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**Drug Policy Office Releases Study on Heroin Use**

Washington, D.C. - The Office of National Drug Control Policy (ONDCP) released today a study entitled, "Tracking the Incidence of Heroin Use." ONDCP commissioned this study to define trends in heroin use and determine if the trends indicate potential for a new heroin epidemic. The report confirms increased availability of heroin in the last decade, a drop in price and a rise in purity. Some experts argue that increased availability of high purity heroin, which can be sniffed and smoked, will lure new users who feared potential HIV infection from heroin injection. While the study disclaims these trends stimulate a heroin epidemic, it has unveiled the following disturbing consequences:

- 1) Established heroin users are using more frequently;
- 2) Recovering heroin addicts are suffering relapses at greater rates; and,
- 3) Heavy cocaine users are turning more often to poly-drug use, using heroin to moderate agitation caused by the effects of cocaine.

Dr. Lee Brown, the ONDCP Director, remarked, "We will continue to monitor the serious threat posed by this high purity and low cost heroin. We can expect the rise in heroin use to continue so long as increasing amounts of the drug are available. As we observe closely these trends, ONDCP's strategies will be developed to address them."

The study was prepared for ONDCP by Abt Associates, a Cambridge Massachusetts based public policy consulting firm. Copies may be obtained from Ms. Sisljan of Abt at 617-349-2730, or from the Office of National Drug Control Policy.

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# A RESEARCH PAPER

## TRACKING THE INCIDENCE OF HEROIN USE

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AUGUST 1993

**TRACKING THE INCIDENCE OF HEROIN USE:  
IS THERE A POSSIBLE EPIDEMIC?**

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**Abt Associates Inc.**

**Spring 1993**

## Introduction

News accounts have circulated since early 1990 of increased worldwide production of heroin and of the entry of Colombian growers and distributors into the trade.<sup>1</sup> The fear underlying these reports is of a new heroin epidemic like the explosion of cocaine use during the 1980s and the heroin epidemics of 1968, 1974 and 1978.<sup>2</sup>

Recent large seizures of heroin and surveillance by law enforcement seem to confirm news accounts. Greater quantities of heroin are being produced, more is being imported into the United States, and prices are falling while purity is increasing. Dealers are not inclined to "stockpile" heroin. Consequently, the trend implies (1) many new users or (2) greater use by established users. Either scenario could account for consumption of the increased supply, but only the first implies a new epidemic.

Earlier heroin epidemics produced large numbers of new users, many of whom became addicted. They generated an unprecedented demand for drug treatment in the late 1970s and early 1980s. If they began use in their late teens and early twenties, the addicts of the 1968 epidemic are now in their early forties. Those from the late 1970s surge are in their thirties. Some have died, "matured out" of drug use, or been cured. Many others are still using.

Until recently, heroin was almost exclusively injected, either intramuscularly (skin-popping) or intravenously. Injection is the only practical way to administer heroin at low purity levels. Currently, with higher purity levels available in some areas, heroin users can smoke or snort it. This may remove the fear of AIDS and some of heroin's stigma, encouraging experimentation by young users who, otherwise, might have avoided the drug.

Learning who is using the increased supply is critical to detecting an emerging epidemic. Is the additional supply being used by established addicts or by a new generation of Americans who could become a future addict population? Or, as is argued in this paper, are consumption patterns more complex?

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<sup>1</sup> J.B. Treaster, "Cocaine Users Adding Heroin to Their Menus," New York Times, 21 Jul 1990; "To Avoid AIDS, Users of Heroin Shift From Injecting to Inhaling It," New York Times, 17 Nov 91, p. A1; "Columbia's Drug Lords Add New Line: Heroin For the U.S.," New York Times, 14 Jan 92, p. A1.

<sup>2</sup> J. Inciardi, The War on Drugs (Palo Alto, CA: Mayfield Press, 1989).

This report considers the following questions:

- Is more heroin currently available and being distributed?
- Is the price lower and the purity higher?
- Has the number of heroin users increased?
- Are new users or long-term users consuming this increased supply?

In considering issues surrounding a potential resurgence of heroin use, this study draws on several data sources:

- the System to Retrieve Information from Drug Evidence (STRIDE)
- the National Household Survey on Drug Abuse (NHSDA)
- the Drug Use Forecasting system (DUF)
- the Drug Abuse Warning Network (DAWN)
- the National AIDS Demonstration Research (NADR) projects data
- the New York State Division of Substance Abuse Services treatment data system
- a series of telephone conversations with ethnographers, treatment providers and police

Section I examines whether high-purity, low-priced heroin is increasingly available nationally or regionally. Section II addresses whether the number of heroin users has increased. Section III examines the breakdown between new and established users.

### Section I: Heroin Availability During the 1980s and Early 1990s

The cultivation of opium, the raw material for the production of heroin, has increased drastically in recent years. Major opium producing countries--Burma, Afghanistan, and Iran--have been incapable or unwilling to take active measures to limit the production of heroin. The U.S. State Department's Bureau of International Narcotics Matters reports that the U.S. Government and other governments committed to reducing drug trafficking have "little or no influence" in the major heroin producing

countries.<sup>3</sup> The inability to reduce opium cultivation has resulted in increased heroin supplied to the worldwide and U.S. heroin markets.

According to the United Nation's International Narcotics Control Board, Southeast Asian opium cultivation doubled within the last five years and has remained high.<sup>4</sup> This high level of production has resulted in more trafficking of heroin from Southeast Asia to Western countries, including the United States. The Drug Enforcement Administration (DEA) reports a substantial increase in the proportion of Southeast Asian heroin available in the U.S. market.<sup>5</sup> In addition, recent government seizures indicate that heroin is now being cultivated and processed in South America.<sup>6</sup> In short, the amount of heroin available for consumption in the world and in the United States has risen dramatically in the last five years.

To gauge how this increased heroin availability has affected the U.S. heroin market, Abt Associates estimated the variation in price and purity of heroin from 1981 through the third quarter of 1992. This analysis was based on data from the System to Retrieve Information from Drug Evidence (STRIDE).<sup>7</sup> STRIDE data comprise reports of the price paid by Drug Enforcement Administration (DEA) agents in clandestine heroin buys across the country. Because prices vary inversely with the weight and purity of the heroin purchased, trend analysis is in terms of price per pure gram of heroin for transactions of a given size.

The eleven years of STRIDE data show a clear trend toward lower unit prices and higher purity. The price of heroin fell throughout the 1980s, bottoming out in 1989. Prices increased in 1990, but they fell again during the first half of 1992.

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<sup>3</sup> Bureau of International Narcotics Matters, International Narcotics Control Strategy Report (Washington, D.C.: Department of State Publications, March 1992), 7.

<sup>4</sup> United Nations, International Narcotics Control Board, Report of the International Narcotics Control Board for 1991 (Vienna, 1990), 22.

<sup>5</sup> United States Department of Justice, Drug Enforcement Administration, Office of Intelligence, Worldwide Heroin Situation 1990 (Washington, D.C.) 1.

<sup>6</sup> J.B. Treaster, "Columbia's Drug Lords Add New Line: Heroin for the U.S." New York Times, 14 Feb 1992.

<sup>7</sup> W. Rhodes and R. Hyatt, "The Price of Illicit Drugs, 1981-1991," report to the Office of National Drug Control Policy (Cambridge, MA: Abt Associates Inc., September 1992).

To detect changes in the market for street level transactions, Abt Associates examined purchases at one-half gram to five gram levels. (Table 1). (Larger buys are generally out of the capital investment range of most user and street level dealers.) Falling prices and increasing purity is evident both at small purchase levels (one-half grams) and at larger purchase levels (five grams). Between 1981 and 1991 heroin purity levels have risen fivefold at the one-half gram level; 1988/89 marked the period of highest purity. High-purity, low-prices, and greater availability now characterize the street level heroin market.

Tables two and three show the heroin price and purity for 1981 through the third quarter of 1992 by region of the country for purchases of up to one-half gram and one gram respectively. As these data show, in 1987 the Northeast experienced significant price drops and purity increases for heroin, a pattern that has continued unabated through the present. Other regions, including the Southeast, Midwest, and Southwest experienced delayed and less marked changes in their heroin markets. While purity levels in these markets never achieved the high levels of the Northeast market, prices have fallen and purity has increased throughout the country.

These findings, based on STRIDE, are substantiated by quarterly telephone interviews conducted by Abt Associates during 1992 with fifteen urban ethnographers. Abt asked ethnographers about changes in the price and purity of heroin over the past two years. By the second quarter of 1992, every ethnographer had reported that heroin is more available and that the purity is higher.

According to ethnographers, availability and purity vary considerably from region to region. Ethnographers in some areas like El Paso, Texas reported that the price and purity of the mainstay of that community's heroin trade, Mexican black tar and brown heroin, have not changed a great deal. However, white heroin has recently become more available. Because white heroin comes principally from Southeast and Southwest Asia or Columbia, ethnographers' reports of white heroin in new areas corroborate DEA reports of increased worldwide production and expanded marketing.

Reports from Florida have changed since interviews were first conducted in April 1992. In the spring of 1992, heroin was not widely available nor widely used. Following Hurricane Andrew, both heroin and cocaine dealers moved into the disrupted area of south Florida and began selling large quantities of both substances to cleanup workers and displaced persons. A south Florida ethnographer noted that even seasoned heroin users were "getting a nod" (becoming stuporous from their typical dosage), suggesting that a higher purity product is for sale.

