



# Combating Illicit Drug Use

*Some Basic  
Questions*

**STEVENS H. CLARKE**

*In Putumayo Province, Colombia,  
children play in a coca field  
defoliated by aerial spraying that is  
supported in part by the United  
States. Right: powder cocaine.*



Recent news illustrates the lengths to which the United States has gone to reduce illicit drug use, as well as some of the unintended consequences of its policies. The *New York Times* of January 31, 2001, reported on the latest cocaine-eradication effort of the Colombian Army, an effort supported by training and financing from the United States.<sup>1</sup> Over six weeks, 65,785 acres were sprayed with herbicides. This was part of a multibillion-dollar program to cut Colombia's coca crop in half by 2005, toward which the United States had pledged \$1.1 billion. American officials said that the herbicide used, glyphosate, could not harm humans or animals,

but the soldiers who sprayed it took showers to cleanse themselves of it. The *Times* quoted a local Colombian official (not connected with the military) as saying that legal crops such as plantains, corn, and yucca were being destroyed along with coca. He said that the defoliation campaign had prompted many farmers and their families to leave their homes. There also were reports of intoxication, diarrhea, vomiting, skin rashes, red eyes, and headaches resulting from the spraying. Among children there were particularly bad effects on the skin. An accompanying photograph (see opposite) showed children playing in a defoliated field that had recently been sprayed.

This article addresses some basic questions about drugs, drug use, and public policies concerning drug use:

- Why is drug use considered undesirable?
- What is the nature of drug dependency and addiction?
- What harm does drug use cause?
- What are recent trends in prevalence of drug use?
- How does the prevalence of drug use in the United States compare with that in other industrialized nations?
- What are the results of the criminal justice system's "war on drugs" in the United States?
- How effective is treatment of drug dependency, and how does treatment compare with other ways of reducing drug use?

This article primarily concerns *illicit drugs*, substances that are illegal to manufacture, possess, and distribute except for certain medical uses. The use of legal substances such as tobacco and alcohol may be more destructive than the use of illicit drugs, but that subject calls for a separate article.

Five illicit drugs or drug types are of primary interest here:

- Cannabis (chiefly marijuana and hashish)
- Cocaine
- Amphetamines and amphetamine-type stimulants
- Methamphetamines, such as ecstasy<sup>2</sup>
- Opiates, such as heroin

Most of the discussion deals with the United States as a whole. North Carolina data are provided where available.

Some definitions will be helpful. In this article a person "dependent on drugs" is one who has difficulty refraining from drug use, and an "addict" is one who cannot refrain without treatment. The surveys cited in this article use certain medical criteria and classify a person as dependent if he or she has been so at any point during the past year.<sup>3</sup> A "current" user as defined in the surveys is one who has consumed drugs during the month preceding the survey. A current user may go on to become dependent or addicted, may use drugs only occasionally without becoming dependent, or may stop using them.

To measure illicit drug use, researchers employ a variety of estimating tech-

niques. When the techniques are applied in a consistent way over time, they describe trends in drug use, and when similar techniques are used in different nations, they provide data for cross-national comparisons.

One technique is a confidential survey in which researchers ask a representative sample of people about drug use. There are two major national surveys of drug use in the United States. One is the National Household Survey of Drug Abuse (NHSDA). Conducted by the Substance Abuse and Mental Health



The author is a retired member of the Institute of Government faculty who specializes in correctional law and criminology. Contact him at [clarke@iogmail.iog.unc.edu](mailto:clarke@iogmail.iog.unc.edu).

Services Administration of the U.S. Department of Health and Human Services, the NHSDA deals with drug use by people aged twelve or older. Until recently the NHSDA provided only nationwide data, but in 2000 it began to publish use estimates for individual states and regions of the country.<sup>4</sup> The other survey is known as Monitoring the Future.<sup>5</sup> Conducted by the National Institute on Drug Abuse, it deals with high school and other students. Its scope is nationwide, and it does not provide estimates for individual states. North Carolina has its own survey, the High School Youth Risk Behavior Survey, conducted by the Department of Public Instruction.<sup>6</sup> There also are international surveys of drug use. The United Nations conducts periodic cross-national studies, in which participating nations rely on similar surveys.

