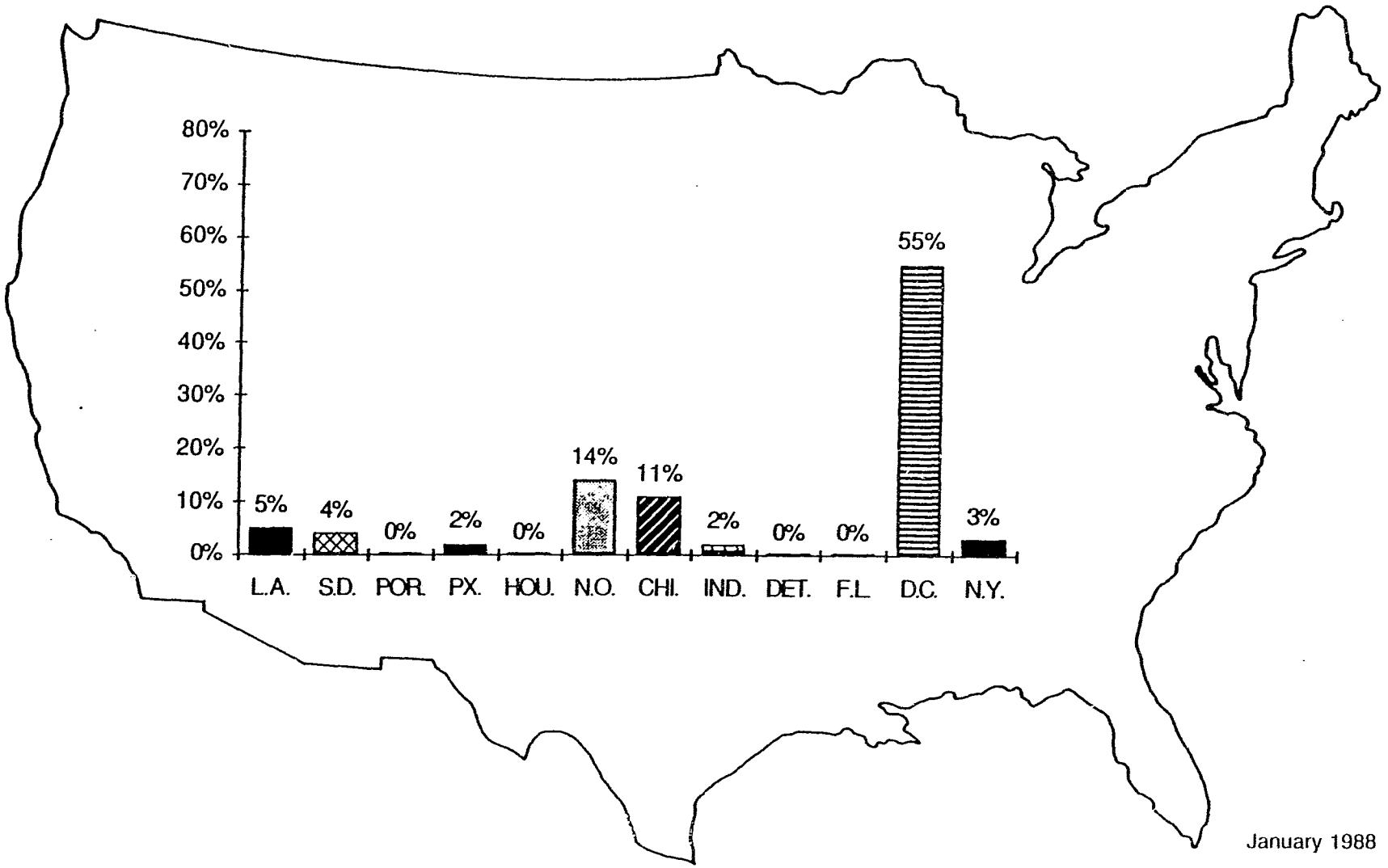
POSITIVE FOR PCP

(Male arrestees, June–November, 1987)



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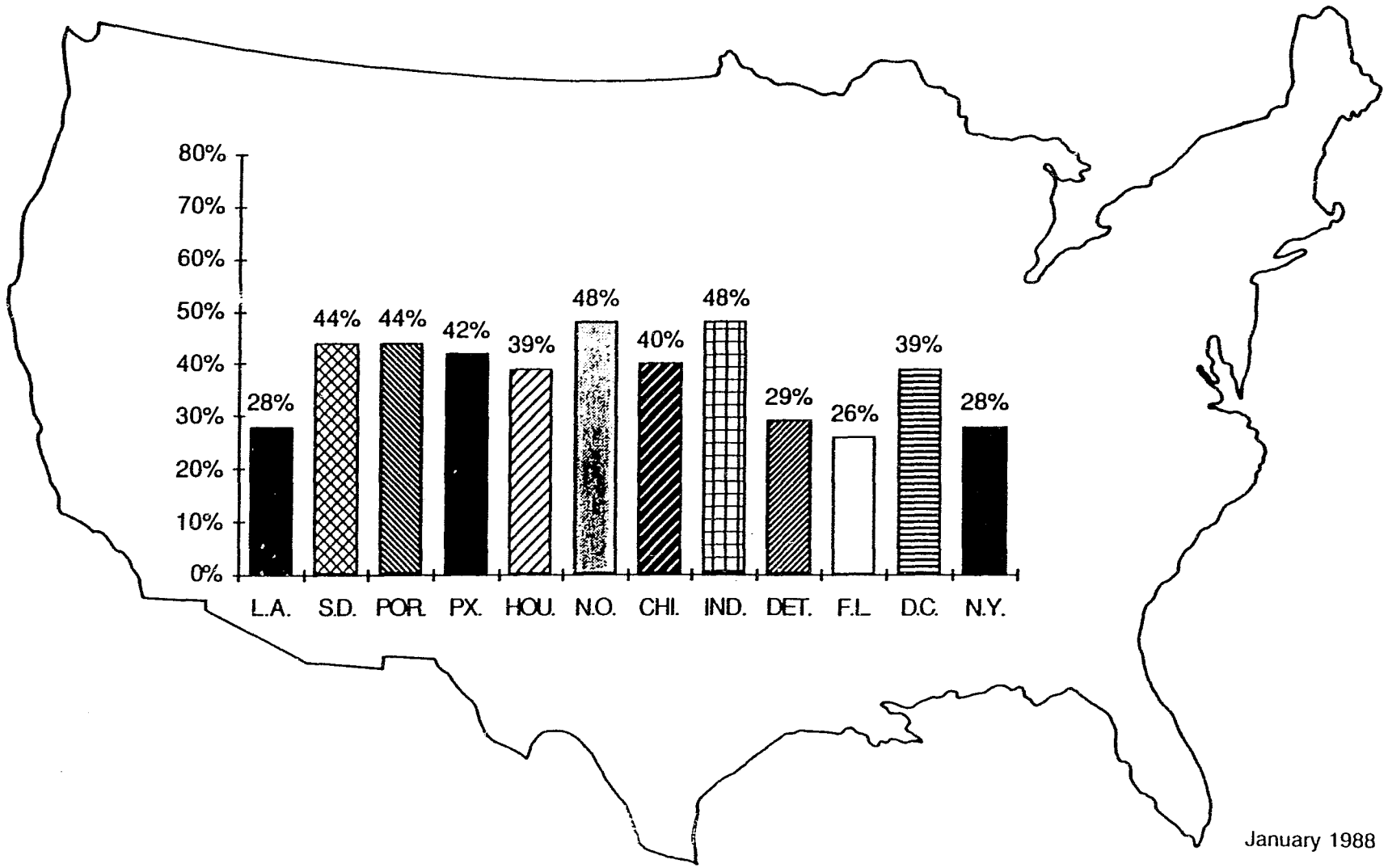
POSITIVE FOR MARIJUANA

(Male arrestees, June–November, 1987)



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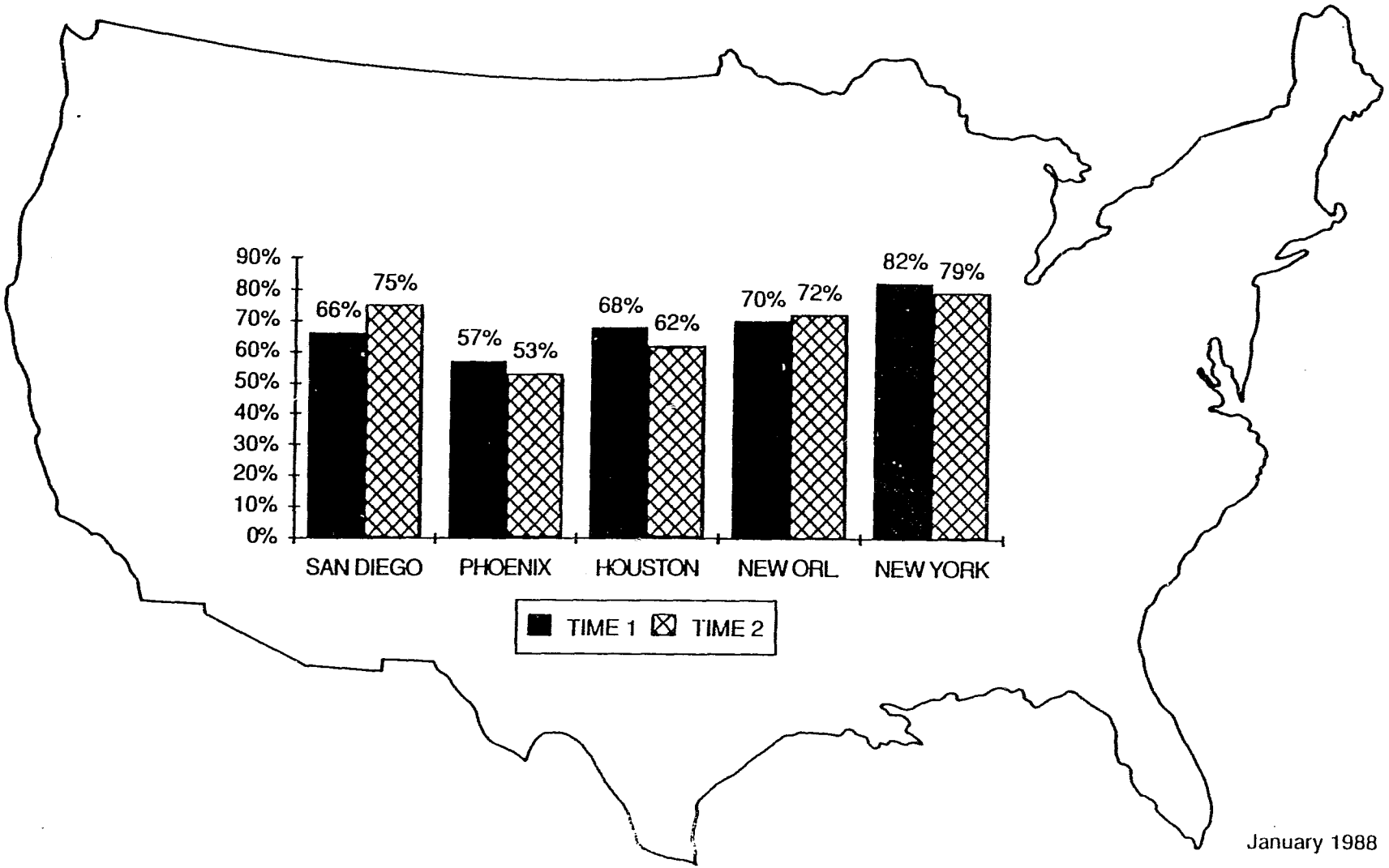
National Institute of Justice

PERCENTAGE POSITIVE FOR ANY DRUG, INCLUDING MARIJUANA

(Data from two time periods)



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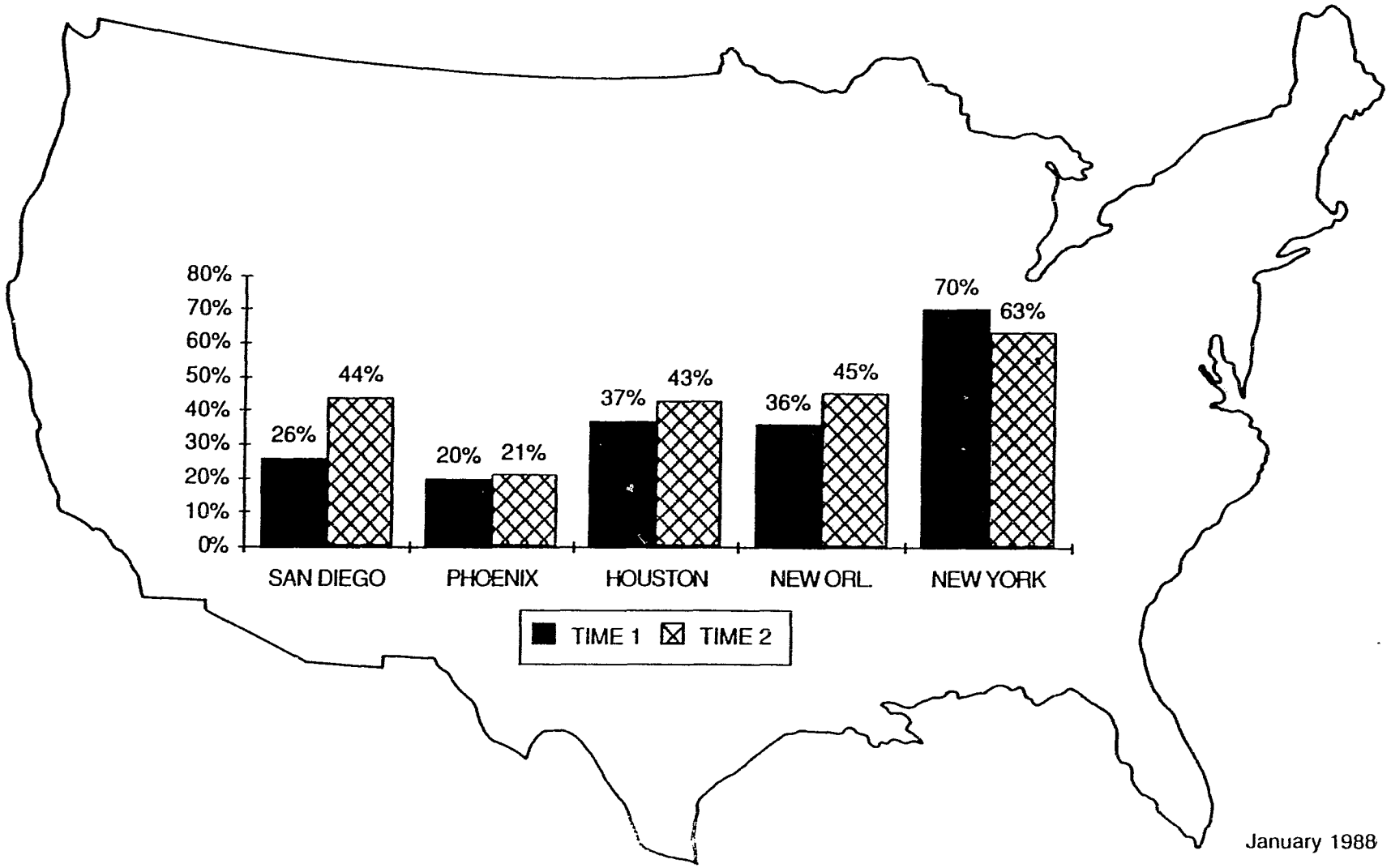
PERCENTAGE POSITIVE FOR COCAINE

(Data from two time periods)