**TABLE 1**  
**AVERAGE PRICE AND PURITY OF HEROIN IN THE UNITED STATES,**  
**1981-1992**

Year	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	
												Q1	Q2
<b>Purchases of 5 grams or less</b>													
Price per pure gram	3374.40	3317.75	3325.33	3071.95	2652.71	2668.86	2270.85	1832.04	1459.33	1935.32	2036.43	1741.89	1964.35
Purity	6.73	9.08	11.36	13.68	14.16	16.43	21.84	30.17	30.33	24.24	26.64	31.88	35.32
<b>Purchases of 1 gram or less</b>													
Price per pure gram	3474.70	3367.18	3422.96	2930.45	2565.75	2661.63	1984.10	1802.74	1472.93	1855.12	1937.56	1626.65	1945.57
Purity	8.06	11.18	12.95	15.36	15.70	17.10	24.41	33.34	34.36	26.65	29.11	34.84	38.20
<b>Purchases of 1/2 gram or less</b>													
Price per pure gram	3852.36	3485.00	3612.22	2811.99	2579.26	2804.98	1898.66	1794.92	1437.29	1774.44	1874.43	1574.88	1874.17
Purity	7.35	10.31	11.44	14.57	13.70	14.54	25.35	35.77	36.81	28.97	33.12	39.15	42.77



**TABLE 2**  
**AVERAGE PRICE AND PURITY OF HEROIN IN DAWN AND DUF CITIES BY REGION,**  
**1981-1992**  
(Purchases of 1/2 gram or less)

Year	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	
												Q1	Q2
<b>Southeast</b>													
Price per pure gram	6926.73	5558.87	7024.08	3486.64	6357.74	NA	NA	2150.25	3679.35	4376.54	2344.35	1310.81	1449.54
Purity	4.03	5.51	4.90	6.18	4.98	NA	NA	22.34	13.28	11.20	29.63	39.27	36.58
<b>Northeast</b>													
Price per pure gram	4524.20	3143.91	2321.52	3066.24	2848.98	1412.23	1972.46	1431.91	958.89	1083.94	1036.84	965.08	843.85
Purity	16.35	22.66	22.25	31.96	24.61	40.63	55.90	51.94	51.24	44.22	55.37	52.48	70.01
<b>Midwest</b>													
Price per pure gram	4284.08	3775.36	3393.16	3674.69	4664.52	2033.33	4117.64	2876.08	1620.62	2245.44	1921.25	2277.12	1370.35
Purity	36.52	12.77	32.27	12.11	13.24	27.23	34.55	25.00	40.02	27.03	18.12	31.67	17.35
<b>Southwest</b>													
Price per pure gram	4082.30	3177.56	2582.34	2232.04	1545.01	1646.74	1331.85	1837.19	1450.21	1714.91	1936.24	1499.31	1464.05
Purity	9.27	20.97	16.91	23.22	38.88	39.51	26.01	38.27	46.65	21.87	21.93	36.21	52.10
<b>Mountain (Denver)</b>													
Price per pure gram	NA	NA	NA	---	---	NA	---	NA	---	NA	3077.87	NA	NA
Purity	NA	NA	NA	---	---	NA	---	NA	---	NA	23.10	NA	NA
<b>Deep South</b>													
Price per pure gram	---	3174.96	---	NA	6208.83	---	NA	3565.34	NA	---	4852.83	5540.07	3727.18
Purity	---	19.76	---	NA	19.08	---	NA	16.28	NA	---	14.99	12.54	15.23
<b>Northwest</b>													
Price per pure gram	8124.55	4316.21	2758.86	1276.87	3097.25	6422.05	987.02	2080.08	NA	1475.88	3510.20	2182.39	1983.90
Purity	16.60	76.63	52.57	49.94	25.23	33.59	34.45	23.90	NA	17.77	15.25	23.34	34.49
<b>Mid-Atlantic</b>													
Price per pure gram	3802.14	2715.04	3870.92	3002.27	1561.97	3826.58	3236.82	2002.65	2501.04	2643.84	1941.87	876.33	2016.87
Purity	21.36	6.80	9.11	35.10	25.53	11.88	19.42	41.19	29.62	17.38	26.95	33.90	18.14

--- No observations for this period.

NA Insufficient data to calculate statistics.

Source: System To Retrieve Information from Drug Evidence, 1981-1992.

**TABLE 3**  
**AVERAGE PRICE AND PURITY OF HEROIN IN DAWN AND DUF CITIES BY REGION,**  
**1981-1992**  
(Purchases of 1 gram or less)

Year	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	
												Q1	Q2
<b>Southeast</b>													
Price per pure gram	6576.71	4937.03	6377.96	4868.66	6165.57	NA	3304.15	3204.26	3159.58	4248.25	2560.58	2111.13	1706.16
Purity	2.76	5.71	6.78	4.08	3.69	NA	5.53	10.03	14.82	9.60	26.76	22.90	34.90
<b>Northeast</b>													
Price per pure gram	3507.28	3343.08	2317.36	3293.13	2662.18	1675.63	1762.32	1475.80	957.98	1157.52	1049.32	950.05	814.75
Purity	17.63	17.46	21.60	26.47	21.33	38.35	47.96	49.07	49.99	43.85	54.54	51.85	68.22
<b>Midwest</b>													
Price per pure gram	4417.71	3203.25	3569.28	4555.45	3846.50	2996.30	4101.27	2679.08	1529.92	2039.37	2171.79	2094.07	1803.13
Purity	27.29	16.25	32.17	10.06	19.67	17.26	21.04	20.93	27.06	22.45	16.83	26.00	17.17
<b>Southwest</b>													
Price per pure gram	4027.02	3263.63	2551.15	2221.23	1538.48	1572.00	1369.26	1595.39	1436.07	1336.53	1862.99	1387.06	1635.30
Purity	11.21	16.32	18.53	24.69	37.29	37.49	25.85	35.40	43.35	21.04	21.13	32.84	39.72
<b>Mountain (Denver)</b>													
Price per pure gram	NA	NA	NA	---	---	12708.94	---	NA	---	1482.02	2874.71	1919.27	2456.11
Purity	NA	NA	NA	---	---	55.81	---	NA	---	40.53	21.94	25.69	36.13
<b>Deep South</b>													
Price per pure gram	---	3174.96	---	NA	5247.45	---	NA	3051.77	1835.38	---	4569.62	4952.18	3693.62
Purity	---	19.76	---	NA	17.85	---	NA	21.05	22.01	---	12.94	10.64	13.72
<b>Northwest</b>													
Price per pure gram	6565.51	2350.37	1966.59	1555.94	1933.13	1369.69	1201.67	2080.08	NA	3045.64	2756.66	1426.93	1879.34
Purity	17.31	42.23	51.02	42.69	35.80	40.50	27.21	23.90	NA	11.99	13.20	24.38	31.83
<b>Mid-Atlantic</b>													
Price per pure gram	2788.49	2456.94	3410.78	3282.38	1935.29	3707.28	3414.84	1899.17	2874.07	2794.52	1676.16	1681.15	1759.67
Purity	29.76	7.39	12.26	26.29	26.12	12.26	16.86	24.29	20.22	13.95	25.09	31.09	21.66

--- No observations for this period.

NA Insufficient data to calculate statistics.

Source: System To Retrieve Information from Drug Evidence, 1981-1992.

For the same period, the Northeast and Chicago areas report the same increased availability of heroin reflected in the STRIDE data. While unit pricing remains the same (\$10 and \$20 "bags"), the purity of the purchase unit is much higher. In New York City, for example, street samples of \$10 units from all over the city test 12-35 percent pure, far higher than the 2-5 percent "Harlem bag" that has long characterized the trade in that area. The higher purity product first appeared among New York's Lower East Side traders but can now be found both citywide and in New Jersey and Connecticut as well.

Epidemiologists reporting to the National Institute on Drug Abuse's Community Epidemiological Work Group (CEWG) say in their 1992 report that heroin prices are down or level in most areas, while purity is up or level.<sup>8</sup> The CEWG notes that New York remains the most significant heroin importation and distribution center with many new independent dealers, increased competitiveness, and more aggressive marketing strategies.

The trend toward increased purity and availability is evident from earlier CEWG reporting cycles. As early as December 1987, the CEWG reported a sharp increase in the purity levels of Southeast Asian heroin in New York and cited reports by local law enforcement of the recent appearance of high-quality heroin in Philadelphia.<sup>9</sup> The June 1988 report of the CEWG reported increased purity levels in cities in the central region.<sup>10</sup> The increased purity trend was confirmed in the December 1988 report of the CEWG: Purity and trafficking of Southwest and Southeast Asian heroin increased in several northeastern cities and purity levels increased in New Orleans.<sup>11</sup>

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<sup>8</sup> Community Epidemiological Work Group, Epidemiologic Trends in Drug Abuse: June 1992 (Rockville, MD: National Institute on Drug Abuse, 1992). The Community Epidemiological Work Group (CEWG) is a network of researchers from major metropolitan areas of the United States and selected foreign countries that meets semiannually to discuss the current epidemiology of drug abuse.

<sup>9</sup> Community Epidemiology Work Group, Epidemiologic Trends in Drug Abuse: December 1987 (Rockville, MD: National Institute on Drug Abuse, 1988).

<sup>10</sup> Community Epidemiology Work Group, Epidemiology of Drug Abuse in the United States and Europe: June 1988 (Rockville, MD: National Institute on Drug Abuse, 1988). Cities in the central region include Chicago, Dallas, Detroit, Minneapolis, New Orleans, and St. Louis.

<sup>11</sup> Community Epidemiology Work Group, Epidemiologic Trends in Drug Abuse: December 1988 (Rockville, MD: National Institute on Drug Abuse, 1988).

The data presented above confirm that heroin is increasingly available. While the Northeast has experienced the most significant drops in price and rises in purity, other regions, including the Southeast, Midwest and Southwest have also seen increases in the available supply of higher purity, lower priced heroin.

Has this increased availability of higher purity heroin engendered an expansion in the number of heroin users? The following sections address this question: Is the expanded supply consumed by new users, increased use by current users, or by some combination of the two.

## Section II: Has the Number of Heroin Users Increased?

None of the data sources examined for this study show any appreciable recent increase in the number of heroin users. The user population has undergone some substantive changes, however. This section reviews evidence of trends in the prevalence of heroin use. The composition of the user population is described in Section III.

