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OFFICE OF NATIONAL DRUG CONTROL POLICY
EXECUTIVE OFFICE OF THE PRESIDENT
Washington, D.C. 20500



November 15, 1993



Kristine M. Gebbie, R.N., M.N., F.A.A.N.
National AIDS Policy Coordinator
Executive Office of the President
750 17th Street, N.W., Suite 1046
Washington, D.C. 20500

Dear Ms. Gebbie:

Enclosed is a draft of the "Heroin Trends Assessment" done recently for this Office. Although it is not yet ready for public release, I thought it important that you and Surgeon General Elders have this information as soon as possible.

Especially instructive is the growing number of drug treatment entrants who administer heroin intranasally, now up to 50 percent in the northeastern United States. Given the anticipated graduation of heroin "snorters" to injection heroin use, I am concerned that Federal government advocacy for the distribution of needles and syringes to drug users might have extremely negative consequences for HIV transmission and drug addiction.

I welcome your comments on this report and situation and look forward to working with you on a policy we can all embrace with enthusiasm.

Sincerely,

Lee P. Brown
Director

Enclosure

set up meet
report to B. Merrill

**OFFICE OF NATIONAL DRUG CONTROL POLICY**
**EXECUTIVE OFFICE OF THE PRESIDENT**
**Washington, D.C. 20500**

RECEIVED

November 15, 1993

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Enclosure

THE WHITE HOUSE

WASHINGTON

January 19, 1994

Lee P. Brown, Ph.D.
Director
Office of National Drug Control Policy
750 17th Street, N.W. Suite 700
Washington, D.C. 20503

Dear Dr. Brown:

Thank you for sharing the report on heroin use trends. My staff and I did find it interesting and I am enclosing a brief summary of comments on the report, which may be value to you and your staff.

Your cover note raised the questions of "Federal government advocacy for the distribution of needles and syringes to drug users." I am concerned that we both use care in our discussion of this general topic. For those who have been involved with programs to reduce the rate of acquiring HIV infection in injecting users, it is syringe exchange programs which appear to have value, and deserve serious consideration. To my knowledge, distribution of equipment has never been supported or advocated in public health practice.

I am looking forward to continuing our collaborative efforts to stem both substance abuse and HIV. Thanks again for sharing the report.

Sincerely,

Kristine M. Gebbie, R.N., M.N.
National AIDS Policy Coordinator

Enclosure

THE WHITE HOUSE

WASHINGTON

January 19, 1994

MEMORANDUM

TO: Lee P. Brown, Ph.D., Director
Office of National Drug Policy Control

FROM: Kristine M. Gebbie, R.N., M.N.
National AIDS Policy Coordinator

SUBJECT: 1994 Drug Control Strategy

I know that it is late in the process and that your staff has been working arduously with representatives of other Federal agencies to improve and enhance the 1994 Drug Control Strategy before it is released next month. My staff and yours have talked, but I also want to put a couple of concerns in writing.

As you know, I am extremely supportive of the philosophical thrust of the Strategy and feel strongly that the shift to a stronger emphasis on demand reduction and treatment access is a dramatic improvement of drug policy. It is positive from the point of view of AIDS control and prevention; it is positive from the point of view of humane and compassionate governing; and it is positive in the sense that it proposes new and constructive alternatives to past policies which have not worked as well as we all would like. It also links smoothly with the health care reform initiatives of this Administration. I am also pleased that the document reflects an awareness of the implications for AIDS/HIV, a recognition of the close interrelationship between these two national tragedies, and the public health arena in which we must battle to achieve any degree of control over them.

I am concerned about terminology in the Strategy, an issue which I have noted in the literature and in many documents. The problem is the inconsistent and confusing array of terms which are used to describe the different types and severity of drug use and abuse, and the way such terminological inconsistencies can sometimes reflect unintentional ambiguities into our written material.

For example, throughout the Strategy the term "hard-core" is used presumably to describe the high volume, high frequency, recidivist drug user population. This term has no clinical meaning and, for many people, carries with it a very pejorative

connotation. One of the basic changes this Administration has tried to apply to our approach is to treat severe addiction as the medical and social disease which it is and to apply treatment models. We should, I believe, avoid two things: 1) the use of terms which are disparaging and therefore in conflict with our philosophical thrust and 2) the use of terms which have no clinical meaning and will therefore be understood differently by individuals in different roles (i.e. researchers, clinicians, insurance payors, social workers, community drug counselors, etc.).

It is important, also, that we try to bring some consistency to the terminology for increased understanding so that people will be able to see that we are being consistent between our words and our broad new philosophical approach. If we are going to describe the initiative as "hard core," it must be defined.

I strongly encourage that early in the draft Strategy there be a discussion of terminology and definition of the terms which will be used throughout the text. Terms used should be consistent with the definitions.

I urge that you consider using terms which will be widely understood in the drug abuse community. The medical, psychiatric, drug treatment, and insurance people have already struggled with this problem by dividing the misuse of drugs into two levels of disease. The two disease levels they find useful are "abuse" and "dependency" plus a third non-disease state, casual drug use. For our purposes these sound a bit too much like medical jargon and we would be served just as well by simply replacing "psychoactive substance" with "drug" as our prefix. The three categories are:

> CASUAL DRUG USE (recreational): The use of mood altering substances on an intermittent or infrequent basis in amounts, which alter mood but without loss of control or any of the other signs which characterize the disease conditions below.

DRUG ABUSE: The use of mood altering substances to such an extent that the individual begins to manifest loss of control during periods of use, tolerance to higher doses of the substance may be present but use has not become compulsive. May continue for a prolonged period of time without progression, or, in individuals who are genetically predisposed, frequently leads to drug dependency.

DRUG DEPENDENCY: That disease condition characterized by daily or regular use of mood altering substances accompanied by the development of tolerance, regular loss of control, preoccupation with obtaining drugs, withdrawal symptoms on being unable to obtain drugs, disregard for personal safety or health, and continued use despite negative consequences.

These categories or something similar would be understood by a broad representation of the drug policy, control, and treatment community as well as psychiatrists, nurses, counselors, social workers, and public health workers. I believe these terms will also be understood by the general population and decision makers at least as well as any other set of terms we might derive.

As a caution, I believe that the document overstates the treatment benefits currently envisioned in the Health Security Act. Inpatient substance abuse treatment is to be provided with a 50 percent co-payment. Much of the population needing this benefit will not be able to pay their share and hence will continue to have difficulty accessing care.

As I have shared with you in my Memorandum on Heroin Trends Assessment - Comments on report (January 14, 1994), I believe that we could put a much more positive interpretation to the new trends which you have identified with regards to routes of administration for heroin. The fact that in the last few years there has been a reduction from 51 percent to 7 percent in AIDS/HIV risk behaviors in this population, for example, is extremely good news and may deserve greater emphasis.

Thank you for the opportunity to comment on this important document. If I can offer any additional clarification or assistance, please let me know.

cc: Carol Rasco

NATIONAL AIDS POLICY OFFICE
OFFICE OF THE COORDINATOR

## ROUTING SLIP

DATE: 1/20

TO: Kristine

FROM: ~~KRISTINE M. GEBBIE~~ Steve

✓ For your information – comments filed.

____ For your action _____

____ Review and comment by (date) _____

____ Prepare reply for Coordinator's signature

____ Reply directly and blind copy Coordinator

____ **Circulate**/forward to: _____

____ File 12/13

COMMENTS: Shall I use this (not that it is needed) to set up a meeting? Yes — & be sure copy of this gets to Ben & Bob — return to I can read —

# HEROIN TRENDS ASSESSMENT

A Report Prepared for
The Office of National Drug Control Policy

October 17, 1993

BOTEC Analysis
CORPORATION

# HEROIN TRENDS ASSESSMENT

*By:*

David Boyum
David P. Cavanagh
Ann Marie Rocheleau

*With assistance from:*

Andrew H. Chalsma
Mark A. R. Kleiman
Jenny W. Rudolph

# Table of Contents

# Executive Summary

There is growing concern that the U.S. is experiencing—or will soon experience—a substantial increase in the number of heroin users, perhaps even a new epidemic. Many of the customary indicators of heroin trafficking and consumption look ominous. In recent years, retail prices have plummeted and purity has soared, heroin seizures have risen and opium production has expanded—all trends one would expect to accompany a growth in heroin supply. At the same time, both heroin-related emergency room visits and admissions to treatment have climbed sharply—developments normally associated with increased use.

Added to this are the reports of police officers, drug enforcement agents, treatment providers, and ethnographers, all of whom seem to be witnessing new and heightened activity, ranging from widespread heroin snorting to the aggressive entry of Colombian cocaine dealing organizations into the heroin trade. Most worrisome are the accounts of new users—purportedly drawn from the ranks of crack and cocaine addicts—for it is new users who provide the catalyst for drug epidemics.

Upon closer examination, the evidence is more ambiguous; there are so many caveats associated with so much of the data that it is hard to make strong inferences. With respect to heroin supply, the rise in seizures seems to reflect a shift in trafficking patterns—specifically, the extensive use of commercial air couriers hired by Nigerian and Colombian trafficking groups—more than it does an across-the-board surge in imports. In terms of heroin use, a good part of the increase in emergency room mentions appears connected to a change in sampling and data-weighting procedures. Figures on treatment admissions are also compromised by inconsistencies in data collection, and they are further weakened by the fact that, given a shortage in treatment capacity, the number of heroin admissions is influenced more by supply than demand.

In studying illicit drug use, complications like these are par for the course. It is always difficult, and sometimes impossible, to sort out the real trends from the apparent ones. This does not mean, however, that nothing conclusive can be said about the current heroin situation. Despite all the unknowns and uncertainties, there are a number of assessments about heroin supply and consumption that can be made with some confidence.

For starters, we know that heroin is, by historical standards, remarkably cheap and pure. In inflation-adjusted terms, heroin is now less expensive than it was 25 years ago, at the onset of the last heroin epidemic; purity, at

least in the major Northeastern cities, is more than ten times what it was then.

We also know something about developments in the supplying industry—in the production, trafficking, and distribution of heroin—most of which jibes with the observed trends in prices and purity. Opium production appears to be much greater than it was five or six years ago, thanks to expanded production in Burma. Perhaps more significant (at least for the future) than heightened Burmese production—most of which does not make its way to the U.S.—is the development of a significant opium crop in Colombia. Although small in comparison to world production, the crop is large when measured against U.S. heroin consumption, which is no doubt its intended market.

It is more difficult to make generalizations about domestic distribution. However, the largest networks (i.e., the ethnic Chinese groups) appear to be more vertically integrated and efficient than they were ten or twenty years ago when traditional organized crime groups played a larger role. It is probably not coincidental that wholesale price markups have fallen significantly.

On the user side of the market, there are two important developments that can be reported without much hesitancy. First, heroin snorting (and to a much lesser extent smoking) has become commonplace in those areas of the country where high purity powder (a prerequisite for intranasal ingestion) is available. In New York City, for example, snorting is the primary mode of ingestion for roughly half of those entering heroin treatment programs, and many ethnographers say that injection has become a rare sight.

Second, heroin is more and more often being combined with cocaine. Evidently, crack abusers find that heroin "takes the edge off" crack and softens the impact of "crashing" after a high. Data on heroin-related emergency room visits seem to be reflecting this behavior, showing sharp increases in combination heroin/cocaine mentions.

It also appears that the average heavy heroin user today is consuming more heroin than the typical user did ten or twenty years ago. Although this judgment must be considered tentative—regrettably, researchers rarely collect data on habit sizes—a comparison of three studies of users, covering different time periods (1965-1972, 1980-1982, 1992) indicated that addicts today are consuming more than twice what they or their predecessors once did. The finding ought not be surprising—lower prices and higher purity can be expected to increase consumption—but it is nonetheless important. If accurate, it suggests that considerably more heroin is being imported and consumed, and much more money is being spent on heroin, than is generally believed.

Looking ahead, countless factors will influence future developments in heroin use. Two stand out. The first is the involvement of Colombian drug organizations in the heroin trade; the second is the rate of initiation of new users.

Most discussion of the Colombian heroin threat focuses on the Colombian opium crop. While the size and nature of the crop are no doubt important, it seems likely that the principal danger posed by Colombian heroin trafficking involves the impact it might have on heroin distribution within the U.S.

Price and purity represent only one aspect of the heroin supply situation. Retail availability, determined by the number, social and geographic distribution, and aggressiveness of retail dealers, shapes consumption as well. In the case of crack, the epidemic was late in reaching some cities (such as Chicago) because the necessary retail distribution infrastructure was often lacking. Wholesale supplies, which were always plentiful, were not the limiting factor.

According to most of the Drug Enforcement Administration agents interviewed for this report, there is now a wholesale supply glut in the heroin business; retail distribution networks are inadequate to handle the supply. What many of these agents fear about the Colombian organizations is their experience, expertise, and willingness to develop a retail infrastructure. "They did it with crack; now they'll do it with heroin."

Although an ample supply of drugs is essential, new users are the key ingredient to a heroin epidemic. Heroin use spreads primarily among friends and peers. New users, typically within their first year of use, are the most likely to "turn on" others; long-time users are the least likely. The implication of this is that new heroin use is susceptible to periods of explosive growth. If the number of new users rises, they initiate more new users, and so on.

To date, there is no strong evidence that a heroin epidemic has begun. There is also no strong evidence that an epidemic hasn't begun. The problem is that currently accessible data tell us little about heroin initiations; by their nature, they tend to overlook new users. Tallies of emergency room visits, or admissions into treatment programs, are more likely to reflect extreme levels of abuse than the behavior of new, and generally still casual, users.

If a heroin epidemic is not yet developing, conditions are ripe. Low prices reduce the economic barriers to experimentation, while high purity makes intranasal administration feasible, thereby eliminating what for many users is the key deterrent to heroin use: needles. Whether for reasons of discomfort, stigma, or the fear of infectious disease, many users will not inject drugs.

Moreover, there is a large and increasingly interested population of potential initiates. Although cocaine-related emergency room visits have continued to

climb, there is reason to believe that the crack epidemic is now past its peak. Many current and former crack addicts are looking for alternatives. That combination use offers them an easy and appealing entrée to heroin is not comforting; a modest shift toward heroin among the population of cocaine users would represent a large increment to the current population of heroin users.

Some public health experts are more cheered than concerned by recent developments in heroin use, believing that the move from injection to snorting can only help efforts to stem the tide of HIV transmission among heavy heroin users. While this analysis is no doubt correct in the short run, it overlooks the uncertain long-term effects of new heroin users. Snorting is a relatively inefficient means of ingesting heroin, and so many new users turn from snorting to injection for reasons of economy when their habits become too expensive to support. And so if widespread heroin snorting attracts large numbers of new users, many of whom eventually progress to injection, the net long-term effect on HIV transmission—not to mention all the other damaging social consequences of drug abuse—could easily be in the wrong direction.

A number of police officers and drug enforcement agents interviewed for this report are also privately cheerful. To them, the sight of cocaine and crack users switching to heroin is welcome. Heroin addicts, they feel, are less violent than cocaine and crack addicts, more likely to "nod off" than "go crazy." Many also pointed out that heroin dealing has traditionally been less violent than cocaine and crack dealing.

While there is also some truth to this analysis, it too may prove shortsighted. Although cheap, high-quality heroin will induce many crack users to switch drugs, some of them might have given up illicit drugs altogether had heroin use been less attractive. For others, by ameliorating some of the less pleasant side effects of crack, heroin will enable them to sustain and prolong their crack habits.

# Introduction

There is growing concern that the U.S. is experiencing—or will soon experience—a substantial increase in heroin use, perhaps even a new epidemic. Many of the customary indicators of heroin trafficking and consumption look ominous. Both the number and volume of heroin seizures are much higher than just a few years ago. Retail prices have fallen sharply, while purity has soared, falling and rising, respectively, to record levels. And over the last five years for which data are available, heroin-related emergency room visits have more than doubled, and admissions to treatment have climbed by two-thirds.

Added to this are the reports of police officers, drug enforcement agents, treatment providers, and ethnographers, all of whom seem to be witnessing new and heightened activity, ranging from widespread heroin snorting, to the aggressive entry of Colombians into the heroin trade. Most worrisome are the accounts of new users—purportedly drawn from the ranks of crack and cocaine users—for it is they who provide the catalyst for epidemics.

Unfortunately, it is extremely difficult to draw firm conclusions about trends in heroin supply and consumption. Because heroin dealing is illegal, there are no publicly available business records. Because the crime is transactional, there are no unwilling victims who report it to the police. Because regular heroin users are often socially isolated or dysfunctional, they are hard to locate, observe, or count, and unreliable to interview.

In the absence of direct and credible data, one is forced to observe the world of heroin inferentially, examining indicators—such as seizures, prices, overdoses—that may reveal underlying trends in heroin trafficking or use. There are many such indicators, and all of them are imperfect. One problem is that many data sets are collected inaccurately or inconsistently. Another difficulty is that there are often several plausible, but conflicting, explanations for observed trends in data. Sorting out the real causes from the apparent ones is not easy. But the biggest problem with available data is that most indicators tend to miss new users. Counts of emergency room visits, or admissions into treatment programs, are more likely to reflect extreme levels of abuse than the behavior of new, and generally still casual, users.