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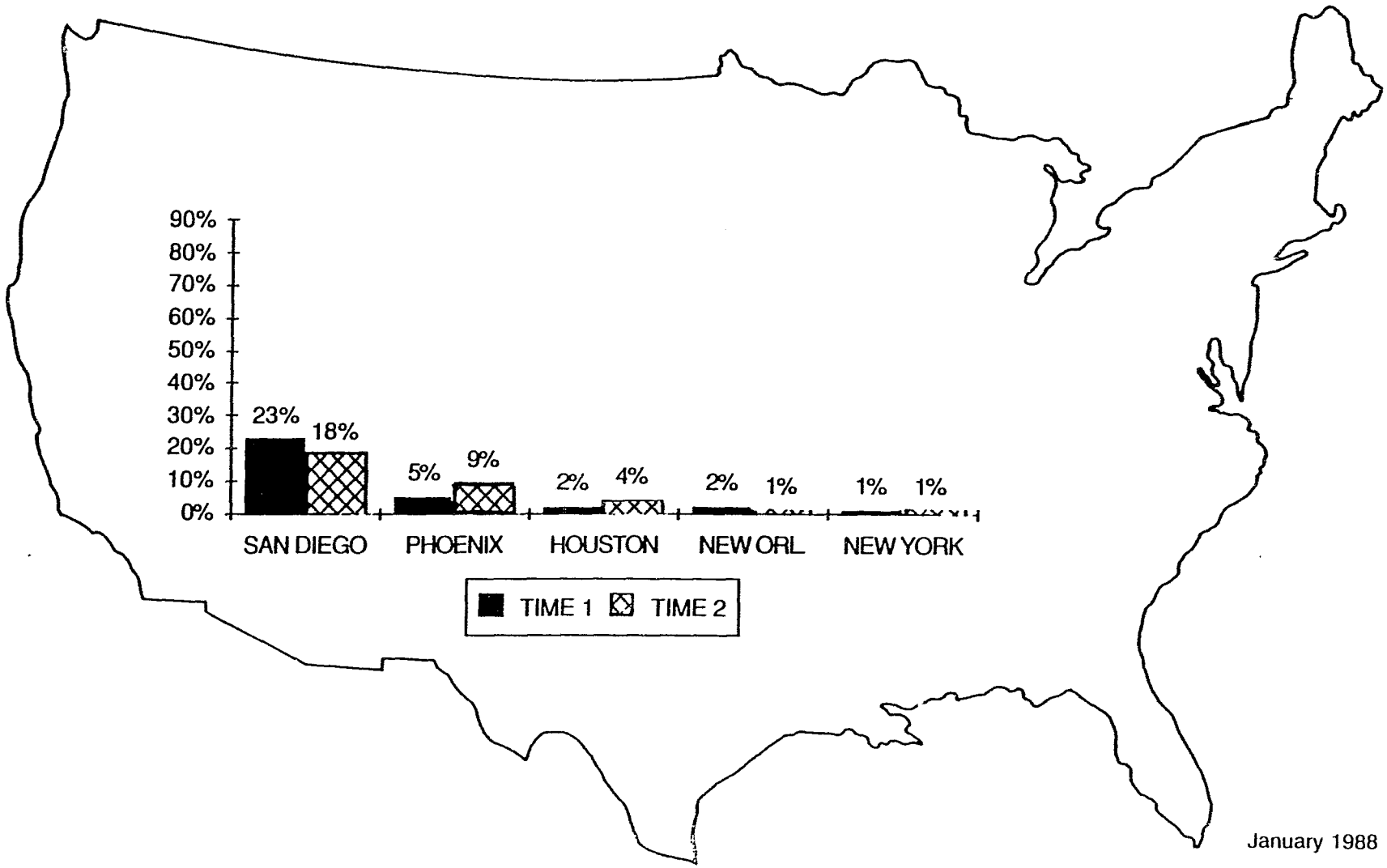
PERCENTAGE POSITIVE FOR AMPHETAMINES

(Data from two time periods)



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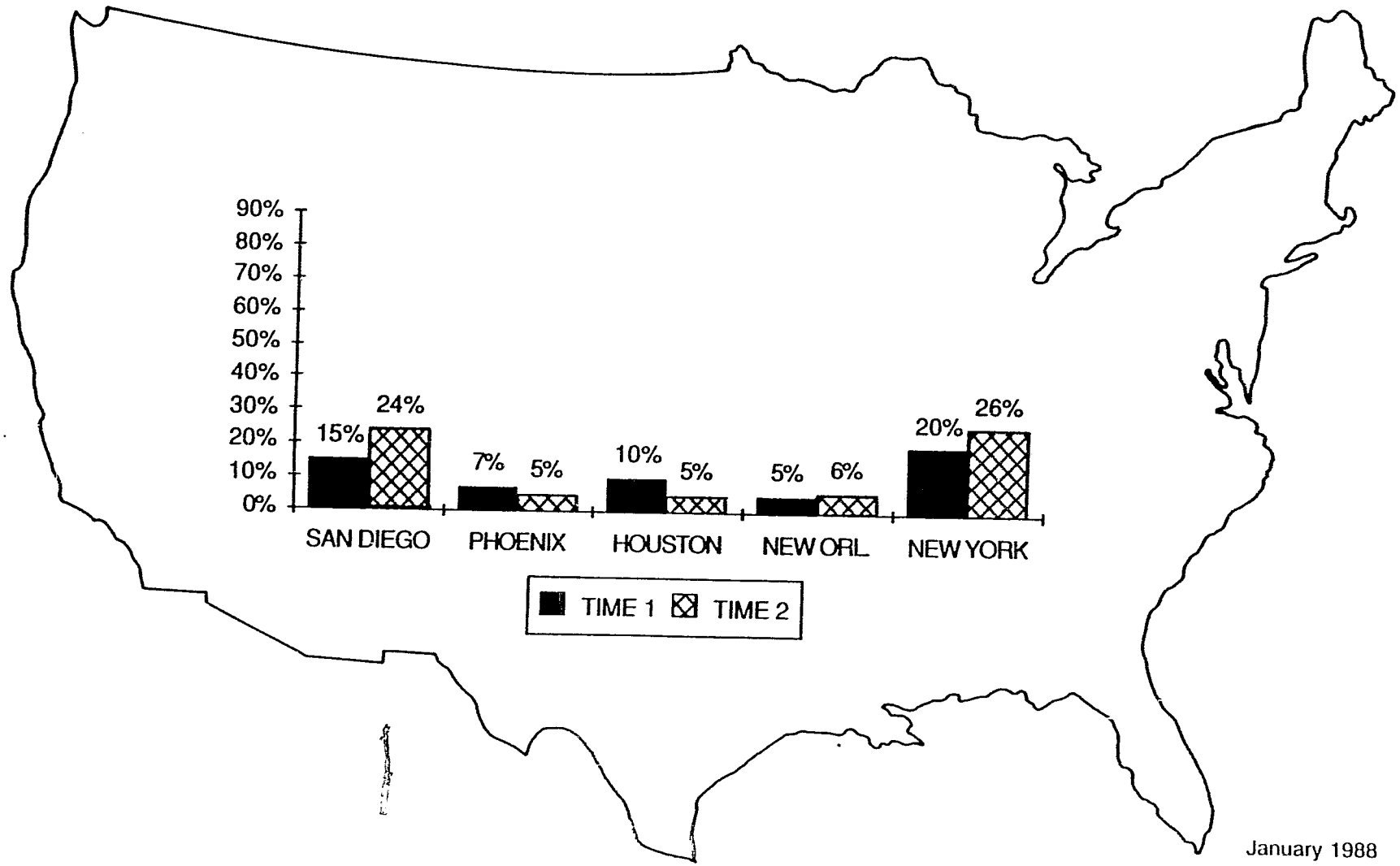

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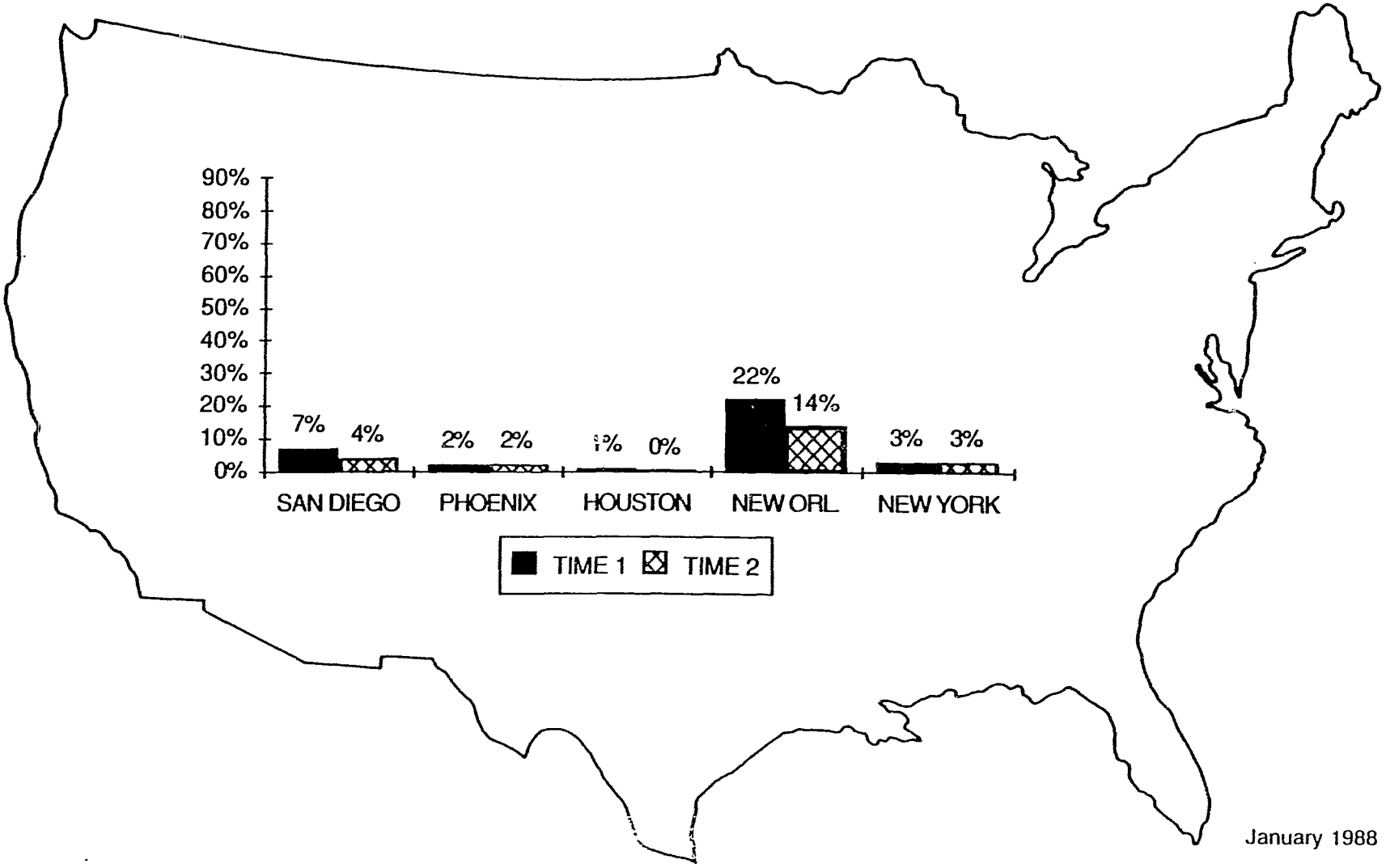
PERCENTAGE POSITIVE FOR PCP

(Data from two time periods)



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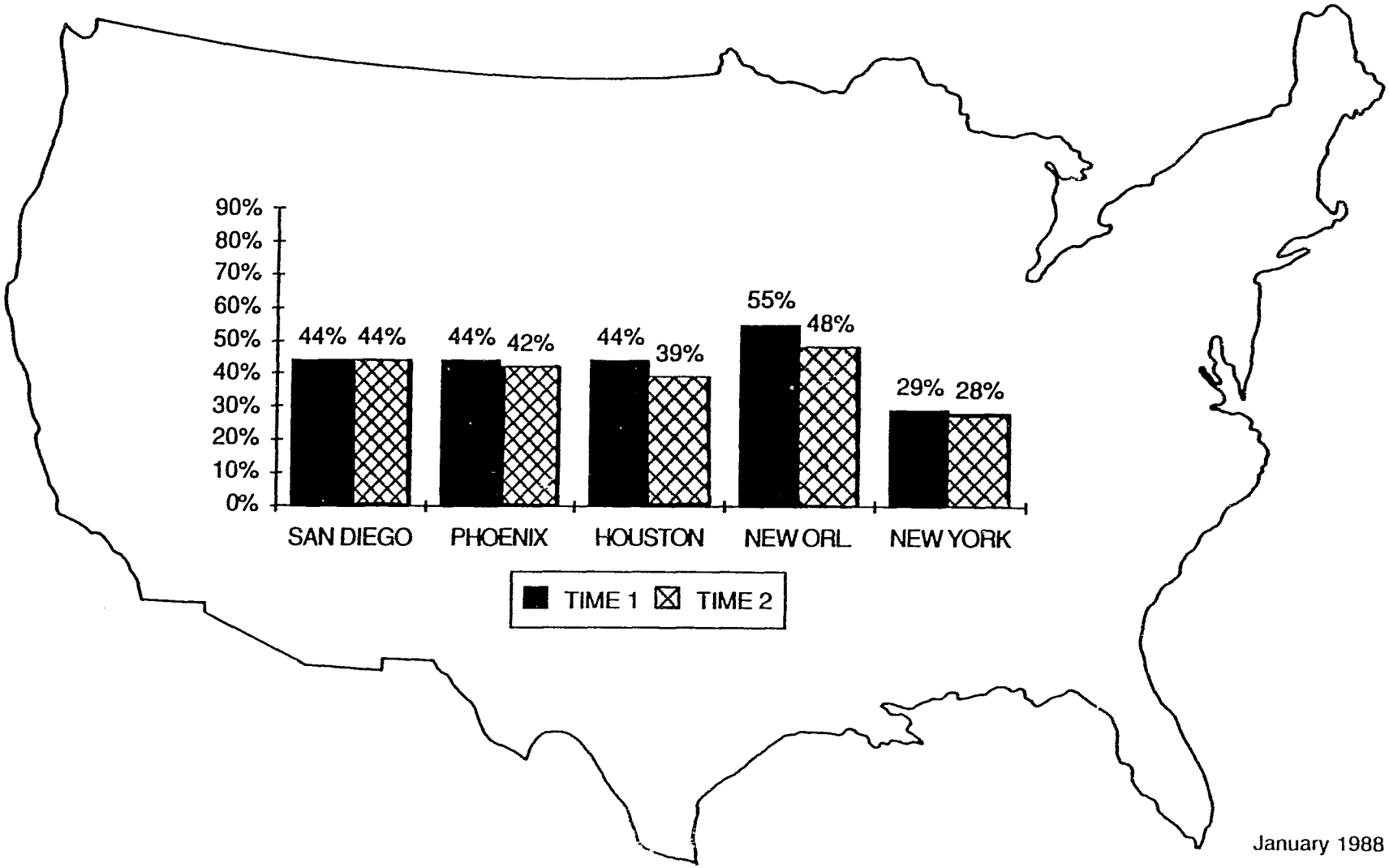
PERCENTAGE POSITIVE FOR MARIJUANA

(Data from two time periods)



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PERCENTAGE OF ARRESTEES WHO TESTED POSITIVE FOR ANY DRUG, BY TOP ARREST CHARGE AND CITY

TOP CHARGE AT ARREST

CITY	DRUG SALE OR POSS.	WEAPONS	ROBBERY	LARCENY	BURGLARY	STOLEN PROPERTY
New York	91%	86%	85%	85%	70%	**
San Diego	77%	63%	86%	70%	77%	73%
Houston	77%	47%	67%	76%	74%	63%
New Orleans	93%	85%	69%	75%	71%	65%
Phoenix	66%	**	**	59%	68%	58%

** Less than 10 persons with this charge

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SELF-REPORTED INJECTION AND NEEDLE SHARING IN ARRESTEES IN FIVE CITIES

(Males arrested between April and July, 1987)

	San Diego	Portland	Phoenix	New Orleans	New York
Ever injected:	33%	38%	28%	15%	21%
Percent of cocaine users who typically inject:	28%	29%	26%	20%	31%
Median age first injected:	19 +	18 +	17 +	19 +	17 +
Among injectors, percent who have changed because of AIDS:	67%	48%	35%	45%	66%
Shares needles					
Never				55	62
Used to, stopped	NA	NA	NA	26	13
Some/most of time				19	26
				100%	100%

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PROMISING DRUG CONTROL STRATEGIES

- DARE—Drug Awareness Resistance Education—a long-term prevention program in the schools;
- Pressure Point—street-level enforcement directed at reducing distribution and demand;
- Forfeiture of Assets—a strategy for reducing dealers' profits;
- Drug screening of arrestees, probationers, and parolees—identify drug abusers for treatment referral, diagnosis of AIDS, and monitoring;
- Scheduled drug testing—ensure that persons released to the community abstain from drugs.