The results of the 1991 National Household Survey on Drug Abuse (NHSDA) suggest that for the years 1988, 1990, and 1991, the number of heroin users is unchanged: 0.3 percent (1988 and 1991) to 0.2 percent (1990) of household members report heroin use in the past year (Figure 1).<sup>12</sup> Similar findings are reflected in the High School Senior Survey (HSSS).

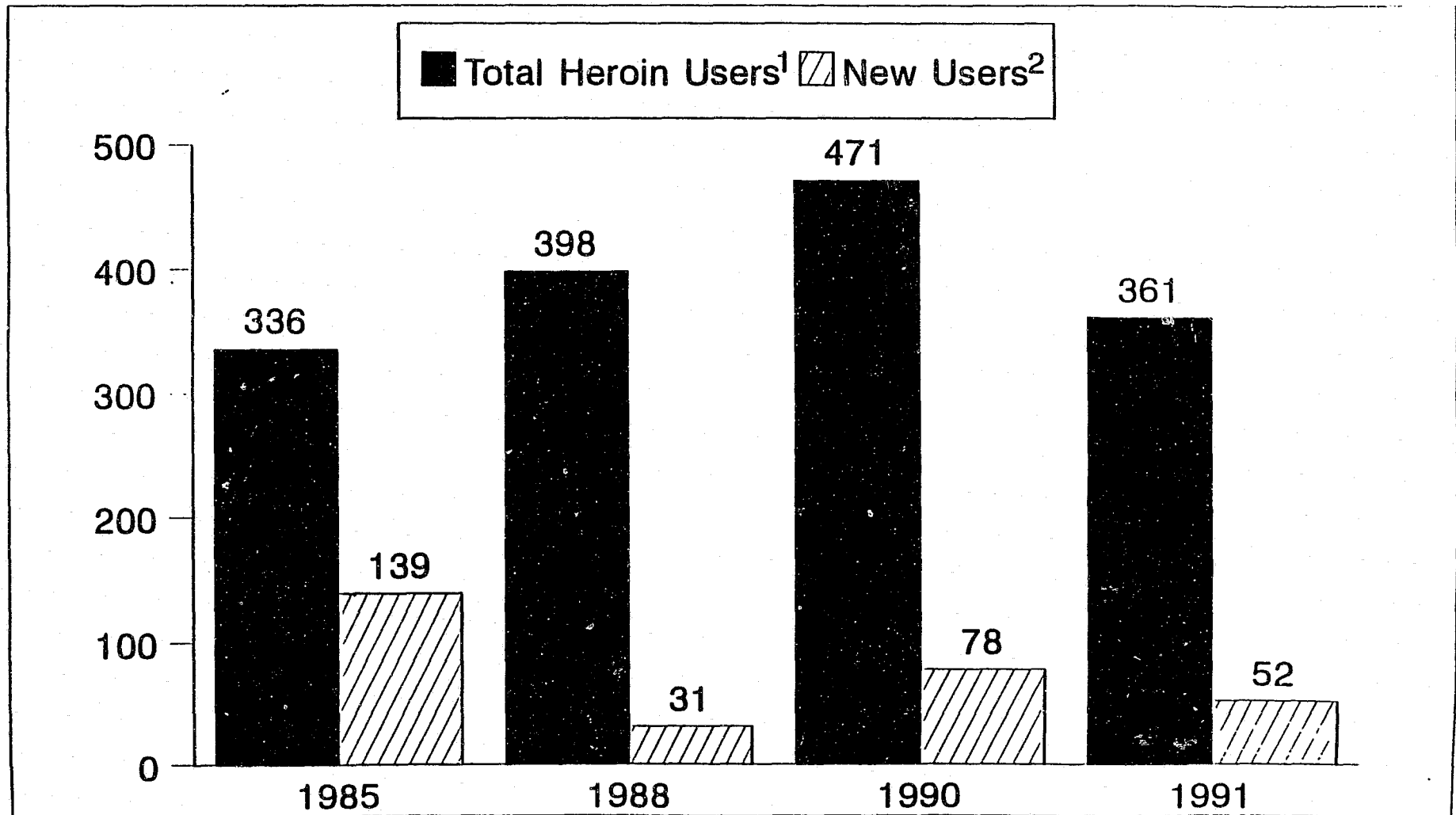
These two surveys are often criticized for undercounting heroin users.<sup>13</sup> Nevertheless, they should reflect any significant increases in heroin use among new users. First-time use of most illicit substances typically occurs during teenage years. Indeed, past heroin epidemics began with experimentation by youths and by young adults. While experimentation--the harbinger of a heroin epidemic--should be reflected in both surveys, neither suggests a new epidemic.

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<sup>12</sup> Any discussion of heroin use reflected in the NHSDA should be prefaced with a cautionary word about the small numbers represented by these samples. Though sampling weights make the final numbers much higher, the actual number of respondents reporting heroin use represented in each of the survey years is often too small to make tests of significance of changes from survey to survey reliable.

<sup>13</sup> Once heroin use has reached addictive levels, many users are not likely to retain stable residences nor remain in school and thus drop out of the potential sampling frame of the NHSDA and the HSSS.

**Figure 1**  
**Annual Heroin Use by Total and New Users,<sup>a</sup> 1985-1991**  
(In thousands)



<sup>a</sup> Two users have been excluded from the analysis--one 71 and another 81 years old--because of the rarity of these cases and the effect they have on the final numbers when weighted.

<sup>1</sup> Any use within the last 12 months.

<sup>2</sup> First use within the last 12 months.

The Drug Use Forecasting System (DUF) provides advanced warning of drug epidemics, in that illegal drugs are often first used by persons heavily involved in crime. DUF is a nationwide urine testing program to detect drug use among arrestees. The program, which began in twelve cities in the late 1980s, was expanded to twenty-three in 1991. Throughout the late 1980s, data from urine testing in the District of Columbia and other early DUF sites showed the remarkable upsurge in cocaine use that characterized the period. In contrast, since the appearance of higher purity and lower price heroin, DUF has not shown dramatic changes in the percentage of users testing positively for opiates (Table 4).

Across all sites 10-11 percent tested positively for opiates in each year. Only Chicago reports a significant increase in the percentage testing opiate positive over these years. All other sites report stable or declining numbers. Even areas of high concentration of heroin users like New York or Washington, D.C. show little change over time.

Abt also examined data from the Drug Abuse Warning Network (DAWN) to confirm findings from analysis of the DUF data. DAWN provides national estimates of the number of emergency room (ER) episodes in which illicit drug use was cited as a reason for seeking treatment.

As was true of DUF, DAWN clearly shows the development of the cocaine epidemic. The total number of drug-related emergencies for any illicit drug increased from 1988 to 1989 (from 416,961 to 425,904) before declining to 371,208 in 1990. There was an increase from 1990 to 1991 (from 371,208 to 398,349, Table 5). Cocaine dominates these statistics.

Heroin is always a small part (less than 10 percent) of the total drug related episodes. Heroin mentions have fluctuated quarterly, but no consistent trend of increasing heroin mentions appears in this four-year series of DAWN data. There are some interesting city specific variations in these data. In New York, where high purity, low cost heroin has been available since 1987, heroin related ER mentions nevertheless declined in 1990 to 70 percent of 1988 levels. Not far away in Newark and Philadelphia, however, ER mentions for opiates increased in the three-year period. Of the twenty-one cities reporting, thirteen report heroin mentions decreasing or remaining essentially the same from 1988 through 1990, and eight report increases during that period.

Medical examiner (ME) data reflect deaths attributable to particular drugs. Abt analyzed ME data for the first quarter of 1989 through the fourth quarter of 1991. Those data showed similar variation in the number of ME mentions for heroin as were shown by the ER data. The ME data reached a high of 700 mentions in the fourth quarter of 1989 and a low of 438 mentions in the

Table 4

Percentage of Arrestees Testing Positive for Opiates in 21 Cities, 1988-1990

City	1988	1989	1990
Birmingham	7%	%	%
Chicago	18	27	27
Dallas	7	7	7
Ft. Lauderdale	5 <sup>a</sup>		
Houston	4	5	6
Los Angeles	16	15	14
Miami	1 <sup>a</sup>		
New York	25	18	19
Philadelphia	12	11	9
Phoenix	8	10	8
Portland	16	18	14
San Antonio	19	17	18
San Diego	21	22	20
San Jose		8	9
St. Louis	6	7	6
Washington, D.C. <sup>b</sup>		15	15

<sup>a</sup> N = less than 200

<sup>b</sup> Not in 1988 sample

Source: Drug Use Forecasting System, 1988, 1989, 1990.

Table 5

All Drug, Heroin- and Cocaine-Related Emergency Room Episodes, 1988-1991

	1988	1989	1990	1991
Drug Episodes <sup>1</sup>	416,961	425,904	371,208	398,249
Drug Mentions <sup>2</sup>	690,360	713,392	635,460	681,737
Heroin	39,026	41,656	33,884	37,185
Cocaine	104,731	110,013	80,355	103,890

<sup>1</sup> A drug episode is an occasion on which a patient presents to the emergency room with a drug-related problem or in which evidence of drugs are found in lab testing.

<sup>2</sup> A drug mention can occur for each drug reported by the emergency room patient or be detected in the lab test. There can be as many as five drug mentions in each drug episode.

Source: Drug Abuse Warning Network, 1988, 1989, 1990, 1991.



fourth quarter of 1990. This nadir was followed by a rise in the number of mentions during the second quarter of 1991 to 627. Cities reporting noticeable increases in heroin-related deaths over this period include Baltimore, Newark, Philadelphia,<sup>14</sup> and San Diego.