This report provides a summary and analysis of current evidence on trends in heroin supply and consumption, with the aim of sorting out some of the apparent ambiguities and conflicts in leading indicators. The information presented is based on data sources, ethnographic reports, and interviews with law enforcement and treatment personnel.

# Indicators

## Price, Purity, and Source

For several reasons, the price of heroin is one of the most important indicators its consumption and supply. First of all, the demand for heroin, like the demand for any commodity, is influenced by its price. Other things being equal, one expects falling prices to be accompanied by increased use, and rising prices to go with falling consumption. Of course, everything is not always equal; at least in the short run, prices and consumption can be affected by a host of factors, so much so that price and consumption can appear to violate the economist's Law of Demand, which holds that other things equal, consumers will buy less at higher prices.

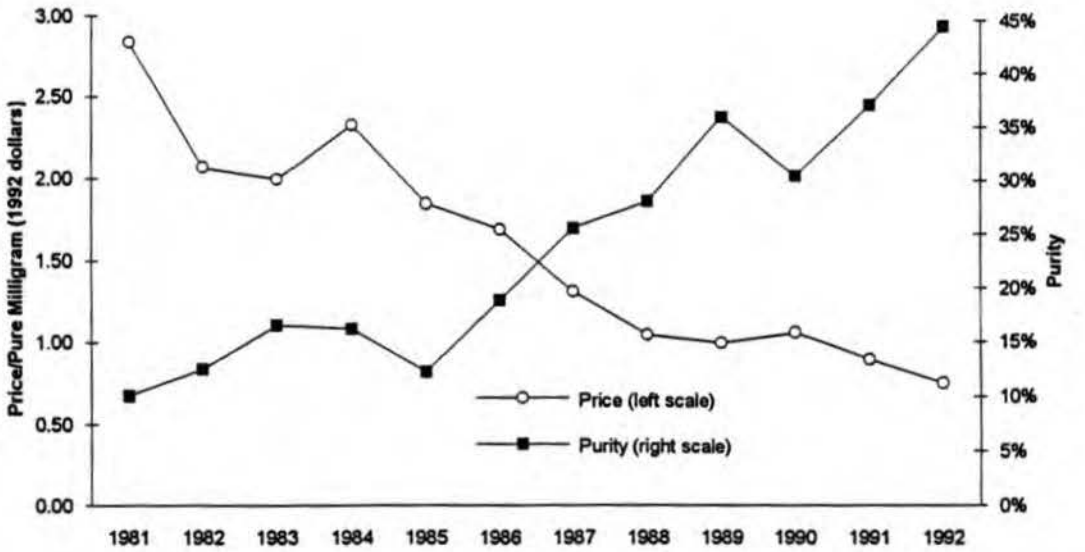
Price trends can also indicate developments in supply. In the immediate term, falling prices can signal a glut in the market (supply outstripping demand), and rising prices a shortage. More generally—and in the long run—prices normally reflect the cost to the supplying industry of getting their product to the consumer. So if the price of heroin falls, as it has fairly consistently over the past decade, it is a good bet that growers, traffickers, and dealers have become more efficient in their business, or are facing greater competition.

Purity is another important indicator of heroin supply and consumption, although it is less clear what inferences should be drawn from such evidence. (For example, the relationship between purity levels and overdoses is a complicated one.) A couple of points are pretty straightforward, however. In terms of consumption, only when heroin is very pure—and in powder form, as opposed to "tar"—does snorting become a practicable route of administration. High or rising purity also tends to bring about increases in tolerance levels among users. On the dealing side of the market, high purity generally denotes ample supply; in contrast, during a shortage, dealers will be more prone to eke out their limited stocks by diluting them heavily.

Figure 1 below provides estimates of heroin price and purity, on a nationwide basis, for the years 1981 to 1992.[1] Table 1 below provides estimates for selected cities.

[1] There are two principal sources of data on heroin price and purity levels, both compiled by the Drug Enforcement Administration (DEA). One is the Domestic Monitor Program (DMP), which collects information about retail heroin markets by making undercover purchases that are then analyzed for purity, adulterants and diluents, and geographic area of origin. The other source is the System to Retrieve Information from Drug Evidence

**Figure 1. Estimated National Retail Heroin Price (1992 Dollars) and Purity**




(STRIDE). In contrast to DMP, most of the data in STRIDE are not collected for intelligence purposes (although DMP data are included in STRIDE). STRIDE contains information on all drugs submitted to DEA laboratories for analysis. These exhibits principally come from DEA purchases and seizures, but some drugs obtained by other agencies (e.g., F.B.I, the U.S. Customs Service, the District of Columbia Metropolitan Police) are also included.

Although DMP has been in operation for more than a decade, it has received limited and inconsistent funding. As such, sufficient data were not available for the entire period. Figure 1 was therefore constructed from STRIDE, which offers a more comprehensive set of price and purity data.

There are a number of problems in working with STRIDE data, since most of the exhibits are collected for investigative purposes: data are collected over a wide range of market levels; transaction sizes vary; cities and regions are represented in relation to investigative activity (which may not correlate well with heroin consumption). The data in Figure 1 were adjusted to account for these difficulties. For a detailed discussion, see Jonathon Caulkins and Andrew H. Chalsma, *Creating Consistent Price Series*, Report prepared for the Office of National Drug Control Policy, 19 Aug. 1993.

## Table 1. Estimated Retail Heroin Price and Purity Series for Selected Cities

| | | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 | 1989 | 1990 | 1991 | 1992* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Chicago | % Purity | 2.6 | 5.1 | 5.3 | 3.2 | 1.7 | 1.1 | 6.6 | 7.1 | 18.5 | 8.4 | 10.9 | 16.5 |
| | $/pure mg. | 4.99 | 2.26 | 1.23 | 2.82 | 3.90 | 3.23 | 2.31 | 1.56 | 1.12 | 1.34 | 1.41 | 1.14 |
| | DAWN ER Mentions | 292 | 280 | 399 | 513 | 605 | 832 | 1,272 | 2,016 | 2,124 | 2,039 | 1,101 | 1,101 |
| | Number of exhibits | 3 | 3 | 3 | 8 | 17 | 2 | 4 | 27 | 35 | 31 | 30 | 15 |
| Detroit | % Purity | 13.5 | 14.3 | 23.0 | 3.1 | 9.9 | 9.4 | 17.0 | 17.0 | 14.1 | 22.5 | 16.2 | 25.4 |
| | $/pure mg. | 2.13 | 1.77 | 1.51 | 2.84 | 1.05 | 1.05 | 0.90 | 1.24 | 1.01 | 1.21 | 1.27 | 1.25 |
| | DAWN ER Mentions | 1,141 | 1,795 | 3,274 | 2,568 | 3,061 | 2,793 | 2,537 | 2,812 | 1,963 | 1,552 | 893 | 893 |
| | Number of exhibits | 2 | 17 | 1 | 16 | 10 | 5 | 13 | 33 | 13 | 25 | 20 | 16 |
| New York | % Purity | 10.4 | 16.6 | 16.3 | 28.5 | 17.1 | 36.4 | 36.6 | 40.5 | 39.9 | 40.9 | 53.1 | 61.9 |
| | $/pure mg. | 1.38 | 0.96 | 1.19 | 1.04 | 1.30 | 0.71 | 0.69 | 0.64 | 0.77 | 0.79 | 0.55 | 0.44 |
| | DAWN ER Mentions | 1,669 | 2,103 | 4,670 | 3,553 | 3,300 | 3,456 | 4,590 | 5,397 | 5,438 | 3,810 | 2,733 | 2,733 |
| | Number of exhibits | 80 | 42 | 66 | 24 | 22 | 11 | 46 | 56 | 60 | 93 | 73 | 39 |
| Philadelphia | % Purity | 3.3 | 4.4 | 2.9 | 8.4 | 3.9 | 11.0 | 42.1 | 29.4 | 51.9 | 43.6 | 51.2 | 54.3 |
| | $/pure mg. | 2.86 | 2.73 | 3.56 | 1.96 | 2.54 | 1.96 | 1.39 | 1.07 | 0.62 | 0.97 | 0.85 | 0.70 |
| | DAWN ER Mentions | 274 | 412 | 344 | 464 | 475 | 466 | 815 | 1,748 | 3,351 | 2,653 | 1,630 | 1,630 |
| | Number of exhibits | 42 | 50 | 18 | 22 | 20 | 13 | 20 | 15 | 16 | 69 | 52 | 14 |
| San Diego | % Purity | 14.3 | 15.9 | 15.6 | 17.5 | 31.7 | 33.0 | 24.1 | 28.4 | 46.2 | 44.5 | 28.5 | 46.0 |
| | $/pure mg. | 1.47 | 1.62 | 1.30 | 1.73 | 0.99 | 0.89 | 0.92 | 0.62 | 0.47 | 0.51 | 0.75 | 0.56 |
| | DAWN ER Mentions | 90 | 93 | 129 | 161 | 177 | 182 | 148 | 407 | 600 | 756 | 352 | 352 |
| | Number of exhibits | 32 | 47 | 76 | 41 | 57 | 43 | 144 | 45 | 13 | 9 | 51 | 35 |
| Washington | % Purity | 12.0 | 7.1 | 6.6 | 17.8 | 11.7 | 7.7 | 17.3 | 30.5 | 39.2 | 14.5 | 19.4 | 20.0 |
| | $/pure mg. | 1.64 | 1.56 | 2.34 | 1.47 | 1.48 | 2.81 | 1.59 | 0.59 | 1.80 | 1.50 | 1.03 | 0.94 |
| | DAWN ER Mentions | 683 | 710 | 824 | 1,511 | 1,447 | 1,196 | 1,650 | 2,557 | 1,761 | 1,334 | 678 | 678 |
| | Number of exhibits | 15 | 27 | 32 | 11 | 3 | 13 | 15 | 2 | 5 | 27 | 34 | 12 |
| National Avg ** | % Purity | 10.1 | 12.6 | 16.6 | 16.2 | 12.3 | 18.9 | 25.5 | 28.0 | 35.8 | 30.3 | 37.0 | 44.5 |
| | $/pure mg. | 1.90 | 1.47 | 1.46 | 1.78 | 1.46 | 1.36 | 1.10 | 0.91 | 0.91 | 1.02 | 0.87 | 0.75 |
| | $/pure mg. 1992 Dollars | 2.84 | 2.07 | 2.00 | 2.33 | 1.85 | 1.69 | 1.31 | 1.04 | 1.00 | 1.06 | 0.89 | 0.75 |

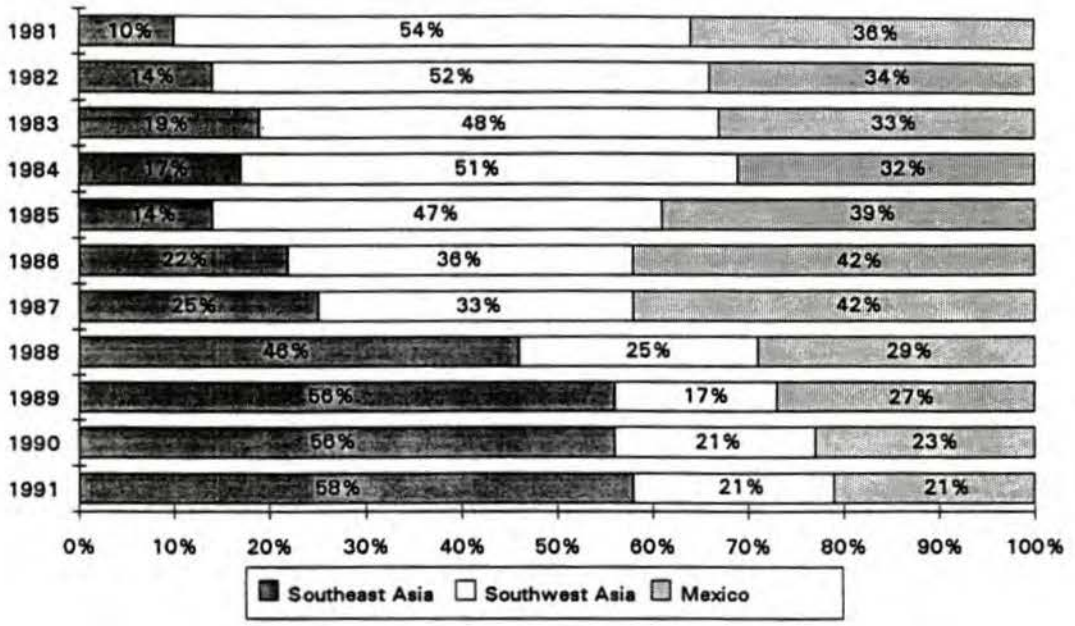
*1992 is derived from STRIDE exhibits from Q1 to Q3 of 1992.

**National average is created by weighting city averages based on DAWN emergency room mentions of heroin for that year. 1991 and 1992 are weighted based on mentions from the 1st half of 1991.

Both Figure 1 and Table 1 reveal a steady and significant fall in prices, and a similar rise in purity levels. Several factors probably account for these developments. In terms of purity, both rising tolerance levels among long-term users and increased snorting have heightened demand for higher quality heroin. Changes in the supplying industry may have played a role as well. Over this period, there was a tremendous growth in the U.S. market share of Southeast Asian heroin, which traditionally is purer than its Southwest Asian and Mexican counterparts. From 1981 to 1991, according to data from

DEA's Heroin Signature Program, Southeast Asian heroin increased its U.S. market share from 10 percent to 58 percent.[2] (See Figure 2 below.)

**Figure 2. Heroin Availability in the U.S. by Area of Origin**




Historically, it was common for heroin to be "cut" or diluted each time it changed hands. It now appears, at least in some cities, that heroin passes through fewer transactions in reaching the consumer than it once did. Consider New York City. It has been estimated that in the 1970s, five or six transactions separated importers from users.[3] According to DEA Agents interviewed for this report, it is now typical for heroin to pass through only two or three transactions between import and consumption. Whereas middlemen characterized the traditional organized crime distribution networks in the 1970s, today ethnic Chinese traffickers often sell directly to groups of street dealers. In economists' terms, the distribution system has become much more vertically integrated.

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[2] Due to the influx of Colombian heroin, which often appears to be Southwest Asian heroin in signature tests, 1992 HSP fractions are probably not reliable.

[3] Mark H. Moore, *Buy and Bust* (Lexington, Mass.: Lexington Books, 1977), 100.

Finally, some of those interviewed for this report suggested that the cocaine business may have contributed to higher heroin purity. Many heroin dealers, they argued, are ex-cocaine dealers, and simply do not have the experience or knowledge of "cutting" (diluting) heroin.

Some of these same developments have no doubt played a role in the decline of prices as well. After all, Southeast Asian heroin increased its U.S. market share for a reason: presumably the ethnic Chinese and Nigerians that import it are lower cost suppliers, or more effective smugglers and illicit marketers, than the traffickers they displaced. More recently, Colombian heroin is adding to the competition. In New York City, Colombian heroin is consistently underselling Southeast Asian heroin, and the Colombians routinely give heroin to potential wholesale distributors on consignment, something rarely seen in the drug business.

And if the shorter distribution chain has affected purity levels, it may have impacted prices too. According to DEA figures, the wholesale price of heroin on the East Coast (which at the time primarily meant New York) over the two years 1973-1974 was $260,000 per kilo (roughly the equivalent of $750,000 today).[4] The average retail price was $2,650,000.[5] This represents a ten-fold increase, or a markup of $2,390,000 per kilo ($6.8 million in 1992 dollars). Today, by contrast, the wholesale price of a pure kilo of heroin in New York is roughly $150,000;[6] at retail, a kilo yields $430,000.[7] This is only a three-fold increase, or a markup of less than $300,000. Thus, most of the increase in heroin prices reflects shrinking markups by domestic middlemen, not falling import prices.

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[4] Drug Enforcement Administration, *Drug Enforcement Statistical Report* (Washington, D.C.: U.S. Department of Justice, March 1975), 33-35.

[5] John R. Bartels, Jr. and Robert L. Dupont, Statement before the Subcommittee of Future Foreign Policy Research and Development, House Committee on International Relations, 23 April 1975, Table 7; Lee P. Minichiello, John B. Lawson, Kathleen A. Gardner, Frederick Parsons, Lynne N. Seekamp, and James A. Winters, *Trends in Heroin Indicators: January to September 1974*, Paper P-1108 (Arlington, Va.,: Institute for Defense Analyses, 1975), 15.