January 1988

National Institute of Justice / Research in action

James K. Stewart, Director

Reprinted from *NIJ Reports/SNI 202* March/April 1987

Controlling drug abuse and crime: A research update

by Mary G. Graham

Drug trafficking and abuse wreak enormous damage on society each year. Lives destroyed or seriously impaired, crime losses, decreased productivity, treatment costs—all contribute to the $59 billion annual toll exacted by illicit drug use and related crime. These social and economic repercussions explain why drugs and crime rank high on the list of public concerns in poll after poll.

Dramatic increases in cocaine use across all age groups and in all parts of the country have contributed to the alarm over drugs. Even as heroin and marijuana use has leveled off since 1980, cocaine-related cases in hospital emergency rooms have tripled since 1981. Emergence of "crack," a new, low-cost smokable cocaine, has resulted in more widespread use especially among the young—and more rapid dependence. A recent survey conducted for the National Institute on Drug Abuse by University of Michigan researchers indicates that 4.1 percent of high school seniors used "crack" during 1986. Addiction to "crack" can occur within several months, as opposed to the 3 or 4 years for typical cocaine "snorting."

"In response to the growing threat, efforts to thwart drug trafficking and diminish the corrosive impact of drugs are intensifying at all levels of government," according to James K. Stewart, Director of the National Institute of Justice.

Attorney General Edwin Meese III recently announced an Executive Order by President Reagan creating a National Drug Policy Board to coordinate all Federal anti-drug activities. Funds available this year under the 1986 Anti-Drug Abuse Act are expected to be a catalyst for comprehensive drug control efforts by State and local jurisdictions. A wide range of prevention, education, and public safety programs at the State and local levels are eligible for support this fiscal year.

"As officials marshal available resources and plan strategy, research can help inform the policy choices to be made," Mr. Stewart suggested.

This article reviews research by the National Institute of Justice that is changing the way we look at drug abuse and its relationships to crime. It also describes promising options for attacking drug trafficking and suppressing demand for drugs by criminals.

Building new knowledge

Much of our previous knowledge about the extent of drug use among criminals has been based on reports by offenders themselves. Research on drug testing of arrestees is revealing the true dimensions of the drug problem, outstripping estimates based on self-report data.

Drug abuse by criminals. More than 14,000 arrestees were tested in Washington, D.C., and New York City in 1984, using highly accurate urinalysis technology. More than half those arrested in both cities tested positive for illegal drugs—double the number expected. The results also showed the prevalence of multiple drug use. Nearly a third of the arrestees testing positive in the District of Columbia had used more than one drug. The findings confirmed that without drug testing most drug use will go undetected. Only half of those who tested positive actually admitted using drugs.

More recent data from the two cities show that drug use by arrested persons is on the rise. By September 1986, nearly three out of four Washington, D.C., arrestees tested positive, compared with 56 percent in March 1984 when testing began.

New findings in New York City reflect the surge in cocaine use. Of 400 people processed through Manhattan Central Booking in September and October 1986, more than 80 percent tested positive for cocaine, compared with 42 percent in 1984. The increase was found among all ages, but it was especially large among young people between 16 and 20 years old—from 28 percent in 1984 to 71 percent last fall.

Drug-crime connections. Evidence of close relationships between drugs and crime continues to mount. The 1984 drug testing research in Manhattan showed, for example, that more than half those charged with murder, manslaughter, robbery, and burglary tested positive for one or more drugs. And the more recent 1986 data on two samples of arrestees in Manhattan showed that between 59 percent and 92 percent of those charged with robbery tested positive for cocaine, as did more than 70 percent of those charged with burglary.

Drug abuse has also been shown to be one of the best indicators of serious criminal careers. Institute-sponsored research found that a majority of the "violent predators" among prison and jail inmates had histories of heroin abuse, frequently in combination with alcohol and other drugs. California prison and jail inmates who were addicted to heroin reported committing 15

Mary G. Graham manages the National Institute of Justice publications program. This article is based on materials and data provided by Dr. Bernard Gropper, NIJ Drugs, Alcohol, and Crime Research Program manager; John Spevacek, NIJ Drug Testing Research manager; Dr. Eric Wish, NIJ Visiting Fellow; and other NIJ staff.

times as many robberies, 20 times as many burglaries, and 10 times as many thefts as non-drug users.

NIJ research indicates that drug use accelerates criminal behavior. Studies in Baltimore showed addicts committed four to six times more crime during periods of heavy drug use than when they were relatively drug free. And, contrary to what was previously believed, research in New York City indicates that drug abusers are at least as violent, and perhaps more violent, than their non-drug-using counterparts. Heroin abusers are as likely to commit crimes such as homicide and sexual assault and even more likely to commit robbery and weapons offenses.

A growing number of homicides in major cities are suspected to be drug related. Research in progress is compiling data on the presence of drugs in the victim or killer, drugs or paraphernalia found at the scene of the crime, and the victim and murderer's known drug connections. The findings will lead to guidelines for revised police reporting of homicides so that more accurate and complete information on the extent of drug involvement in killings can be recorded. These statistics may advance our understanding of drugs as a catalyst for violence.

Cutting supply and reducing demand

The growing evidence of drug-crime connections has spurred efforts to develop new law enforcement tools for cutting both the supply and the demand for illegal drugs.

Disrupting supplies. Huge profits generated by the illegal drug market have created a web of suppliers. NIJ research is focusing on the best combination of strategies to disrupt various types of distribution networks.

Strategies to incapacitate the middle-level retail cocaine and heroin wholesaler are expected from a study now under way in Arlington County, Virginia; Broward County, Florida; Baltimore, Maryland; and Phoenix, Arizona.

Fighting drug trafficking with forfeiture sanctions

Forfeiture is a legal procedure that enables a government to seize property used in the commission of a crime and, in some jurisdictions, assets traceable to criminal profits. Federal prosecutors are successfully wielding forfeiture sanctions as a powerful weapon against drug traffickers. In fiscal year 1986, total income to the Department of Justice Assets Forfeiture Fund was some $90 million. And, under the provisions of the 1984 Comprehensive Crime Control Act, approximately $25 million in cash and property forfeited in Federal cases in 1986 was shared with the State and local criminal justice agencies that participated in those cases.

Used effectively, forfeiture sanctions can cripple an ongoing criminal enterprise by seizing the tools of the drug trafficking trade—planes, vessels, cars, and trucks—as well as cash, bank accounts, and other goods used in criminal activity or obtained with illicit profits. The risk of losing such assets raises the stakes considerably for criminal enterprises such as drug trafficking. For example, Federal prosecutors in California seized land that had been used to grow marijuana. The prospect of losing prime real estate may well serve as a powerful deterrent to others contemplating an illegal harvest.

An additional advantage of forfeiture for jurisdictions is the financial windfall gained through successful forfeiture proceedings. In most States, proceeds from the sale of property seized go to the State or local treasury. Some States, however, allow law enforcement agencies to keep the funds or forfeited property for official use. Seized vehicles, for example, can be used in undercover operations, and cash can supplement the undercover drug "buy" fund.

Despite the potential of forfeiture as a drug enforcement strategy, its use remains relatively limited at the State and local levels. Two complementary efforts, sponsored by the National Institute of Justice and the Bureau of Justice Assistance, aim to change that picture.

With funds from the National Institute of Justice, the National Criminal Justice Association (NCJA), in conjunction with the Police Executive Research Forum (PERF), will develop an instruction manual on establishing and maintaining an asset seizure and forfeiture program at the State level. The project will also devise and pilot test a model training curriculum.

In a survey conducted by NCJA as part of a 1986 pilot program on asset seizure and forfeiture, every responding jurisdiction reported the need for training in this area. Existing forfeiture statutes were viewed as ambiguous and lacking procedural guidelines for implementation. Police and prosecutors were reluctant to use forfeiture sanctions in drug trafficking cases without firm knowledge and understanding of relevant statutes and procedures, and State officials were concerned about managing seized assets.

The manual is intended to guide development of a State asset seizure and forfeiture program. It will discuss recent developments in forfeiture laws and procedures—establishment of a seizure and forfeiture capability, management of an inventory of forfeited assets, cooperative enforcement and prosecution efforts, and the resource requirements of maintaining such a program. It will also cover investigative tools for forfeiture cases, with an emphasis on financial investigations.

The core document for the training curriculum, the manual is also designed to be an independent, "stand-alone" resource for officials who want to establish or review forfeiture programs. Publication of the guide is expected later this year, and its availability will be announced in *NIJ Reports*.

Concurrently, the Police Executive Research Forum and the National Criminal Justice Association will develop training for local criminal justice investigators on the tools and techniques for financial investigations in asset seizure and forfeiture cases. The training is funded by the Bureau of Justice Assistance. Four training sessions will be held later this year. For more information on these training sessions, write Richard Ward, Bureau of Justice Assistance, 633 Indiana Avenue NW., Washington, DC 20531 (202-724-5974).

Researchers are collecting data on drug unit policies and operations and on the characteristics and vulnerabilities of wholesalers. The information is drawn from police records, files of closed cases, and interviews with investigators in the four jurisdictions, all of which have active enforcement policies against wholesalers. The study will analyze when the dealers were first detected, how much intelligence had been gathered, and what conditions led to major arrests and prosecutions.

In California, street gangs have become increasingly active in selling cocaine. Research in progress is studying how the youth gangs acquire cocaine, how they distribute the drug, and the customers they sell to. The study is expected to offer new ideas for breaking these networks, reducing both trafficking and violence.

Attacking the financial underpinnings of drug traffickers is another weapon in deterring suppliers. NIJ has analyzed the potential of asset seizure and forfeiture provisions in Federal and State laws as a tool for eliminating the trafficker's working capital. (Details of this study appear in the box on page 2.).

Profits from illegal drugs often find their way into the legitimate economy. Before dealers can make use of their profits, the funds must be "laundered." Federal investigators have become experienced in tracing the money narcotics dealers and other organized crime elements shift into apparently legitimate channels. The National Institute of Justice is preparing a handbook showing how the Federal experience can be adapted by State and local agencies initiating programs to investigate and prosecute money laundering operations.

Drug testing. Court-supervised drug testing is giving criminal justice a new tool to reduce demand for drugs by offenders and to help control crime.

Photo by [illegible] Bolton, NCJRS

Research sponsored by the National Institute of Justice is providing information to develop more effective policies for cutting drug supplies and reducing demand, especially among criminals.

The potential of mandatory drug testing of those released before trial was demonstrated in an NIJ-sponsored experiment in Washington, D.C.* As a result of the research, the city has made drug testing of arrestees a standard part of its pretrial release programs. Judges in D.C. Superior Court use the objective information about an offender's drug habits to decide what conditions should be imposed on those released pending trial. Drug-using defendants can be ordered to report for periodic testing while on release.

Replication of the successful D.C. pretrial drug-testing program is planned in three or more cities. The Bureau of Justice Assistance of the Office of Justice Programs, will fund operation of the program in participating jurisdictions, and the National Institute of Justice will support evaluation of the results.

New NIJ research is exploring other ways that drug testing of offenders can counter drug abuse and crime.

Public safety and offender supervision. Research in Washington, D.C., and New York revealed that arrestees who use drugs were more likely to be rearrested while on release and to fail to appear for trial. Mandatory drug testing is the best available method to ensure that released defendants remain drug free and thus less likely to jeopardize public safety.

In Washington, D.C., for example, the pretrial rearrest rate for drug users was 50 percent higher than for nonusers. Among defendants who reported regularly for court-mandated drug tests, however, the rate of pretrial arrests was 14 percent—the same as that for defendants who did not use drugs. Thus, drug testing also benefits the defendants. Those who test clean while under supervision have the opportunity to remain in the community pending trial.

*The D.C. program was the Research in Action article in the September 1986 *NIJ Reports*. For information on obtaining a reprint of the article or obtaining a videotape about the program, call NCJRS at 800-851-3420.

Drug detection through hair analysis: Developing future capabilities

Since all drug testing methods have inherent limitations, the National Institute of Justice is interested in developing new screening capabilities that complement those already available. Urinalysis provides an objective and efficient large-scale tool for rapidly screening criminal justice populations for drug use. Its power to detect is limited, however, to drugs consumed within the previous 2 to 3 days. Analysis of a few strands of human hair, on the other hand, offers the potential to detect drugs absorbed by the growing hair over a much longer period.

Hair analysis promises a complementary type of drug detection for various criminal justice and forensic applications. At present, however, it is still in the developmental stage and may be a few years from wide-scale field applications.

An NIJ pilot study will explore whether present laboratory capabilities can be transferred into operational environments. The research will monitor a sample of Los Angeles parole and probation clients over a 1-year period for compliance with abstinence from serious drugs as a condition of release. The results obtained with radioimmunoassay of hair (RIAH) will be compared to those obtained from urine samples.

Monitoring methods

Current drug detection methods primarily monitor two types of effects. The first are *short-term behavioral impacts* on speech, eye movements, and coordination of motion. These stem from the effects of drugs or alcohol on the brain and typically start within several seconds or minutes after the drug or alcohol is consumed. They are generally over within a few hours. Drunk driving and violent assaults are the most common instances where offenders are likely to be apprehended and tested while these effects are still present.

A second type of possible indicators of drug usage are the *short-term metabolic effects* evidenced in changes in the breath, blood, and urine. These effects begin within about a half-hour and end within 2 to 4 days for heroin or cocaine. Other drugs such as marijuana and PCP may be detectable in trace amounts for up to 2 to 3 weeks. But the body's processing eliminates so much within a few days that urine tests become impractical beyond that period.

A third set of possible diagnostic indicators exists. *Long-term organic effects* result when drug molecules are absorbed by growing body tissues such as hair and nails. Drugs become detectable within the hair about 3 to 4 days after consumption. Thus, hair analysis cannot reveal recent usage. But after 3–4 days, the portion of the growing hair nearest the scalp has entrapped detectable drug molecules that remain for the entire life of the hair shaft. As the hair grows, it records the individual's pattern of drug consumption much as a recorded tape retains a pattern of the signals imposed on it. Hair on the head grows about one-half inch per month. A 2–3 inch strand of hair, for example, would contain a record of the last 4–6 months of drug usage. Any body hair is potentially usable in tests, but hair on the head offers the advantages of relatively rapid growth and minimal intrusiveness.

The techniques of hair analysis are essentially the same as those of radioimmunoassay of urine and offer the same general detection sensitivity. Because hair analysis involves additional steps, however, it is inherently more time consuming and more costly per test. But detecting a probationer's abstention or drug usage over a prolonged period, for example, may require only periodic sampling—testing hair every month or two rather than conducting much more frequent urine tests. The result may be not only greater reliability but reduced expense for long-term monitoring.

Hair analysis capabilities could also minimize some concerns associated with urinalysis:

- Hair samples can be readily obtained from either sex in public without violating privacy and without the invasiveness related to blood or urine as monitoring mediums.
- Subjects cannot claim they are "unable" to provide a sample while being observed.
- Subjects cannot attempt to avoid detection by "flushing" the system with large quantities of fluids to dilute urine samples or by "staying clean" for a few days or weeks before a scheduled test.

Hair analysis also means that additional samples can be acquired and tested. This retesting capability would be valuable to confirm a positive result, as is now done with positive urine samples. It also would permit acquisition of a totally new sample to verify or refute original test findings. This would overcome, in ways not now possible, the legal and operational challenges presented by offenders' claims of "That's not my sample," "Somebody must have put something in it," and "I haven't taken anything at any time."

For the long term, it appears that present laboratory-based hair analysis methods will be refined and made more amenable to larger scale applications. When this occurs, hair analysis will become a technique complementary to urinalysis, expanding the criminal justice system's ability to detect and monitor illicit drug abuse.

