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Research
in Action

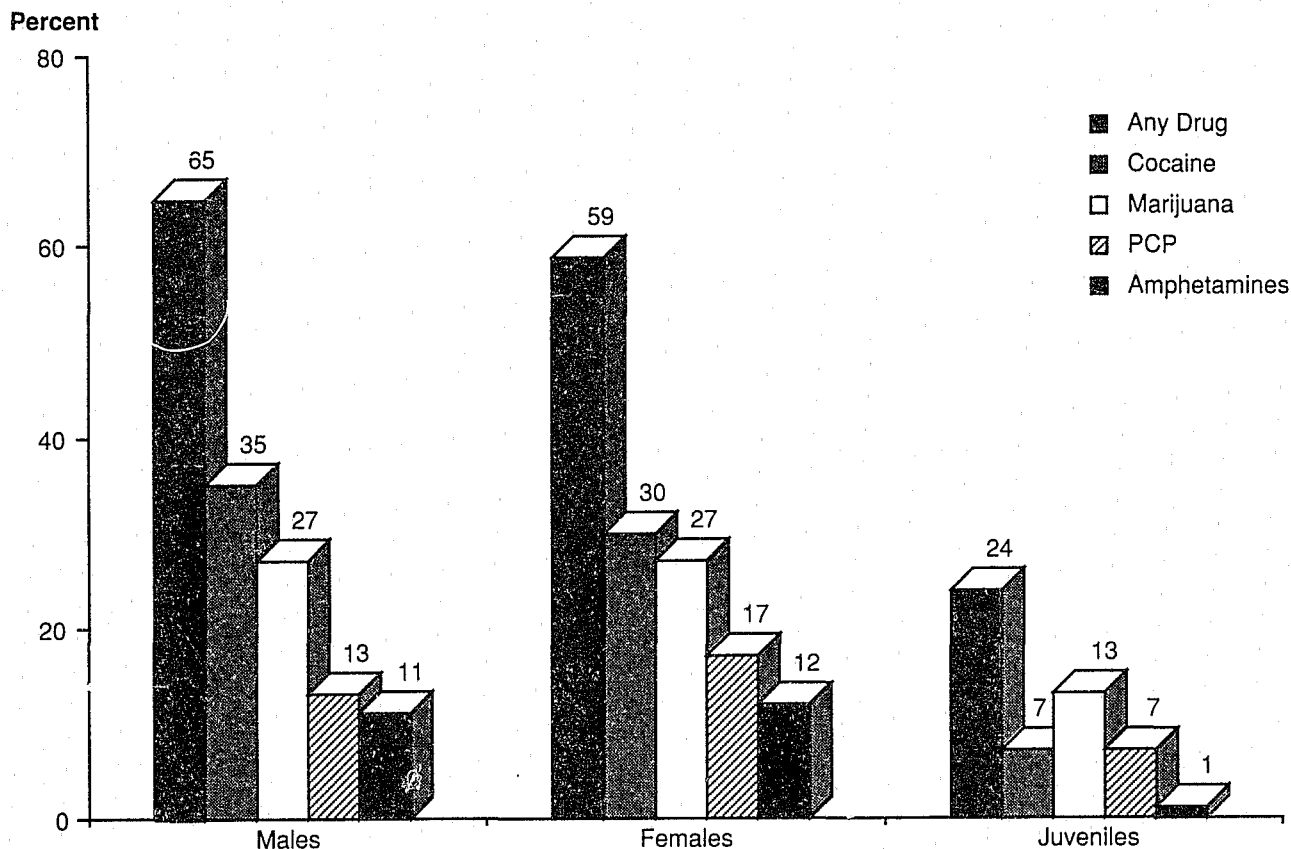
James K. Stewart, Director

DUF

DRUG USE FORECASTING

JULY TO SEPTEMBER 1989

First DUF Findings From Arrestees in San Jose*



Source: National Institute of Justice/Drug Use Forecasting

*Percent positive by urinalysis, July through September 1989. See page 2 for details.

Drug Use Forecasting (DUF) Research Update

In 1987, the National Institute of Justice began the Drug Use Forecasting (DUF) program in New York City. By 1989, 21 cities had entered the program. DUF is designed to provide each city with estimates of drug use among arrestees and information for detecting changes in drug use trends. The DUF program provides the country with the first objective measure of recent drug use in this deviant segment of the population. The information can be used to plan the allocation of law enforcement, treatment, and prevention resources, as well as to gain an indication of the impact of local drug use reduction efforts.