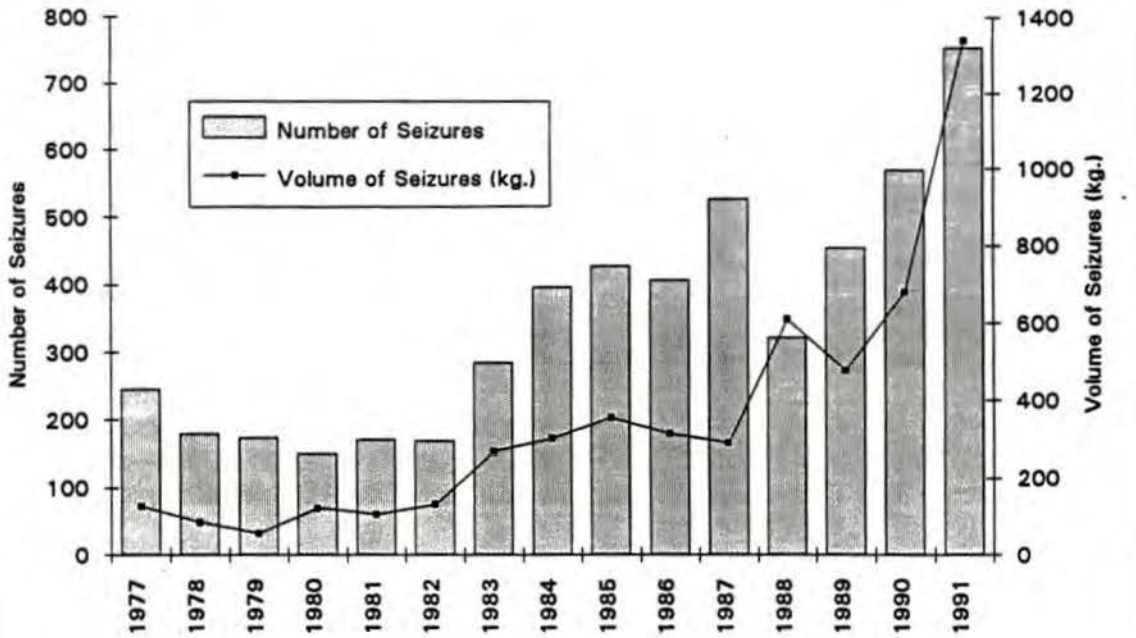
[6] DEA estimates that the wholesale price of Southeast Asian ranges from $90,000 to $240,000 per kilo. See Drug Enforcement Administration, *Source to the Street: Mid-1992 Prices for Cannabis, Cocaine, Heroin* (Washington, D.C.: U.S. Department of Justice, October 1992), 6. Narcotics agents interviewed for this report put the price at around $150,000.

[7] In a recent report from DEA's Domestic Monitor Program, agents in New York City purchased a total of 2,650 mg of pure heroin through eleven purchases of $100 each. This implies an average price of $430,000 per kilo. See Drug Enforcement Administration, *Domestic Monitor Program: Quarterly Report on the Source Areas, Cost, and Purity of Retail-Level Heroin, April-June 1992* (Washington, D.C.: U.S. Department of Justice, October 1992), 35.

## Heroin Seizures

For over a decade now, there has been a marked increase in heroin seizures by the U.S. Customs Service (see Figure 3 below). Clearly, at least one of two developments in trafficking and enforcement must have occurred. Either more heroin is being trafficked to the U.S., or the Customs Service is stopping a larger fraction of the heroin supply (or both).

**Figure 3. U.S. Customs Heroin Seizures, 1977-1991 (fiscal years)**



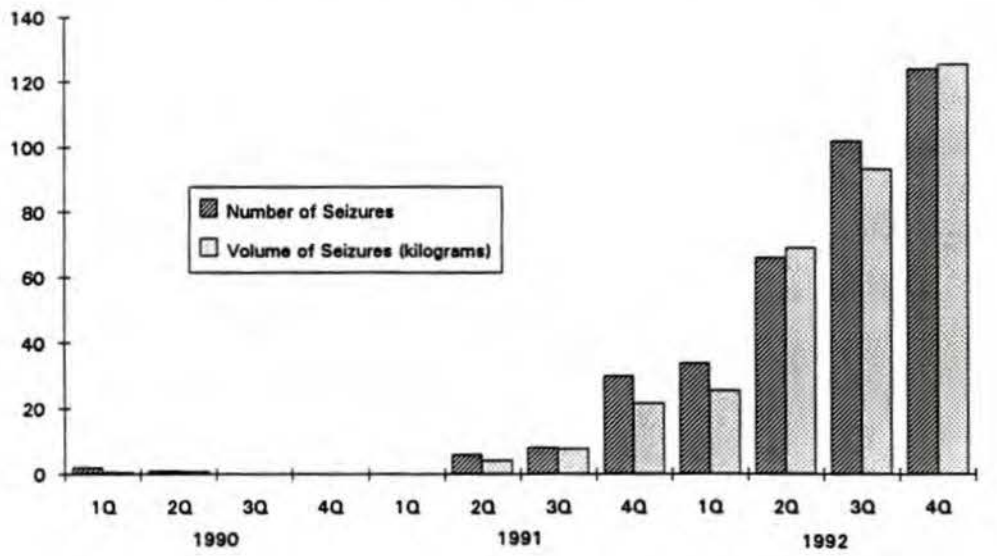

While it difficult to resolve this issue with much confidence, an analysis of Customs seizures reveals several important points. First of all, the increase in the number and weight of seizures is almost exclusively a consequence of an increase in seizures from commercial air flights. Seizures from automobiles, international mail, and commercial vessels have fluctuated around relatively steady levels. In turn, the increase in commercial air seizures appears directly related to the massive entry of Nigerian-based (and more recently Colombian-based) organizations into the heroin business.

The extent of Nigerian trafficking is revealed by an analysis from Customs' Combined Agency Border Intelligence Network (CABINET); it is estimated

that Nigerians were involved in 48 percent of all Customs heroin seizures in 1989 (accounting for 47 percent of total volume). In 1989, Customs made 217 seizures from West Africans, a six-fold increase from 1988.

The most important (and worrisome) recent development in heroin interdiction is the large number of seizures from Colombia, for this almost certainly indicates greatly increased supply from this new source. Figure 4 below shows the number and volume of Colombian heroin seizures for the past three years.

**Figure 4. U.S. Customs Seizures of Colombian Heroin, 1990-1992**




Overall, seizure statistics reveal an increase in heroin supply via Nigerian and Colombian traffickers. But the data are a reliable indicator only because—and to the extent that—Nigerian and Colombian couriers have relied on a mode of conveyance relatively vulnerable to detection: individual couriers (mostly swallowers) on commercial air flights.[8]

[8]*Relatively* vulnerable does not necessarily imply a high rate of interdiction. According to a *New York Times* article, then Customs Commissioner Carol Boyd Hallett estimated that no more than five percent of Nigerian couriers were caught. Joseph B. Treaster, "Nigerian Connection Develops New Army of Heroin Smugglers," *The New York Times*, 15 February 1992, 50.

Indeed, seizures may no longer be a reliable gauge of Nigerian trafficking. Customs heroin seizures from Nigerian flights have declined since 1990. But CABINET analysts and other Customs officials interviewed stressed that one should not infer from this an abatement in Nigerian heroin trafficking. Evidently, Nigerians have diversified their trafficking routes and methods, often bringing heroin into the U.S. through Europe or directly from Southeast Asia, regularly using non-Nigerian couriers (other West Africans and, more recently, Americans and Europeans).

However, until these recent developments, Nigerian heroin trafficking followed a relatively uniform pattern. Characteristically, Nigerian trafficking groups would employ large numbers of individual couriers, most of whom ingested heroin in condoms (an average of 700 grams per courier). John F. Kennedy International Airport in New York (JFK) has been the principal point of entry for Nigerian couriers. In 1989, for instance, 87 percent of seizures from Nigerians occurred at JFK. Colombians now appear to be using the same approach, sending scores of swallowers through JFK and Miami International Airports.[9]

In contrast to Nigerians and Colombians, Chinese traffickers generally smuggle heroin by commercial vessel, usually through Los Angeles or San Francisco. This mode of conveyance is much more difficult for Customs to intercept. (Consider that an average of 3 million cargo containers enter the U.S. each year, and that a single container might be able to hold a full year's worth of U.S. consumption.) Between 1985 and 1992, Customs made only six commercial vessel heroin seizures in Los Angeles, and three in San Francisco.

Seizures of Mexican heroin are also rare; most is smuggled by car or by foot across the Southwest border, much of it in extremely small lots. As such, seizure data are not a reliable indicator of Mexican heroin supply.

## Opium Production

Table 2 below gives the State Department's Bureau of International Narcotics Matters' estimates of worldwide opium production for 1987 to 1992.

[9] Of 326 U.S. Customs seizures of Colombian heroin in 1992, 285 were taken from commercial air couriers passing through JFK or Miami International Airports.

**Table 2. Worldwide Potential Net Opium Production (mt), 1987-1992**

| Country | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 |
|---|---|---|---|---|---|---|
| Afghanistan | 600 | 750 | 585 | 415 | 570 | 640 |
| Iran | 300 | 300 | 300 | 300 | 300 | 300 |
| Pakistan | 205 | 205 | 130 | 165 | 280 | 175 |
| Total SW Asia | 1,105 | 1,255 | 1,015 | 880 | 1,150 | 1,115 |
| Burma | 835 | 1,280 | 2,430 | 2,255 | 2,350 | 2,280 |
| Laos | 225 | 255 | 380 | 275 | 265 | 230 |
| Thailand | 24 | 25 | 50 | 40 | 35 | 24 |
| Total SE Asia | 1,084 | 1,560 | 2,860 | 2,570 | 2,650 | 2,534 |
| Colombia | | | | | 27 | na |
| Lebanon | na | na | 45 | 32 | 34 | na |
| Guatemala | 3 | 8 | 12 | 13 | 17 | na |
| Mexico | 50 | 67 | 66 | 62 | 41 | 40 |
| Total Above | 53 | 75 | 123 | 107 | 119 | 40 |
| Total | 2,242 | 2,890 | 3,998 | 3,557 | 3,919 | 3,689 |

*Source: International Narcotics Strategy Control Report, 1991, 1993*

The figures suggest that there was a substantial increase in worldwide opium production during the late 1980s, almost entirely due to an explosion in Burmese production. Precisely how this affected the U.S. heroin market is unclear. For one thing, U.S. heroin consumption accounts for only a small share of worldwide opium production, perhaps less than five percent.[10] Furthermore, according to DEA estimates, neither the price of opium in Burma nor the price of heroin in Bangkok, changed dramatically over this period. For 1987, DEA estimated the price of a kilo of opium in the Northern Shan

[10] An ONDCP report has estimated that individuals who were involved with the criminal justice system consumed about 12,000 kilograms of heroin in 1989. See Office of National Drug Control Policy, *What America's Users Spend on Illegal Drugs* (Washington, D.C.: June 1991), 15. The State Department's *International Narcotics Control Strategy Report (INCSR)* estimates worldwide potential net opium production for 1989 at 3,998 metric tons. While the accuracy of these estimates is uncertain—there is some evidence that annual U.S. consumption is considerably greater than 12,000 kilos—they imply that U.S. heroin consumption accounts for 3 percent of world opium production.

State of Burma at $170.[11] For 1992, DEA estimated the price at $120-$200.[12] The price of a kilo of heroin in Bangkok is estimated at $7,000-$11,000 for 1987,[13] and $6,000-$10,000 for 1992.[14] In fact, the big drop in U.S. retail heroin prices is almost entirely a result of reduced markups within the U.S.

It should be noted, however, that the boom in Southeast Asian opium production coincided with the growth of Nigerian and ethnic Chinese trafficking groups bringing heroin into the U.S. (As noted above, Southeast Asian heroin more than doubled its U.S. market share from 1987 to 1991.) The connection is probably not entirely coincidental. Given a glut in supply, opium and heroin brokers in Southeast Asia presumably had a strong incentive to find new markets for their goods. This may have been instrumental for the Nigerians, who at the time did not have well-established supply networks.

Opium production in Mexico probably has a more direct effect on the U.S. heroin market than does Southeast Asian production. For one thing, virtually all of the opium cultivated in Mexico is destined for U.S. heroin markets. Perhaps more important, consumers of Mexican "black tar" generally do not consider a powder form of heroin an acceptable substitute. In fact, even users of Mexican "brown"—which is a powder—are averse to using white heroin. Allegiance is strong enough among users that narcotics agents occasionally find samples of white heroin that have been dyed brown.

Table 2 above suggests that Mexican opium production has declined sharply over the last four years. These figures do not jibe with the observations of DEA agents interviewed in connection with this report. "I've never seen so much Mexican heroin," was a typical comment. A number of DEA agents directly questioned the crop estimates. They pointed out that, in recent years, Mexican poppy cultivation has moved into Sonora and Chiapas, spreading beyond the traditional growing states of Sinaloa, Chihuahua, Durango, and Guerrero.[15]

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[11] Drug Enforcement Administration, *Intelligence Trends*, Vol. 14, No. 3 (Washington, D.C.: U.S. Department of Justice, 1987), 9.

[12] Drug Enforcement Administration, *From the Source to the Street: Mid-1992 Prices*, 9.

[13] Drug Enforcement Administration, *Intelligence Trends*, 9.

[14] Drug Enforcement Administration, *From the Source to the Street: Mid-1992 Prices*, 9.

[15] According to a recent DEA report: "The two primary growing areas for opium poppy—the traditional tri-state area of Sinaloa, Chihuahua, and Durango, and Guerrero—have merged into one single growing area which extends from the northernmost Sierra Madre Occidental in Sonora and Chihuahua, along the west coast of Mexico, down through Chiapas into Guatemala." Drug Enforcement Administration, *Mexico: A Country Profile* (Washington, D.C.: U.S. Department of Justice, December 1991), 3.

The most important recent development in opium cultivation is the substantial acreage in Colombia. Table 3 below shows the State Department's estimates for worldwide opium cultivation in 1991 and 1992. Even after eradication efforts, Colombian acreage is estimated to cover 20,000 hectares. A quick calculation suggests how significant this figure is. Assuming a yield of 10 kilos of opium per hectare—a conservative assumption—this acreage could produce 200,000 kilos of opium, or about 20,000 kilos of heroin when processed. By most estimates, this is an amount greater than annual U.S. heroin consumption.

**Table 3. Worldwide Opium Cultivation**

| | 1992 | | | 1991 | | |
|---|---|---|---|---|---|---|
| | Hectares | | | Hectares | | |
| Country | Cultivated | Eradicated | Net | Cultivated | Eradicated | Net |
| Afghanistan | 19,470 | 0 | 19,470 | 17,190 | 0 | 17,190 |
| Iran | na | na | na | na | na | na |
| Pakistan | 8,920 | 750 | 8,170 | 8,645 | 440 | 8,205 |
| Total SW Asia | 28,390 | 750 | 27,640 | 25,835 | 440 | 25,395 |
| Burma | 154,925 | 1,215 | 153,710 | 161,102 | 1,102 | 160,000 |
| Laos | 25,610 | 0 | 25,610 | 29,625 | 0 | 29,625 |
| Thailand | 2,050 | 0 | 2,050 | 4,200 | 1,200 | 3,000 |
| Total SE Asia | 182,585 | 1,215 | 181,370 | 194,927 | 2,302 | 192,625 |
| Colombia | 32,715 | 12,715 | 20,000 | 2,316 | 1,156 | 1,160 |
| Lebanon | na | 0 | na | 3,400 | 0 | 3,400 |
| Guatemala | 1,200 | 470 | 730 | 1,721 | 576 | 1,145 |
| Mexico | 10,170 | 6,860 | 3,310 | 10,310 | 6,545 | 3,765 |
| Total Above | 44,085 | 20,045 | 24,040 | 17,747 | 8,277 | 9,470 |
| Total | 255,060 | 22,010 | 233,050 | 238,509 | 11,019 | 227,490 |

*Source: International Narcotics Strategy Control Report, 1993*

## Arrests

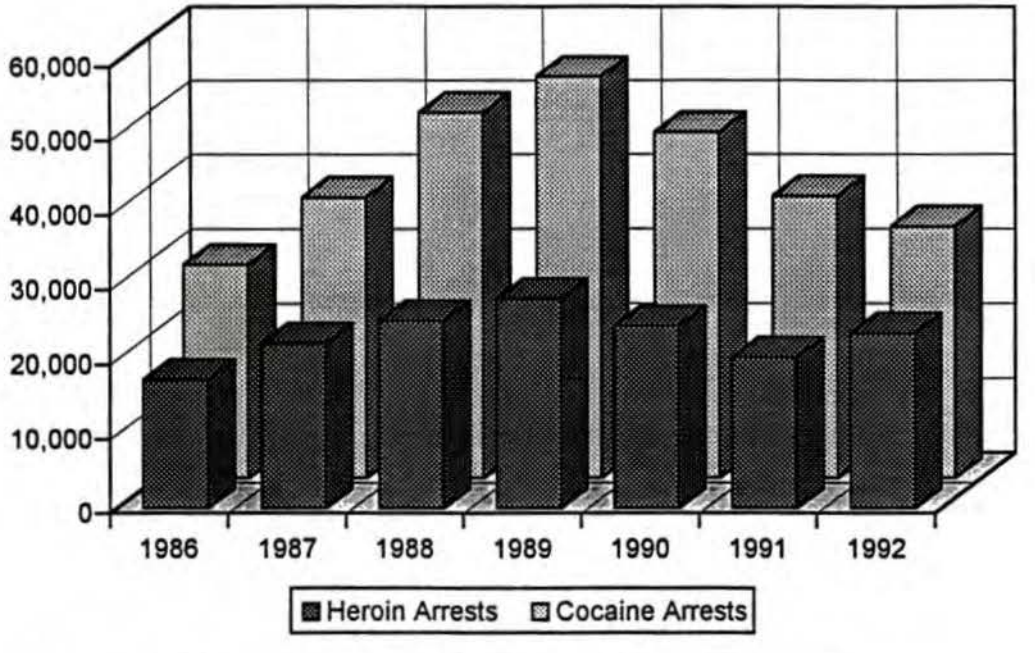
Figures on drug-related arrests are commonly cited as evidence of trends in drug trafficking. However, there are several difficulties with using arrest data as an indicator of drug trafficking, especially in the case of heroin. First, the Federal Bureau of Investigation's Uniform Crime Reports (UCR),

the principal source of nationwide drug arrest data, did not, until quite recently, distinguish between cocaine and heroin arrests. Since cocaine arrests have outpaced heroin arrests for a number of years, UCR data cannot be used as a source of heroin arrest figures.