The June 1992 CEWG confirms the trends from DUF and DAWN. Heroin ERs are stable in thirteen cities. Increases are reported in Miami, Atlanta, Detroit, Newark, New York, and St. Louis. Heroin-related deaths declined in six cities, were up in five, and stable in three. Primary treatment admissions for heroin were up in several cities, though only in New York, New Jersey, and San Francisco do they represent more than one-third of total admissions. Average age of both treatment admissions and ER mentions is consistently over 35 years old across reporting cities, implying that new users have been a constant proportion of the population seeking treatment.<sup>15</sup>

These national and regional data show no change in the number of new users, be they initiates or returning veterans. Some data show continued experimentation with heroin. However, the data provide no grounds for concluding that the country faces a new epidemic of heroin use.

### Part III: Today's Heroin User

Four factors affect heroin consumption decisions: price, availability (and the availability of substitute drugs), the user's level of drug tolerance, and mode of ingestion. The influence of these factors vary by types of heroin users:

- traditional heroin addicts
- established cocaine users who complement their cocaine use with heroin
- relapsed users
- new users

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<sup>14</sup> While Philadelphia's ME report for the fourth quarter of 1991 shows an almost identical number of heroin related deaths as reported in the first quarter of 1989, the city reported unusually high numbers of deaths in the first three quarters of 1991.

<sup>15</sup> However, the CEWG reports that methods of use now include inhalation, though the extent varies considerably. In New Jersey, for example, over 40 percent of patients admitted for treatment inhale heroin, while inhalation is almost nonexistent in the Southwest. Inhalation raises a serious risk of promoting use by reducing the risk of AIDS from shared injection equipment and by differentiating disreputable needle users from potentially respectable inhalers.

Description of these four user types follows. This description is based on drug research literature,<sup>16</sup> logical assumptions about patterns of drug use, and tabulations by Abt Associates.

Potentially, each user type could account for the increase in heroin consumption. We continue our effort to judge which user type is responsible.

#### A. The Traditional Heroin Addict

Our profile of heroin users begins with a sketch of traditional users, whose role in the current picture of heroin use is especially prominent. Established heroin users are an aging population, whose characteristics have been reflected in data sets for thirty years. Their numbers and geographic distribution have remained constant, although AIDS has taken a toll. Estimates of the size of this population vary, but most current studies for the United States place it between 500,000 and 1 million long-term heavy users of heroin.<sup>17</sup>

When heroin is scarce, many addicts enter treatment or substitute other opiates such as Dilaudid, Demoral, codeine, or nonprescription methadone for heroin. As heroin availability increases, most return to heroin, their drug of choice. When heroin is abundant, many increase their purchases. Thus, established users increase and decrease their heroin consumption as market forces dictate. Their consumption undoubtedly accounts for much of the increased heroin supply.

A review of the major data sources reveals an aging population of users. Few of today's heroin users are young initiates. The NHSDA data probably miss most hard-core heroin users. Nevertheless, those data show that the user population reached by the survey is aging. The average age of current heroin users found was twenty-four years old in 1985 and over twenty-eight years old in 1991. By implication, members of

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<sup>16</sup> D. Nurco, I. Cisin and M. Balter, "Addict Careers. I. A New Typology," The International Journal of the Addictions 16, no. 8 (1981):1305-1325; D. Hunt, D. Lipton, D. Goldsmith and D. Strug, "Problems in Methadone Treatment: The Influence of Reference Groups," in Behavioral Intervention Techniques in Drug Abuse Treatment, ed. J. Grabowski, M. Stitzer, and J. Henningfield, NIDA Monograph No.46 (Rockville, MD: National Institute on Drug Abuse, 1984), 8-22; B. Johnson, P. Goldstein, E. Preble et al., Taking Care of Business: The Economics of Crime by Heroin Users (Lexington, MA: Lexington Books 1985); L. Robins, "Addict Careers," in Handbook on Drug Abuse, ed. R. Dupont, A. Goldstein and J. O'Donnell, (Rockville, MD: National Institute on Drug Abuse, 1979), pp.325-336.

<sup>17</sup> W. Rhodes, "Synthetic Estimation Applied to the Prevalence of Drug Use," Journal of Drug Issues 23 (Spring 1993).

earlier cohorts of heroin users are continuing to use, and few young recruits are being added. The average age of first-time users has increased slightly, also accounting for the somewhat older users appearing in 1991 (see Figure 2).

Data from the National Institute on Drug Abuse's National AIDS Demonstration Research (NADR) Projects reflect patterns in heroin use, although in a special population. NADR, which operated in over sixty sites from 1987 to 1991, targeted outreach efforts to drug users not currently in treatment and their sexual partners. The study accumulated descriptive information on over 50,000 persons.<sup>18</sup> Of that number, more than 30,000 were current heroin users.<sup>19</sup>

Because of the way the NADR data were drawn, the sample pertains to a population of consistent heavy users of heroin. In each year of the project, 80 percent or more of the sample of heroin users report taking heroin once a week or more and nearly 60 percent are daily users.<sup>20</sup> Few are new users. The average age of the current heroin user in the NADR data is thirty-five. They have been injecting heroin for an average of thirteen years and cocaine for an average of eleven years. Over 60 percent of the sample have been injecting heroin for ten or more years; 19-27 percent have been injecting twenty-one or more years. These percentages have not changed over the span of the survey.

The NADR data do not comprise a panel of projects across each year. Each year, new programs were added, some of which serve different populations than were represented in the earlier years. Also, these new projects were often located in communities with different drug use problems. This variation in populations served and program locations could confound interpretation in use patterns.

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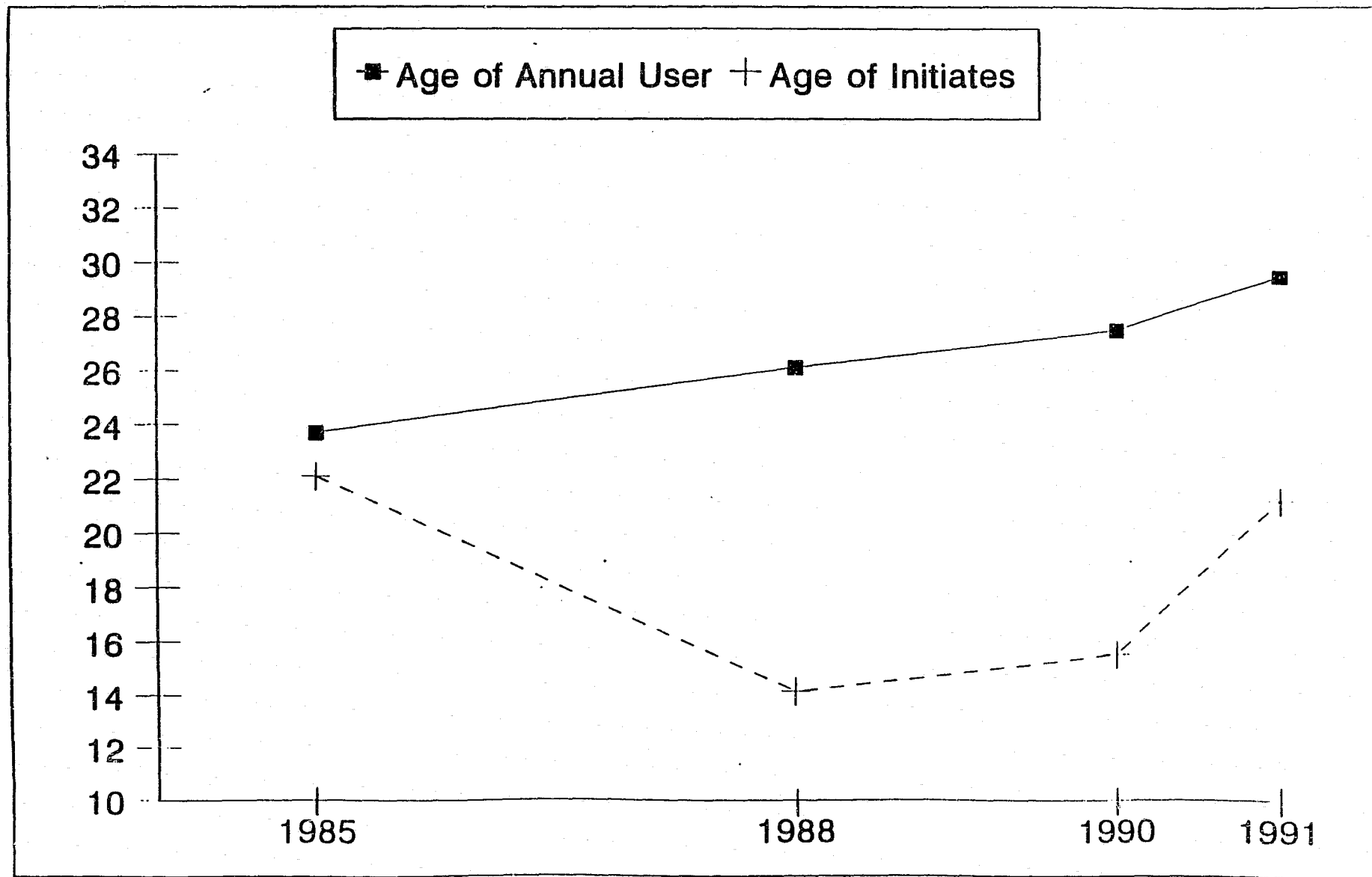
<sup>18</sup>For the purposes of this research, data from the NADR sample were separated according to the year in which the interview took place. Data used represent all interviews conducted in 1988, 1989, 1990, and during the first quarter of 1991. In some analyses the 1991 data have been combined with the 1990 data.

<sup>19</sup> These data were supplied by Nova Research Corporation, the national contractor for the NADR projects for the National Institute on Drug Abuse. They represent all cases interviewed as of March 1991.

<sup>20</sup>Since the early samples in 1987-1988, the proportion of daily users has decreased (from 63 percent of heroin users to 44 percent of users) and the proportion of occasional users (who use heroin four or fewer times per month) has increased (from 9 percent of users to 15 percent). This is still, however, a sample representative of the core group of heavy users mentioned earlier.