Another technique is to measure the physical or medical indicators of drug dependency. One can count people who die because of a drug overdose, hospital trauma patients who test positive for drugs, and people arrested for crimes whose urinalysis reveals drug use. Two examples of this technique are the Arrestee Drug Abuse Monitoring Program (ADAM) and the Drug Abuse Warning Network (DAWN), administered by the U.S. Department of Justice and the Substance Abuse and Mental Health Services Administration, respectively. ADAM personnel perform annual urinalyses on people arrested for crime in thirty-five metropolitan areas.<sup>7</sup> DAWN personnel sample hospitals across the country to obtain estimates of emergency department visits in which medical staff believe that drug use is the reason for the patient's presenting problem.<sup>8</sup> DAWN includes illicit drug use and also alcohol use if combined with use of illicit drugs. Data from both ADAM and DAWN apply to the nation as a whole but not to individual states.

### Why is drug use considered undesirable?

There seem to be two answers to this question: (1) drug use is immoral and (2) it is harmful and unhealthy. The two views have led to quite different policies on drug use.



The “immoral” view is that drug addicts are “weak or bad people, unwilling to lead moral lives and to control their behavior and gratifications.”<sup>9</sup> Consequently the government needs to protect addicts from themselves and from those who prey on them. Addicts, according to this way of thinking, should face the threat of legal punishment for possession of drugs, as should people who take advantage of addicts’ weakness by selling them drugs.

The “unhealthy” view is that drug use is harmful to the user as well as the public. In this view, casual use of illicit drugs subjects the user to the risks of addiction, contamination from needles, poisoning from drugs, and other health hazards. Addiction affects the health and the safety of the addict by making him or her unable to carry on a productive life. It harms the public by spreading diseases and contributing to criminal behavior. This view underlies efforts to prevent drug use through public health education and to treat those who become dependent or addicted.

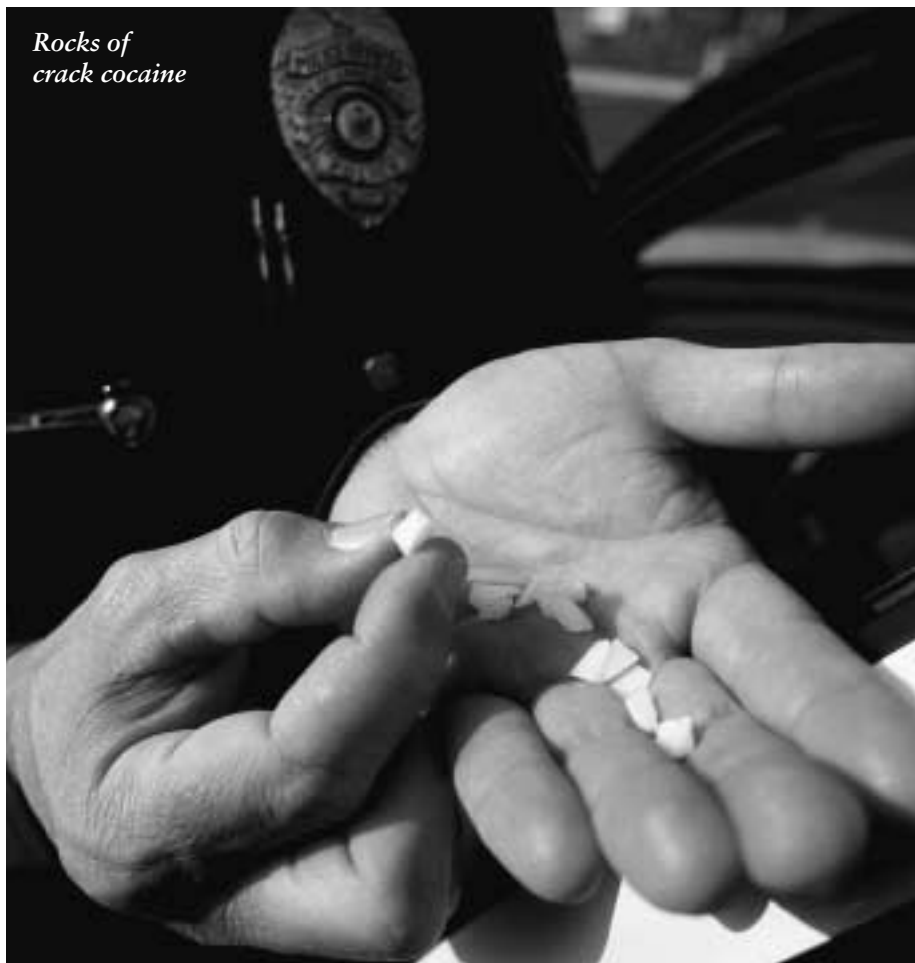
### What is the nature of drug dependency and addiction?