Many major cities keep and disseminate data on heroin arrests. The problem is that heroin arrests, like all drug arrests, are as much a function of police policy as drug selling activity. As any major-city narcotics officer will acknowledge, there is no shortage of suspects for drug arrests. This suggests that the fraction of a city's drug arrests that are heroin-related might often be a better indicator than the absolute number. Yet this too is a problematic measure.

Consider the data in Figure 5, which show heroin and cocaine arrests in New York City from 1986-1992. As suggested by the graph, heroin arrests represented a greater share of drug-related arrests in 1992 than in 1986. But does this indicate an increase in heroin dealing or a decrease in cocaine dealing? Perhaps both heroin and cocaine dealing declined, but cocaine dealing by relatively more? Or do the data merely reveal a change in emphasis—away from cocaine and toward heroin—on the part of the New York City Police

**Figure 5. Heroin and Cocaine Arrests in New York City**




*Source: New York State Office of Alcoholism and Substance Services*

Department?

Given these uncertainties, it seems unlikely that heroin arrest data, by itself, can tell us much about heroin dealing activity. The data can, however, provide a small measure of confirmation (or refutation) when set against other evidence, including the perceptions of the police officers whose work generates the data in the first place.

In the case of New York City, it is unclear whether arrest data corroborate more than they contradict the accounts of police officers and others who report increased retail heroin dealing. On the one hand, heroin arrests were fewer in 1992 than in 1988, 1989, or 1990. On the other hand, total drug arrests—defined here as heroin plus cocaine—declined even more sharply, falling by 30 percent from 1989 to 1992, as the Police Department deemphasized retail drug arrests. During this period, heroin arrests fell by 16 percent, while cocaine arrests dropped off by 37 percent.

## Heroin-Related Emergency Room Mentions

Traditionally, heroin-related emergency room mentions have been the most important and reliable indicator of heroin use. To be sure, the data have never been a perfect measure; by their nature, such statistics quantify extreme levels of abuse or adverse reactions to particularly strong, large, or adulterated doses of heroin, and not ordinary consumption. Still, emergency room mentions provided a better gauge of use than alternative measures like population surveys (which tend to overlook heavy users).

The principal source of emergency room data has been the Drug Abuse Warning Network (DAWN), until recently managed by the National Institute on Drug Abuse (NIDA), but now under the auspices of the Substance Abuse and Mental Health Services Administration (SAMHSA).

DAWN may still be the most reliable indicator of heroin consumption by chronic heavy users, but there are a number of caveats that have developed in the last few years. There are now several distinct problems in using DAWN data to assess recent trends in heroin use in the U.S.

### Changes in Sampling and Weighting Procedures

When NIDA assumed responsibility for DAWN in 1980, it was recognized that the sample of DAWN emergency rooms should be restructured. At the time, participating emergency rooms were not selected in a proper probabilistic fashion; as a result, DAWN data was not suitable for calculating unbiased estimates of the total number of drug-abuse-related hospital emergency room

visits. NIDA immediately began designing and planning a proper probability sample, which it started to implement in 1986, and completed in 1990.

Prior to 1989, published DAWN data report unweighted numbers of drug-abuse-related emergency room visits. In other words, the data were not adjusted to account for demographic and geographic biases in the sample of participating emergency rooms. The published 1989 DAWN data are also unweighted, but some basic tabulations of weighted numbers are provided in an appendix. From 1990 on, published DAWN data are based on tabulations of properly weighted drug-abuse-related emergency room visits. The unweighted data are not published, earlier data have not been recalculated, and the weighting formulas are not provided. Thus there is a basic incompatibility between the unweighted DAWN data which are available in published tabulations for 1989 and previous years and the weighted data which are available in from 1990 onwards.

Moreover, there is reason to suspect—at least in the case of heroin, if not with other drugs as well—that the adjustments in sampling and weighting procedures produced a sharp increase in overall DAWN estimates. Consider the first section of Table 4 below, which shows heroin-related emergency room mentions for 1983 to 1991. Note that there was a 65 percent jump in mentions from 1989 to 1990, precisely when the data changes from unweighted to weighted estimates.

It is possible to use published DAWN data to examine trends in drug abuse up to 1989, while recognizing that the use of unweighted data may compromise the findings in a minor fashion. It is also possible to use published DAWN data to examine trends in drug abuse from 1990 onwards. However, published DAWN data from 1989 and before are not compatible with published DAWN data from after 1989. There is, in effect, a hiatus in DAWN data that makes it impossible to calculate changes in patterns of drug abuse between 1989 and 1990.

A further problem is that NIDA did not finalize the current DAWN emergency room sample immediately. Some emergency rooms which participated in early DAWN samples, but not in the final probabilistic sample, were retained in the DAWN sample until 1988, 1989, or even 1990. Thus DAWN data from these years do not form a completely consistent series. This may be a particular problem in using DAWN data to study trends in heroin abuse, since DAWN cities which experienced major changes in the numbers of DAWN sample emergency rooms included Boston, Chicago, New York, and Philadelphia. According to other information, these are among the cities showing upsurges in heron abuse during this period.

## Table 4. DAWN Emergency Room Mentions for Heroin and Cocaine

| | Heroin | | | Cocaine | | |
|---|---|---|---|---|---|---|
| | | Change | | | Change | |
| Year | Number | Absolute | Percent | Number | Absolute | Percent |
| 1983 | 12,663 | | | 7,194 | | |
| 1984 | 13,355 | 692 | 5% | 10,996 | 3,802 | 53% |
| 1985 | 14,696 | 1,341 | 10% | 13,501 | 2,505 | 23% |
| 1986 | 15,832 | 1,136 | 8% | 24,847 | 11,346 | 84% |
| 1987 | 18,566 | 2,734 | 17% | 46,331 | 21,484 | 86% |
| 1988 | 20,599 | 2,033 | 11% | 62,141 | 15,810 | 34% |
| 1989 | 20,566 | -33 | 0% | 61,665 | -476 | -1% |
| 1990 | 33,884 | 13,318 | 65% | 80,355 | 18,690 | 30% |
| 1991 | 36,576 | 2,692 | 8% | 102,727 | 22,372 | 28% |

| | Heroin/No Cocaine | | | Cocaine/No Heroin | | |
|---|---|---|---|---|---|---|
| | | Change | | | Change | |
| Year | Number | Absolute | Percent | Number | Absolute | Percent |
| 1983 | 10,725 | | | 5,256 | | |
| 1984 | 10,709 | -16 | 0% | 8,350 | 3,094 | 59% |
| 1985 | 11,754 | 1,045 | 10% | 10,559 | 2,209 | 26% |
| 1986 | 12,044 | 290 | 2% | 21,059 | 10,500 | 99% |
| 1987 | 12,102 | 58 | 0% | 39,867 | 18,808 | 89% |
| 1988 | 12,851 | 749 | 6% | 54,393 | 14,526 | 36% |
| 1989 | 13,183 | 332 | 3% | 54,282 | -111 | 0% |
| 1990 | 23,957 | 10,774 | 82% | 70,428 | 16,146 | 30% |
| 1991 | 23,487 | -470 | -2% | 89,638 | 19,210 | 27% |

| | Heroin and Cocaine | | | Heroin and/or Cocaine | | |
|---|---|---|---|---|---|---|
| | | Change | | | Change | |
| Year | Number | Absolute | Percent | Number | Absolute | Percent |
| 1983 | 1,938 | | | 17,919 | | |
| 1984 | 2,646 | 708 | 37% | 21,705 | 3,786 | 21% |
| 1985 | 2,942 | 296 | 11% | 25,255 | 3,550 | 16% |
| 1986 | 3,788 | 846 | 29% | 36,891 | 11,636 | 46% |
| 1987 | 6,464 | 2,676 | 71% | 58,433 | 21,542 | 58% |
| 1988 | 7,748 | 1,284 | 20% | 74,992 | 16,559 | 28% |
| 1989 | 7,383 | -365 | -5% | 74,848 | -144 | 0% |
| 1990 | 9,927 | 2,544 | 34% | 104,312 | 29,464 | 39% |
| 1991 | 13,089 | 3,162 | 32% | 126,214 | 21,902 | 21% |

*Source: Drug Abuse Warning Network (DAWN)*

### Underreporting of Episodes

In theory, DAWN is supposed to record all drug-related admissions to participating hospital emergency rooms. In practice, underreporting is inevitable.

Whether an admission is drug-related can be determined in one of three ways: (1) a patient's self-report of drug abuse; (2) a doctor's recorded suspicion of drug abuse; (3) toxicological reports. In the absence of a notation on the medical record indicating one of these, the DAWN reporter will not record a case for inclusion in the DAWN system.

Toxicology reports are particularly valuable in determining which, if any, drugs are involved in an emergency room visit. Yet the use of a toxicological report in deciding whether a visit is DAWN eligible or not seems to be the exception rather than the rule. Something less than fifty percent of all major trauma patients in a typical hospital receive a complete toxicology screen involving both urine and blood screenings. The proportions are probably much lower for emergency room visits of a less serious nature. Furthermore, toxicological reports are typically not added to emergency room records until several days after the visit, when the medical record may have already been coded into the DAWN system.

Another problem is that doctors are often under considerable pressure in treating emergency room visits and are unlikely to record drug abuse on the medical record, even when they observe it, unless they believe such abuse has medical significance. It is also likely that in many emergency room visits patients are less than forthcoming about the role drug-abuse may have played in the visit. For all these reasons, researchers agree that DAWN tends to underestimate the extent of drug-related emergency room visits.

### Recent Developments in Heroin Use

There are at least three recent developments in heroin use that may have weakened the traditional connection between heroin use and heroin-related emergency room visits. One is unprecedentedly high purity levels. Another is the growth of snorting, and to a lesser extent smoking, in lieu of injection. A third is the rise in combination drug use, particularly heroin mixed with cocaine.

At first glance, one might expect high purity heroin to result in more overdoses. This would indeed be the case if heroin users were suddenly exposed to high purity heroin for which they had not yet developed tolerance. Once users have developed such a tolerance, however, high purity levels will tend to reduce overdoses. For a user accustomed to 10 percent pure heroin, a shot of 40 percent pure drug represents a four-fold increase over his customary

dosage. But if the same user is regularly ingesting 70 percent pure heroin, the potential for a "hot shot" is much smaller. Another consideration is that many apparent heroin overdoses in fact come from adverse reactions to the adulterants used to dilute the drug, and not from a bad response to the heroin itself. On average, higher purity heroin has fewer adulterants.

The widespread use of snorting as a mode of administration will also tend to reduce overdoses. For one thing, many of the more dangerous pathologies associated with heroin use in the past are actually a function of the injection process itself. More importantly, it is simply quite difficult to achieve dangerous levels of opiate concentration in blood plasma through snorting. Furthermore, even if heroin snorting does lead to an emergency room visit, the well-known indications which in the past have led doctors to conclude that a person is abusing heroin—track marks, injection induced infections, lymphedema ("puffy" hands), etc.—are unlikely to be present among snorters (or smokers).

Finally, the use of heroin and cocaine in conjunction may also reduce some of the pathological effects of heroin, effects which might otherwise lead to an emergency room visit. One physician interviewed for this report suggested that it may be easier to overdose on heroin alone than on heroin combined with cocaine. He argued that the central nervous system (CNS) stimulation which cocaine produces may counteract the CNS depression and cardiac or pulmonary failure which is a typical cause of heroin overdose. Another doctor largely agreed with this assessment, stressing that respiratory depression is the most common cause of death in acute opioid overdose, and that cocaine could partially offset this effect. Other physicians doubted these analyses, pointing out that although cocaine and heroin do have opposing effects on the central nervous system, they have different mechanisms of action—which are as likely to compound as to offset one another.[16]

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[16] Cocaine blocks the neuronal re-uptake of norepinephrine, serotonin, and dopamine by the presynaptic nerve fibers. Heroin interacts (as an agonist) mainly with mu ($\mu$) opioid receptors, but also with kappa ($\kappa$) and sigma ($\sigma$) receptors. See Richard A. Harvey, Pamela C. Champe, Mary J Mycek, Sheldon B. Gertner, and Maria Menna Perper, *Pharmacology* (Philadephia, J. B. Lippincott, 1992), 104, 134; J. Murdoch Ritchie and Nicholas M. Greene, "Local Anesthetics," in *Goodman and Gilman's The Pharmacological Basis of Therapeutics*, eds. Alfred Goodman Gilman, Theodore W. Rail, Alan S. Nies, and Palmer Taylor, 8th ed. (New York: Pergamon Press, 1990), 311-31; Jerome H. Jaffe and William R. Martin, "Opioid Analgesics and Antagonists," in *Goodman and Gilman's*, 485-521; Jerome H. Jaffe, "Drug Addiction and Drug Abuse," in *Goodman and Gilman's*, 522-73.

## Implications of DAWN Data

Because of the limitations of the DAWN system, DAWN data cannot provide a definitive or even clear answer as to whether heroin abuse has been rising recently in the United States. The number of persons in DAWN who are abusing heroin appears to have increased at an annual rate which has fluctuated around ten percent from 1983 to 1991 and may have been increasing more recently. But variations in the DAWN sample of emergency rooms, which have been described above, make it impossible to draw any firm conclusions from these increases.[17] Furthermore, to put these apparent increases in heroin abuse in perspective, during this same period the number of persons in the DAWN sample abusing cocaine has risen at an annual rate that has never fallen much below thirty percent.

As shown in Table 4, between 1983 and 1989 the number of heroin-related emergency room mention in DAWN increased from 12,663 to 20,566. A change in the DAWN sample is at least partly responsible for the increase in DAWN heroin abusers from 20,566 to 33,884 between 1989 and 1990. It is impossible to determine how much of this increase reflects a real increase in heroin abuse and is not an artifact of changes in the DAWN sample and weighting procedures. Between 1990 and 1991, the number of heroin-related emergency room visits rose by eight percent, from 33,884 to 36,576. The most recent DAWN data show a continuing, though not very rapid, increase; there were 36,600 mentions for the first three quarters of 1992, compared to 33,900 mentions for the same period of 1991.[18]

Interestingly, although DAWN data cannot definitively tell us whether heroin abuse has increased in the last several years, the data do suggest that much of the heroin abuse involves the increasing use of heroin in conjunction with cocaine. This in turn provides confirmatory evidence of the common belief among police, drug treatment personnel, and others familiar with local drug markets, that persons who are already abusing cocaine have increas-

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[17] Another problem is that published DAWN reports do not allow one to reliably examine trends in the ages of those entering in emergency rooms for treatment of heroin-related problems. An important sign of new heroin users would be an increase in the number of younger persons showing up in DAWN records. However, DAWN reports have not used the same age categories over time, making comparisons difficult. Moreover, the new sample and weighting procedures appear to have increased representation of younger patients. See James D. Colliver, "Characteristics and Implications of the New DAWN Emergency Room Sample," *CEWG*, June 1991, 411.

[18] Substance Abuse and Mental Health Services Administration, *Preliminary Estimates from the Drug Abuse Warning Network: Third Quarter 1992 Estimates of Drug-Related Emergency Room Episodes* (Washington, D.C.: U.S. Department of Health and Human Services, April 1993). This change is not particularly significant in statistical terms ($p = 0.160$).

ingly begun to use heroin to take the "edge" off cocaine and reduce the effects of coming down from a cocaine "high."

Table 4 shows drug-related emergency room visits for various combinations of heroin and cocaine. Note that heroin-only overdoses (listed as "Heroin/No Cocaine") have consistently shown smaller rates of increase than heroin overdoses overall. Also note that the sharpest increases in heroin overdoses occur in the "Heroin/Cocaine" combination category. Indeed, according to the data, most of the increase in the number of heroin overdoses has come from increases in combination use. This at least suggests that cocaine users who also begin using heroin may account for much of the increase in heroin abuse within the DAWN sample during this period.