Method

DUF data are collected in central booking facilities in participating cities throughout the United States. For approximately 14 consecutive evenings each quarter, trained local staff obtain voluntary and anonymous urine specimens and interviews from a new sample of arrestees. In each site, approximately 225 males are sampled. In some sites, approximately 100 female arrestees are also interviewed.

To obtain samples with a sufficient distribution of arrest charges, DUF interviewers limit the number of male arrestees in the sample who are charged with the sale or possession of drugs. Because such persons are most likely to be using drugs at time of arrest and are undersampled, DUF statistics are minimum estimates of drug use in the male arrestee population. All female arrestees, regardless of charge, are included in the DUF sample because of the small number of female arrestees available.

Urine specimens are analyzed by EMIT™ for 10 drugs: cocaine, opiates, marijuana, PCP, methadone, benzodiazepine (Valium), methaqualone, propoxyphene (Darvon), barbiturates, and amphetamines. Positive results for amphetamines are confirmed by gas chromatography to eliminate positives that may be caused by over-the-counter

drugs. For most drugs, the urine test can detect use in the prior 2 to 3 days. Exceptions are marijuana and PCP, which can sometimes be detected several weeks after use.

Third Quarter Results July to September, 1989

The percentage of males testing positive for a drug at the time of arrest ranged from 53 percent in San Antonio to 84 percent in New York (see page 3). In every city except San Antonio, 59 percent or more of the male arrestees tested positive for a drug. The range of drug use for female arrestees was 42 percent in Dallas and Indianapolis to 90 percent in Philadelphia. In 10 of the 16 cities that tested female arrestees, more than 60 percent were positive for a drug at time of arrest.

The highest rate of multiple drug use (urinalysis positive for more than one drug) for male arrestees was found in San Diego—52 percent. Female arrestees in Los Angeles had the highest rate of multiple drug use (38 percent), while female arrestees in Indianapolis had the lowest (10 percent).

For the majority of male arrestees, cocaine was the most frequently detected drug. Exceptions were found in San Diego, Indianapolis, Portland, Phoenix, and San Antonio. In San Diego, cocaine, marijuana, and amphetamines were found in more than 36 percent of the male arrestees. Marijuana use exceeds the use of all other drugs in Indianapolis. The percent of male arrestees testing positive for marijuana and cocaine was nearly equal in Portland, Phoenix, and San Antonio.

Cocaine was also the most frequently detected drug in female arrestees in all cities except Indianapolis. Female arrestees in Indianapolis were about as likely to test positive for marijuana (23 percent) as cocaine (22 percent).

Findings From San Jose

San Jose entered the DUF program in September 1989. Sixty-five percent of the males and 59 percent of the females

tested positive for one or more drugs at time of arrest. While cocaine was the drug most frequently detected in males (35 percent) and females (30 percent), the overall prevalence of cocaine was modest compared with most other DUF cities. Four drugs—marijuana, cocaine, amphetamines, and PCP—were detected in 10 percent or more of male and female arrestees. In fact, San Jose was the only city in the DUF program that had as much PCP use in arrestees as Washington, D.C. (To date, PCP use has been highest among arrestees in Washington, D.C.) Thirteen percent of the male arrestees and 17 percent of the female arrestees in San Jose tested positive for PCP. Amphetamine use detected in arrestees in San Jose was consistent with prior DUF statistics showing that amphetamine use is primarily limited to the western part of the United States.

Results from juvenile detainees were also obtained in San Jose. Twenty-four percent of the male juvenile detainees tested positive for a drug at time of arrest. Marijuana (13 percent) was the most frequently detected drug, followed by PCP and cocaine (7 percent). Future DUF reports will present urinalysis findings from juvenile detainees in Washington, D.C., Portland, Phoenix, Indianapolis, San Diego, and San Antonio.

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To receive more drug testing information or to be added to the DUF mailing list, contact:

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Rockville, MD 20850

1-800-851-3420
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The Assistant Attorney General, Office of Justice Programs, coordinates the 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.