Police crack down on heroin market in Lynn, Massachusetts

In 1983, a virtual drug bazaar operated each day just four blocks from the downtown business district of Lynn, Massachusetts. Drug dealers openly competed for business, sending "runners" out to hawk their wares to both pedestrians and drivers passing by. The easy and consistent availability of high-potency drugs made Lynn the preferred place to buy heroin for drug users all over the North Shore of Massachusetts.

Lynn, with a population of 80,000, had the second highest crime rate of all Massachusetts cities and a police department whose sworn strength had fallen by about one-third due to fiscal pressures. Understaffed, it had no resources it could dedicate solely to narcotics work.

Chronic complaints from residents and merchants brought Lynn's drug trade to the attention of the newly organized county Drug Task Force. When it began operations in September 1983, the Task Force's objective was to make the streets of Lynn an unattractive place for heroin buyers and sellers to meet. And, it was hoped, retail heroin enforcement would lead not only to a reduction of drug sales but also to a reduction in the area's property crime.

The National Institute of Justice assessed the results of the Task Force effort. By every available measure, the heroin market in Lynn shrank substantially. What was a bustling street drug market became placid and ordinary looking, with no report of substitute drug markets developing.

In the first 10 months, 186 arrests were made on a total of 227 charges. Ninety-six defendants were convicted or pleaded guilty, including 10 on felony heroin charges. Nominal minimum sentences on all charges totaled 110 years.

The effect on non-drug crime was also dramatic. A year after the enforcement effort began, robberies dropped 18.5 percent and reported burglaries were down 37.5 percent compared to the previous 12 months. A year later, even after drug enforcement manpower in Lynn was reduced due to a shift in personnel, reported burglaries remained at their new, lower level. Reported robberies declined still further, to a level 30 percent below the 1983–84 period.

Two types of enforcement

In many cities, police departments have assigned retail drug traffic enforcement to a separate vice or narcotics unit staffed by detectives. Traditionally, those units have been devoted to catching the "kingpins" of the drug trade and have accorded little value to street arrests. At the same time, policies designed to ensure rapid response to calls for service and to prevent corruption have insulated retail drug markets from the uniform patrol force.

The two types of enforcement—one for high-level drug dealers, the other for street dealers and users—produce different effects on the drug trade.

If risk increases due to more vigorous enforcement, some high-level dealers may quit, cut back, or refuse to expand when the opportunity arises. This shift will generate higher prices. Higher prices mean users may commit more crime just to meet the cost of the drug.

When street-level enforcement becomes more vigorous, though, heroin buyers are likely to face increased difficulty in "scoring" (as well as increased risk of arrest for possession) rather than just higher dollar prices. Thus, street-level enforcement increases the time and risk involved in buying heroin rather than the money price. In Lynn, the increase in transaction time and risk cut both drug and non-drug crime.

While the Lynn results indicate the impact enhanced street enforcement can have, some questions remain. Is the drug trade and related crime really decreased or just displaced to other locations by street-level enforcement? What about the scale, timing, and duration of such efforts? Police managers need to think through the possible resource needs for launching retail drug enforcement efforts. Further analysis of the Lynn program data and evaluation of a similar effort in Lawrence, Massachusetts, will help answer some of these questions.

(This summary was drawn from the report *Bringing Back Street-Level Heroin Enforcement* by Mark A.R. Kleiman, who is a Research Fellow in Criminal Justice at the Kennedy School of Government, Harvard University. He is evaluating the Lynn and Lawrence programs for the National Institute of Justice.)

Drug testing also can provide greater control over offenders free in the community on probation and parole. New research will assess the potential of drug screening for reducing the risk posed by regular probationers and by convicted felons in intensive probation supervision programs.

Another study is analyzing probation and parole supervision of addicted offenders. The effects of varying levels of supervision are being tracked to find better ways to match various types of addicts with different degrees of supervision and control.

National Institute of Justice research is also focusing on young people not yet heavily committed to drug use or dangerous criminal careers. Evaluators will assess a program begun in Washington, D.C., with funds from the Bureau of Justice Assistance. The new program is one of the first in the Nation to require all juveniles arrested for serious crimes to be given urine tests to detect drug use. The goal is to break their drug habits before they become well established and thus reduce the youngsters' criminal activity.

Forecasting. Information about national drug consumption patterns comes primarily from surveys of various population groups about their admitted drug use, hospital admissions for overdose, or applications to treatment programs. These indicators show up well after the introduction of a new drug like "crack" or increases in use of a particular drug like PCP. Changes in drug use patterns among arrestees, however, appear to precede such changes in the general population.

To detect drug use changes accurately and objectively, the National Institute of Justice has launched a national Drug Use Forecasting program (DUF) that will test arrestees in 10 cities across the country. Indianapolis, New York, and Washington, D.C., are the first cities in the system, which will be funded jointly by the National Institute of Justice and the Bureau of Justice Assistance. Each participating city will test samples of arrestees four times a year. The results will provide information useful in planning and evaluating drug control tactics and signaling early warnings

about use of a particular drug to health, education, and treatment programs.

Extending drug-testing capabilities. The availability of more accurate technology has made urinalysis a reliable indicator of objective information on an offender's recent drug use. At the same time, the National Institute is exploring other screening methods that can add to the ability to detect drug use even more accurately and at lower cost. One method currently under study tests hair samples, which provide a more permanent record of an individual's drug use. (For more on this new research, see the box on page 4.)

Enforcement. An NIJ study in Lynn, Massachusetts, is assessing the merits of police crackdowns on street-level heroin trafficking. The results indicate that disruption at the point of purchase meant fewer customers for street dealers and also reduced robberies and burglaries in the target areas. (See box on page 5 for more details.)

New research planned by the National Institute of Justice will examine these and other street-level enforcement tactics.

The "drug culture," reinforced by marketing of drug use paraphernalia, may spur demand. A National Institute study found that enactment of the Drug Enforcement Administration's Model Drug Paraphernalia Act by a majority of States has significantly reduced "head shop" operations and the ready availability of "hard-core" paraphernalia. In response to the legislation, the drug paraphernalia industry has placed new emphasis on "dual-use" items and on mail-order sales. Advertising has become more sophisticated and frequently includes disclaimers and announcements that the objects are sold for use with legal substances only.

State laws are currently the most effective means of controlling the sale of drug paraphernalia, but adequate resources are a prerequisite for effective enforcement. Lack of resources was reported as the primary reason for nonenforcement of the laws.

Prevention and treatment. Drug prevention and treatment programs primarily fall within the responsibility of agencies other than the Department of Justice. Because law enforcement can contribute to such efforts, however, NIJ research is analyzing approaches that appear promising and is assessing the impact of treatment on drug-abusing criminals.

DARE. Drug Awareness Resistance Education (DARE) involves police and public schools as partners in teaching younger children to resist offers to try drugs. A model program started in Los Angeles, the DARE concept has now been transferred to schools in Virginia, Massachusetts, New York City, and Washington, D.C. An NIJ report will document the approaches used in the four jurisdictions to plan, design, and implement drug education programs for elementary schools. The programs feature joint efforts by law enforcement and public schools to present materials on the dangers of using drugs, ways of resisting peer pressure to take drugs, and students' self-esteem. The report will describe the joint agreements between agencies, curriculums, selection and training of police officers—and in one site, prosecutors—and the results of short-term evaluations of the efforts.

Treatment effects. Many of the effects of treatment programs are still unknown. NIJ research is providing some answers to questions about the impact of treatment programs on crime rates, the economic costs imposed by drug abusers' criminal activity, and the cost-benefit ratio for various types of treatment.

Using a national sample of clients in the Treatment Outcome Prospective Study (TOPS), an NIJ study found that, by virtually all economic measures, crime is lower after treatment than before. The savings in crime-related costs are at least as great as the cost of the treatment programs. Residential treatment appears to have the greatest economic return in comparison to methadone maintenance for narcotics addicts or outpatient drug treatment.

The study results also indicate that the longer the time in treatment, the better. Clients staying in treatment for longer periods are more likely to change their drug lifestyles than those who undergo treatment for shorter episodes. The criminal justice system can help get drug abusers into treatment and keep them there for longer periods. The researchers concluded that "there are real returns to society and law abiding citizens" from longer terms of treatment for offenders required to enroll in drug treatment as part of their sentence.

Opportunities for intervention with drug-abusing delinquents are being explored in inner city neighborhoods in California. The study is examining how drugs figure in the commission of violent crime by juveniles and the social-psychological and demographic characteristics of high-risk delinquents. The analysis should help improve classification and potential treatment for various types of juvenile offenders.

Looking ahead

Research will continue to play a vital role in developing information that can serve as a foundation for more effective public policies against drugs and crime. The National Institute of Justice has expanded funding for research that will help improve criminal justice strategies for stemming drug abuse and trafficking. The research on drug and alcohol abuse and related crimes is expected to award up to $1,500,000 this fiscal year for studies aimed at identifying more effective public policy responses as well as more complete and accurate measurement of the extent of drug abuse, drug-related crime, and the social costs they impose on us all.

U.S. Department of Justice
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National Institute of Justice / Research in Action

James K. Stewart, Director

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Drug Use Forecasting: New York 1984 to 1986

by Eric D. Wish, Ph.D.

As part of research funded by the National Institute of Justice, staff of Narcotic and Drug Research, Inc. (NDRI), entered Manhattan Central Booking in 1984 and 1986. Researchers interviewed and obtained voluntary urine specimens from persons who had recently been arrested. This report compares the level of drug use found in the 1984 drug testing with that found in 1986.

Background of the studies

During a 6-month period in 1984, NDRI staff were stationed in Manhattan Central Booking to obtain voluntary interview information and urine specimens from 6,406 male arrestees. In requesting participation, priority was given to persons charged with nondrug felony offenses. Ninety-five percent of the arrestees approached consented to an interview, and 84 percent of these provided a specimen. The New York State laboratory in Brooklyn analyzed the specimens. The results indicated that 56 percent of male arrestees in 1984 tested positive for opiates, cocaine, PCP, or methadone.

After completion of the study in 1984, the use of cocaine processed for smoking—"crack"—became prevalent in New York City. Researchers at NDRI and officials at the New York City Police Department (NYPD) expressed interest in learning if drug use and crime patterns had changed in arrestees in Manhattan in the 2 years since the first study. Concurrently, NIJ had been planning to establish a national drug forecasting system based upon periodic drug screening of arrestees in the largest cities across the United States. Because of their experience obtaining urine specimens, NIJ staff felt that New York City would be a good site to test procedures for this new national data system. NDRI staff were asked to return to Manhattan Central Booking for a few months to obtain additional interviews and urine specimens from male arrestees.

The current study

We returned to Manhattan Central Booking in September, October, and November 1986. Each month, NDRI staff approached arrestees for approximately 1 week, during the busiest period (between 3:00 and 11:00 p.m.), until at least 200 specimens had been obtained. We followed the same procedures used in 1984, with one exception: this study was totally anonymous and no names were recorded. (We had obtained names of arrestees in the earlier study to track each person's case disposition.) Participation in the brief interview regarding prior and current drug use and provision of a urine specimen were voluntary. At the completion of each month's data collection, the urine specimens were delivered to the New York State Laboratory in Brooklyn for analysis by EMIT™ and by thin layer chromatography (TLC). Primary drugs tested for were opiates, cocaine, marijuana, PCP, and methadone. The interviews and test results were sent to NDRI offices in Harlem for analysis.

Findings

Response rates. We obtained the same high level of cooperation in 1986 that we achieved in our study in 1984. In September, 96 percent of the 247 eligible male arrestees approached agreed to the interview and 85 percent of these provided a urine specimen. The figures for October were 92 percent (of 262) and 88 percent, respectively, and 94 percent (of 235) and 91 percent for November. A primary reason that arrestees cooperated with our research is that staff interacted with them in a nonthreatening and supportive manner.

Charge at arrest. Both studies undersampled persons charged with the sale or possession of drugs and oversampled persons charged with a felony offense. In 1984, 20 percent of the arrestees in the interviewed sample who also gave urine specimens were charged with a drug offense, compared with 22 percent of the arrestees in 1986. In 1984, 76 percent of the sample were charged with a felony offense. In 1986, oversampling felony cases was more difficult because we were collecting data for only 1 week each month. Thus, 63 percent of the persons studied in 1986 were charged with a felony offense. To ensure that changes in drug use found in 1986 were not a function of any changes in the distribution of the charges in the samples, some of the analyses reported here examine persons charged with specific offenses.

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Age. The age distribution of the arrestees from the two studies was very similar, as shown in Table 1. Any marked differences in results from the two studies, therefore, cannot be attributed to age differences in the samples.

Table 1
Age distribution of arrestees interviewed and submitting a urine specimen, by year

Age at arrest	Arrestees in 1984 (n = 4,821*) %	Arrestees in 1986 (n = 614**) %
16–20	22	18
21–25	25	27
26–30	21	22
31–35	13	16
36+	19	17
	100%	100%

*Age information missing for 26 persons.
**Age information missing for one person.

Urine test results, 1986. Table 2 shows the percentage of arrestees who tested positive for drugs in each of the 3 months in 1986. It is clear that drug use was consistently high in September and October. Cocaine was the drug most likely to be found each month, in 82 percent and 84 percent of the arrestees, respectively. Marijuana was the next most common drug, found in a little more than one-quarter of the arrestees. Opiates were found in approximately one-fifth of the arrestees. Methadone, some of which may have been prescribed as part of treatment, and PCP, were found in a small minority of the arrestees.

The results for November were similar to the prior 2 months for all drugs except cocaine, which declined to 68 percent. The decline in cocaine is impressive given the stability in the other drugs. It should be noted that in November the NYPD was considering the potential transfer of large numbers of police officers throughout the city. Resulting tensions and reductions in police activity during this period may have altered the types of persons that were arrested. Table 4 shows, however, that the decline in cocaine was found for all arrest charges. (Because of the strong similarity in the drug use results for September and October, subsequent tables will combine the findings from these 2 months.)

Table 2
Percentage of arrestees with a positive urine test, by month of arrest

Tested positive for:	September 1986 (n = 203)	October 1986 (n = 211)	November 1986 (n = 201)
Cocaine	82%	84%	68%
Marijuana	29%	25%	23%
Opiates	21%	23%	20%
Methadone	6%	10%	10%
PCP	3%	5%	3%
Any of above	86%	89%	79%
2+ of above	44%	49%	41%

Table 3
Comparison of urine test results for arrestees in 1984 and 1986

Tested positive for:	Arrestees in 1984 (n = 4,847)	Arrestees in Sept + Oct. 1986 (n = 414)	Arrestees in Nov. 1986 (n = 201)
Cocaine	42%	83%	68%
Opiates	21%	22%	20%
Methadone	8%	8%	10%
PCP	12%	4%	3%
Any of above	56%	85%	73%
2+ of above	23%	30%	23%

Comparison of drug use in 1984 and 1986. Table 3 compares the test results for 1984 and 1986. Since marijuana was not tested for in 1984, findings regarding marijuana use in 1986 are not included in the table.

Cocaine use has increased considerably since 1984. More than 80 percent of male arrestees tested positive for cocaine in September and October 1986, compared with 42 percent in 1984.

The increase in cocaine contrasts with the relative stability found for the other drugs. Even after the decline in November, the prevalence of cocaine is still 26 percentage points above that found in 1984. Use of opiates and methadone was unchanged, while PCP use actually

The Assistant Attorney General, Office of Justice Programs, coordinates the criminal and juvenile justice activities of the following program Offices and Bureaus: National Institute of Justice, Bureau of Justice Statistics, Bureau of Justice Assistance, Office of Juvenile Justice and Delinquency Prevention, and Office for Victims of Crime.

declined. The decline in PCP raises some doubts about reports of the popularity of combined use of crack and PCP in Manhattan.

In spite of the rise in cocaine use, the percentage of arrestees testing positive for more than one drug was relatively stable over the 2 years—between 23 and 30 percent. Contrary to what was found in 1984, arrestees detected as cocaine users were not likely to be using other drugs. In 1984, 52 percent of the persons positive for cocaine were also positive for opiates, PCP, or methadone. This was true of only 35 percent of the cocaine positives in 1986.