#### Drug Addiction

Drawing on recent advances in medical science, Alan Leshner of the National Institute on Drug Abuse describes addiction as a “chronic, relapsing illness, characterized by compulsive drug seeking and use.” Addiction is a disease of the brain. When a person becomes an addict, his or her brain becomes distinctly different from that of a nonaddicted person with regard to “metabolic activity, receptor availability, gene expression, and responsiveness to environmental cues.” Some of these brain changes are unique to specific types of drugs, but others are common among many different drugs, suggesting that common mechanisms underlie all addictions.<sup>10</sup>

Addiction also is a psychological illness. The social context is critically important. Even after a person has been successfully treated, exposure to certain conditions or events in his or her environment can cause recurrent cravings for

*Rocks of  
crack cocaine*



drugs and relapses in drug use.<sup>11</sup> Thus, perhaps one goal of treatment should be to change the addict's environment, even if only during the treatment period.

#### **Experimentation versus Dependence**

Available data indicate that a majority of adults try illicit drugs at some point in their lives but few become dependent on drugs. For example, according to the NHSDA for 1999, 53 percent of U.S. residents 18–25 years of age, and 51 percent of those 26–29 years of age, had used an illicit drug at some point in their lives. Considerably fewer were current users (that is, had used a drug within a month of the survey): 17.0 and 8.5 percent, respectively. Fewer still were dependent on illicit drugs: 4.7 and 1.8 percent, respectively.<sup>12</sup>

Among youth as well as adults, frequent or heavy use is much less prevalent than occasional use. For example, the Monitoring the Future survey of high school students in 1999 indicated that 37.8 percent of twelfth-graders had used marijuana during the past year and 23.1

percent had used it during the past month but only 6.0 percent were using it daily.<sup>13</sup>

Although heavy use is rare, it accounts for the bulk of illicit drug consumption. This has implications for public policy, as explained in a later section of this article.

#### **Peaks and Declines in Use**

Illicit drug use tends to begin in the late teens and early twenties. For example, according to the NHSDA for 1998, use of marijuana began at an average age of 17, use of hallucinogens at 18, use of cocaine at 21, use of heroin at 21, and use of crack cocaine at 25.<sup>14</sup>

Current use of illicit drugs, which is a statistical indicator of regular use, tends to increase as youth reach their late teens and to decrease as they get older. According to the NHSDA for 1999, current use peaks in the 18–20 age range at nearly 21 percent and drops to below half that level before age 30. Dependence on illicit drugs, which is much less common than current use, also peaks at about 6 per-

cent in the 18–20 age range and drops off in the late 20s.<sup>15</sup>

### **What harm does drug use cause?**

Drug use has harmful effects in two areas of public concern: health, and violence and crime.