# Figure 2

## Average Age of All Heroin Users and Initiates



Source: National Household Survey on Drug Abuse, 1985, 1988, 1990, 1991

Consequently, we examined data from a single area (New York/New Jersey) over the four-year period to see if the type of user, methods of use, or amount of use changed as higher purity, lower price heroin became available. As was discussed earlier, New York/New Jersey is the area reporting the highest purity and lowest prices in the country during this period.<sup>21</sup>

As with the total NADR sample, in the New York/New Jersey sample, heroin injectors are on average three years older than non-injectors (see Table 6). The proportion of users under twenty are extremely small while the proportion of users over thirty are consistently over 60 percent. Even among non-injectors, a group in which one might expect younger users to appear, almost half are 30-39 years of age. Most important, across the years in this regional sample, the age of both injectors and non-injectors rises, implying an aging population.

Like the NHSDA, the NADR New York/New Jersey sample has few new users. For each year, less than 8 percent are initiates.<sup>22</sup> Over three-fourths have been using for five or more years.

Figure 3 shows the percentage of heroin users in the New York/New Jersey sites who report some inhalation or smoking of heroin in the prior six-month period. Given that this sample was intended to gather data from intravenous drug users, the dramatic increase in the number of persons who also inhale is remarkable. In 1988 less than half the New York/New Jersey heroin users reported any inhalation or smoking of heroin, a number that jumped to almost three-fourths of the sample in 1990 and the first half of 1991. It is important to remember, however, these users are also injecting heroin: the percentage of heroin users who are injecting never drops below 90 percent in any year.

The implication is important. Intravenous drug users are supplementing their use through inhalation. For established users, whose drug tolerance is relatively high, inhalation is practical only when heroin is of high purity and low price. That is, to get a comparable effect from inhalation, these users must purchase and use more pure heroin than they would if they injected heroin exclusively. Inhalation of heroin by established users must account for a significant portion of heroin's increased supply.

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<sup>21</sup> This analysis is based on data from six sites in the New York/New Jersey area. These sites produced data on a total of 7488 drug users and their sexual partners. Of that number 90 percent are heroin users. The data cover the time period from February 1988 to February 1991.

<sup>22</sup> Data from 1990 and the first half of 1991 are combined in these calculations.

Table 6

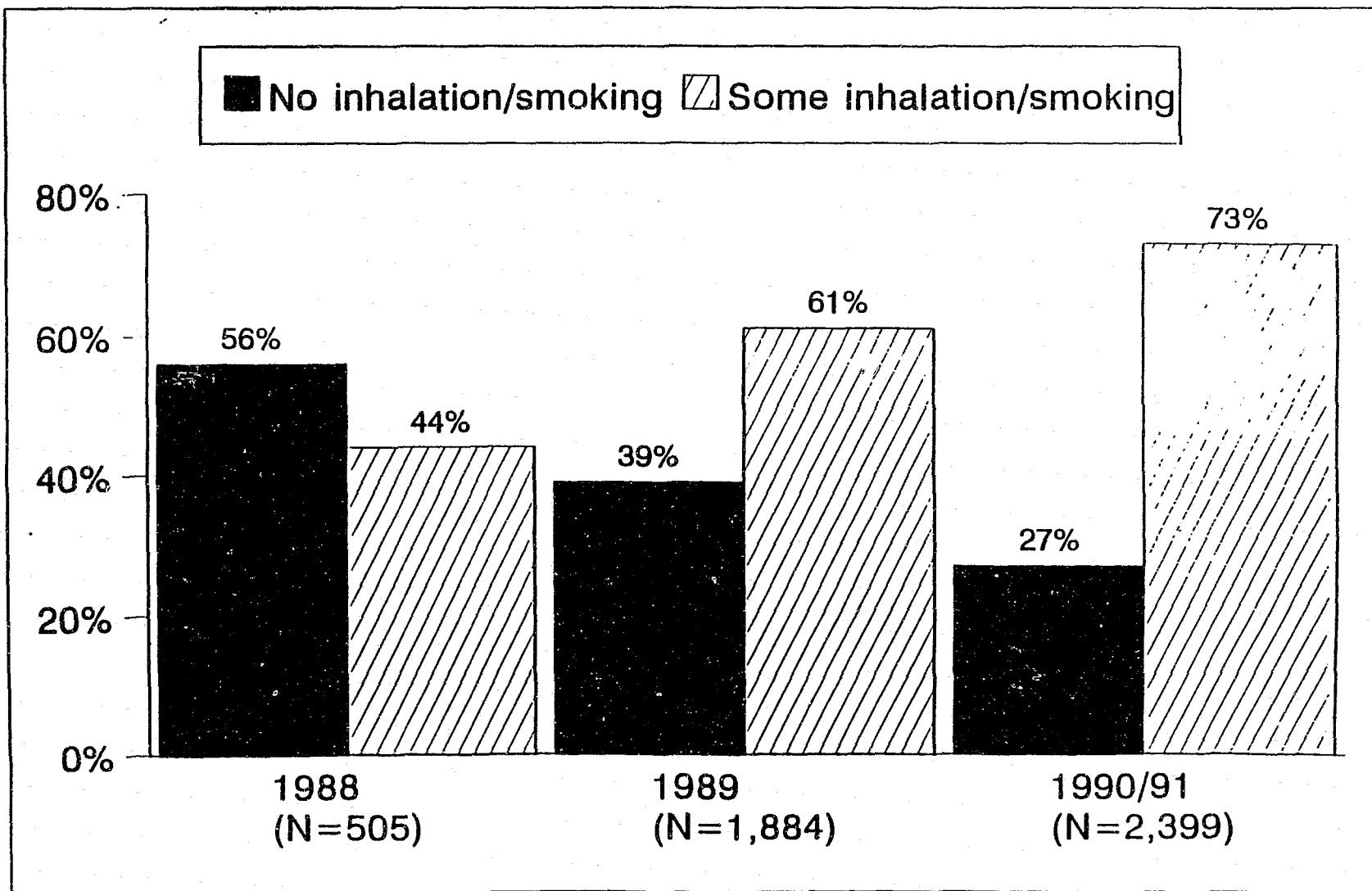
Average Age of Injectors and Non-Injection Heroin Users  
in New York and New Jersey NADR Samples, 1988-1991

Year	Non-Injected Use	Injected Use	Total
1988	30.5	32.9	32.9
n	(11)	(575)	(586)
% of population	(2%)	(98%)	(100%)
1989	31.95	35.7	35.6
n	(109)	(2,575)	(2,684)
% of population	(4%)	(96%)	(100%)
1990	32.2	34.5	34.4
n	(167)	(3,087)	(3,254)
% of population	(5%)	(95%)	(100%)
1991 <sup>a</sup>	30.1	32.6	32.4
n	(19)	(206)	(225)
% of population	(8%)	(92%)	(100%)

<sup>a</sup> Represents 6 months of data only.

Source: National AIDS Demonstration Research project, 1988-1991.

**Figure 3**  
**Percentage of Heroin Users Who Inhaled Heroin**  
**in the Prior Six Months in N.Y./N.J. NADR Sites,**  
**1988-1991**



Source: National AIDS Demonstration Research Project, 1988-1991, 4-1991, p. 10.

Data provided by the DAWN system reflects drug toxicity associated with overdoses, contaminated adulterants, and dangerous drug combinations. Established users dominate the DAWN emergency room data. Nevertheless, young initiates, not yet sophisticated in the use of the drug, are particularly prone to many of these ills. If the incidence of heroin use were increasing, we would expect first-time users to appear in the DAWN system with increasing frequency. This is not the case. Emergency room data show no great increase in the number of young users admitted for heroin-related problems (Table 7).

DAWN emergency room data suggest little change in the number of persons in each age category over the years 1988-1991. Three-quarters of the heroin users consistently fall in the 35-plus group. In fact, there has been a decline in emergency room mentions among those aged 12-25--from about 5,500 heroin-related episodes reported in 1989 to approximately 4,800 in 1990. These patterns suggest that the increased purity of heroin causes medical problems for older users--established heroin users and new users who are over thirty.

Treatment data provide a different view of who is using this increased supply of heroin. Of course, persons entering drug treatment represent established drug users, those who have sought treatment as their use has become problematic. Table 8 shows the number of persons entering treatment in New York State in 1989, 1990 and 1991 with heroin as the primary drug of abuse. This table shows a slight increase in heroin entrants in New York. Still, these figures are well below the numbers of entrants with other drug problems. The New York data also show an increase in non-injectors of heroin entering treatment (from 33 percent of all heroin users in 1989 to 39 percent in 1991).

Who are these entrants who inhale heroin? Table 8 indicates the secondary drug of abuse of treatment entrants whose primary drug problem is heroin. As this table shows, heroin users most commonly choose cocaine to complement their heroin habit, and two types of users or use patterns predominate. Heroin injectors are more likely to inject cocaine than to inhale or smoke it as crack; heroin inhalers are more likely to inhale or smoke cocaine rather than to inject it. There are some shifts in this pattern in 1991, where evidence shows more smoking/inhaling of both heroin and crack.

Although the number of users who inhale heroin combined with crack is increasing, the injector is still the primary heroin consumer. That user is also an older addict, perhaps part of the earlier cohort of users established in the late 1970s and early 1980s.

In general, evidence from these major data files shows that heavy heroin users are an aging group who initiated their heroin



Table 7

## DAWN Emergency Room Mentions by Age for 1988-1991\*

	1988	1989	1990	1991*
Total Heroin Episodes	39,026	41,656	33,884	28,261
Total Drug Episodes	416,961	425,904	371,349	301,266
12-17	141 (*)	168 (*)	182 (1%)	154 (1%)
18-25	5,370 (14%)	5,094 (12%)	4,654 (14%)	3,631 (13%)
26-34	17,547 (45%)	17,251 (41%)	13,127 (39%)	10,947 (39%)
35+	15,817 (41%)	18,949 (46%)	15,850 (47%)	13,394 (47%)
Unknown	152 (*)	188 (*)	66 (*)	136 (*)

\* Represents Q<sub>1</sub>-Q<sub>3</sub>, 1991

\* Value is less than 1 percent.