These findings suggest that many of the additional cocaine users may be limiting their drug use to cocaine. On the other hand, it is also possible that many of these cocaine users will eventually progress to the use of heroin and other hard drugs because of their experiences with cocaine. This appears to be a critical question for future research so New York City may better estimate whether there will be an influx of new heroin abusers in the near future.

Was the rise in cocaine use limited to certain age groups? As Figure 1 shows, the increase occurred at all age levels. Perhaps most significant, however, is the rise in cocaine use among arrestees age 16 to 20. Only a minority of youths (28 percent) were positive for cocaine in 1984 while almost three-fourths were positive in September and October 1986. Interestingly, the November decline in cocaine use was most marked in young arrestees and those above age 35. Arrestees at these extremes tend to be less likely overall to be found to be using cocaine. In contrast, almost 80 percent of the arrestees age 21 to 35 were positive for cocaine in November.

Figure 1
Percentage of arrestees positive for cocaine in 1984 and in 1986, by age (n = 4,821 in 1984, 413 in Sept/Oct. 1986, and 201 in Nov. 1986)

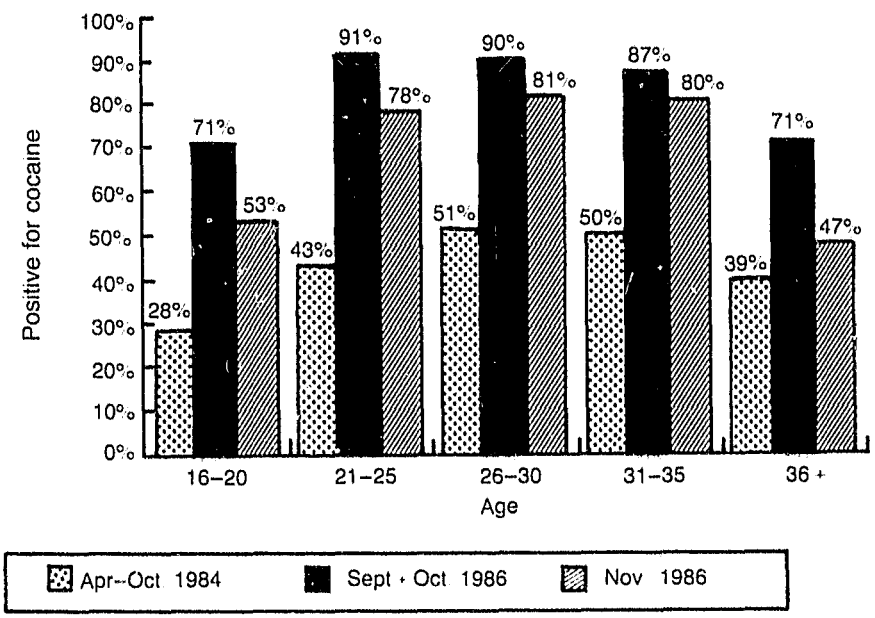

Table 4
Percentage of arrestees positive for cocaine, by date and charge at arrest

Charge at arrest	1984 (n*)%	Sept + Oct. 1986 (n)%	Nov. 1986 (n)%
Sale of drugs	(355) 55%	(27) 96%	(18) 89%
Possession of drugs	(615) 60%	(61) 92%	(28) 82%
Robbery	(676) 38%	(51) 92%	(17) 59%
Fare beating	(98) 21%	(26) 85%	(8) **
Larceny	(667) 44%	(50) 82%	(42) 69%
Burglary	(348) 43%	(31) 81%	(17) 71%
Assault	(506) 25%	(37) 65%	(15) 27%

*Number of persons charged with this offense.
**Too few cases.

Cocaine and charge at arrest. Table 4 shows the percentage of persons charged with specific offenses who were positive for cocaine. All offenses for which we had at least 20 persons charged in the September and October samples are included in the table.

As the table shows, cocaine use has increased dramatically for all offenses. Even drug dealers, who might be expected to have been already using cocaine in 1984, registered an increase (from 55 percent to 96 percent in September/October). Perhaps most significant, between 59 percent and 92 percent of the persons charged with robbery in 1986 were positive for cocaine, compared with 38 percent in 1984. Persons charged with assault were least likely to have been detected to be using cocaine, although use did increase from 25 percent to 65 percent in September and October. By November, the percentage of persons charged with assault who were positive for cocaine had declined to the level found in 1984.

The fact that the November decline in cocaine was found for each charge

category suggests that a real decline has occurred in cocaine use in offenders from the extreme levels found in September and October. Nevertheless, cocaine use remains high for almost all charges, compared to that found in 1984.

Self-reported drug use in 1986. Brief interviews were held with each arrestee studied in 1986 before he was asked to provide a urine specimen. Each arrestee was asked questions about his lifetime and recent use of cocaine and crack, and about need for treatment. Table 5 presents these findings.

Arrestees tend to underreport their recent use of illicit drugs, even in confidential research interviews, when held in the potentially threatening environment of a booking facility. Nevertheless, the self-report information can be used to establish trends over time, as long as we remember that the figures themselves grossly underestimate the level of drug use. The following information from the interviews should therefore be considered to yield minimal estimates of the degree of drug abuse and treatment in this population.

Responses were highly stable over the 3 months. A little under one-half of the arrestees reported having ever used cocaine. (This underscores the magnitude of the underreporting of drug use by arrestees: although nearly twice as many arrestees were positive for cocaine in 1986 than in 1984, the percentage of arrestees who *admitted* to ever having used cocaine in the two studies was about the same—46 percent vs. 40 percent.)

A little more than one-quarter of the arrestees in 1986 said they had tried crack. (The statistics for crack and cocaine should not be combined because many of the persons who reported crack use are included among those who reported cocaine use.) A small minority (7 percent) of the arrestees reported having being on crack, and this was constant over the 3 months. Almost three-fourths of the persons who reported using cocaine said they typically smoked or snorted the drug. Injection of cocaine was relatively rare. We asked persons who used cocaine whether they would prefer to have cocaine or crack, if they had a choice. Three-quarters of those with a preference indicated they would prefer cocaine over crack. Many of them expressed fear of the quick dependence that crack produces. About 40 percent of the persons who reported using cocaine first tried it before age 18.

A small percentage of the arrestees indicated that they were currently receiving drug or alcohol treatment. Arrestees are often reluctant to report on treatment experiences in interviews in Central Booking for fear of possible repercussions if their programs were to learn of their arrest. It is noteworthy that the percentage admitting to treatment increased over the 3 months and may reflect the increased attention being given to the cocaine problem in New York City. Almost one-fourth of the arrestees were not in treatment but indicated a desire for some treatment services. Their need for treatment was underscored by the finding that these persons were especially likely to be positive for cocaine by the urinalysis test.

Table 5

Self-reported drug use and treatment in the arrestees in 1986, by month (n = 701 interviewed arrestees)

	September 1986 (n = 238)	October 1986 (n = 241)	November 1986 (n = 222)
Ever used cocaine:	43%	47%	47%
Of those who have used cocaine, usually snort or smoke it:	73%	71%	73%
Of those who have used cocaine, first tried it *before*:			
age 18:	37%	41%	41%
age 20:	63%	61%	56%
Ever used crack:	27%	27%	27%
Now dependent on crack:	7%	7%	7%
Of those who stated a preference, preferred cocaine over crack:	73%	74%	70%
Are in drug/alc treatment now:	3%	7%	10%
Not currently in treatment but need treatment now:	20%	22%	22%
Of those who need treatment now, positive by urinalysis for cocaine:	91%	96%	85%

Discussion

This study shows a dramatic increase in the prevalence of cocaine in the arrestee population in New York City. Recent use of cocaine by arrestees doubled since our study 2 years ago, and exceeded 80 percent in September and October. The increase was found at all age levels and for persons charged with a variety of offenses. In September and October, 92 percent of the persons charged with robbery and 81 percent charged with burglary were positive for cocaine.

Similar findings have also been obtained for arrestees in Washington, D.C. The prevalence of cocaine among arrestees tested by the D.C. drug testing program doubled in the same period, to about 48 percent. It is clear that, while national surveys of the general population indicate some moderation in drug abuse, use of cocaine has increased dramatically among offenders.

It is difficult to attribute the rise in cocaine positives in arrestees solely to the use of crack. A urine test cannot differentiate use of crack from cocaine. And more persons admitted to having used cocaine than crack. On the other hand, most users indicated that they smoked or snorted their cocaine, rather than injecting it. When given a chance to specify their preference for crack or cocaine, many persons volunteered that crack was too dangerous a drug to use. Therefore much of the increase detected by the tests may stem from a more general increase in cocaine use rather than just crack use.

Almost one-quarter of the 1986 arrestees said they were not currently in a treatment program but that they needed treatment. These persons were among those most likely to test positive for cocaine and represent a challenge for future treatment outreach efforts.

As was found in our earlier study, use of cocaine (and PCP) typically begins in the teenage years. This suggests that prevention programs might need to focus on youths in their early teens. Furthermore, since most users were not injecting drugs, treatment programs aimed at current cocaine users may be able to stop these users from progressing to the injection of cocaine and heroin. The cocaine users in 1986 differed from those in 1984 by their apparent lower likelihood of multiple drug use. Research should be initiated to determine whether the increased number of cocaine users will result in a future rise in the number of heroin users or whether most of these persons will limit their drug abuse to cocaine and refrain from injecting the drug.

Finally, the results underscore the value of a national drug crime forecasting system envisioned by the National Institute of Justice. By obtaining urine samples from arrestees periodically, one can document trends in drug use in the offender population. Besides showing the dramatic increase in cocaine use among offenders, the findings provide some promise that the rising trend may have ended in November. Whether this

About the Drug Use Forecasting System

The National Institute of Justice has begun a Drug Use Forecasting system (DUF) for tracking drug-use trends in offenders. In 1987 DUF will be established in 10 of the largest cities in the United States. Next year the system will be expanded to 25 cities.

Every 3 months, a new sample of about 200 arrestees in each participating city will provide voluntary urine specimens. Because the estimates of drug use will be based on urinalysis results rather than on the person's self-report, the DUF system will provide the most objective information available regarding recent drug use by offenders.

In addition to uncovering national trends in drug use, the DUF system will enable each site to gather information useful for the early detection of drug epidemics; for planning and allocating law enforcement, treatment, and prevention resources; and for measuring the impact of efforts to reduce drug abuse and crime.

DUF selection criteria. During the first year of the project NIJ is selecting large cities that meet the following criteria:

- Have a central booking facility.
- Have a large number of index crimes.
- Have a suspected drug abuse problem.
- Provide DUF with geographic diversity.

DUF is currently operating in eight cities: New York; Indianapolis; Washington, DC; Phoenix; Portland, Oregon; New Orleans; San Diego; and Houston.

DUF training and funding. NIJ will assist each DUF site in selecting and interviewing volunteer arrestees, obtaining the urine specimens, and preparing the data for delivery to NIJ. Each site will receive a contract from NIJ to cover all local costs of data collection.

DUF results. NIJ will prepare annual reports that compare the information from each city. Using the test results and information about the annual number of arrests, NIJ will make estimates of the total number of drug users in the offender population in each DUF city. The Institute will examine the trends in drug use in each city and make projections of future trends. The DUF information will also be compared with other indicators of community drug use. Reports will specify the relationship between recent drug use and charge at arrest, age and other demographic characteristics of the arrestees.

To obtain more information about the DUF system or details on becoming a DUF site, please contact Mr. John Spevacek or Dr. Eric Wish at the National Institute of Justice, 633 Indiana Avenue NW., Washington, DC 20531, 202–272–6010.

is a 1-month aberration or a true change in trend will be discovered once January's new data have been analyzed. (A preliminary assessment indicates that the percentage testing positive for cocaine in January rose to 73 percent, which is still below the high levels found in September and October.) This decline probably is genuine, in view of the added attention given by law enforcement and treatment agencies to the cocaine problem, and the greater societal warnings against cocaine use that have become common.

New York City's participation in NIJ's Drug Use Forecasting system (DUF) will ensure that policymakers will continue to obtain invaluable information about drug abuse and crime in Manhattan. The DUF system will provide information needed to forecast future drug epidemics, to plan the allocation of scarce law enforcement and treatment resources, and to assess the impact of societal actions to reduce drug abuse in the offender population.

Acknowledgments

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Research in Brief

October 1984

Drug Use and Pretrial Crime in the District of Columbia

Mary A. Toborg and Michael P. Kirby

Widespread public alarm about crimes committed by defendants released while awaiting trial has been heightened by growing concern over the apparent link between drug abuse and crime. Better understanding of the link between drug abuse and crime is a prime research concern of the National Institute of Justice, and a number of studies on the subject are underway. Two, in the District of Columbia, focus on the relationship of drug abuse and pretrial criminality. A recently completed analysis of data from 1979 to 1981 reveals some striking relationships between drug use and pretrial arrest and failure to appear for court. Its findings highlight the importance of the questions being examined in depth in a major study launched in DC. this spring.

From the Director

Drug-abusing offenders are a very significant and highly active segment of the criminal population. According to research, the violent predators who commit hundreds of robberies and burglaries each year are often high-cost users of heroin and other drugs. And research indicates that the intensity of the addicts' criminality increases during periods of heavy drug use.

In short, current drug use is a key indicator of probable criminal activity. Such information is vitally important to the courts in making critical decisions about release pending trial and sentencing. At present, however, judges and other court officials have only limited knowledge of a defendant's prior or current drug history.

The new experiment described in this *Research in Brief* will help fill this information vacuum. It will take advantage of advances in technology that permit more accurate detection, through urinalysis, of drug use by those arrested in the District of Columbia. This information can then be factored into decisions about which defendants can be safely released pending trial and under what conditions.

What we learn from this research will help answer important policy questions: Are drug users rearrested more frequently than drug nonusers? How can we control pretrial crime? Is treatment or surveillance of drug abusers the most effective approach to protecting the public and assuring the defendant's appearance at trial? In the meantime, recent findings from an analysis of District of Columbia data offer empirical support for the concern about drug use and its relation to pretrial crime. The findings, summarized in this *Brief*, are revealing:

- Drug abusers were more than twice as likely as nonusers to be rearrested before trial.
- Abusers were half again more likely to fail to appear when scheduled for court appearances, although they eventually returned for trial.
- Drug abuse is increasing in the District of Columbia. Reports by defendants themselves show a doubling of the rate of drug abuse in the 3-year period 1979–1981. And, this year, approximately half of the defendants tested in the first 2 months of the experiment showed traces of serious, illegal drugs, such as PCP and opiates.

The National Institute of Justice is pleased to present these new data on drugs and crime in one major city. At the conclusion of the experiment, we hope to offer workable recommendations that will help the courts, the police, the prosecutors, and others in criminal justice in creating effective approaches for controlling drug abusers during the pretrial period. In this way, we can achieve our overriding goal: preventing people from becoming victims of crime.

James K. Stewart
Director
National Institute of Justice

Drug testing in the District of Columbia

In March 1984, under National Institute sponsorship, the D.C. Pretrial Services Agency (PSA) began gathering drug-use data at the time of arrest. The testing uses the Emit™ mechanism, a speedy new automated urinalysis device for which the manufacturers claim remarkable accuracy in detecting drug use. (Other research is underway to establish the relative effectiveness of different urinalysis technologies in drug detection.) The D.C. research is testing for five drugs—heroin, amphetamines, methadone, cocaine, and phencyclidine (PCP). To date, more than half the defendants tested have shown use of one or more of these drugs.

Supervision before trial

In the District of Columbia, information on drug use is taken into account at the pretrial release hearing. Drug users who are released receive different forms of supervision during the pretrial period.

In the research study, approximately one-half of those defendants Emit identifies as users are referred to a drug treatment agency. These defendants receive treatment before trial, including counseling and, often, for heroin users, methadone maintenance. This group undergoes frequent retesting for drug use.

Other drug-using defendants are required to submit to Emit urinalysis surveillance before trial. A final group of drug users is placed on regular supervision, which may include phone reporting of activities, employment, residence, and drug use. Occasional spot checks are made by telephone to ensure defendants actually are at the address they have reported.