#### **Effects on Health**

Drug use is implicated in the transmission of deadly diseases. For example, the U.S. Centers for Disease Control and Prevention (CDCP) report that since the AIDS epidemic began, 36 percent of cases in the United States have involved exposure through injection of drugs, and in 1998, 31 percent of new cases involved such exposure.<sup>16</sup> Users of nonintravenous drugs like crack cocaine also contribute to the AIDS epidemic by trading sex for drugs or money or engaging in risky sexual behavior in which they might not engage when sober.

Drug use also leads to medical emergencies—for example, overdoses or unexpected reactions. Trends in drug-related medical emergencies are discussed in a later section of this article.

#### **Effects on Violence and Crime**

Drug use is well known to be associated with criminal behavior. Following are a few examples of studies correlating the two phenomena:

- The Denver Youth Study found that of 1,527 children 7–15 years of age, commission of crimes and delinquency were about twice as high among those who had experimented with illicit drugs or alcohol as among those who had not.<sup>17</sup>
- A National Institute of Justice study indicated that among adults held in detention on criminal charges in 1998 in thirty-five metropolitan areas, two-thirds tested positive for at least one illicit drug.<sup>18</sup>
- The NHSDA for 1999 found that among youth aged 12–17, theft was correlated with drug use. Of those who had not stolen or tried to steal anything worth more than \$50 in the past year, only 6.2 percent were current marijuana users. Of those who had stolen one or two times, 28.6 percent were marijuana users;



of those who had stolen three to five times, 48.7 percent; and of those who had stolen ten or more times, 54.5 percent.<sup>19</sup>

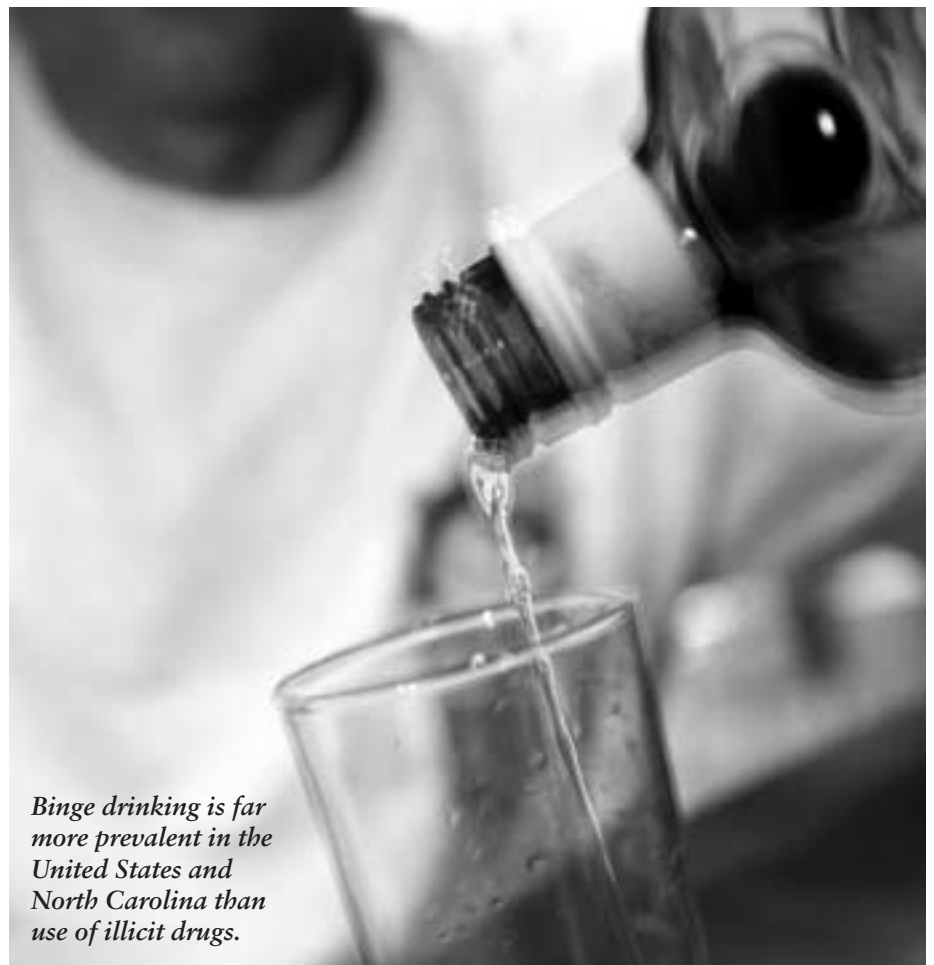
That drug use is *correlated with* crime does not necessarily mean that drug use *causes* crime. The relationship is complex; each causes the other to some extent. Reviewing the literature, Jan and Marcia Chaiken conclude that