Source: Drug Abuse Warning Network, 1988 through the third quarter of 1991.

Table 8

**Entrants to New York State Drug Treatment with Heroin as Primary Drug of Abuse  
by Secondary Drug of Abuse, 1989-1991**

Heroin as Primary Drug of Abuse						
Secondary Drug	1989		1990		1991	
	Injected	Inhaled	Injected	Inhaled	Injected	Inhaled
Alcohol	629 (6%)	258 (5%)	695 (6%)	346 (7%)	763 (8%)	492 (8%)
Crack <sup>1</sup>	457 (4%)	518 (9%)	443 (4%)	495 (10%)	617 (7%)	917 (16%)
Cocaine Inhaled <sup>2</sup>	758 (7%)	1,472 (27%)	664 (6%)	1,536 (31%)	483 (5%)	1,684 (28%)
Cocaine Injected	5,629 (50%)	180 (3%)	5,371 (50%)	132 (3%)	4,445 (47%)	57 *
Marijuana	308 (3%)	619 (11%)	278 (3%)	318 (6%)	261 (3%)	436 (7%)
Other or None Cited	3,929 (35%)	2,413 (44%)	3,379 (31%)	2,827 (57%)	2,895 (31%)	2,342 (40%)
	11,253	5,460	10,830	4,969	9,464	5,928
<b>Total</b>	16,713		15,799		15,392	
<b>All treatment entrants total</b>	49,899		50,366		51,143	

<sup>1</sup> Crack smoked, cocaine smoked, crack other

<sup>2</sup> Cocaine oral, cocaine inhaled, cocaine other

\* Value is less than 1 percent.

Source: New York State Division of Substance Abuse Services

use during earlier epidemics. Recent initiates to heroin use are a decided minority in this population. No evidence suggests that this minority has increased due to the increased availability of heroin.

B. Established Cocaine Users Who Supplement Their Cocaine Use With Heroin

Heroin use by the heavy cocaine user is a potentially important part of the heroin puzzle. As the scenario has unfolded in the media, heroin is a new and secondary drug of abuse for the heavy cocaine or crack user. Given the many heavy cocaine users in the country, much of the increased heroin supply could go to satisfy their desires to complement their cocaine use with heroin.

Before heroin's recent drop in price and rise in purity, heroin may not have been an option for the cocaine user. He or she could cope with the agitation cocaine engenders with other narcotics or depressants, tranquilizers, alcohol, sedatives, and marijuana. With the appearance and new marketing of heroin (perhaps through cocaine distributors rather than traditional heroin dealers), heroin, a particularly effective depressant, has become an option for thousands of users who otherwise would not have considered it.<sup>23</sup>

We assume that those who complement cocaine and crack use with heroin are likely to inhale heroin. Most crack smokers and cocaine inhalers may be reluctant to start injecting heroin.

The NHSDA data help explain the dynamics of heroin and cocaine use. It is no surprise that most current heroin users also report cocaine use. Heroin and cocaine have long been companion drugs among heavy users.

However, heavy users usually begin taking other drugs including cocaine before "graduating" to heroin use. Consistent with this pattern, Figure 4 shows that before 1991 between 28 and 41 percent of current heroin users had tried heroin before or at the same time as they had tried cocaine.<sup>24</sup> However, in 1991, 58 percent had tried heroin first or in the same year they tried cocaine.

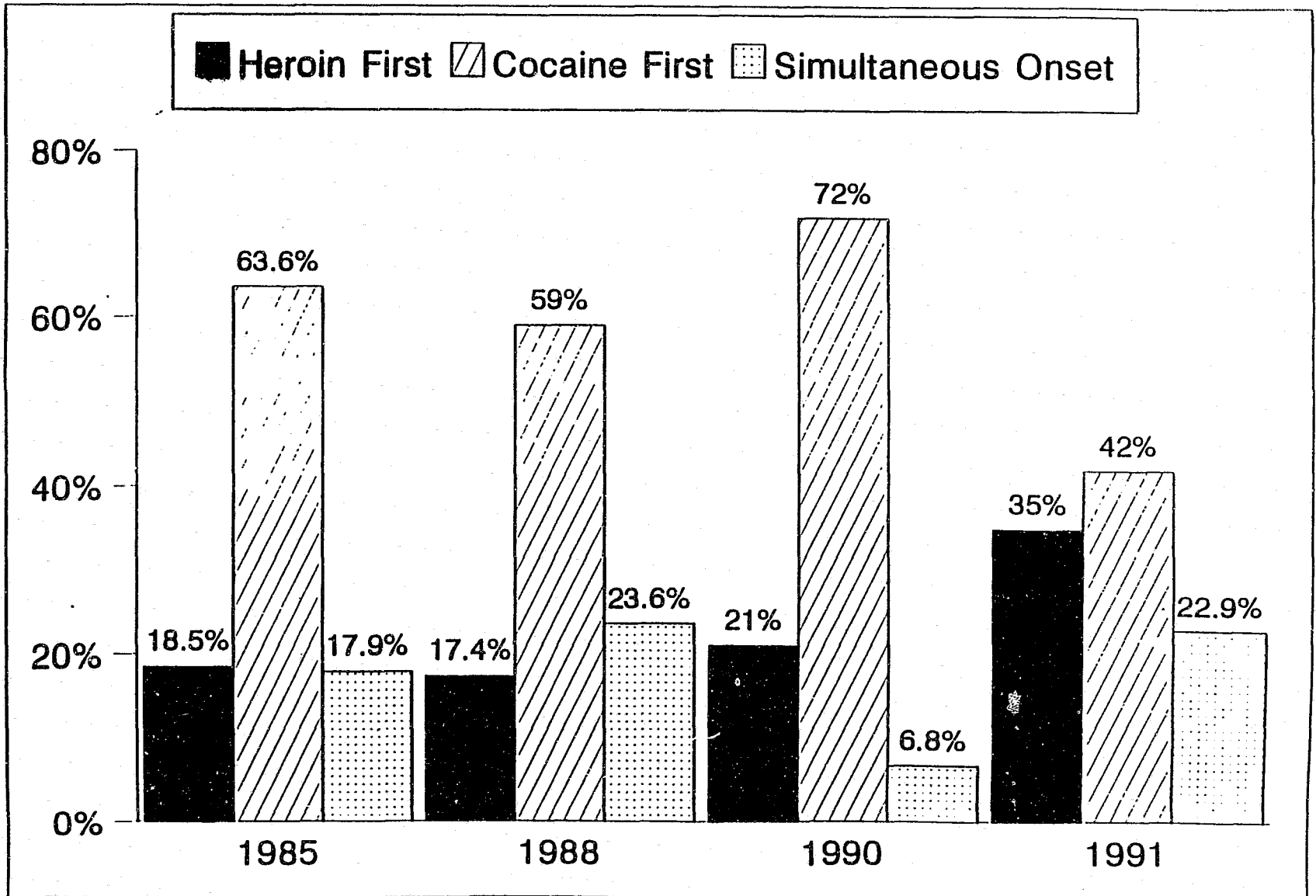
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<sup>23</sup> The DEA reports that Colombian organizations have begun distributing heroin in the United States; they derive this heroin both from trading cocaine for heroin in Asia and Europe and from cultivating poppies in Colombia (Source: Community Epidemiology Work Group, "Epidemiologic Trends in Drug Abuse," December 1991 (Rockville, MD: National Institute on Drug Abuse, 1992), p. 23.

<sup>24</sup> "At the same time" means during the same year, not necessarily at the same drug use episode.

# Figure 4

## Sequence of Heroin/Cocaine Use



Source: National Household Survey on Drug Abuse, 1985, 1988, 1990, 1991.

Although it could be a fluke caused by the small numbers of heavy heroin users in the sample, the new trend bears watching. It may imply that new users are advancing to heroin use without cocaine serving as an intermediate step. Alternatively, it may simply mean that heroin has become so readily available that it and cocaine are increasingly used in combination by first-time users.

At any rate, a progression from cocaine to heroin use typifies patterns of abuse for all years. Many current heroin users are cocaine users adding heroin as a drug of abuse.

Reports from the CEWG for 1988 may have captured the growing problem of the heavy cocaine or crack consumer's use of heroin. The June 1988 report described increases in both intranasal heroin use and an increase in the speedballing of heroin (injecting heroin and cocaine together).<sup>25</sup> The December 1988 report noted reports of increased smoking of heroin combined with crack in New York and Philadelphia, two cities in which an increase in higher purity heroin was first detected.<sup>26</sup>

Using DUF, we find that most heroin users use cocaine (Table 9). In both 1989 and 1990 large numbers of arrestees tested positive for both substances. However, these data cannot tell the sequence of initiation, nor can they explain the declining percentage of heroin users who tested positive for cocaine. In 1989, 78 percent tested positive compared with 69 percent in 1990. Although both heroin and cocaine appear to have declined among arrestees, this decline was temporary.<sup>27</sup>

Important for our purposes, DUF data show that 20 percent of weekly cocaine users also use heroin on at least a weekly basis. According to NADR data, 58 percent of weekly cocaine users also use heroin on at least a weekly basis. Suppose just a fraction of the estimated 1.5 to 2.5 million weekly cocaine users<sup>28</sup> also

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<sup>25</sup> Community Epidemiology Work Group, Epidemiology of Drug Abuse in the United States and Europe: June 1988, (Rockville, MD: National Institute on Drug Abuse, 1988).