In summary, DAWN provides uncertain evidence that heroin abuse has increased in the United States; DAWN provides stronger support for the hypothesis that heroin abuse is increasing among those who are already abusing cocaine.

## Drug Testing Among Arrestees

The Drug Use Forecasting Program (DUF), administered by the National Institute of Justice, conducts drug testing and interviews of arrestees in twenty-four cities. Tables 5 and 6 below show the percentage of male and female booked arrestees that tested positive for opiates from 1987 to 1992.

**Table 5. Opiate Use by Male Booked Arrestees (% testing positive)**

| City | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 |
|---|---|---|---|---|---|---|
| Atlanta | - | - | - | 4 | 3 | 4 |
| Birmingham | - | 6 | 5 | 5 | 5 | 3 |
| Chicago | 14 | 18 | 27 | 27 | 21 | 19 |
| Cleveland | - | 4 | 3 | 3 | 3 | 3 |
| Dallas | - | 6 | 8 | 5 | 4 | 4 |
| Denver | - | - | - | 2 | 2 | 2 |
| Detroit | 12 | 12 | 8 | 8 | 8 | 8 |
| Ft. Lauderdale | 2 | 5 | 3 | 1 | 1 | 1 |
| Houston | 8 | 4 | 4 | 6 | 3 | 3 |
| Indianapolis | - | 4 | 3 | 4 | 3 | 4 |
| Kansas City | - | 2 | 2 | 2 | 1 | 2 |
| Los Angeles | 15 | 13 | 13 | 11 | 10 | 10 |
| Manhattan | 23 | 24 | 18 | 17 | 14 | 18 |
| Miami | - | 1 | 2 | - | 2 | 2 |
| New Orleans | 5 | 6 | 6 | 5 | 4 | 4 |
| Omaha | - | 1 | - | 2 | 2 | 2 |
| Philadelphia | - | 11 | 10 | 8 | 11 | 12 |
| Phoenix | 6 | 7 | 8 | 6 | 5 | 5 |
| Portland | 14 | 13 | 14 | 11 | 9 | 11 |
| St. Louis | - | 6 | 7 | 6 | 6 | 7 |
| San Antonio | - | 18 | 15 | 17 | 16 | 15 |
| San Diego | 20 | 21 | 22 | 19 | 17 | 16 |
| San Jose | - | - | 7 | 7 | 8 | 4 |
| Washington, D.C. | - | - | 12 | 13 | 10 | 11 |

*Source: Drug Use Forecasting Program*

**Table 6. Opiate Use by Female Booked Arrestees (% testing positive)**

| City | 1987 | 1988 | 1989 | 1990 | 1991 | 1992 |
|---|---|---|---|---|---|---|
| Atlanta | - | - | - | 6 | 4 | 5 |
| Birmingham | - | 14 | 5 | 11 | 11 | 4 |
| Chicago | - | - | - | - | - | - |
| Cleveland | - | - | - | 5 | 6 | 5 |
| Dallas | - | 9 | 7 | 10 | 9 | 8 |
| Denver | - | - | - | 6 | 2 | 5 |
| Detroit | - | 20 | - | 16 | 11 | 15 |
| Ft. Lauderdale | - | - | 2 | 2 | 4 | 3 |
| Houston | - | - | 8 | 8 | 4 | 4 |
| Indianapolis | - | - | 5 | 7 | 11 | 7 |
| Kansas City | - | 6 | 5 | 3 | 4 | 3 |
| Los Angeles | - | 22 | 19 | 18 | 18 | 13 |
| Manhattan | - | 26 | 19 | 24 | 21 | 24 |
| Miami | - | - | - | - | - | - |
| New Orleans | - | 7 | 6 | 10 | 7 | 6 |
| Omaha | - | - | - | - | - | - |
| Philadelphia | - | 18 | 15 | 11 | 9 | 11 |
| Phoenix | - | 12 | 15 | 15 | 17 | 15 |
| Portland | - | 25 | 26 | 21 | 17 | 22 |
| St. Louis | - | 7 | 7 | 8 | 7 | 7 |
| San Antonio | - | 20 | 20 | 20 | 21 | 14 |
| San Diego | - | 21 | 19 | 22 | 21 | 17 |
| San Jose | - | - | 9 | 12 | 7 | 9 |
| Washington, D.C. | - | - | 25 | 19 | 16 | 19 |

*Source: Drug Use Forecasting Program*

It is evident that DUF shows no clear changes in heroin use. However, changes in heroin use might not necessarily be reflected in DUF. For one thing, as shown in Table 1, the price of heroin has been declining sharply. Because it may have become cheaper for heroin users to support their habits, they may in turn be engaging less in crime. (To be sure, there can be countering effects as well. Lower prices may encourage larger habit sizes and new users, partly or completely offsetting the beneficial effects of a drop in prices.)

More important, however, are the factors of crime and arrest rates among different classes of arrestees and drug users. Not all heroin users are criminally active, and most arrestees are not heroin users. Basically, the percent-

age of arrestees who test positive for opiates is dependent on five numbers: the rates of crime and arrest among heroin users, the rates of crime and arrest among non-heroin users (that is, the crime and arrest rates among the vast majority of the population that does not use heroin), and the proportion of the population that uses heroin.[19]

Particularly important to consider here is the factor of cocaine use. For even if heroin use rose over the last five or six years, it is likely that for much of this period cocaine use grew at a faster rate. If this is so, then DUF figures could easily show a decline in the *percentage* of arrestees testing positive for opiates, despite an increase in opiate use.

DUF data is not without value, however. For one thing, it can reveal important demographic information about the population of criminally active heroin users in a city. Figure 6 below shows the age distribution of DUF opiate positives for New York and Chicago, the two cities with the largest samples of opiate positives. Two important pieces of information stand out. First, the population of criminally active opiate users is, on average, older in New York than in Chicago. Second, the New York population is more clearly aging. In New York, the younger age groups show decreasing representation, while the older age groups account for more. By comparison, the picture in Chicago is mixed. Since new heroin users are typically younger than established ones, and since without an influx of new users the existing population of heroin users will age, DUF data for Chicago is more consistent with reports of new, criminally active, heroin users.

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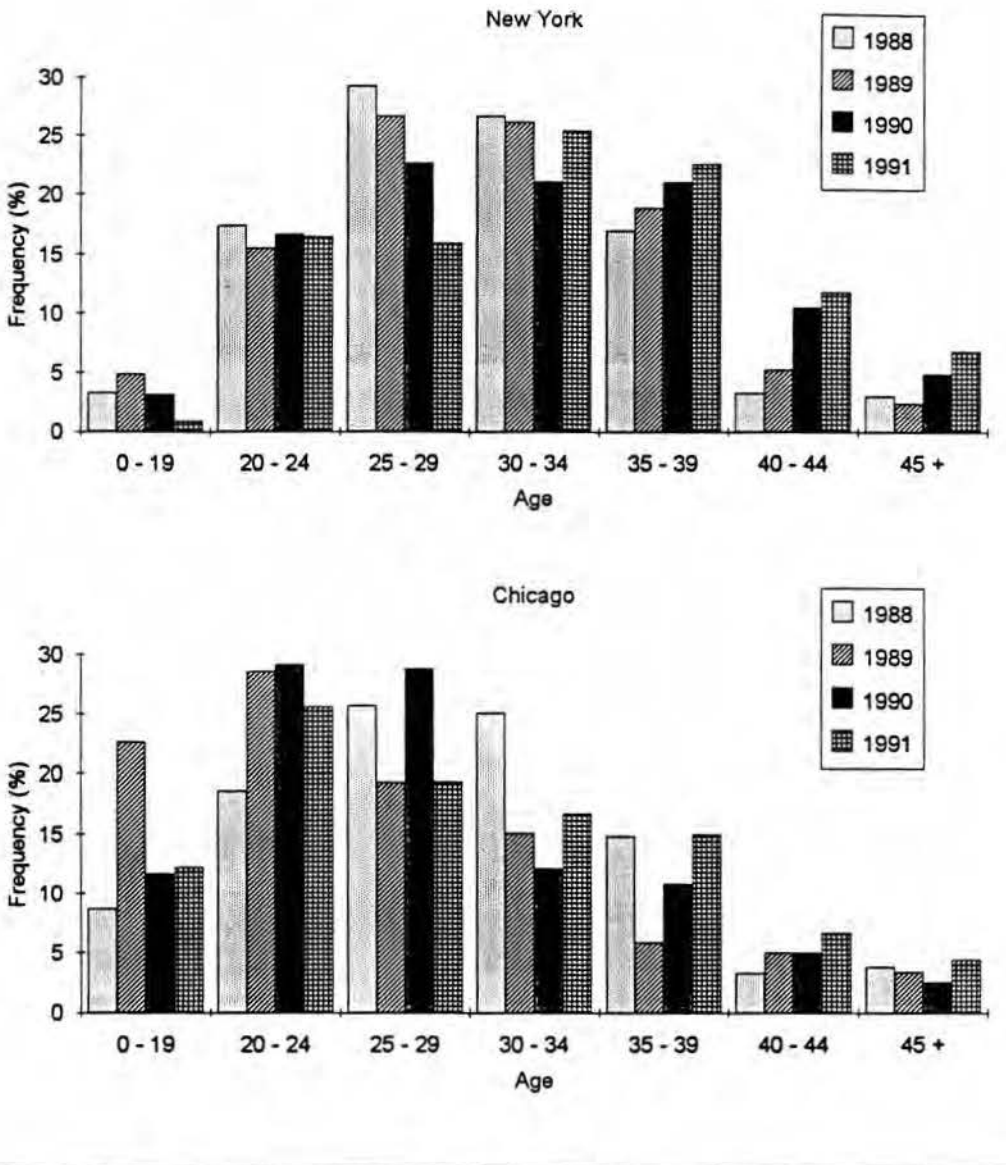
[19] Although a number of simplifying assumptions are implicit, this can be expressed mathematically as follows:

$Y$ = total population
$Y_O$ = total population of opiate users
$Y_N = Y - Y_O$ = total population of non-opiate users
$\lambda_O$ = crime rate among opiate users
$\lambda_N$ = crime rate among non-opiate users
$q_O$ = probability of arrest per crime among opiate users
$q_N$ = probability of arrest per crime among non-opiate users
$P_+$ = probability that an arrestee tests positive for opiate use

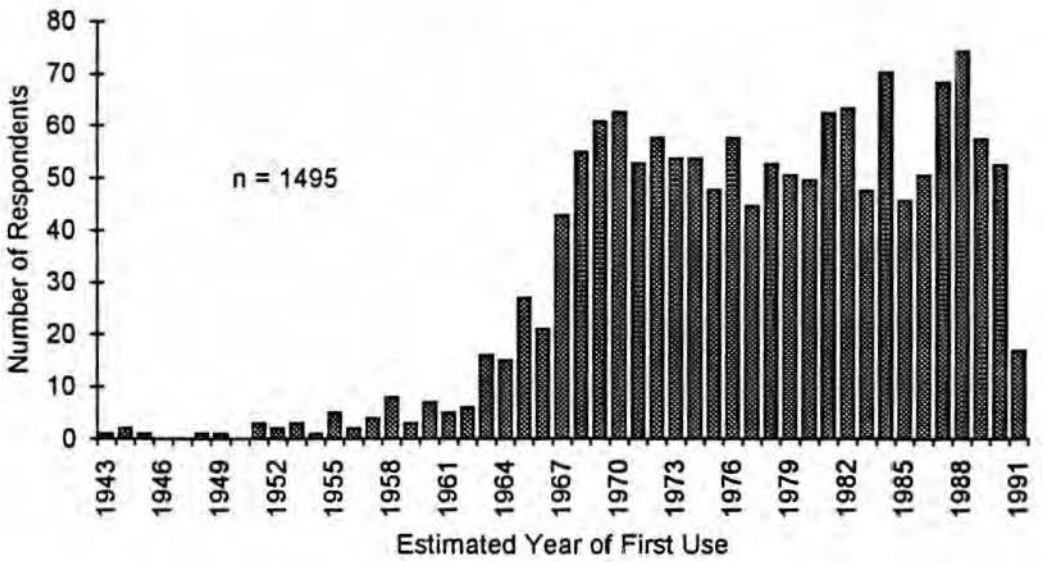
$$P_+ = \frac{Y_O \lambda_O q_O}{Y_N \lambda_N q_N}$$

**Figure 6. Age Distribution of DUF Opiate Positives**




DUF respondents are asked a series of questions about their drug use history, including the age at which they first tried heroin. This question is particularly important; by comparing the answers to age at arrest, one can estimate a distribution of year of first use among DUF opiate positives. Such a distribution (for 1991) is shown in Figure 7 below.

**Figure 7. Year of First Use Among 1991 DUF Opiate Positives**




According to the graph, year of first heroin use is fairly evenly distributed across the past twenty years. Although this does not show any clear surge in recent dates of first use, it does illustrate that heroin initiation did not end in the 1970s. A number of DEA agents interviewed for this report—especially those who had worked heroin cases twenty or twenty-five years ago— suggested that, contrary to public perception, heroin use did not decline during the 1980s. "Heroin never went away; cocaine diverted our attention." The data presented in Figure 7 lend some weight to this argument.

DUF also offers a glimpse of the remarkable extent of combination drug use, at least among arrested heroin users. Table 7 below shows, on a city-by-city basis, the percentage of those in the DUF sample testing positive for opiates that also tested positive for at least one other drug.

**Table 7. Percentage of Opiate Positives Testing Positive for Other Drugs**

| City | 1988 | 1989 | 1990 | 1991 |
|---|---|---|---|---|
| Birmingham | 85.2 (27) | 89.7 (29) | 77.9 (68) | 80.2 (81) |
| Chicago | 96.2 (183) | 95.8 (119) | 90.0 (241) | 90.6 (180) |
| Cleveland | 77.8 (9) | 71.4 (21) | 72.7 (33) | 88.1 (42) |
| Dallas | 93.0 (71) | 86.6 (82) | 90.3 (93) | 90.5 (74) |
| Denver | N/A | N/A | 76.6 (47) | 82.6 (23) |
| Detroit | 83.0 (88) | 85.5 (69) | 80.2 (126) | 79.8 (109) |
| Ft. Lauderdale | 100.0 (9) | 91.7 (12) | 80.0 (20) | 76.9 (26) |
| Houston | 76.5 (17) | 82.9 (35) | 88.9 (90) | 88.0 (50) |
| Indianapolis | 75.0 (8) | 71.4 (28) | 68.5 (54) | 65.0 (60) |
| Kansas City | 85.7 (7) | 82.8 (29) | 67.9 (28) | 83.3 (24) |
| Los Angeles | 86.8 (288) | 87.8 (82) | 85.4 (246) | 86.7 (240) |
| Miami | 100.0 (2) | 100.0 (4) | | 93.8 (16) |
| New Orleans | 87.8 (74) | 92.1 (63) | 91.9 (86) | 81.5 (65) |
| New York | 98.1 (270) | 96.6 (206) | 93.1 (247) | 91.0 (221) |
| Omaha | 100.0 (1) | N/A | 36.4 (11) | 61.5 (13) |
| Philadelphia | 96.7 (92) | 93.7 (126) | 91.8 (147) | 93.7 (158) |
| Phoenix | 76.2 (105) | 86.1 (72) | 73.7 (133) | 79.9 (149) |
| Portland | 85.3 (217) | 84.7 (163) | 85.0 (160) | 80.8 (125) |
| St. Louis | 95.0 (20) | 89.9 (69) | 78.0 (91) | 89.9 (79) |
| San Antonio | 78.0 (59) | 84.5 (148) | 76.6 (205) | 79.1 (163) |
| San Antonio | N/A | N/A | 91.3 (23) | 88.3 (60) |
| San Diego | 90.6 (244) | 92.5 (214) | 90.9 (274) | 89.7 (242) |
| San Jose | N/A | 78.8 (33) | 72.7 (121) | 82.0 (100) |
| Washington, DC | N/A | 92.6 (136) | 86.9 (206) | 91.4 (152) |

*Source: Drug Use Forecasting Program*

In many cities, it would appear that over 90 percent of criminally active heroin users are regularly consuming other drugs as well. (Not surprisingly, cocaine is the most common additional drug: in 1991, 72 percent of those who tested positive for opiates also tested positive for cocaine.) Interestingly, the percentages appear to be declining. Most likely, this testifies to the widespread and easy availability of high purity heroin. When heroin is scarce or of poor quality, heroin addicts more often turn to other drugs, either as a substitute or a supplement.

On the surface, DUF data seem to indicate a decline in polydrug use, contradicting the trend observed in heroin-related emergency room visits. How-

ever, a closer look suggests that DAWN and DUF data may not be in conflict here. For one thing, there is evidence that in some cities the apparent decline in polydrug use within DUF data primarily involves drugs other than cocaine. Table 8 shows a breakdown of positives opiate tests for New York and Chicago. In each case, despite an increase in the percentage testing positive for opiates only, there was also a rise in the percentage testing positive for cocaine.