Drug Use by All Arrestees*

City	% POSITIVE ANY DRUG*	RANGE OF % POSITIVE				% POSITIVE*					
		LOW	DATE	HIGH	DATE	2+ DRUGS	COCAINE	MARIJUANA	AMPHETAMINES	OPIATES	PCP
Males											
New York	84	76	4/89	90	6/88	41	77	24	0	20	2
San Diego	83	66	6/87	85	1/89	52	42	46	37	23	6
Philadelphia	81	79	8/88	84	4/89	33	73	25	1	8	1
Los Angeles	76	69	10/87	77	4/88	30	57	25	6	14	5
Houston	70	61	1/88	70	7/89	24	58	24	2	3	0
Cleveland	70	66	2/89	70	8/89	17	58	18	0	4	2
Ft. Lauderdale	69	62	8/88	71	3/88	27	52	32	0	3	0
Wash., D.C.	68	68	9/89	72	2/89	24	61	13	0	8	11
Detroit	67	62	4/89	69	10/88	22	57	24	0	6	**
New Orleans	65	58	1/88	76	4/89	24	56	23	0	5	2
Dallas	65	57	12/88	72	6/88	29	55	23	4	11	**
San Jose	65	Data not available				25	35	27	11	7	13
Portland	64	54	1/89	76	8/88	28	37	35	10	15	0
Birmingham	63	63	8/89	75	7/88	21	52	22	**	5	**
Indianapolis	62	50	2/89	62	9/89	23	29	48	0	5	0
St. Louis	61	56	10/88	69	4/89	24	48	24	**	6	7
Phoenix	60	53	10/87	67	1/88	32	36	38	9	14	**
Kansas City	59	54	11/88	64	5/89	20	43	24	2	2	5
San Antonio	53	49	6/89	63	8/88	22	28	27	3	15	**
Females											
Philadelphia	90	77	1/89	90	7/89	34	75	18	0	17	0
Wash., D.C.	84	70	2/89	88	6/89	35	79	8	0	18	10
Kansas City	83	70	11/88	83	8/89	25	70	20	3	2	1
Los Angeles	80	72	7/88	80	7/89	38	67	14	6	20	7
Portland	79	69	1/89	82	8/88	35	57	24	16	27	0
New York	72	72	7/89	83	2/88	30	61	21	0	18	1
Ft. Lauderdale	70	Data not available				16	61	12	0	2	0
Phoenix	69	54	7/88	78	3/89	33	48	27	12	16	3
New Orleans	63	46	11/87	65	1/89	24	54	10	0	6	2
Houston	62	62	7/89	64	4/89	29	54	17	1	11	0
St. Louis	59	45	11/88	75	4/89	19	50	12	0	10	1
San Jose	59	Data not available				21	30	10	12	8	17
Birmingham	56	56	8/89	77	4/89	19	43	12	0	4	0
San Antonio	55	45	2/89	55	9/89	32	36	16	5	22	0
Dallas	42	42	9/89	71	6/88	11	31	8	3	6	0
Indianapolis	42	42	9/89	47	2/89	10	22	23	0	**	0

Source: National Institute of Justice/Drug Use Forecasting Program

* Positive urinalysis, July through September 1989
 ** Less than 1%

Cocaine Use Among Arrestees in the Largest U.S. Cities

by Eric D. Wish, Ph.D., Visiting Fellow
at the National Institute of Justice¹

Measures of Drug Use Trends

National estimates of drug use trends in the United States are derived primarily from two surveys: the National Household Survey and the High School Senior Survey. However, the persons excluded from these surveys (school dropouts from the student survey; persons in jails or institutions and the homeless from the household survey) are those who the mass of empirical scientific literature indicates are at high risk for illicit drug use.

In order to gather information about drug use from a deviant part of the population not typically sampled in the surveys of the general population, the National Institute of Justice (NIJ), the primary research arm of the Department of Justice, established the national Drug Use Forecasting (DUF) program in 1987.

Comparison of Estimates of Cocaine Use in the United States in 1988

Table 1 (below) compares estimates of drug use in the prior month obtained from the 1988 National Household Survey, the High School Senior Survey and the DUF program. Estimates are provided for arrestees in 20 cities in the

DUF program in 1988. Arrestees' self-reported use of drugs in the prior month and the results of their urinalyses are presented.