<sup>26</sup> Community Epidemiology Work Group, Epidemiologic Trends in Drug Abuse: December 1988 (Rockville, MD: National Institute on Drug Abuse, 1988).

<sup>27</sup> This may be explained by the relatively high price of cocaine in 1990. See W. Rhodes and R. Hyatt, "The Price of Illicit Drugs, 1981-1991," report to the Office of National Drug Control Policy (Cambridge, MA: Abt Associates, September 1992).

<sup>28</sup> It has been estimated that 1.5 to 2.5 million individuals currently use cocaine on a weekly basis in the United States. W. Rhodes, "Synthetic Estimation Applied to the Prevalence of Drug Use." Journal of Drug Issues 23 (Spring 1993).

Table 9

## Profile of Heroin Users Among Arrestees

	1988 N=13,815	1989 N=21,991	1990 N=28,502
Test positive for opiates	13 %	11 %	10 %
Self-reported use of heroin in past 30 days	*	48 %	42 %
Characteristics of those who tested positive for heroin	N=1,791	N=2,319	N=2,751
Test positive for cocaine	76 %	78 %	69 %
Current (30 day) crack use	*	64 %	53 %
Current injectors	*	61 %	58 %
Average age	31 %	31 %	32 %
Average years of heroin use	12 %	12 %	13 %
% who are initiates	3 %	4 %	4 %
Average age of initiates	26 %	26 %	27 %

\*Information unreliable due to change in questionnaire in the second quarter.

Source: Drug Use Forecasting System, 1988-1990.

used \$10 to \$20 worth of heroin every few days. They would account for a large fraction of the heroin market, currently estimated at \$9 billion per year.<sup>29</sup> For example, suppose that one-third of the 2.0 million heavy cocaine users used just \$15 worth of heroin twice per week. Then they would use about \$1.0 billion worth of heroin per year.

As users complement their cocaine use with heroin, they should begin to appear in increasing numbers among populations reporting cocaine as the primary abuse problem and heroin as a secondary problem on admission to treatment (Figure 5). When heroin is the primary drug of abuse of the patient entering treatment in New York, cocaine is the secondary drug about half the time (Figure 6). Typically, both drugs are injected. When cocaine is the primary drug of abuse at entry, however, heroin is the secondary drug in only 5 percent of those in treatment. And heroin is injected by no more than 6 percent of those people. The heavy cocaine user and the heavy heroin user are most often from different populations.

Just a fraction of primary cocaine abusers identify heroin as a secondary drug of abuse. That fraction has not changed appreciably over time. This small fraction is difficult to reconcile with the thesis that established cocaine users account for much of the increase in heroin use. However, heavy cocaine users who also use heroin may be difficult to detect in treatment data sources. If cohort members use too little heroin to produce problems related specifically to heroin use, that use would not be identified as a second drug of abuse.

To summarize, then, the best evidence at our disposal suggests that some of the increase in heroin use can be attributed to heavy cocaine users complementing their use of a stimulant (cocaine) with a depressant (heroin). The low price and high purity of heroin may have induced this behavior. So, too, might the innovative marketing schemes by cocaine dealers of introducing heroin as a second product line.

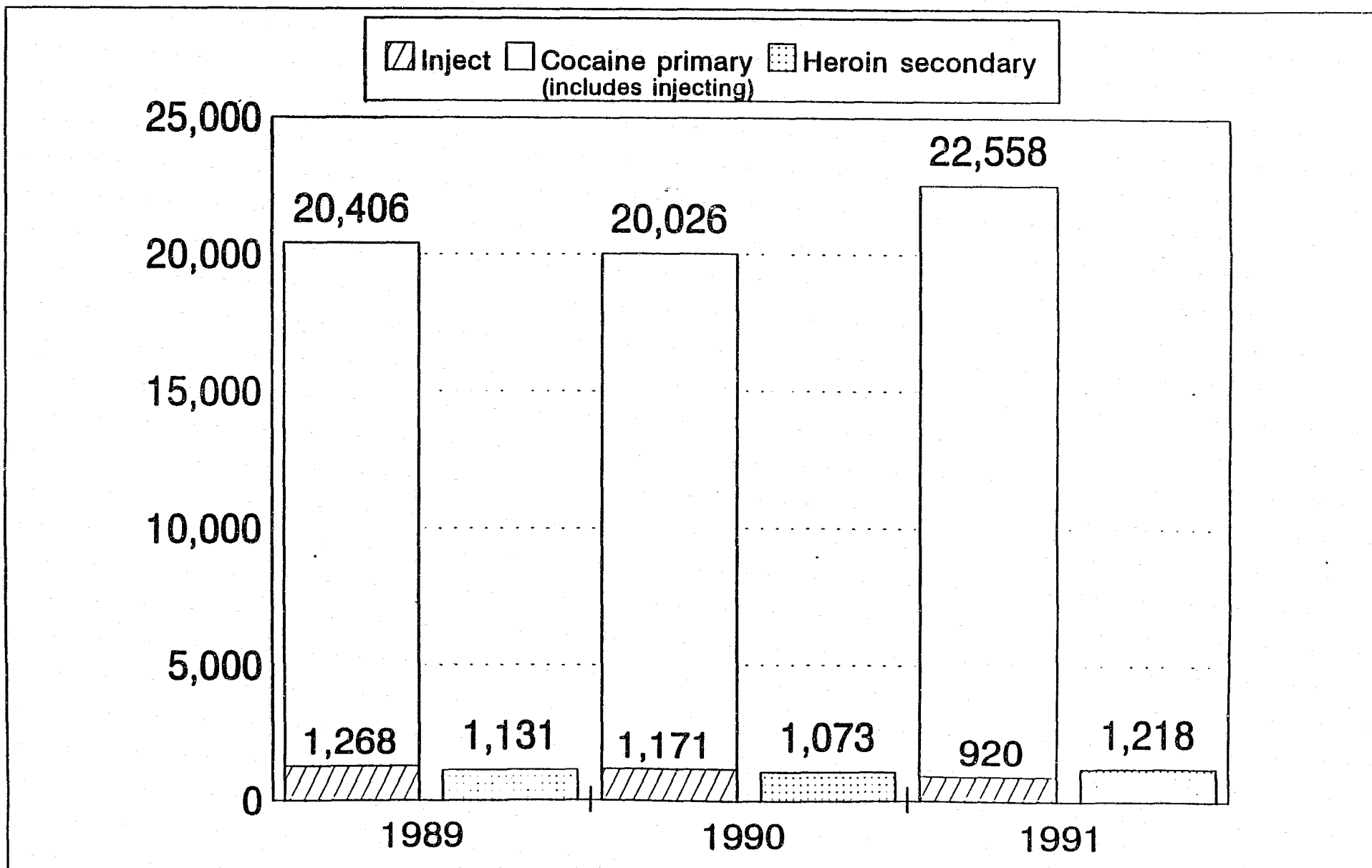
### C. Relapsed Users

The former heroin user returning to use is not a "new user" but will appear as a new user in some data sets if he or she has not used heroin in many years. Recovered heroin addicts or current methadone treatment clients may have returned to heroin because of its higher purity and lower price. Former heroin users may also be drawn back into heroin use through a contemporary, heavy use of cocaine (see previous discussion).

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<sup>29</sup> W. Rhodes, P. Scheiman, and K. Carlson, "What America's Users Spend on Illegal Drugs, 1988-1991," report submitted to the Office of National Drug Control Policy by Abt Associates, February 23, 1993.