**Table 8. Polydrug Use Among DUF Opiate Positives**

| | 1988 | 1989 | 1990 | 1991 |
|---|---|---|---|---|
| New York | | | | |
| Opiates only | 1.9% | 3.4% | 6.9% | 9.0% |
| Opiates and Other (No Cocaine) | 13.0% | 3.9% | 4.5% | 5.0% |
| Opiates and Other (Including Cocaine) | 85.2% | 92.7% | 88.7% | 86.0% |
| Chicago | | | | |
| Opiates only | 3.8% | 4.2% | 10.0% | 9.4% |
| Opiates and Other (No Cocaine) | 16.4% | 15.1% | 16.6% | 6.7% |
| Opiates and Other (Including Cocaine) | 79.8% | 80.7% | 73.4% | 83.9% |

More generally, because DUF reports percentages, the data can conceal changes in absolute numbers that go in an apparently different direction. For the purposes of illustration, imagine that a particular city has 100,000 criminally active heroin users, of which nine out of ten use cocaine as a supplement. DUF data for this city would indicate that 90 percent of heroin users also consume cocaine (90,000 out of 100,000). Now suppose that the quality of heroin improves dramatically, enticing 50,000 criminally active crack addicts to begin combination crack/heroin use. The purer heroin also prompts 20,000 of the heroin addicts who were previously using cocaine to stick to heroin alone. Despite the overall increase in heroin use, and the overall increase in combination heroin/cocaine use, DUF data will show a decline to 80 percent in the percentage of heroin users who use cocaine (120,000 out of 150,000).

## Drug Treatment

According to data compiled by the Substance Abuse and Mental Health Services Administration (SAMHSA) and the National Institute on Drug Abuse

(NIDA), there has been, since the mid-1980s, a substantial increase in reported admissions to treatment programs where heroin is the primary drug of abuse. (See Table 9 below; data on cocaine and marijuana/hashish admissions are given for purposes of comparison.)

**Table 9. Client Treatment Admissions by Top Three Primary Drugs of Abuse**

| Fiscal Year | Heroin | Cocaine | Marijuana/Hashish |
|---|---|---|---|
| 1985 | 87,043 | 38,323 | 57,578 |
| 1986 | 82,927 | 55,757 | 68,491 |
| 1987 | 94,299 | 81,356 | 57,473 |
| 1988 | 115,308 | 137,343 | 76,948 |
| 1989 | 122,612 | 206,480 | 95,253 |
| 1990 | 153,852 | 235,202 | 106,885 |
| 1991 | 142,372 | 229,703 | 96,421 |

*Source: SAMHSA, NIDA*

Were these data to reflect an increase in the underlying demand for heroin treatment, they would suggest a notable rise in heroin consumption.[20] However, there are a number of reasons for discounting their significance. For one thing, the data are widely acknowledged to be an unreliable indicator of use. Several problems stand out in this regard: (1) there is no accepted federal standard of what does and does not constitute a treatment program; (2) data are submitted voluntarily by State Alcohol and Drug Abuse Agencies, and include data "*for only those programs which received at least some funds administered by the State Alcohol/Drug Agency*"[21]; (3) since in many areas of the country there is unmet demand for drug treatment—as evidenced by waiting lists for programs—a rise or fall in admissions may denote a change in supply rather than demand.

[20] Aging of the user population can increase the demand for treatment, but probably not by enough to explain the sharp upturn shown in Table 9.

[21] National Institute on Drug Abuse, *State Resources and Services Related to Alcohol and Other Drug Abuse Problems, Fiscal Year 1990* (Wasington, D.C.: U.S. Department of Health and Human Services, 1991), x.

Whether these factors have tainted the data on heroin admissions is not immediately evident, but the figures in Table 9 on marijuana admissions give cause for concern. From 1985 to 1991, reported marijuana admissions increased by 67 percent (by comparison, heroin admissions rose by 64 percent). Yet over this same period, population surveys (the National Household Survey on Drug Abuse, the High School Seniors Survey) indicated significant declines in marijuana use, including frequent use. Since marijuana users are a large, diverse, and for the most part socially functional group, such surveys are generally trusted to reveal major trends in marijuana use. It is therefore hard to believe that there has been a large growth in demand for marijuana treatment. Needless to say, if trends in marijuana treatment admissions conflict sharply with trends in marijuana use, one should be cautious in making any inferences from data on heroin treatment admissions.

The state-by-state data on heroin treatment admissions suggest further caution. Table 10 below provides this data, comparing 1986 and 1991.

## Table 10. Heroin Treatment Admissions in State-Supported Facilities

| State | FY 1986 | FY 1991 | Difference | % Change |
|---|---|---|---|---|
| Alabama | 542 | 48 | -494 | -91% |
| Alaska | 154 | 123 | -31 | -20% |
| Arizona | 1,365 | 1,426 | 61 | 4% |
| Arkansas | 55 | 65 | 10 | 18% |
| California | 14,696 | 49,644 | 34,948 | 238% |
| Colorado | 558 | 1,155 | 597 | 107% |
| Connecticut | 3,483 | 3,648 | 165 | 5% |
| Delaware | 258 | 336 | 78 | 30% |
| District of Col | 2,582 | 2,567 | -15 | -1% |
| Florida | 1,382 | 864 | -518 | -37% |
| Georgia | N/A | N/A | N/A | N/A |
| Guam | N/A | 2 | N/A | N/A |
| Hawaii | 139 | 374 | 235 | 169% |
| Idaho | 51 | 72 | 21 | 41% |
| Illinois | 2,923 | 5,934 | 3,011 | 103% |
| Indiana | 427 | 111 | -316 | -74% |
| Iowa | 83 | 152 | 69 | 83% |
| Kansas | N/A | N/A | N/A | N/A |
| Kentucky | 14 | 270 | 256 | 1829% |
| Louisiana | N/A | 130 | N/A | N/A |
| Maine | N/A | 35 | N/A | N/A |
| Maryland | 5,211 | 7,021 | 1,810 | 35% |
| Massachusetts | 5,104 | 15,938 | 10,834 | 212% |
| Michigan | 3,646 | 4,153 | 507 | 14% |
| Minnesota | 269 | 307 | 38 | 14% |
| Mississippi | 10 | 20 | 10 | 100% |
| Missouri | 713 | 768 | 55 | 8% |
| Montana | 49 | 0 | -49 | -100% |
| Nebraska | 36 | 89 | 53 | 147% |
| Nevada | 497 | 595 | 98 | 20% |
| New Hampshire | 35 | 115 | 80 | 229% |
| New Jersey | 7,812 | 9,107 | 1,295 | 17% |
| New Mexico | 1,039 | 326 | -713 | -69% |
| New York | 16,264 | 15,001 | -1,263 | -8% |
| North Carolina | N/A | 1,076 | N/A | N/A |
| North Dakota | 0 | 0 | 0 | 0% |
| Ohio | 216 | 1,092 | 876 | 406% |
| Oklahoma | 216 | 281 | 65 | 30% |
| Oregon | 1,004 | 2,068 | 1,064 | 106% |
| Pennsylvania | 5,649 | 4,742 | -907 | -16% |
| Puerto Rico | 1,610 | 4,146 | 2,536 | 158% |
| Rhode Island | 377 | 1,714 | 1,337 | 355% |
| South Carolina | 542 | 337 | -205 | -38% |
| South Dakota | 6 | 14 | 8 | 133% |
| Tennessee | 56 | 62 | 6 | 11% |
| Texas | 2,024 | 5,021 | 2,997 | 148% |
| Utah | 368 | 279 | -89 | -24% |
| Vermont | 27 | 91 | 64 | 237% |
| Virgin Islands | 54 | N/A | N/A | N/A |
| Virginia | 2,808 | 3,332 | 524 | 19% |
| Washington | 1,901 | N/A | N/A | N/A |
| West Virginia | 7 | 22 | 15 | 214% |
| Wisconsin | 915 | 500 | -415 | -45% |
| Wyoming | N/A | N/A | N/A | N/A |
| Totals | 87,177 | 145,173 | 57,996 | 67% |

For one thing, the data clearly indicate that the link between demand for treatment and admissions can be weak. Note that for 1991 Massachusetts has more admissions for heroin than New York, despite the fact that New York has at least ten times as many heroin users. The data also show that two of states account for the bulk of the rise in the national data. By itself, California accounts for more than half of the overall rise in admissions; California and Massachusetts together account for more than three-quarters of the increase.

Interviews with state treatment officials in the five states that showed the largest increases (California, Illinois, Maryland, Massachusetts, Texas) suggest that increased federal funding for the treatment of intravenous drug users has played a central role in the rise in admissions. Unsurprisingly, some states (like California and Massachusetts) have done a better job than others (New York, for example) of availing themselves of increased federal resources.

## Population Surveys

Broad population surveys like the National Household Survey on Drug Abuse or the High School Senior Survey cannot provide reliable estimates of overall heroin use. Regular users of heroin are often socially isolated and thus beyond the reach of such surveys. (Specifically, they are typically undercounted both among high school seniors—as opposed to dropouts—and among the Household Survey sample—as opposed to the homeless or imprisoned. They are also presumably less likely than average to agree to an interview and to be forthcoming in their responses.) Consider that of the 32,594 respondents to the 1991 Household Survey, only 22 reported having used heroin in the past month. By comparison, 44 reported having inhaled spray paints in the past 30 days.

However, in principle, a significant increase in middle-class heroin use should register in the Household Survey. This raises some questions, since reports of growing middle-class heroin use have become almost commonplace. Are the reports inaccurate or exaggerated? Or are middle-class heroin users refusing to participate or lying to the Household Survey?

The answers are not clear. It is conceivable, though, that new middle-class heroin use is geographically concentrated in a few areas, and that these new pockets of users have not yet been selected as sampling units by the Household Survey. In any multistage cluster sample, relatively few sampling units are in fact selected. Examining this issue in more detail would require comparing the actual sampling units in the Household Survey with those areas

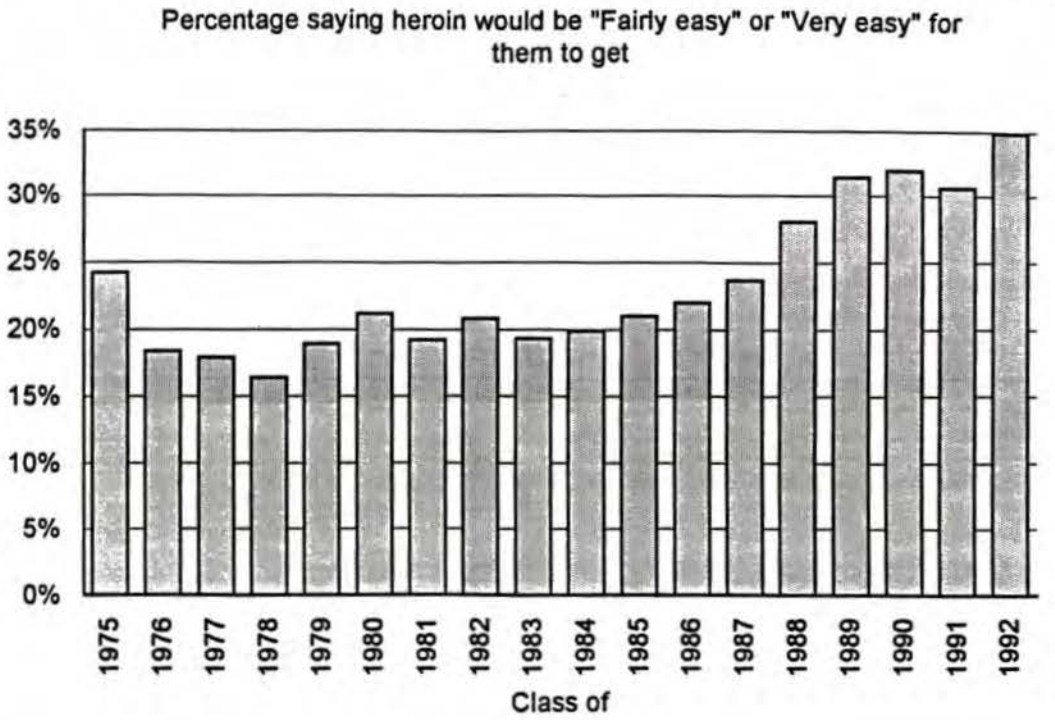
reporting increased middle-class heroin use. Such research is beyond the scope of this study.

### Perceived Availability

Although population surveys cannot provide reliable estimates of heroin use prevalence, they do offer information on perceptions of and attitudes about drug use and its social setting. The High School Senior Survey is most comprehensive on this score; students are asked about the harmfulness of drugs, their personal disapproval of drug use, their attitudes regarding the legality of drug use, the attitudes of parents and friends, their exposure to drug use, the availability of drugs.

In the case of heroin, the responses to most of these questions are not very revealing. Heroin use among students is uncommon, and disapproval of heroin use has always been very high. In the 1992 survey, for example, only 0.3 percent of twelfth graders reported having used heroin in the last 30 days, while 94.9 percent said they disapproved of those "people (who are 18 or older) who try heroin once or twice." What does seem to be worrisome are student perceptions about the availability of heroin. When twelfth graders were asked in 1992, "How difficult do you think it would be for you to get heroin if you wanted some?" fully 34.9 percent said it would be "Fairly easy" or "Very easy" for them to get; in 1983, the figure was 19.3 percent. (Responses to this question from 1975 to 1991 are shown in Figure 8.)

**Figure 8. Trends in Perceived Availability of Heroin, Twelfth Graders**




## Habit Size

As indicated in Table 1, there has been, over the past decade, not only a dramatic fall in the price, but an equally notable rise in the purity of heroin sold in retail markets. In New York City, for example, heroin purity today averages over 60 percent; in 1981, it was roughly 10 percent. And if one looked back another ten years, purity would be even lower, on the order of 3 or 4 percent.

These trends raise an important question about habit sizes, particularly among heavy users, who account for a disproportionate share of total heroin consumption. Are addicts today consuming more heroin, either as a result of lower prices or higher tolerance, or has their use remained steady? The answer has profound implications for any assessment of the current heroin situation. If addicts have significantly increased their habit sizes, then the supply of heroin into the U.S. has almost certainly increased as well.

To look at this issue, we compared the findings of three studies that contain estimates, at different time periods, of heroin consumption among addicts or

daily users. The first, Mark Moore's *Buy and Bust*,[22] reviews several studies of heroin consumption over the period 1965-1972, and based on them develops estimates of consumption for different classes of users. We used Moore's estimates for the category of "addicts." The second study was conducted by Bruce Johnson and his colleagues at the New York State Division of Substance Abuse Services. Reported in their book, *Taking Care of Business*,[23] the study collected data from interviews with user groups in East and Central Harlem from 1980-1982. We used data on the category of "daily users." The final study, conducted by BOTEC Analysis Corporation for ONDCP, consisted of individual interviews and focus groups with 32 heroin addicts in Boston during 1992.[24]

Based on these three studies, we calculated average weekly heroin consumption (in pure milligrams) among addicts or heavy users. As shown in Table 11, the numbers suggest that addicts today are consuming at least twice as much heroin as addicts ten or twenty years ago.[25] And one suspects that if the BOTEC study had surveyed users in New York City (as the other two studies did), where heroin sells for about half its Boston price, the differences might have been even greater.

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[22] Mark H. Moore, *Buy and Bust*, 75-92.

[23] Bruce D. Johnson, Paul J. Goldstein, Edward Preble, James Schmeidler, Douglas S. Lipton, Barry Spunt, Thomas Miller, *Taking Care of Business: The Economics of Crime by Heroin Users* (Lexington, Mass.: Lexington Books, 1985).

[24] Ann Marie Rocheleau and Mark A. R. Kleiman, *Measuring Heroin Availability: A Demonstration*, Report prepared for the Office of National Drug Control Policy (Cambridge, Mass.: BOTEC Analysis Corporation, 1993).

[25] Note that the number of bags consumed weekly is virtually identical in the Moore and BOTEC studies. The difference: the bags today contain approximately twice the amount of pure heroin.

**Table 11. Average Weekly Consumption Among Heroin Addicts**

| | Study | | |
|---|---|---|---|
| | Moore | Johnson, et al. | BOTEC |
| Time period surveyed | 1965-1972 | 1980-1982 | 1992 |
| Daily habits | | | |
| Average expenditures per day | | $36.00 | |
| Price per pure mg. | | $1.17 | |
| Bags purchased each "day on street" | 5.6 | | |
| Fraction consumed each "day on street" | 0.95 | | |
| Fraction of "days on street" | 0.75 | | |
| Weekly habits | | | |
| Mean number of heroin purchases per week | | | 9 |
| Mean number of bags per purchase | | | 3 |
| Implied number of bags per week | 27.93 | | 27 |
| Average bag size (pure mg.) | 10 | | 21 |
| Average weekly heroin consumption (pure mg.) | 279 | 215 | 567 |

*Note: price per mg. = average of 1981, 1982 estimates from Table 1 above.*

Moreover, all of these studies looked at heroin injectors. Many current users, especially in northeastern cities like New York, are ingesting heroin intranasally instead. As a mode of administration, snorting is less efficient than injection—in other words, snorting requires the consumption of more heroin to achieve the same effect. Obviously, this could bring about an increase in habit sizes as well; for users who switch from injection to snorting have to increase their consumption to reach their accustomed levels of intoxication.