Analysis of the results of this long-term study should yield dependable measures of rearrest and court appearance rates of drug users on pretrial release, compared with nonusers similarly released. It will also produce important information on the comparative effectiveness of treatment versus surveillance in controlling pretrial drug abusers free pending trial.

Prior research

Pending findings from the drug-testing program, a D.C. study conducted for the Institute by Mary A. Toborg of Toborg Associates, Inc., of Washington, D.C., and Michael P. Kirby of Southwestern at Memphis, Memphis, Tennessee, reveals some striking relationships between drug use and pretrial arrest and failure to appear for court. The study found:

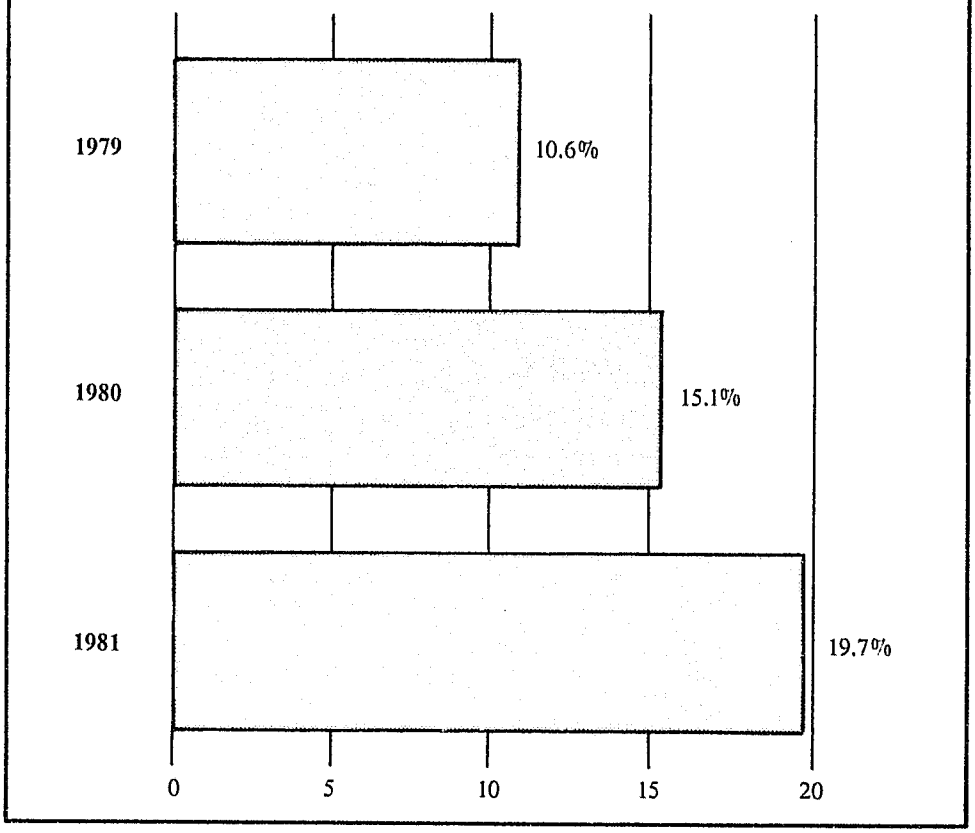
- Drug abusers released before trial were more than twice as likely as nonusers to be arrested again before trial.
- Abusers were half again more likely to fail to appear in court when scheduled. However, abusers had lower rates of failure to return eventually for trial, and
- Abusers were charged with less serious crimes than nonusers when they were arrested while awaiting trial on earlier charges.

These findings are particularly important in view of the increasing levels of drug use reported by defendants to the D.C. Pretrial Services Agency. Indeed, the rate of self-reported drug use (excluding marijuana and alcohol) among persons arrested almost doubled in only 3 years (Figure 1). And initial results from the early months of urinalysis reveal that more than half the defendants tested used drugs.

Our study is based on data collected by the D.C. Pretrial Services Agency, which interviews each defendant shortly after arrest as one step in developing pretrial release recommendations for the court. Release conditions may range from release on personal recognizance through various levels of supervision and forms of bail to preventive detention. To assess the defendant's likely pretrial behavior if released, the PSA asks the defendant a series of questions, including whether he or she uses drugs or alcohol. The study analyzed computerized PSA records for the 3 years 1979–1981. These data included defendants' self-reports on drug use and other characteristics, and official

FIGURE 1

Percentage of cases involving self-reported drug users, 1979-81 (Excludes marijuana and alcohol)



records of pretrial arrests and case dispositions for the same defendants.

One of the limitations of such a study is that self-reports may be inaccurate.[1] As noted, initial results of the Emit urinalysis testing program show much higher rates of drug use (more than 50 percent). In our study, only 17 percent of all defendants in the 3-year period acknowledged drug use. However, they accounted for 22 percent of all cases because of multiple arrests.

Two forms of analysis

A single defendant may have several arrests over 3 years and respond differently to questions about drug use each time. An important contribution of the study is its illumination of the difference between analysis of defendants who reported drug use at some arrest during the 3-year period (defendant-based studies) and analysis of cases in which the defendant reported drug use at arrest (case-based studies). Defendant-based studies count as nonusers only those who never reported drug use during the 3 years.

In defendant-based studies, 42 percent of released drug users were rearrested before trial, compared with 18 percent of released nonusers (Figure 2). In case-based analyses, pretrial arrest rates were 31 percent for users and 19 percent for nonusers. Among defendants who were drug users, 31 percent failed to appear in at least one case compared with 21 percent of released nonusers. Case-based studies, however, showed only slightly higher failure-to-appear rates for drug users: 22 percent for users versus 19 percent for nonusers. Those who never returned to court included only 1.7 percent of released drug users compared with 2.6 percent of nonusers; this suggests that drug-using defendants find it more difficult to remain at large.

Case analyses detailed

Figure 3 shows the rates at which users and nonusers were detained before trial, were rearrested, and failed to appear. Case-based studies in-

1. Also, pretrial arrests are an imperfect measure of pretrial crime, because of the exclusion of crimes that do not result in arrests and the inclusion of arrests that do not result in convictions.

FIGURE 2

Number of pretrial rearrests by defendants' drug use status

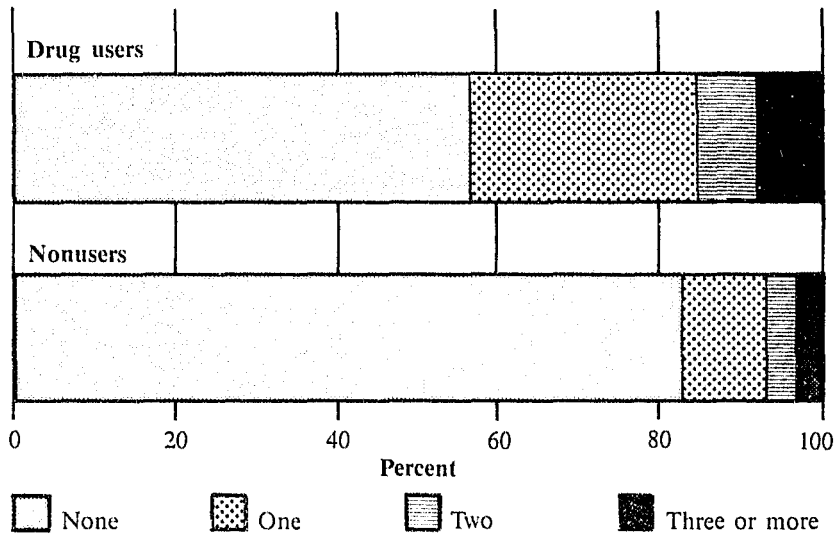
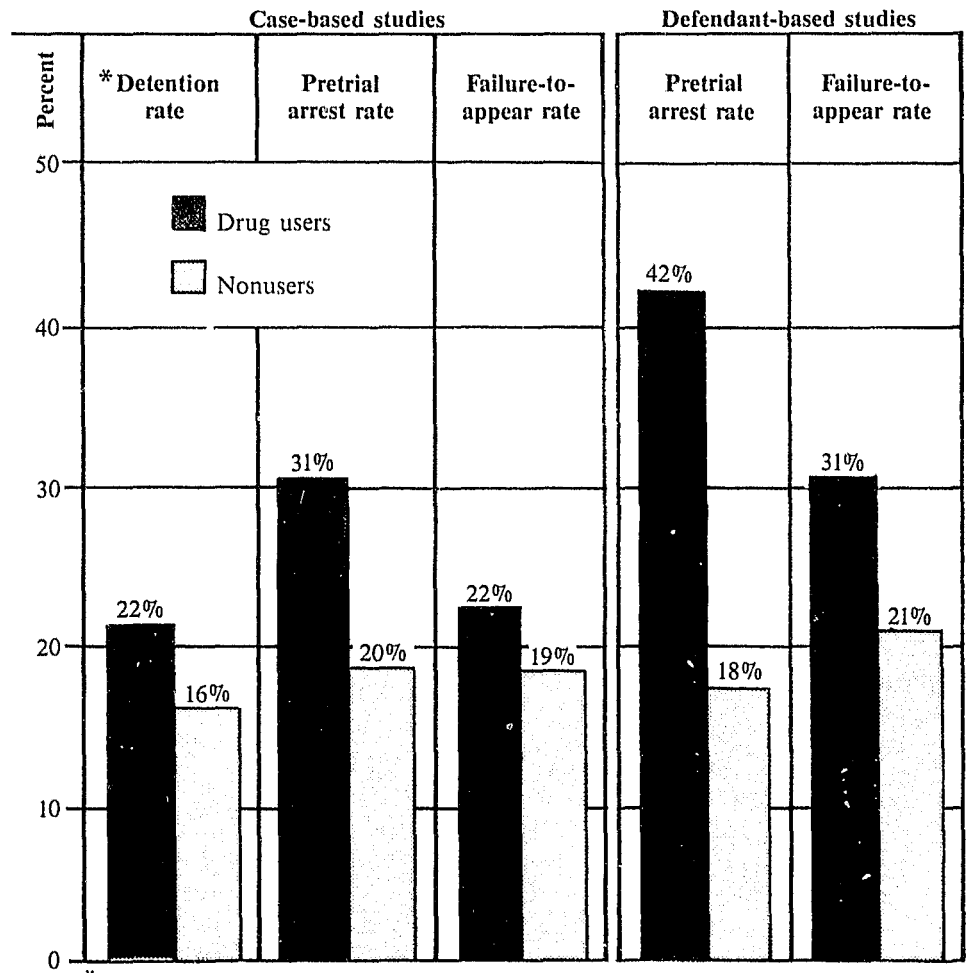


FIGURE 3

Detention, pretrial arrest, and failure-to-appear rates for drug users and nonusers



*Detention rate (only case-based figures available)

dicated that the greatest differences in detention rates by type of charge were for robbery (37 percent users detained, 22 percent nonusers), other crime against persons (23 percent users, 12 percent nonusers), and prostitution (22 percent users, 11 percent nonusers).[2]

Case analysis showed drug users not only were detained more frequently but received more stringent conditions of release if they were not detained. Only half the drug users charged with felonies were released on personal recognizance—in most cases, there are some conditions—compared with 64 percent of nonusers.

Despite fewer users being released—and those under more stringent conditions—released drug users were nevertheless more likely to be rearrested. A case involving a drug user was 50 percent more likely to involve a rearrest before trial than a case where the defendant did not use drugs.

2. The analyses isolated robbery, drug sales, and prostitution, and classified remaining charges as follows: Other crimes against persons—murder, rape, assault, arson, and kidnapping. Other economic crimes—burglary, larceny, vehicle theft, fraud, forgery, embezzlement, and possession of stolen property. Miscellaneous crimes—drug possession, weapons, gambling, sex offenses other than rape and prostitution, possession of implements of crime, destruction of property, flight or escape, and other crime.

Less serious charges

Charges against rearrested drug users, however, were likely to be less serious than charges against rearrested nonusers. Only 30 percent of user rearrests involved felony charges, compared with 38 percent for nonusers. To some extent, this reflects the drug users' greater likelihood of rearrest for drug sales or for "miscellaneous crimes" (mainly misdemeanors and including drug possession).[3] Sixty percent of drug user rearrests fell in these categories, compared with 39 percent of nonusers' rearrests.

Failure to appear for court

Drug users were somewhat more likely to fail to appear in court, as shown in Figure 3, particularly in felony cases (21 percent to 15). Misdemeanor cases showed a smaller difference in failure to appear overall (24 percent to 22); however, users specifically charged with drug sales, prostitution, or miscellaneous crimes had lower nonappearance rates than nonusers.

3. "Miscellaneous crimes"—see note 2.

Although drug users were more likely to fail to appear for court, they showed lower rates of failure to return to court than nonusers. Failure to return to court was relatively rare in cases involving both drug users (1 percent) and nonusers (2 percent).

Short-term conclusions

Our study suggests that case-based analyses may underestimate the involvement of drug users in overall pretrial misconduct, and that defendant-based analyses, despite being more difficult to conduct, may provide better guidance for public policy and thus merit the additional work they require.

By either form of analysis, drug users in the District of Columbia were rearrested before trial much more often than nonusers. This suggests that efforts to discourage drug use may be effective ways to reduce pretrial criminality and increase public safety. The research recently initiated in the District of Columbia will provide further insight about this possibility and about the relationship of drug abuse to criminality.

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Probing the Links Between Drugs and Crime

Bernard A. Gropper, Ph.D.

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policy areas. Aggregate statistics, for example, can tell us something about overall numbers of drug abusers, total costs of drugs to society, or other large-scale questions, but they offer little insight into many other issues important to policymakers. Informed public policy also requires knowledge of individual and small group questions—the "hows" and "whys" by which drug abuse and crime are linked at the user level.

This article briefly summarizes some findings from recent research that examined the nature and extent of drug-crime links at the individual offender level. The studies reviewed assess some of the fundamental assumptions un

[illegible]

derlying drug control and treatment policies. Among these are:

- Different levels of abuse of such drugs as heroin are directly related to criminality at the individual level, and individuals who abuse such drugs in differing degrees of severity will tend to have corresponding patterns of severity in criminal behavior.

- Even among high-risk individuals with established patterns of both drug abuse and criminality, an increase or reduction in level of drug abuse will be associated with a corresponding increase or reduction in criminality.

- Street-level heroin abusers tend to engage in a variety of criminal acts and other behavior to support their drug habits and personal survival needs, with corresponding costs to their victims, their families, and society in general.

Effects of drugs on criminality

Drugs and violent crime. Recently completed National Institute of Justice-supported studies of career criminals by researchers at RAND (Chaiken and Chaiken, 1982) found that a majority of the most serious offenders (the "violent predators") among the inmates in prisons and jails of three States had histories of heroin use, frequently in combination with alcohol and other drugs. Such a history of drug abuse, in fact, proved to be one of the best "predictors" of serious career criminality.

Other National Institute of Justice-funded research (Wish, 1982; Johnson, Wish, Strug, and Chaiken, 1983) indicates that narcotics abusers engage in violence more often than earlier studies would lead us to believe. Recent studies have shown that heroin-using offenders are just *as likely* as their non-drug-using or non-heroin-using counterparts to commit violent crimes (such as homicide, sexual assault, and arson), and even *more likely* to commit robbery and weapons offenses.

Data being developed by researchers at the Interdisciplinary Research Center on the Relations of Drugs and Alcohol to Crime (IRC) lend further support to the growing body of evidence suggesting that drug abusers are at high risk for violence. Reports from several cities indicate that one-quarter or more of homicides are related to drug-trafficking (Goldstein, 1982; McBride, 1983).

Perhaps even more disturbing is the finding that 75 percent of all robberies reported by a national sample of youth and 50 percent of the felony assaults were due to a small, but highly criminal, group. This was the subsample, comprising less than 3 percent of all youth, who had committed three or more index offenses *and* were pill or cocaine/heroin users (Johnson, Wish, and Huizinga, 1983).

The role of research in separating myth from reality

Drugs are surrounded by myth and, to some extent, probably always will be. But closer examination and systematic research have shown that many widely held beliefs about drugs and drug users are untrue, and that others are relatively simplistic. The reality of drug abuse is so interconnected with other factors affecting human behavior as to make such beliefs a poor basis for guiding public policy unless those other factors are also taken into account.