Cocaine use in the prior month was reported by 1.5 percent of the household population and 3.4 percent of high school seniors. This compares with a median of 24 percent of male arrestees in the DUF cities who reported use of cocaine in the prior month. Results were similar for female arrestees. Thus, self-reported cocaine use in arrestees in the past month was 8 to 12 times the level of self-reported use in the general population. However, according to the urinalysis, cocaine use by arrestees (in the prior 2 to 3 days) was 17 to 25 times greater than the use in the past month reported in the general population. This is because twice as many arrestees tested positive for cocaine as admitted to using the drug in the prior month.

The statistics in table 1 are not totally comparable because the age distributions of the participants in the three studies are not equivalent. However, even if one compares estimates of recent drug use in high school seniors to DUF test results for juvenile detainees, a similar pattern of differences presents itself. Rates of cocaine use in the prior 2 to 3 days are three to seven times those reported by high school seniors.

¹This article is based on: Wish, E.D., "U.S. Drug Policy in the 1990's: Insights from New Data from Arrestees." *The International Journal of the Addictions*, in press.

Frequent Cocaine Use in Arrestees in the Largest U.S. Cities

We thought it might be useful to construct a rough estimate of the prevalence of frequent cocaine use in the arrestee population in the largest cities in the United States in 1988. We obtained the total number of arrests in each of the DUF cities in 1988 from data provided by the FBI from the Uniform Crime Reports (UCR). We then used the percentage of male arrestees positive for cocaine in each DUF city in 1988 (more than 10,000 were tested) to estimate the total number of arrests in that city in which the arrestee would have tested positive for cocaine.

For example, 58 percent of the 905 male arrestees tested by the DUF program in Chicago in 1988 were positive for cocaine. We therefore estimated that in 58 percent of the 201,000 arrests in Chicago in 1988, the arrestee would have tested positive for cocaine. The estimate for Chicago was therefore 117,000 arrests involving a recent cocaine user. Applying this technique to each DUF city, we estimate that there were about 1.1 million arrests involving male or female cocaine users in all 21 DUF cities in 1988.

We wanted to apply the DUF estimates of cocaine use to cities of similar size. All DUF sites except Ft. Lauderdale have populations in excess of 250,000

Table 1

Estimates of Current Drug Use in 1988 From Self-Reports and Urine Tests From Three Populations

	Percentage Reporting Use of Drug in Prior 30 Days						Percentage Positive for Drug by Urinalysis*			
	Household Survey	Senior H.S. Survey	DUF Males		DUF Females		DUF Males		DUF Females	
			Median	Range	Median	Range	Median	Range	Median	Range
Cocaine	1.5%	3.4%	24%	8-50%	27%	9-51%	49%	15-74%	52%	15-75%
Marijuana	5.9%	18.0%	39%	18-51%	29%	19-40%	39%	17-50%	23%	15-38%
Heroin	<1%	<1%	5%	<1-16%	10%	0-20%	6%	1-24%	19%	6-26%
(N)	(8,814)	(16,300)	(10,554)		(3,261)		(10,554)		(3,261)	

Source of Table 1 and Table 2: Wish, E.D., "U.S. Drug Policy in the 1990's: Insights from New Data from Arrestees." *The International Journal of the Addictions*, in press.

*The urine tests used in DUF detect cocaine or opiate use in the prior 2 to 3 days, and marijuana use up to 2 weeks

Cocaine Use (continued)

persons. In 1988, there were 61 cities with a population of 250,000 or more; 20 of these cities were part of the DUF system. To estimate the number of arrests in the 41 cities not in DUF in 1988 (we did not have UCR arrest statistics for these cities), we took the total population in these 41 cities (17,166,000) and multiplied this number by the UCR estimate of arrest rates in cities of 250,000 or greater population (7,901 arrests/100,000 population). This procedure yielded an estimated 1.36 million arrests in these 41 cities in 1988.

To estimate the number of these arrests in which the arrestee would have tested positive for cocaine, we used two estimates. The low estimate used the lowest percentage of arrestees who tested positive for cocaine in any DUF city in 1988 (15 percent in Indianapolis). The high estimate used 47 percent, the simple average of the percentage of male arrestees in each of the 21 DUF cities in 1988 who tested positive for cocaine.