Regrettably, no scientific estimates of the relative efficiency of injection and snorting are available; to date, medical researchers have not addressed the question. One expert interviewed for this report, a medical school professor who studies drug abuse, called this oversight "an embarrassment." Ethnographic reports from heroin users confirm that snorting is a considerably less efficient mode of administration, but how much so is not indicated.

It is important to emphasize that the comparison of these three studies does not provide conclusive evidence of an increase in habit sizes. Clearly, more research is warranted. But if the evidence examined here is indicative of trends in habit size, then much more heroin is being imported and consumed, and much more money is being spent on heroin, than is generally believed.

Not long ago, an ONDCP study estimated annual U.S. heroin consumption for 1989 at 12,000 kilos.[26] That study assumed that heavy heroin users consumed about 225 milligrams of pure heroin per week.[27] If the number of heavy users has remained constant since then, the weekly habit size estimated by the BOTEC report (567 milligrams) would imply an annual U.S. heroin consumption of just over 30,000 kilos. At an average price of $0.75 per milligram, this would be a $22.5 billion industry.

## Ethnographic Studies

While the quantitative data presented above inform us about various aspects of heroin distribution and use, they are somewhat limited; they either focus on the availability of heroin, or on indicators of progressive users (those who have been arrested , hospitalized, or have entered treatment). In order to learn more about current patterns heroin use, and to add a qualitative depth to the information culled from data sources, we reviewed recent ethnographic studies of heroin users[28] and also conducted an informal survey of detoxification (detox) center directors.[29]

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[26] Office of National Drug Control Policy, *What America's Users Spend on Illegal Drugs* (Washington, D.C.: June 1991), 15.

[27] The study assumed that heavy heroin users spent about $300 per week to support their habits. It also assumed that a milligram of pure heroin had a retail price of about $1.33. This implies weekly consumption of 225 milligrams.

[28] Ethnographic sources included: "Measuring Heroin Availability: A Demonstration," a 1993 report completed for ONDCP studying the mechanics of heroin purchase in Boston; "Epidemiologic Trends in Drug Abuse," the proceedings from NIDA's December, 1992 Community Epidemiology Work Group; "Heroin Use: A Perspective from the 'Inside,'" a July, 1992 report completed for NIDA summarizing focus group meetings of heroin users in twelve American cities; two additional focus groups of Boston heroin users, one conducted by BOTEC Analysis Corp. and the other by the Massachusetts Department of Public Health and Health and Addictions Research, Inc.; "The Houston New Heroin Users Project: A First Report," September, 1992; and a recent April, 1993 report provided to ONDCP by Abt Associates, Inc. on the results of "Pulse Check Calls" to law enforcement, ethnographers and treatment providers on recent drug use trends.

[29]Five cities—Boston, New York, San Francisco, Chicago and San Antonio—were chosen for the detoxification (detox) center director surveys. With the exception of Boston, which had alternative indicators of high heroin use, the other four cities were chosen because they had high percentages of heroin use among their arrestees (over 20%) as reported by DUF. All detox centers were identified in the five cities through state directories of substance abuse programming. Detox centers were included if they provided detox services to alcohol and drug users, and not just methadone patients. Both residential and out-patient, as well as both medical and social detox centers, were included. Capacity ranged from a four-bed detox to an out-patient detox with a capacity of 1000; the average detox facility in our survey had

## Reported Increase in Use

All of the ethnographic data sources surveyed point to some increase in overall heroin use. However, there is much variation reported in the amount and nature of the increase, especially across regions. In the detox center survey, six out of every seven directors believed that heroin use was on the rise in their city; only a handful believed that use had remained constant. Although a few of them based this belief on the "word on the street," the majority cited data on the number of heroin users who they had admitted to their facilities. Thirty-one (out of 42) directors were able to provide admissions data for the last two years. Of these facilities, two-thirds have experienced an increase in admissions where heroin is the primary drug of choice. Percentage increases ranged from one to 60 percent, with an average rise of 19 percent. These same facilities have also experienced a rise in the share of admissions where heroin in the primary drug, from 41.5 percent two years ago to 49 percent over the past year.

When detox center directors were asked to list the factors they believed responsible for the increase in heroin use, most responses fell into one of four categories: decrease in cost, increase in purity, the desire for heroin either with or instead of cocaine, and widespread availability.

This last factor—easy heroin availability—was noted by many of the users who took part in the ethnographic studies surveyed. Many users were struck by the changes they saw in the heroin scene: dealing is more widespread and open, buyers are more plentiful, and dealers more often use aggression to prey on users. Regarding the openness of heroin dealing, one Boston male commented, "Before, it used to be hidden in the projects or maybe on a back street somewhere, but now they're just right out there in the middle of the strip." Hispanic heroin users in Houston reported the re-emergence of shooting galleries, which five years ago had been non-existent.

## Purity

As mentioned previously, increased purity was seen by many detox center directors as a factor contributing to the increase in heroin use. Of those who felt knowledgeable about heroin purity on the street, most reported an increase. Regional differences were notable here. Purity was clearly up in New York and Boston, but reports were mixed in San Francisco and Chicago.

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capacity to treat 59 patients. In all, 42 interviews were completed with detox center directors or their designees.

Interestingly, heroin users themselves have a very different perspective on purity. Uniformly, according to ethnographic studies (which included focus groups in twelve cities), users report that the quality of heroin available on the street is poor. Commonly, older users made references the 1970s, when they claimed heroin was of good quality.

As evidenced by data from drug laboratories around the country, these observations are demonstrably false, especially in the Northeast. Two factors may help to explain this apparent contradiction. One is higher tolerance levels. Another is that it seems heroin users often judge the quality of heroin by whether it makes them sick. "If it doesn't make me sick," they appear to reason, "it must be weak stuff." The irony is that adverse reactions to heroin are more often related to adulterants than to heroin itself; and, in general, the purer the heroin, the fewer the adulterants.

### What Accounts for Increased Use?

If heroin use is on the increase, who is using more heroin? Are there new users (that is, are there new users in excess of the number which would replace older users who die or quit?), or are existing users consuming more heroin as a result of increased habit size? A number of questions were asked of detox directors concerning these issues. Almost two-thirds of the directors believed there was an increase in new users; the others either did not know or reported that the rate of new use was unchanged. Users considered "new" made up 22 percent of all heroin admissions to the surveyed detox centers during the past year. In terms of regional differences, new users were most prevalent in Boston and New York, less so in Chicago, and least common in San Antonio and San Francisco.

Directors were also asked what percentage of heroin admissions were accounterd for by occasional users, defined as those using irregularly or casually, such as on weekends. More than half reported no casual users, and the mean percentage estimated was less than five percent. As with new users, facilities in New York, Boston, and Chicago reported more casual users than facilities in San Antonio and San Francisco.

### Mode of Administration

Over half of the directors reported that new users usually do not inject, preferring to snort or sometimes smoke heroin. Regional differences showed up here as well. New users in San Francisco and San Antonio are said to inject, while in New York, Boston, and Chicago, snorting and smoking is more typical.

Surveying the ethnographic sources, one finds that injecting is still the predominant route of administration, especially among experienced users. However, both the detox directors and the ethnographic sources report that snorting and smoking are becoming increasingly common. About half of the detox directors reported that they had seen an increase in snorters among the users they admitted to their programs. Regionally, directors in San Francisco and San Antonio reported no changes in route of administration; heroin users were still mostly injecting. By contrast, more than half of the directors in New York and Chicago reported seeing an increase in snorting and, to a lesser extent, smoking.

According to detox directors and heroin users themselves, the increase in snorting is a consequence of several factors. The first factor is simply the increased purity which allows snorting as an alternative to injection. The second factor is the preference for snorting among new users. A number of detox directors and experienced users believed this trend would be short-lived, since new users would eventually switch to injection, either because of their increased tolerance or because of a decrease in purity. As a Baltimore addict put it, "I think a lot of them are starting snorting because, first of all, the stigma, you know what I mean? But once they reach the point, a lot of them say, 'I might as well shoot.'" A third factor contributing to increased snorting is a shift from injecting to snorting by older users who, after years of injecting, are physically unable to continue due to damaged veins. As one Detroit addict described his switch, "I shot so much dope that I wore myself out. I had to go to snorting because I don't have a vein left in my body and I had no other choice. If I wanted to use dope still, I either had to get high quality dope and skin pop it, or snort it."

A final factor leading to snorting is, of course, AIDS, although addicts were very mixed in their discussions about the impact. Some users believed that snorting was simply fashionable and that AIDS was not a factor. As one Patterson, New Jersey addict put it, "I don't think the AIDS virus has anything to do with it; I think they just started because this is how it starts going up and down. ... because they're just starting to get high, they start off sniffing and then mainline. And eventually when they can't feel it sniffing no more, they might go to shooting. I don't think it's the virus or...anything that has to do with AIDS. More people are starting to sniff because more people are getting high." In contrast, others believed that the AIDS epidemic was having a strong impact, and that new users and some older users preferred to snort, rather than inject. As one Chicago addict related, "I know people that quit injecting because of the AIDS scare, they're leaving the needles alone and going to snorting because of the AIDS."

### Habit Size

Questions concerning habit size yielded mixed results. Detox directors in San Francisco and San Antonio were split; half believed heroin users' habits had remained constant, half felt incapable of responding to the question. The three detox directors in Boston were also divided, with one not knowing about habit size, another believing that habit size had increased due to a decrease in price, and third believing habit sizes had remained the same. In New York, half of the directors believed habit sizes had remained constant, while a fourth believed they had increased due to a fall in price, an increase in purity, and greater availability. One third of the directors in New York and Boston reported that due to increased purity, addicts were using fewer bags of heroin than previously. Finally, in Chicago, opinion was evenly split, half believing that habit sizes had increased, half believing they had remained constant. It should be noted, however, that a number of Chicago directors also reported that heroin users were using more bags of heroin due to poor quality.

### New Users: Who Are They?

Ethnographic sources point to at least four types of new heroin users: young users, women, minority users, and middle-class users. New young users, both male and female, tend to live in urban areas and dabble in a number of different drugs, especially crack. Heroin is often viewed as either "just another drug" or as a means of "taking the edge off" of crack or cocaine. A number of treatment providers noted that young crack users, concerned about their weight loss, unable to sleep and feeling edgy from crack, are now using heroin to combat those effects. Some young users evidently see heroin as simply an attractive occasional alternative, or as one Boston police officer put it, "the martini of drugs."

Several ethnographic studies pointed to increasing use of heroin by women, especially in urban areas. Like young users, many women begin using heroin through the crack/poly-drug routes. By the time they become involved with heroin, many have already begun to prostitute themselves to maintain their crack habits. Several detox directors pointed to the desperate conditions that urban mothers find themselves in and suggested that these women often turn to various drugs to escape from the pressures and the realities of life. Several also noted that mothers with young children find it easier to maintain a (relatively mellow) heroin habit than a crack or cocaine addiction. However, a focus group of female heroin users in Boston concluded that heroin use was more degrading for women because of prostitution, and because society looks down on female heroin addicts, especially those who are moth-

ers. No differences were reported in either the heroin purchasing or use behaviors of men and women.

Various ethnographic studies have pointed to race and ethnicity as having a role in the increase in heroin use. From the NIDA focus groups, Beschner and Prenovitz concluded that more Hispanics were using heroin, especially in Seattle, Los Angeles, and Denver. Detox directors in Boston, New York and Chicago point to increased use by either blacks, Hispanics, or both. Similar observations were made by ethnographers and police in these cities. In his study of new heroin users in Houston, Kotarba classified new users according to ethnicity and found four distinct subcultural groups. The first were new Hispanic heroin users who join "a very intricate, supportive and exclusive heroin subculture," one that not only provided heroin, but also the rules surrounding use. New black users were introduced to and became part of one of two different drug subcultures in their community. "The first subculture exists primarily for the support of cocaine and crack-cocaine use ... [where] heroin functions largely to provide variety and change-of-pace to everyday drug activities." The second black subculture was the traditional heroin subculture, "where new members [become] totally committed to and organize their everyday lives around heroin, achieving the traditional identity of 'junkie' or 'dope fiend.'" The fourth group consisted of new white users who were mostly young and were introduced to heroin as part of a symbolic subculture. "This subculture reflects the traditional history of heroin use among artists and musicians and seeks a nostalgic retrieval of the romantic aspects of heroin use." Kotarba's division of new heroin users is informative and could probably serve as a basis for studying new users in other cities.

The final group of new users was labeled by Beschner and Prenovitz as "outsiders." They are people who reportedly drive into the inner-city communities from the suburbs to buy heroin. Referred to as "yuppies" or "rich" by the heroin addicts, detox directors referred to them as "middle-class," "suburban," or "working" people. Observations of heroin-dealing in open market Boston locations confirmed police reports of suburban, middle-class users who would drive into the city early each day to purchase their daily supply of heroin. Experienced Boston users told stories of how they would go to their dealers' homes and be "amazed at who was using"—people who are not usually included in the stereotype of a heroin user. From a research point of view, this last group is the most hidden of the four groups, in that they are less likely to turn up in the criminal justice system or publicly-funded drug treatment facilities. Like other new users, they are less likely to be at a point in their usage career where they can be identified and counted.

## Polydrug Use

Evidence of polydrug use among heroin users was also found in the detox director survey, as well as in other qualitative data sources. Overall, detox directors reported that poly-drug users made up an average of 70 percent of all heroin user admissions; the median was 75 percent. Interestingly, Chicago, San Francisco, and San Antonio had higher levels of polydrug heroin admissions than Boston and New York, where strict heroin users were more common. This might be a function of the higher purity levels found in Boston and New York; perhaps in other cities users have to supplement their heroin use with other drugs to make up for poor quality. Overall, four out of five detox directors mentioned alcohol and cocaine/crack as other substances of abuse consumed by heroin users. Other drugs mentioned were marijuana, amphetamines, and depressants. In the Boston heroin availability study, half of the participants reported use of a variety of drugs in addition to heroin during their eight weeks of interviews. Alcohol was the most widely used, followed by cocaine, which was either used alone or in combination with heroin ("speedballing"). Participants also reported a high usage of tranquilizers.

In the past, it was common for heroin and cocaine addicts to argue over which drug was superior. Today, ethnographic studies report, most heroin users view their heroin use as part of their overall drug use. As reported in "Heroin Use: A Perspective from the 'Inside,'" every addict that participated in the focus groups used a combination of drugs. There were many conversations about how some drugs moderated the side effects of heroin, while others enhanced the heroin high. Addicts in both this study and the Boston heroin availability project discussed their choice of drugs in terms of money, availability, purity, and preferred effects of combination use.

As mentioned above in the discussion of DAWN and DUF data, two combinations of drugs are especially noteworthy—heroin in combination with cocaine and heroin in combination with crack. Although the intoxicating effects of cocaine or crack combined with heroin can be similar, users generally make a distinction. Many experienced users cited "speedballing," the injection of cocaine with heroin, as the drug or drug combination of choice. A Chicago user in the NIDA focus groups explained why he preferred it: "Because you get the high off the coke, you get the good rush off the coke, a good high, and you get the heroin that brings it down, you know. That way you don't get too paranoid." One of the new heroin users interviewed in Houston pointed to speedballing as a way to make up for low quality heroin, in that cocaine lengthens the low quality heroin experience.

It appears that progression to speedballing occurs among both cocaine users and heroin users. This poses a great and growing concern to treatment

providers who say that treating someone with both a heroin and cocaine habit is difficult and complex. Indeed, continued cocaine use among methadone maintenance patients is a mounting problem.

While many of the addicts in the focus groups referred to crack smoking followed by heroin use as a form of speedballing, the progression was usually different. Much of the discussion focused on the overall popularity of crack, and on how some heroin addicts had switched from heroin to crack. In terms of combination use, it appears more common for crack smokers to begin using heroin than for heroin users to start using crack. As noted before, crack smokers evidently turn to heroin to moderate or "take the edge off" of the effects of crack. Abt Associates pulse checks of ethnographers found that crack users were buying small amounts of heroin in many cities, and that in some cities, like New York, Atlanta and Chicago, one can buy heroin and crack from the same dealer. Crack users who take up heroin are usually relatively young and prefer to ingest heroin by snorting. Because of the prevalence of crack use, a growth in this practice could cause an alarming rise in heroin use among a population with little knowledge about its addictive nature and long-term effects.

## Discussion

At first blush, much of the evidence surveyed in the previous section would suggest an increase in heroin supply and consumption. In recent years, retail prices have plummeted and purity has soared, heroin seizures have risen and opium production has expanded—all trends one would expect to accompany a growth in heroin supply. At the same time, both heroin-related emergency room visits and admissions to treatment have climbed sharply—developments normally associated with increased use.