Direct and indirect relations between drugs and crime. National policy concerns and National Institute of Justice's overall research objectives encompass both the *direct* and *indirect* relations of substance abuse to criminal behavior—the ways in which drug abuse and trafficking affect the behaviors and crime patterns of those *directly* involved (whether they use the drugs themselves or simply deal in them), and the *indirect impacts* of drug abuse and drug-related crime on our criminal justice system and all levels of our society.

The *direct impacts* of drugs or alcohol on a user's behavior reflect both physical and physiological factors. The near-term effects are influenced not only by the *types* and *quantity* of drugs consumed, but also by such other *individual* and *situational* variables as the user's prior exposure (level of tolerance for the specific drug or its close pharmacological relatives), route of administration (swallowed, inhaled, injected), and psychological state (personality traits, expectations, social setting, etc.).

The *immediate outcomes* may vary from the user's passing out, experiencing pleasant to violent mood changes, or suffering perceptual distortions and decreased psychomotor control capabilities. These, in turn, can lead to further behavioral changes such as aggression, decreased abilities to judge time and distance, and loss of skill and control while driving—with *consequences* that can vary from minor embarrassments to loss of the lives and property of the drug abusers themselves or those around them.

Longer term effects, addiction, and causal mechanisms. Beyond considering the types of immediate impacts of mood-altering drugs and the short-term mechanisms by which they act on user behaviors, we must also recognize the longer term effects that tend to come with their continued use and abuse. Repeated and intensified use typically lead to a degree of *psychological or physical dependence* (addiction) that is destructive and costly to the user and to society.

The psychopharmacological and behavioral sciences have not established *any* drugs (or combination of drugs) as inherently or directly *"criminogenic"* in the simple sense that they compel users to commit crime. But, the overall cumulative evidence is clear and persuasive that the consistently demonstrated patterns of correlation between drug abuse and crime reflect real, albeit *indirect, causal* links.

Knowledge as the base of informed public policies. Unfortunately, recurrent and persistent myths appear to play a large part in sustaining the appeal of drug abuse for the uninformed. Over the years, similar claims have been made for many drugs as being nonaddictive (e.g., heroin and cocaine), "mind expanders," "sex enhancers," "benign" forms of recreation, and so on. The reality has proven to be less attractive. An important role of policy-oriented research is to separate such myth from reality and to continually develop and update knowledge on which informed policies aimed at the prevention and control of drug abuse and drug-related crime can be based.

Robberies and assaults, in fact, are proving to be rare among criminally active youths who are *not* also involved in illicit drug use. While such data cannot show whether drug abuse is necessarily the primary or only cause of these behaviors, they do show that it is very much a characteristic of serious and violent offenders.

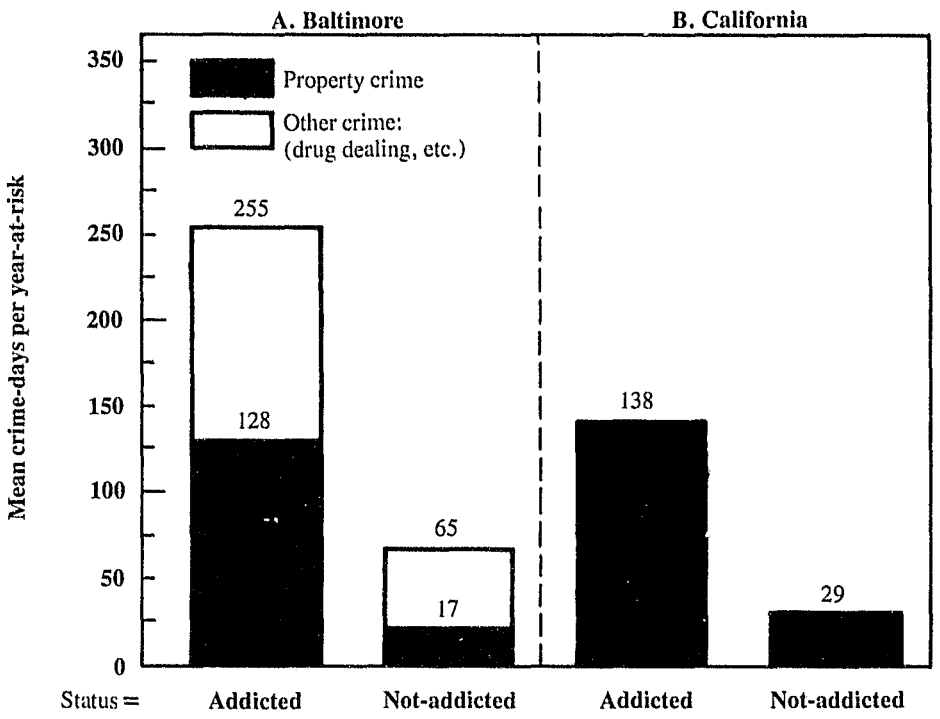
Changes in crime with changes in drug use. Among the most compelling evidence of the impacts of hard drug use on crime are the findings reported by teams of researchers in Baltimore (Ball, Shaffer, and Nurco, 1983) and at UCLA (McGlothlin et al., 1978; Anglin and Speckart, 1984). These studies clearly confirm one of the major assumptions of drug treatment—that reducing the level of drug usage can reduce the level of criminal activity, even among relatively hard-core drug users.

The Baltimore team analyzed background factors and long-term patterns of crime for 354 black and white male heroin addicts. The sample was drawn from more than 7,500 known opiate users arrested (or identified) by Baltimore police between 1952 and 1976 so as to be representative of the addict male population at large.

The results show how the intensity of the criminal behavior—especially property crime—of such addicts tends to be directly related to their current drug use status. During a 9-year period at risk, their crime rates dropped to relatively low levels during periods when they had little or no narcotic use. While they were actively addicted, however, their criminality was typically about 4 times to 6 times higher (Figure 1). Overall, they averaged 2,000 crime-days (defined as any day on which they committed one or more crimes) per addict. For those who had several periods of addiction and reduction or cessation of narcotics use, the levels of criminality clearly tended to rise and fall with drug usage.

The UCLA team's analyses yield parallel patterns. Their Southern California sample consisted of 753 white and Hispanic heroin addicts admitted to methadone maintenance programs from 1971 to 1978 (see Table 1 for a subsample of this group). Contrasting these addicts' criminal involvements in the year prior to their first addiction

Figure 1. Changes in criminality by narcotic addiction status



Sources: A.) Ball, Shaffer & Nurco, 1983 B.) Anglin & Speckart, 1984

Table 1. Relations of narcotic usage level to criminal behaviors and arrest rates

Ethnic subgroup: Subsample size[1]	White (N = 68)		Hispanic (N = 92)	
Usage level:	**Daily**	**Less than daily**	**Daily**	**Less than daily**
Criminal Behaviors: (per nonincarcerated person-year)				
a) Percent of time at this usage level:	53%	47%	55%	45%
b) Crime-days:				
Overall total:	138	29	129	20
Theft	77	24	81	12
Burglary	49	3	47	6
Robbery	3	0	2	0
Forgery	8	1	2	0
Other	1	3	8	4
c) Arrest rates:				
Overall total:	2.37	1.04	2.35	1.12
Drug possession	.77	.23	.37	.28
Burglary grand theft	.42	.14	.35	.12
Petty theft	.19	.08	.17	.06
Drug sales	.10	.02	.07	.03
Robbery	.09	.03	.04	.02
Forgery	.06	.01	.02	.00
Violence	.05	.03	.07	.05
Minor & other	.39	.30	.50	.37
d) Crime dollars	14,900	1,500	10,700	1,000

Source: Anglin and Speckart, 1984.

1. Subsamples who reported being addicted between 25 and 75 percent of the time during their addiction careers.

(defined as the first period of daily heroin use for 1 month or more) with their criminality in the year after revealed notable increases.

Arrest rates increased from 40 to 100 percent overall, with the largest increases occurring for burglary and theft. There were 21 to 30 percent increases in the numbers of individuals engaging in crime from the pre- to post-addiction years, and three- to five-fold increases in the numbers of days on which they committed crimes. For example, white males reported 20 crime-days per nonincarcerated year in the 12 months prior to first addiction and 92 in the year after; Hispanic males reported 36 and 107 crime-days, respectively.

Costs of street level addiction and crime

Another recent study, under National Institute of Justice and National Institute on Drug Abuse cosponsorship, explored the behaviors and economic impacts of street-level opiate abusers (Johnson et al., 1985). Its findings indicate that, although these abusers are able to obtain drugs and survive through many methods, criminality is very common among them and clearly related to their levels and patterns of drug usage.

The research team, from the IRC at the New York State Division of Substance Abuse Services, gathered data from 201 heroin users who were recruited directly from their Central and East Harlem neighborhoods. The subjects provided 11,417 person-days of self-reported data during 1980 to 1982 on their day-to-day drug usage and how they supported themselves.

The study classified users according to their frequency of drug use: *daily* (6 to 7 days per week), *regular* (3 to 5 days per week), or *irregular* (2 days or less per week). The findings provide a far more detailed picture of the street-level economics of drug usage and crime than has previously been available.

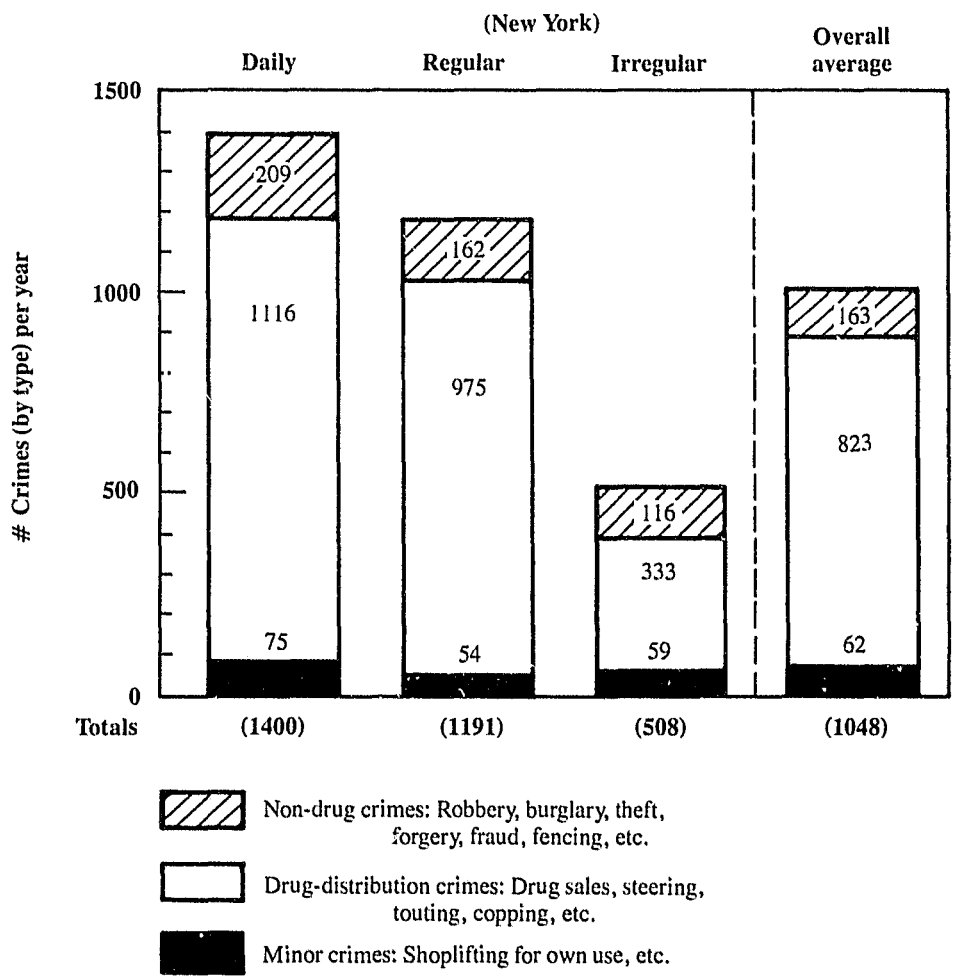
Patterns of drug use and crime. Like the Baltimore addicts, most of the Harlem heroin abusers committed a large number of nondrug crimes and an even larger number of drug distribution offenses. Daily heroin users reported the highest crime rates (Figure 2). They averaged 316 drug sales per year and participated in 564 more drug distribution offenses through "steering" (directing customers to sources of supply), "touting" (promoting a particular dealer's drugs) or "copping" (conveying drugs and money between buyers and sellers, who may not actually meet). Daily heroin users also committed more *violent crimes* (i.e., robberies), one-quarter or more of which were committed against other drug users or dealers, drunks, and other street people.

Almost all tended to use a variety of other drugs in addition to heroin; 90 percent also used cocaine and alcohol, and 73 percent used marijuana. Some drug use occurred on 85 percent of the days—heroin on 54 percent of the days, alcohol on 51 percent, cocaine on 27 percent, and illicit methadone on 10 percent.

The daily heroin users each consumed over $17,000 worth of drugs per year, compared to about $5,000 for the irregular users, with *noncash* arrangements covering about one-third of their consumption. Daily heroin users also committed about twice as many robberies and burglaries as regular users, and about five times as many as the irregular users.

However, the daily heroin users did *not* tend to commit more crimes per day than the other groups. Most of them had more criminal cash income during a year only because they were criminally active on *more days* (209 nondrug crimes per year compared with 162 among regular and 116 among irregular users). The daily users did *not* tend to have significantly higher arrest or incarceration rates than the less intensive users, and may thus be considered more "successful" as criminals since they committed more crimes and used more drugs than the less regular users.

Figure 2. Crime rates of street heroin abusers by level of drug usage



Source: Johnson et. al., 1985.

Relatively modest returns per crime. The returns per crime proved to be relatively small, though they tended to be somewhat greater for the daily users ($41 per crime) than the $25 per crime netted by the irregular users. The average returns from robbery ($80) and burglary ($81) were modest compared with the risks. The typical drug sale or distribution offense provided $5 or less cash income.

The average daily heroin user gained over $11,000 per year *cash* income from crime. This rose to over $18,000 total when the economic value of the drugs received without cash payment is included. In comparison, an irregular user netted only $6,000 total.

Economic impacts on victims and society. These figures do not represent the full range of economic consequences that heroin users impose upon other persons and upon society. To provide a somewhat more extensive picture, Johnson et al. (1985) developed estimates of 33 different types of economic harm imposed by such street heroin abusers. Among them were:

- *Nondrug crime.* The average street heroin abuser committed "nondrug" crimes (including burglary, robbery, and theft) from which victims suffered an economic loss of almost $14,000 annually, based on the retail value of stolen goods. The toll from such nondrug crimes by daily heroin users was nearly four times (almost $23,000) that of the irregular users (almost $6,000).
- *Freeloading.* The public and relatives or friends of daily heroin users contributed over $7,000 annually to them in the form of public transfer payments, evasion of taxes, cash "loans," and shelter and meals.
- *Drug distribution crimes.* Street heroin abusers contribute substantially to the "underground economy." In addition to being drug consumers, they function as low-level drug dealers and distributors. In this New York sample, the average daily heroin user distributed approximately $26,000 per year in illegal drugs. From this, they received about 40 percent in cash or drug "wages," while 60 percent went to higher level dealers and others in the illegal drug distribution system.

The combined costs imposed on society by the daily heroin users in this study totaled about $55,000 annually per offender. Regular heroin users cost society about $32,000, and irregular users about $15,000 each per year. These costs are *in addition* to those due to other economic factors typically addressed by prior research on social costs—such as foregone productivity of legitimate work; criminal justice system expenses for police, courts, corrections, probation and parole; treatment costs; private crime prevention costs; and less tangible costs due to fear of crime and the suffering of victims.

Policy implications

What sort of overall picture can we draw from the types of studies summarized here? And, when combined with data from other ongoing efforts at monitoring the current "drug scene," what are some of the implications for our policies to prevent and control drug abuse and drug-related crime?