Using these procedures, we estimated that there were 203,000 to 637,000 arrests involving a recent cocaine user in these 41 cities in 1988. We added these estimates to the 1.1 million cocaine involved arrests from the 20 DUF cities (deletion of Ft. Lauderdale did not change this estimate) and arrived at a combined estimate of 1.3 to 1.7 million arrests in the 61 largest cities in 1988 in which the arrestee probably would have tested positive for cocaine.

Because some persons are arrested more than once each year, the number of persons is somewhat less than the number of arrests. Based on estimates from prior research, we reduced the number of arrests by 25 percent to estimate the number of different arrestees represented. We conclude that there were between 978,000 and 1.3 million arrestees who would have tested positive for cocaine in 1988 in the 61 largest cities in the United States.

Prior research on criminal drug users indicates that it is reasonable to assume that nearly all the persons who tested positive for cocaine at arrest probably used the drug at least once a week. To

Table 2

Frequent Cocaine Users in 1988: Criminal Justice and Household Populations

	Number of People	Frequent Cocaine Users	
		Low Estimate	High Estimate
Criminal Justice Population			
Arrestees in 61 largest cities			
20 DUF cities	1,407,000	826,000 ^a	826,000
41 largest non-DUF cities	<u>1,020,000</u>	<u>152,000^b</u>	<u>478,000^c</u>
	2,427,000	978,000	1,304,000
Other Criminal Justice Persons			
Other arrestees, ^d prisoners, probationers, and parolees	10,800,000 ^e	Unknown	Unknown
General Population			
U.S. households ^f	250,000,000	620,000	1,173,000

^a Low and high estimates are the same for DUF cities because they employ the exact estimates of cocaine use obtained from arrestees tested in each city

^b Assumes that 15 percent of arrestees would test positive for cocaine (the lowest rate found in any DUF city—Indianapolis)

^c Assumes that 47 percent of arrestees (simple average of all DUF cities in 1988) would test positive for cocaine

^d Arrestees in counties, cities with less than 250,000 population, and rural areas

^e Includes 7,500,000 arrestees, 600,000 prisoners, and 2,700,000 probationers/parolees

^f Source: National Household Survey on Drug Abuse: 1988 Population Estimates, p.94. National Institute on Drug Abuse, 1988

put our estimates of cocaine use among arrestees in perspective, we compared them with the estimates of the number of weekly cocaine users in the U.S. household population in 1988 (table 2). The arrestee population in the 61 largest cities contains about as many weekly cocaine users (978,000 to 1.3 million) as estimated in the entire U.S. household population (620,000 to 1.2 million). **If we add together the estimated number of frequent users of cocaine from the arrestee and household data, we estimate that arrestees from just these cities may account for one-half or more of the resulting total.**

While these estimates of cocaine use by arrestees are based upon the assumptions noted above, we feel that the resulting estimate is reasonable for the following reasons: first, the DUF system underestimates drug use in the entire arrestee population because persons charged with drug offenses are undersampled and because the urine test only detects cocaine use in the prior 2 to 3 days. Second, our estimates of drug use have been limited to adult arrests in the largest 61 cities; omitted are more than 10 million arrests that occurred outside of these cities. Furthermore, we underestimate cocaine

use in the total criminal justice population because these estimates omit juvenile detainees and those of the 2.7 million criminals on probation or parole in 1988, and the 600,000 persons in prisons who were not arrested during 1988. Many of these persons also tend to be drug users. Finally, estimates based upon the 21 DUF cities alone indicated that there were about as many arrestees who recently used cocaine (more than 800,000) as were estimated to be weekly users of that drug in the entire U.S. household population in 1988.

Opportunity To Reduce Drug Use and Crime

While it is not possible to translate the numbers of weekly users exactly into the amount of cocaine that is used, we suggest that these data provide evidence that much of the demand for cocaine in the United States stems from the persons who are detained and supervised by the criminal justice system. Efforts to reduce their drug use could have a significant impact on drug use and crime in the Nation.