Upon closer examination, the evidence is more ambiguous. With respect to heroin supply, the rise in seizures seems to reflect a shift in trafficking patterns—specifically, the widespread use of commercial air couriers hired by Nigerian and Colombian trafficking groups—more than it does an across-the-board surge in imports. In terms of heroin use, a good part of the increase in emergency room mentions appears connected to a change in sampling and data-weighting procedures. Figures on treatment admissions are also compromised by inconsistencies in data collection, and they are further weakened by the fact that, given a shortage in treatment capacity, the number of heroin admissions is influenced more by supply than demand.

Those indicators that are not showing an increase in heroin use are also less than trustworthy. Society-wide polls like the National Household Survey on Drug Abuse and the High School Seniors Survey simply do not reach those segments of the population where heroin use is prevalent. The Drug Use Forecasting Program does get at their population; however, the percentage of arrestees who test positive for opiates is only partially a function of opiate use among the criminally active; the crime and arrest rates among opiate users, the size of the non-opiate using population, and the crime and arrest rates among that group are also key variables.

### Sorting Out the Evidence

The caveats associated with the data are legion. Despite all the unknowns and uncertainties and apparent contradictions, however, there are a number of assessments about heroin supply and consumption that can be made with some confidence.

Heroin is, by historical standards, remarkably cheap and pure. While data on price and purity have their shortcomings, the fall in prices and the rise in purity has been too large and too sustained to be chalked up to any idiosyncrasy in the data.

We also know something about developments in the supplying industry—in the production, trafficking, and distribution of heroin—most of which jibes with the observed trends in prices and purity. Although estimating illicit crop production is an inexact science, worldwide opium production appears to be much greater than it was five or six years ago, thanks to expanded production in Burma.[30] Perhaps more significant (at least for the future) than heightened Burmese production—most of which does not make its way to the U.S.—is the development of a significant opium crop in Colombia. Although small in comparison to world production, the crop is large when measured against U.S. heroin consumption, which is no doubt its intended market.

Although heroin of Colombian origin is now making visible inroads into many U.S. markets, the source story for most of the past decade has been Southeast Asian (SEA) heroin. SEA, which tends to be higher quality than its Southwest Asian and Mexican counterparts, has dramatically increased its U.S. market share. In terms of smuggling, SEA heroin has always been associated with ethnic Chinese organizations. While according to intelligence reports these groups still predominate, what is now different is the widespread involvement of Nigerian groups as well.

It is more difficult to make generalizations about domestic distribution. However, the largest networks (i.e., the ethnic Chinese groups) appear to be more vertically integrated and efficient than they were ten or twenty years ago when traditional organized crime groups played a larger role. It is probably not coincidental that wholesale price markups have fallen significantly.

On the user side of the market, there are two important developments that can be reported without much hesitancy. First, heroin snorting, and to a much lesser extent smoking, has become commonplace in those areas of the country where high purity powder (a prerequisite for intranasal ingestion) is available. In New York City, for example, snorting is the primary mode of ingestion for roughly half of those entering heroin treatment programs, and many ethnographers say that injection has become a rare sight.

Second, heroin is more and more being combined with cocaine. We conclude this not only from the accounts of observers, but also from data on heroin-related emergency room visits, which shows recently sharp increases in combination use. It stands to reason (and ethnographic reports confirm) that much of this behavior involves new users, presumably cocaine and crack aficionados who are now adding heroin to their menu. The alternative explanation—that large numbers of long-time heroin addicts have turned to cocaine—seems less plausible.

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[30] In fact, if Burmese production is excluded, State Department estimates would show a decrease since 1987 in worldwide potential net opium production.

Other things being equal, falling prices and rising purity will tend to increase heroin consumption. Lower prices make heroin more affordable, meaning that any given user will be inclined to purchase more within his or her budget. Higher purity is apt to raise consumption through a couple of effects. First, because few users know the purity of the heroin they consume, they gauge their dosages according to gross weight (the total weight of pure heroin plus adulterants and diluents). When purity goes up over time, dosages of a particular gross weight contain more and more heroin. These larger dosages are reinforcing, producing higher levels of tolerance—in other words, habits that require more pure heroin to satisfy.

Second, higher purity (in powder form heroin) makes snorting a practicable route of administration. This eliminates what for many users is the key deterrent to heroin use: needles. Whether for reasons of discomfort, stigma, or the fear of infectious disease, many users will not inject drugs.

Or so they think. Because snorting is a relatively inefficient means of ingesting heroin, many users switch from snorting to injection for reasons of economy as their habits grow larger and too expensive to support. Exactly how frequently and quickly this transition takes place is unclear. Historical data are of little value because they date from periods when heroin purity was considerably lower and prices significantly higher.

## Looking Ahead

Countless factors will influence future trends in heroin use. Two stand out—one on the supply side of the heroin market, the other on the user side. The first is the involvement of Colombian drug organizations in the heroin trade. The second is the rate of initiation of new users.

### Colombian Heroin Trafficking

Concern about Colombian involvement in heroin trafficking is not new. After all, some DEA agents claim to have discovered poppy growing in Colombia as early as 1983. Until recently, however, warnings that Colombian drug cartels were planning to enter the heroin business were greeted with skepticism.

There is now no debating that Colombian heroin is entering the U.S. in significant quantities. Who is behind the trafficking—and what it portends for the future—is still very much in dispute. Some DEA and Customs agents argue that the major Colombian cartels are not involved, pointing to the fact that Colombian heroin is entering the U.S. principally via couriers on commercial air flights, which is not the smuggling style of the big organizations.

Given their well-established supply lines for cocaine, why would the cartels use a mode of conveyance more vulnerable to detection?

The answer, according to other federal drug agents, is that the cartels do not want to appear connected with heroin trafficking; heroin, unlike cocaine, is widely disapproved of in Colombia. (An indication of this disapproval: heroin couriers are generally told they are carrying cocaine.) These agents claim that the cartels have hired smaller Colombian drug groups to run their heroin operations.

It is also worth noting that the use of couriers makes more economic sense for heroin than it does for cocaine. A kilo of heroin is worth ten times as much as a kilo of cocaine, so the fee paid to a courier, and price of an airplane ticket, become relatively smaller expenses. Moreover, the use of couriers diversifies one's investment. By regularly losing small shipments, instead of occasionally dropping a large load, the supply flow is more consistent and reliable.[31] Interestingly, it was common in the early 1980s for Colombians to smuggle cocaine via couriers. The method quickly became impractical when cocaine prices fell and growing demand required larger smuggling capacity. Several Customs agents interviewed suggested that Colombian heroin is now repeating the same pattern.

Most discussion of the Colombian heroin threat focuses on the opium crop. How many hectares are available? How mature are the plants? What is the yield per hectare? And so on. Arguably, however, the principal threat posed by Colombian heroin trafficking involves the impact it might have on heroin distribution within the U.S.

Price and purity represent only one aspect of the heroin supply situation. Retail availability, determined by the number, social and geographic distribution, and aggressiveness of retail dealers shapes consumption as well. In the case of crack, the epidemic was late in reaching many cities (like Chicago) because the necessary retail distribution infrastructure was often lacking. Wholesale supplies, which were always plentiful, were not the limiting factor.

According to most of the DEA agents interviewed, there is now a wholesale supply glut in the heroin business. And retail distribution networks are inadequate to handle the supply. What many of these agents fear about the Colombian organizations is their experience, expertise, and willingness to

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[31] Evidently, key to the success of Nigerian trafficking groups—who also smuggle heroin via couriers—is their reputation for dependability. Wholesale distributors value the ininterupted supply of heroin that the Nigerian traffickers can provide.

develop a retail infrastructure. "They did it with crack; now they'll do it with heroin."

### The Significance of New Users

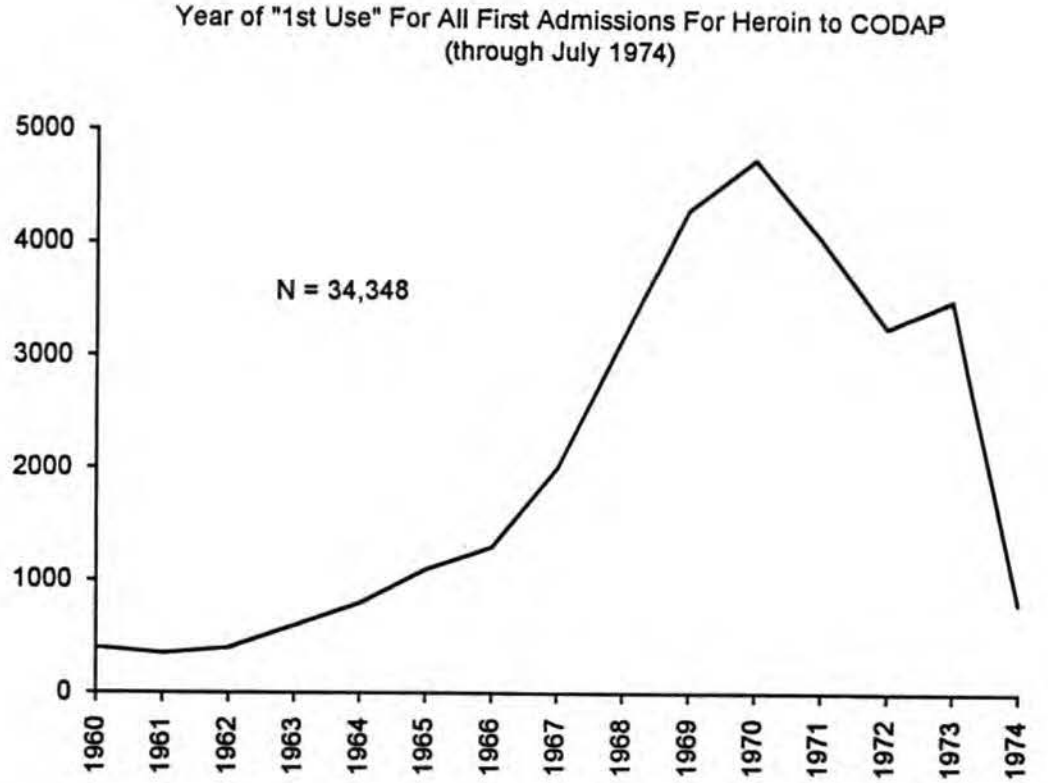
Contrary to the popular image of the "drug pusher" who hooks new addicts in a premeditated and calculating fashion, heroin users are generally initiated to the drug by friends and peers. Heroin use thus spreads much like a communicable disease; heroin users are "contagious," and some of those with whom they come into contact get "infected."

In studying the spread of infectious diseases, epidemiologists distinguish between *incidence*, the rate of new cases per population unit, and *prevalence*, the number of cases per population unit at a given time. For many diseases, incidence is a function of prevalence; the more people that have the flu, for example, the more new cases we can expect to see. But not all heroin users are equally contagious. In fact, long-term addicts are frequently the least contagious. They are socially isolated, and knowing the pitfalls of prolonged use, they may not want to expose others. Moreover, they do not present an appealing picture of the consequences of heroin addiction.

Research indicates that heroin users are most likely to initiate others when they themselves are new users, typically within their first year of use. One implication of this is particularly ominous—that heroin incidence is susceptible to periods of explosive growth. Imagine a population that had, for a period of time, fairly stable levels of heroin incidence and prevalence—just enough new users developed to replace older ones who quit or died. Then suppose that, for whatever reason, incidence rises. This creates more new users, who in turn initiate even more new users, and so on. In short order, an epidemic can develop.

This is what appears to have happened during the late-1960s. The graph below shows the year of first use among first admissions to treatment programs in 1974. Two things are important to note. First, the rapidity with which the incidence of new use accelerated; in five years, from 1964 to 1969, incidence of new use more than quadrupled. Second, the incidence of new use began to decline sharply in 1971, before the 1972 heroin shortage. What this indicates is the importance of the size of the susceptible non-user population. As incidence, and then prevalence rise, the susceptible non-user population shrinks. Eventually, the susceptible population is almost fully depleted, and incidence of new use falls off dramatically.

**Figure 9. An Epidemic of New Users**




Source: Leon Gibson Hunt and Carl D. Chambers, *The Heroin Epidemics: A Study of Heroin Use in the United States, 1965-1975* (New York: Spectrum Books, 1976), 63.

## Conclusion

To date, there is no strong evidence that a heroin epidemic has begun. There is also no strong evidence that an epidemic hasn't begun. The problem is that currently accessible data tell us little about heroin initiations; by their nature, they tend to overlook new users. Tallies of emergency room visits, or admissions into treatment programs, are more likely to reflect extreme levels of abuse than the behavior of new, and generally still casual, users.

If a heroin epidemic is not yet developing, conditions are ripe. Low prices reduce the economic barriers to experimentation, while high purity makes intranasal administration feasible, thereby eliminating what for many users is

the key deterrent to heroin use: needles. Whether for reasons of discomfort, stigma, or the fear of infectious disease, many users will not inject drugs.

Moreover, there is a large and increasingly interested population of potential initiates. Although cocaine-related emergency room visits have continued to climb, there is reason to believe that the crack epidemic is now past its prime. What this means is that many current and former crack addicts are looking for alternatives. That combination use offer them an easy and appealing entrée to heroin is not comforting.

Some public health experts are more cheered than concerned by recent developments in heroin use, believing that the move from injection to snorting can only help efforts to stem the tide of HIV transmission among heavy heroin users. While this analysis is no doubt correct in the short run, it overlooks the uncertain long-term effects of new heroin users. Snorting is a relatively inefficient means of ingesting heroin, and so many new users turn from snorting to injection for reasons of economy when their habits become too expensive to support. And so if widespread heroin snorting attracts large numbers of new users, many of whom eventually progress to injection, the net long-term effect on HIV transmission—not to mention all the other damaging social consequences of drug abuse—could easily be in the wrong direction.

A number of police officers and drug enforcement agents interviewed for this report are also privately cheerful. To them, the sight of cocaine and crack users switching to heroin is welcome. Heroin addicts, they feel, are less violent than cocaine and crack addicts, more likely to "nod off" than "go crazy." Many also pointed out that heroin dealing has traditionally been less violent than cocaine and crack dealing.

While there is also some truth to this analysis, it too may prove shortsighted. Although cheap, high-quality heroin will induce many crack users to switch drugs, some of them might have given up illicit drugs altogether had heroin use been less attractive. For others, by ameliorating some of the less pleasant side effects of crack, heroin will enable them to sustain and prolong their crack habits.

## Methods and Sources

The information presented in this report is based on data sources, ethnographic reports, existing literature on drug abuse, and interviews with law enforcement and treatment personnel. Relevant data sources are referrenced in the body of the report. Ethnographic reports and drug abuse literature are given in the References section.

Drug Enforcement Administration Agents were interviewed in the following cities: Boston, Chicago, Denver, Los Angeles, Newark, New York, Miami, San Diego, and Washington, D.C.

U.S. Customs Service Agents and/or Inspectors were interviewed in the following cities: Boston, Calexico, Chicago, Los Angeles, New York, Miami, San Diego, San Ysidro, and Washington, D.C.

Interviews were conducted with the directors (or their managers) of the following detoxification facilities:

*Boston*

Dimock Detoxification Center
Dimock Community Health Center

River Street Detox
Positive Lifestyles

Transitional Care Facility
Boston Alcohol Detox Project

*Chicago*

Add Detox
Lutheran Social Services

Center for Addictive Problems

Center for Chemical Dependency
Jackson Park Hospital

Chemical Dependence Program

Interventions Southwood

Mt. Sinai Hospital Care Unit

Northwestern Chemical Dependency Program

Parkside Recovery Center at Bethany Hospital

Chicago Clergy Association for the Homeless/Haymarket House

Clean Start

Entry House/Woodlawn Residential Rehabilitation Program

South Chicago Community Hospital Chemical Dependency Unit

Weiss Memorial Hospital

Women's Chemical Dependence Program

*New York*

A.R.E.B.A./Casriel Inc.

BIMC - Beth Israel - Bernstein Institute

Harlem Hospital

HHC/Coney Island Hospital CDATP

HHC/NYC Kings County Hospital MMTP

HHC/Metropolitan Hospital Center MMTP

HHC/Queens Hospital Center ADTP

HHC/Woodhill Medical and Mental Health Center

Interfaith Medical Center MMTP

Metropolitan Correctional Center

Montefiore Medical Center Riker's Island

Regent Hospital

St. Barnabus Hospital

St. Lukes Hospital

Union Hospital Association of the Bronx

*San Antonio*

Baptist Medical Center

Bexar County Board of Trustees for MHMR Detoxification Unit

*San Francisco*

Bay Area Addiction Research/ Treatment/Geary Street Clinic

Salvation Army Harbor Light Center Detox

Haight-Ashbury Free Clinics
Smith House

Haight-Ashbury Free Clinics
Drug Detoxification Project

St. Vincent De Paul Society of S.F.
Osanam Reception Center

San Francisco General Hospital
Substance Abuse Services

Walden House
Adult Residential

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