Perhaps the foremost finding is that heroin abusers, especially daily users, commit an extraordinary amount of crime. These studies reveal a lifestyle that is enveloped in drug use and crime. The major impetus for most of their criminal behavior is the need to obtain heroin or opiates. A large majority reported that they were only sporadically employed, if employed at all, during their active addiction periods, that they were generally helped or supported by a relative or friend, and that they had little legally generated income of their own.

Other information on the changing street scene suggests that heroin and other drugs are now typically so "cut" or impure that true addiction is less likely than in the past. Together with the insights into how street-level users support their needs through cash and noncash means, these findings suggest the notion that addicts typically have uncontrollable cravings that compel them to commit crime immediately in order to get money to buy drugs is less valid for today's users.

Although narcotic addicts and users as a group engage in a great deal of crime, the amounts and types of crimes committed vary considerably among individuals. For the majority of users, their current patterns of criminality are strongly influenced by their current drug usage status. Based on the findings discussed here, treatment and education programs targeted toward reducing drug usage by the most *frequent* and *intensive* users could gain more significant reductions in drug-related criminality than undirected efforts or those aimed toward lesser users.

Information from other ongoing studies is also providing greater insight into the specific roles of drug and alcohol use in criminal events, both among heroin abusers and the general youth population. These confirm that street-level "addicts" can control their compulsion for drugs to some extent and can decrease or stop their drug usage for significant periods of time. In addition, both hard-core and less intensive users tend to modulate or defer their use until the social or criminal situation is more appropriate, typically taking few or no drugs before critical events—such as before committing a theft—and deferring intensive usage for safer situations or settings, such as after the crime is completed (Johnson, Wish, and Huizinga, 1983).

This article is a "progress report" on the continuing research efforts to develop current and indepth knowledge on how drugs affect crime. These findings are only part of a larger, broader series of interrelated efforts by both National Institute of Justice and other organizations to improve our understanding of the nature and extent of drug-crime linkages. Together, they help provide sound informational bases for the guidance of public policies directed toward the prevention and control of drug-related crime.

Dr. Gropper, an experimental psychologist, is manager of the National Institute's research on the relationships of drugs and alcohol to crime.

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National Institute of Justice / CRIME FILE Study Guide

James K. Stewart, Director

Drug Testing

by Eric Wish, Visiting Fellow, National Institute of Justice

Introduction

In the current atmosphere of heightened concern about drug abuse in America, there is growing interest in the use of chemical tests, especially urinalysis tests, for identifying drug users. Public debate, often heated, has focused on the advisability and legality of urine urinalysis to identify drug use in athletes, celebrities, and employees performing sensitive jobs. However, less attention has been given to the use of urine testing for persons who have been arrested or are under the supervision of the criminal justice system, despite the high prevalence of drug abuse and associated health problems in criminals.

Why Identify the Drug Abuser?

To target active criminals. Research has found that drug abusing offenders are among the most active criminals. Addicts commit more crimes during periods when they are using drugs frequently than during periods of lesser drug use. The association between high rates of offending and drug abuse has been found predominantly in persons who use expensive dependence producing drugs like cocaine and heroin. Less is known about the criminal activities of people who abuse PCP or other nonaddictive illicit drugs. In youths, however, heavy marijuana use is also associated with problem behavior and is often accompanied by the use of other illicit drugs.

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Guests: Jay Carver, D.C. Pretrial Services Agency; Elizabeth Symonds, National Capital Area American Civil Liberties Union; Eric Wish, Visiting Fellow, National Institute of Justice

More than half of the people arrested for serious crimes in recent years in Washington, D.C., and New York City test positive for drug use. Many active offenders use drugs, and high rates of drug use are associated with high rates of offending. Use of drug use tests, especially urinalysis, is becoming widespread but raises difficult legal and policy questions.

There are a number of reasons why drug abuse and crime are associated. Some people are so dependent upon drugs that they are driven to commit income generating crimes like theft, robbery, drug selling, and prostitution. For other people, drug abuse appears to be merely one of many deviant behaviors they engage in, for still others, crime may be the result of a violent, bizarre reaction to a drug. In planning effective responses for each person, it may be necessary to understand which of the above relations between drug use and crime applies.

To protect the public from crimes by persons released to the community. Judges are often faulted when persons they have released pending trial or on probation are found to have committed another crime, especially a violent crime. If persons who are released to the community before trial or under probation or parole supervision were tested for illicit drug use, it might be possible to initiate treatment or urine monitoring for those who test positive. Because of the association between drug use and offending, effective programs for controlling or monitoring drug use may be a means of reducing crimes of released arrestees and offenders.

To reduce jail or prison crowding. Jail and prison populations in large cities contain substantial numbers of drug dependent persons. By identifying drug dependent persons and placing them in residential treatment programs or urine monitoring programs, we may be able to reduce jail and prison populations and to lessen future drug abuse and crime. One jurisdiction in Indiana is adopting a program in which arrestees charged with minor offenses can be released without bail if they agree to participate in a urine monitoring program. The cost of testing is charged to the defendant but is less than the amount for bail and should

result in the early release of more defendants. Judges in Washington, D.C., report that because of their pretrial testing program, they are more likely to release suspected drug users because they know that their drug problems are being addressed.

To reduce drug abuse and crime. There is growing evidence that criminal justice referral of offenders to drug abuse treatment programs, often accompanied by urine monitoring, can lead to a longer treatment period and to reductions in both drug abuse and crime. Because younger offenders are less likely than older offenders to inject hard drugs and to use heroin, identification of youthful offenders who are abusing drugs such as marijuana, PCP, or cocaine may hold promise for preventing more extensive drug use.

To address public health problems. Abusers of hard drugs, especially persons who inject drugs, are at high risk for health problems. Intravenous drug users are especially at high risk for contracting AIDS by sharing dirty needles that contain blood from infected fellow addicts. Prostitutes are also likely to have serious drug abuse and associated health problems. More than two-thirds of the arrestees in Washington, D.C., and New York City have been found to test positive by urinalysis for one or more drugs. The criminal justice system may have an unusual opportunity to identify persons with health problems.

To monitor community drug use trends. As illicit drugs become available in a community, the more deviant persons can be expected to be among those who first use them. Thus, an ongoing urine testing program may provide warning of drug epidemics and information on changing patterns of drug availability. The results from a current urine testing program for arrestees in Washington, D.C., have been useful for tracking the rising trend of heroin use in the 1970's and of cocaine in the 1980's.

How Do We Identify Drug Users?

A variety of methods are available for identifying drug users in the criminal justice system. Urine testing is the most commonly used method and much of the current policy debate focuses primarily on urine testing. Other forms of drug use testing are now under development—including testing of drug traces in hair samples—that may be less intrusive and, perhaps as a result, less controversial.

Offenders' self-reports. Social science research has amply documented that people are willing to disclose sensitive information about their drug use if the information is collected voluntarily, for research purposes only, and if confidentiality is assured. These conditions do not exist for persons detained and processed by the criminal justice system. Many detainees will conceal their recent drug use, even in a voluntary, confidential, research interview. Estimates of recent drug use obtained by self-reports from arrestees generally identify about half as many drug users as urine tests do.

Criminal justice records. The criminal justice system maintains extensive files on offenders. However, because much of the information in the files is obtained from the offender, the records provide only limited information about an offender's involvement with drugs. Furthermore, drug users are arrested for a variety of offenses; relying solely on the filing of a drug-related charge at arrest to identify drug users will also underdetect users.

Urinalysis tests. Although urine tests have long been used by the criminal justice system, only with the advent of more accurate and less expensive technology has urine testing become a viable option for screening large numbers of offenders. Primarily because of their low cost (under $5 for each drug tested) and ease of use, the EMIT™ (enzyme multiplied immune test) tests are the most commonly used urine tests today. These tests depend on a chemical reaction between the specimen and an antibody designed to react to a specific drug. The chemical reaction causes a change in the specimen's transmission of light, which is measured by a machine. If the reading is higher than a given standard, the specimen is positive for the drug. Because the determination of a positive is based on specific numbers, the level of subjectivity required by the EMIT test is less than that required by most other tests.

The growing popularity of the EMIT tests has made them the object of several legal challenges. The primary criticism is that the EMIT tests have too high a rate of false-positive errors. That is, the tests too often falsely indicate the presence of a drug. Much of the debate surrounds the possibility that some common *licit* drugs can cross-react with the test's reagents to produce a positive result. The ingestion of poppy seed bagels has been found to produce a positive test result for opiates, for instance. Furthermore, the EMIT test for opiates will detect prescribed drugs such as codeine as well as heroin (morphine). Sloppy recording procedures by laboratory staff and failure to maintain careful controls over the chain of custody of the specimen can also produce serious test errors.

The future of urine testing in the criminal justice system will probably depend on a satisfactory solution to the problem of false-positive errors. Preliminary Federal guidelines for testing specify that all positive test results from immunoassay tests, like EMIT, should be confirmed by gas chromatography/mass spectroscopy (GC/MS). GC/MS is the most accurate technique available for indentifying drugs in the urine, but it costs $70 to $100 per specimen. It seems appropriate to require such a procedure when a single test result may end in loss of a person's job or liberty. However, when a test result is used to trigger further investigation to determine if a person is involved in drug use, confirmation by other methods (urine monitoring or diagnostic interview) may be equally acceptable. The courts have yet to decide this issue.

Who Should Be Tested?

Arrestees. By testing arrestees one can screen for drug abusers in the largest and most diverse criminal justice population, in contrast with the much smaller populations reached by programs which test only persons who have been placed on probation or parole. There are, however, special legal concerns regarding testing and monitoring of persons at the pretrial stage, before a determination of guilt or innocence has been made. In some States a judge has statutory authority to decide the defendant's pretrial release status solely on the basis of information regarding the defendant's risk of failure-to-appear in court (FTA). The judge's authority to order urine screening or to set pretrial release conditions aimed at monitoring drug use, or requiring treatment, may depend in these States on the existence

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of a link between drug abuse and FTA. Prior research has suggested such a link, and research being completed in New York City has found that arrestees who tested positive for drugs and admitted current drug dependence, or a need for treatment, were at high risk for FTA.

While a number of jurisdictions are considering implementing pretrial testing programs, Washington, D.C., is the only jurisdiction with an operating program. Judges use urinalysis results and information from a brief cellblock interview about prior drug use to determine conditions of pretrial release. The judge may refer arrestees who test positive to a treatment program or to continued urine monitoring.

Probationers and parolees. Probation and parole are suitable times for screening for drug use, primarily because abstinence from illicit drugs is typically a condition of postconviction release. Testing would probably be constructive, however, only in programs with manageable case loads so that the test results can be used as part of a comprehensive program of assessment and treatment. Adequate resources must be available for treatment and monitoring.

Juveniles. Adult offenders tend to have begun their illicit drug use as youths. There is hope that by identifying juvenile detainees who use such drugs as marijuana and PCP, and intervening with them, it may be possible to prevent their progression to injection of harder drugs.

Female detainees. Much less attention has been given to the drug use and crime of female offenders than of males. This is true in spite of the evidence that female arrestees are more likely than males to test positive for drugs and to have associated health problems. Many female offenders engage in prostitution and inject drugs, making them a high risk group for transmission of the disease AIDS.

Why Not Test?

It is clear from experience with the Washington testing program that many of the issues and criticisms that have been raised about drug testing in the workplace will be raised about testing offenders. This section reviews briefly some of the more significant legal and practical issues relevant to offender urine testing programs.

Fourth amendment rights against illegal search and seizure. Does the government have the right to impose mandatory testing on a person in the absence of individualized suspicion? It is argued that the invasion of privacy, the costs, and the intrusiveness of urine testing are too great to justify the testing of persons at random, when there is no clear suspicion that the person is using drugs. In some instances, mandatory urine testing has been sustained by the courts when unique institutional requirements existed. For example, such tests have been upheld for jockeys, in the context of regulation and reduction of criminal influence in the racetrack industry, as well as for prison inmates to promote security, and in the military.

A Federal appeals court overturned a lower court's decision staying the U.S. Customs Service program from testing employees transferring to sensitive jobs. The appeals court found that the particular method by which the program operated was limited in its intrusiveness and that there was a strong and legitimate governmental interest in not employing drug users in the positions in question. It is not clear how these legal precedents will apply to programs for screening large numbers of offenders.

Critics of mandatory urine testing argue that the need to watch the person providing the specimen is an unacceptable infringement of privacy. When an employee or offender who has received advance notice is tested, special precautions must be made to ensure that the person does not substitute someone else's urine. When arrestees have no time to plan for the urine test, there may be less need to observe the voiding. Under these circumstances, the test may be no more intrusive than conditions that already exist in using public restrooms or toilet facilities in local jails.

The legality of mandatory testing of offenders will probably depend on the stage at which testing is introduced. Some believe that it is improper to require tests of persons at the pretrial stage when they are presumed to be innocent. Others argue that because an arrest results from probable cause to believe that the person has committed a crime, and because arrestees have reduced fourth amendment rights, it is legal to require testing of arrestees. Probation officers often have the authority to require urine tests to enforce the conditions of probation requiring abstention from illicit drug use. Similar authority may also apply to parole officers.

Fourteenth amendment due process rights. Considerable litigation has occurred over the accuracy of urine tests and whether punitive actions taken against a person on the basis of a single unconfirmed urine test violate the 14th amendment's guarantees of due process. Because of the extensive use of the EMIT test, most of this discussion has concerned the accuracy of that particular test.

It is clear that the acceptability of results of EMIT tests of criminal justice detainees varies from jurisdiction to jurisdiction. Some courts have ruled that a single unconfirmed EMIT result is sufficient for revoking probation or imposing sanctions on prisoners, while other courts have ruled that the test must be confirmed. There is, however, little agreement on the type of confirmatory test required. In some instances, courts have ruled that repeating the EMIT test is sufficient, while other courts have required that an alternative method such as TLC (thin layer chromatography) or GC/MS be used.

When persons are tested repeatedly, other issues become relevant. For example, a contempt of court ruling for a person on pretrial release in Washington, D.C., who tested positive for PCP on 16 tests over a 60-day period was denied when expert witnesses could not specify the length of time that PCP could be detected in urine. Unlike cocaine and opiates, which are eliminated from the body within days after ingestion, PCP and marijuana may be stored and released weeks after use. The Washington judge could not therefore rule out the defendant's claim that all of the positive tests were the result of use of PCP before the pretrial period began. There is a critical need for the creation of a national system for evaluating laboratory proficiency and establishing appropriate guidelines for the use and interpretation of urine tests by the criminal justice system.

Other relevant issues. A number of other legal and ethical issues have been raised. Among the most important is whether the testing program could result in additional harm to the offender. Persons arrested for a minor offense might

find themselves in more trouble with the court by participating in a drug testing program (if they repeatedly test positive), than they would have been for the original arrest charge. Penalties could also result from refusal to take a test.

Another important issue is the confidentiality of test result information. For example, is information about drug use at arrest to be made available at the time of sentencing or parole? A person labeled a drug user can suffer adverse consequences from that label for some time after a positive test result is obtained.

Perhaps the greatest danger posed by urine testing programs is the belief that use of the tests will somehow solve the drug abuse problem. Testing will uncover the magnitude of the drug problem in a jurisdiction and identify some of the affected persons. However, in the absence of well-developed plans on how to assess a person's level of drug involvement and how to plan effective responses, the testing program will fail to achieve its goals. A program that does nothing more than increase detentions will only add to jail and prison crowding. Drug abuse treatment facilities in most large cities are filled to capacity and will require new resources if they are to handle an influx of criminal justice referrals. A comprehensive strategy for handling the test results should be in place *before* urine testing is adopted.

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Discussion Questions

1. Should criminal justice system officials be permitted to test arrestees for drug use? Probationers? Parolees?

2. Should testing of arrestees for current drug use be limited to people who have been charged with drug-related crimes? Why or why not?

3. Should testing for drug use be permitted for all arrestees (or probationers or parolees) or only in cases where there is probable cause to believe that the arrestees are current users of illicit drugs?

4. Should the rules governing administration of drug use testing and confirmation of positive results be stricter for arrestees, whose positive result may lead to loss of pretrial freedom, or for employees, whose positive result may lead to loss of a job?

5. If you were chief judge of an urban court, would you establish a program of drug use tests for all arrestees? Why or why not?

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