Regional Differences in Drug Use, Injection, and Treatment

by Christy A. Visser, Ph.D., Senior Research Associate at the National Institute of Justice

Previous DUF reports have shown wide variation by city in patterns and types of drug use. Grouping these cities reveals distinct regional differences in drug use among arrestees. The 20 DUF cities can be divided into four regions: Northeast, Midwest, South, and West. In the analyses reported here, the cities were grouped into regions as defined by the U.S. Bureau of Census.¹ The results are based on the entire sample of male and female arrestees interviewed during 1988 (see table, lower right).

In 1988, arrestees in the Northeast had the highest rate of drug use: 82 percent of male arrestees and 80 percent of female arrestees tested positive for one or more drugs. The second highest region was the West for both males (74 percent tested positive) and females (73 percent positive). In the Midwest and South, the percentage positive for males and females ranged from 59 to 68 percent. In all regions but one (the South), female arrestees tested positive as often as male arrestees.

Use of multiple drugs, excluding marijuana, is often an indicator of especially serious drug use. In the Northeast, more arrestees tested positive for multiple drugs than in any other region. Female arrestees in every region had rates of multiple drug use as high or higher than male arrestees. For example, in the Northeast 38 percent of females tested positive for multiple drugs compared to 29 percent of male arrestees.

¹Northeast—Washington, D.C., New York, Philadelphia; South—Miami, Ft. Lauderdale, Birmingham, New Orleans, Houston, Dallas, San Antonio; Midwest—Detroit, Cleveland, Indianapolis, Chicago, St. Louis, Kansas City; West—Portland, Los Angeles, San Diego, Phoenix. Four of these cities did not test female arrestees in 1988: Cleveland, Ft. Lauderdale, Houston, and Miami. Although the Census Bureau places Washington, D.C., in the South, it is included in the Northeast here because of its similarity to the other cities of that region.

Drug Use Among Arrestees by Region*

		% Positive					
Region		ANY DRUG	2+DRUGS ^a	COCAINE	AMPHETAMINES	OPIATES	PCP
Northeast	M	82	29	68	**	17	12
	F	80	38	68	2	27	16
Midwest	M	63	11	43	**	8	5
	F	67	16	53	**	14	4
South	M	68	9	48	2	6	1
	F	59	16	41	5	10	2
West	M	74	22	44	15	14	3
	F	73	23	52	12	20	3

Source: National Institute of Justice/Drug Use Forecasting Program

* Positive urinalysis, January through December 1988

** Less than 1%

^a Excluding marijuana

Types of Drugs

Regional differences were most evident in the use of specific drugs. In 1988, cocaine use was highest in the Northeast—68 percent of both male and female arrestees tested positive. Cocaine use was lower and similar in the Midwest, South, and West: 43 to 48 percent for males and 41 to 53 percent for females. Females in the West and Midwest tested positive for cocaine more often than male arrestees.

Opiate use among DUF arrestees was generally less than 20 percent in all four regions for both males and females. Opiate use was highest in the Northeast and West: 14 to 17 percent of males and 20 to 27 percent of females. Arrestees in the South had the lowest use of opiates. But female arrestees in all regions tested positive for opiates more often than male arrestees.

In 1988, it was primarily arrestees in the West who tested positive for amphetamines (15 percent of males and 12 percent of females). Some amphetamine

use also existed in the South, primarily in Texas.

Use of PCP was not confined to a single region of the country during 1988. Five percent or less of both male and female arrestees in the Midwest, South, and West tested positive for PCP. Use of PCP can best be understood by examining city data. Male arrestees who tested positive for PCP were located in three cities: Washington, D.C.

DUF Sample Sizes by Region—1988

	M	F
Northeast	1,377	464
Midwest	2,204	388
South	2,969	826
West	3,912	1,583

Source: National Institute of Justice/Drug Use Forecasting Program

Regional Differences (continued)

(31 percent tested positive), Chicago (14 percent), and St. Louis (9 percent). For females, PCP use was found in Washington, D.C. (25 percent), and St. Louis (10 percent). About 6 percent of female arrestees in both Chicago and Los Angeles also tested positive for PCP.

Regional Analysis of Self-Reported Injection and Drug/Alcohol Treatment

Examining injection and drug/alcohol treatment histories by region may be helpful in targeting resources for treatment programs. The data presented here are based on responses of male and female arrestees interviewed in 1988.²

In all four regions, more female arrestees reported injection of drugs than male arrestees. In the Northeast, Midwest, and South, about 20 percent of males and 26 percent of females said that they had injected drugs.³ Arrestees in the West reported injection of drugs (31 percent of male arrestees and 37 percent of female arrestees) more often than the other regions.