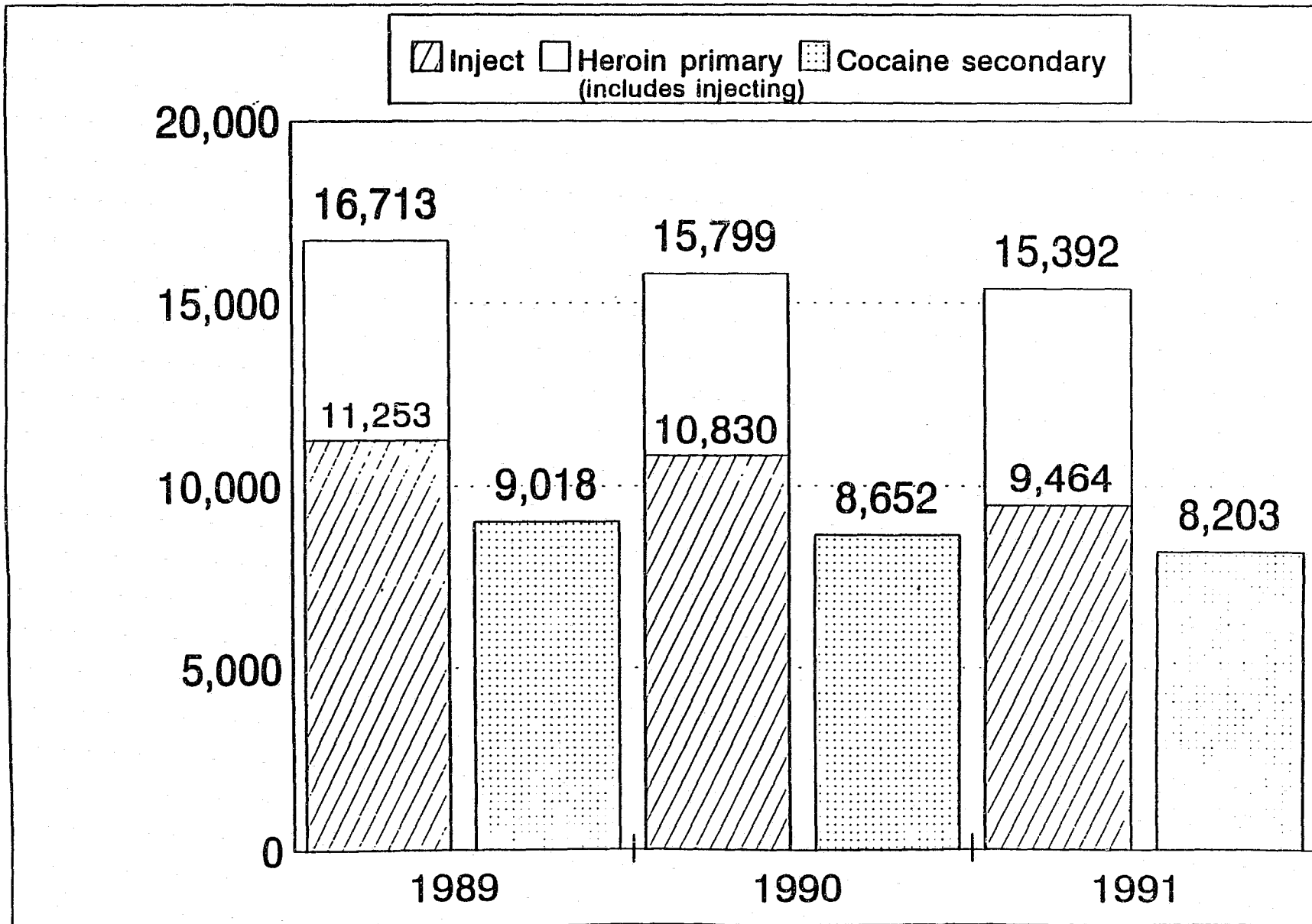
Figure 5  
Cocaine as Primary Drug Used





# Figure 6

## Heroin as Primary Drug Used



These relapsed users can be distinguished from other new users because they are typically older and have a history of drug use and prior treatment for their addictions. Relapsed users may also use the drug differently than someone who has never used heroin before; that is, they may be either injecting or inhaling heroin, but because of prior experience with the drug, they may display less resistance than initiates to injecting it.

Given the size of the cohort that initiated heroin use during earlier eras, many recovered addicts may be at-risk of reinitiating heroin use. While their propensity to return to heroin use is unknown, if many former users relapse, they may account for heroin's increased consumption.

None of the extant data sets clearly distinguishes between relapsed users and established users.<sup>30</sup> Although data from each source describe current users as older, with established heroin habits and often with long treatment histories, they do not indicate whether these are relapsed heroin users. However, telephone conversations with treatment providers conducted by Abt Associates in April and September of 1992 produced evidence that after long periods of abstinence, relapsed addicts are again entering treatment.

#### D. New Users

The final category of heroin users comprises initiates or "virgin users." For the current situation to be a true epidemic, data should show many virgin users.

An initiate to heroin is someone who has only recently begun to use heroin.<sup>31</sup> These users may appear in the Drug Abuse Warning Network (DAWN). As poor judges of correct dosage or purity they may take too much of the drug, precipitating a need for medical attention. They are not likely, however, to appear in treatment data for several months or even years after initial use.<sup>32</sup> New users may not appear in the DUF data as early stages of use may not reach a level of lifestyle or financial involvement that results in criminal activity.

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<sup>30</sup> Questions in DUF, NHSDA, and NADR include age of onset of heroin use and recency of use (prior 30 days, six months, one year, etc.), but do not cover whether use was continuous from onset to recent use.

<sup>31</sup> For the purposes of this report, recent heroin use is defined as initiation within the last year. However, initiates to heroin use may be users of other drugs. An annual user is defined as any use in the prior 12-month period.

<sup>32</sup> Establishment of physiological addiction takes time, often not occurring until one to two years after initial experimentation.

The number of heroin users in the NHSDA is small. Still, a substantial increase in new users should appear as an increase in NHSDA respondents reporting first-time heroin users as prices have dropped and availability has risen. As reported earlier, Figure 1 shows the number of persons reporting that they used heroin at least once in the prior 12-month period in the 1985, 1988, 1990 and 1991 NHSDA and the proportion of users who initiated use in the prior year. No significant increase in initiation has occurred over time.

Figure 2 shows the average age of all annual heroin users and the average age of initiates. Most of the users are older, long time users in their thirties. Initiates comprise less than 10 percent and are a new, younger cohort of users. The proportion of new users in each year is small, most likely reflecting continuous replacement of the older cohort of users rather than an epidemic of new ones. Most of these new initiates are young experimenters: 67 percent are under thirty years of age. Of these new users, 77 percent have used heroin fewer than five times during their lives. However, there is the appearance in 1991 of a group of initiates over thirty years of age (19 percent) who do not appear in any of the prior years' data, suggesting a new group of older initiates.

Given the typically early age of heroin initiation, some new initiates to heroin use might also be expected to emerge in the Monitoring the Future study conducted by researchers at the University of Michigan (HSS). This series of surveys comprises a national probability samples of high school seniors. Trends from this sample indicate a decline in the use of all illegal drugs, including heroin. In 1991, lifetime prevalence for heroin was 0.9 percent.<sup>33</sup> This figure has been steadily declining among seniors surveyed since 1975, when 2.2 percent reported ever having used heroin. Only 0.4 percent of the seniors surveyed in 1991 reported any use in the prior year period and only 0.2 percent reported any use in the prior thirty-day period.

Worth noting, however, are the HSS researchers' findings that the perceived availability of heroin has risen steadily over the last few years--consistent with the evidence presented earlier. In 1986, 22 percent of the high school seniors surveyed reported that heroin would be "fairly easy" or "very easy" to obtain. Beginning in 1989, over 30 percent of those surveyed reported heroin as easy to obtain.

DAWN data from 1988-1991 show that teenagers and young adults (12-25), the age typically associated with drug initiation, have not appeared in Ers in greater numbers since

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<sup>33</sup> The researchers explain the higher prevalence among younger samples as the effect of dropouts. The students who report use in the early years are more likely to have dropped out by senior year.

1988 for medical problems related to heroin use. This age group has been consistently 13-14 percent of the total heroin ER mentions (see Table 7). Again, most heroin-related ER episodes occur among older users who are less likely to be initiates.

According to the NADR data, the percentage of users who are initiates (individuals who injected heroin for the first time within the last year) was about 8 percent in 1988 and 1989 and 10 percent in 1990-1991. In the DUF data, heroin initiates are on average five to six years younger than established heroin users, but, otherwise, have much the same profile. They are concurrent users of cocaine (76 percent in 1990) and likely to be injecting rather than using intranasally or smoking (57 percent in 1990).

Initiates are potentially the largest group of new users, since the boundaries of the class are unlimited. However, other factors mitigate against expanded use that might otherwise follow increased availability. Heroin, primarily a drug taken by injection, has long had a poor reputation--damaged further by the onset of the AIDS epidemic. Therefore, to attract new users, the reputation of heroin would have to have changed. This change might have occurred through introduction of a new method of ingestion. Alternatively, the need to use heroin (for example, to counter the effects of heavy cocaine use) would have to override heroin's bad reputation. In San Francisco, one ethnographer<sup>34</sup> conjectured that a combination of the decrease in cocaine's purity and reputation (both from representations in public education campaigns, and the lifestyle surrounding heavy crack users) and the increase in heroin quality in that area may be helping to convert heavy cocaine users into heroin initiates.

In the recent past, heroin has been almost exclusively injected, either intramuscularly (skin-popping) or intravenously. The intranasal use or smoking of heroin was rare. Today, with higher purity levels available in some areas, heroin users can smoke or snort the drug, perhaps removing the fear of AIDS and some stigma associated with injection of the drug. Nevertheless, available data do not suggest a large influx of new users, no matter the mode of ingestion.<sup>35</sup>

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<sup>34</sup> Sheila Murphy, Institute for Scientific Analysis, San Francisco, California, interview with Abt Associates, September 1992.

<sup>35</sup> According to the NADR data, among heroin users who primarily or exclusively inhale the drug the average age is two to four years younger than it is for those who primarily or exclusively inject it, but both groups are on average over 30 years of age.

## Conclusions

This study shows a consistent increase over recent years in the supply of high-purity, low-price heroin. The trend, first noted in the Northeast in the late 1980s, has since spread across the country. The trend has apparently resulted in increased heroin consumption by older, established users. It may also have led to increased inhalation of the higher purity substance by both initiates and returning users.

The bulk of this increased supply of heroin is consumed by older established heroin addicts who primarily inject the drug, often mixing it with cocaine. Unit purchases--"dime" (\$10) or "twenties" (\$20) bags--are priced the same, but the product is typically of better quality than that found in earlier periods. The increase in purity occurred over a three to five year period depending on the geographic region in question. This gradual increase may have allowed the established user to build up a greater tolerance to higher purity levels, keeping emergency room admission rates lower than one might anticipate. Older users may find that they at times "nod" on the higher quality product, but in general they have developed a tolerance level that allows, or even dictates, consumption of a greater quantity of the drug.

In addition, the higher purity product suits both old and new intranasal users of heroin. Those who are injecting may also be inhaling the drug. Those who are exclusively inhaling may remain inhalers, though several treatment and ethnographic sources noted that this is often a first stage use pattern. As one ethnographer reports, "They may start snorting it, but they always end up with the needle. It's too wasteful to keep snorting it, and the rush is not the same."<sup>36</sup> Whether this tendency will hold true for the initiates in these data sets should be the subject of future research.

The dominant user in these samples is the traditional heroin user described in the literature, most of whom initiated use ten to even twenty years ago. There are also some new users, both replacements to the older cohort with similar use patterns, and some who initiate heroin use through heavy cocaine use. The path to heroin through heavy cocaine use is still uncommon, however. Most cocaine and crack users in treatment are not heroin abusers, although the reverse pattern (heavy heroin users also abusing cocaine) is common. In today's drug market, however, this user--reflected also in the DUF, DAWN, and NADR samples--is most likely using more of both drugs in a continuation of a longstanding drug use career.

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<sup>36</sup> "Quarterly Pulse Check," report to Office of National Drug Control Policy, (Cambridge, MA: Abt Associates, October 1992).