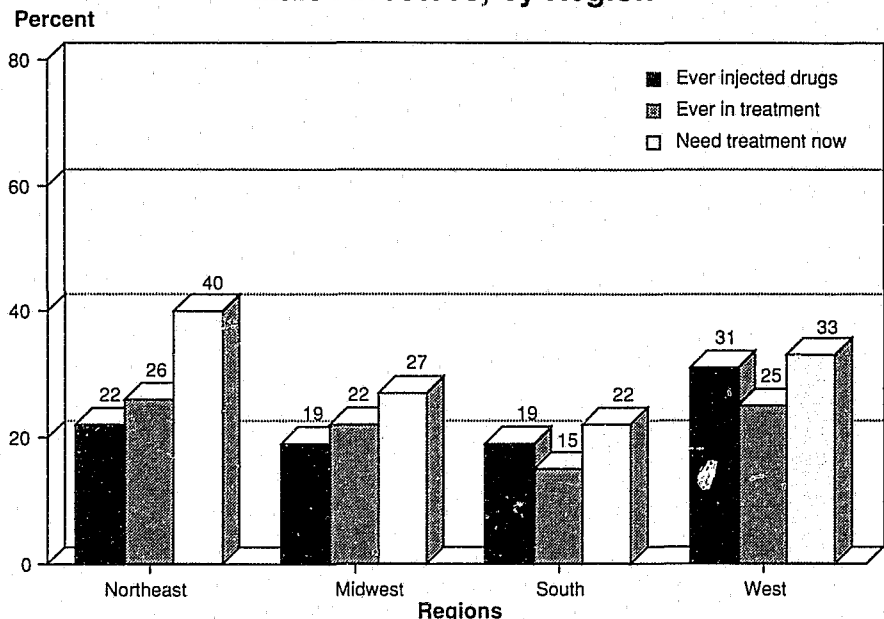
About 25 percent of male and female arrestees in the Northeast, Midwest, and West reported previous drug or alcohol treatment. Arrestees in the South were less likely to have ever been in treatment: only 15 percent of the males and 13 percent of the females reported any prior drug or alcohol treatment.

Self-reported *need* for drug/alcohol treatment also varied across regions. Arrestees in the region with the highest rate of drug use—the Northeast—were the most likely to report that they currently needed treatment: 40 percent of the males and 34 percent of the females. One-third of arrestees in the West and 27 percent of arrestees in the Midwest expressed a need for treatment. Arrestees in the South—both male and female—were the least likely to report a need for treatment.

² Because these are sensitive topics, arrestees may have underreported their drug injection and treatment history.

³ For the Northeast region, self-reported information on injection and drug treatment was based on only New York and Philadelphia arrestees.

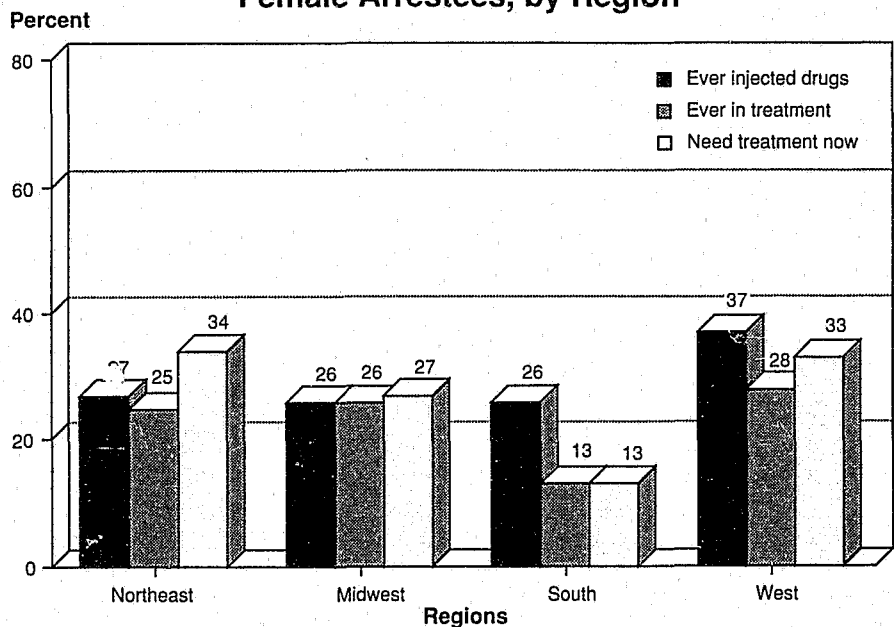
Drug Injection and Drug/Alcohol Treatment in Male Arrestees, by Region*



Source: National Institute of Justice/Drug Use Forecasting

* Data based on voluntary self-reports, January through December 1988

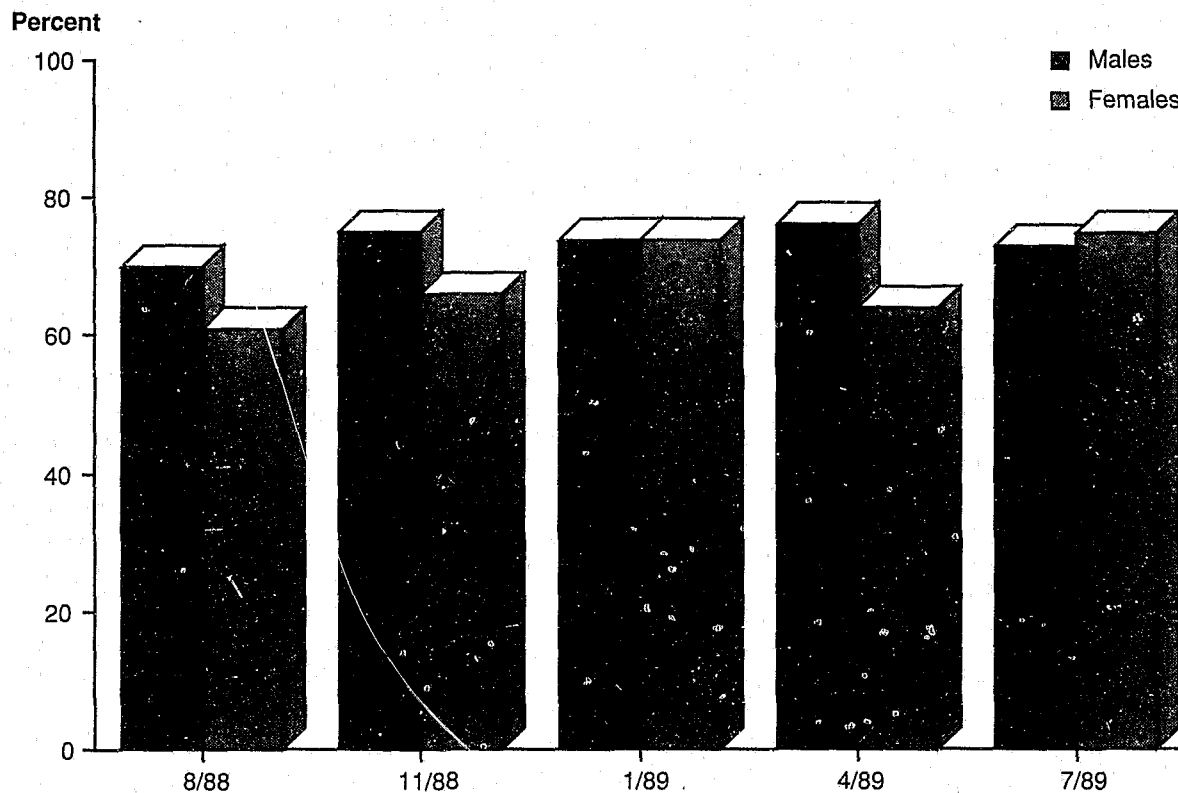
Drug Injection and Drug/Alcohol Treatment in Female Arrestees, by Region*



Source: National Institute of Justice/Drug Use Forecasting

* Data based on voluntary self-reports, January through December 1988

Cocaine Use Among Arrestees in Philadelphia*



Source: National Institute of Justice/Drug Use Forecasting

*Percent positive by urinalysis, August 1988 through July 1989

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