*no single sequential or causal relationship is now believed to relate drug use to predatory crime. . . . [N]o coherent general patterns emerge associating drug use per se with participation in predatory crime, age at onset of participation in crime, or persistence in committing crime.*<sup>20</sup>

Research that traces the development of children and youth shows that the onset of drug abuse does not necessarily precede the onset of delinquency. Rather, the two are intertwined. The most frequent sequence is minor delinquency, alcohol use, commission of serious (index<sup>21</sup>) crimes, marijuana use, and finally use of multiple drugs. Drug abuse increases the likelihood of delinquency. At the same time, delinquency increases the chance of drug abuse. Reviewing the findings of longitudinal studies in Denver, Pittsburgh, and Rochester, David Huizinga and his coeditors conclude that “over time substance use appears to stimulate delinquency more than . . . delinquency tends to stimulate substance use.”<sup>22</sup>

The mechanisms by which drug use causes criminal behavior are complex. In the case of violent crime (assaultive offenses, including homicide, rape, robbery, and nonfatal assault), Paul Goldstein’s thinking is helpful.<sup>23</sup> Goldstein theorizes that drug abuse may have three types of effects on violent crime: (1) direct or psychopharmacological, (2) economically compulsive, and (3) systemic. These three types of effects are not mutually exclusive; more than one may be involved in a single instance of drug-related violence.

Regarding the *direct* or *psychopharmacological effect*, using drugs may have psychological or physical consequences that cause a person to become excitable,



*Binge drinking is far more prevalent in the United States and North Carolina than use of illicit drugs.*

irrational, and violent. Also, drug use may make the user more vulnerable to crime victimization by causing him or her to act more provocatively or less cautiously than he or she would normally act.

In his review of the literature, Goldstein found that psychopharmacological violence is common, but most of it is due to alcohol rather than to illicit drugs. Common situations for such violence are domestic disputes, fights in bars involving young men, and confrontations between prostitutes and drunk customers. Alcohol use affects the chance of becoming a victim of violence as well as a perpetrator. Trauma patients in urban areas frequently have used alcohol before their injury, especially when firearms are involved. In a 1993 study that Goldstein and others conducted in Chicago, 47 percent of violence victims in hospital trauma units reported drinking alcohol at the time of their injury. This finding suggests that alcohol influenced the victims to take greater risks than they normally would have. With

regard to illicit drugs, there was no evidence that the victim’s use at the time of the injury contributed to the injury. However, *previous* use of illicit drugs (in the year before the injury) significantly raised the chance of being victimized. This finding suggests a systemic effect, in the sense that a lifestyle of drug use places the user at risk for violent injury, rather than a psychopharmacological effect.

The *economic compulsive effect* of drug use occurs when a person engages in economically oriented violent crime like robbery to support his or her use of expensive drugs. This sort of violence is rare, according to research reviewed by Goldstein. If drug users turn to crime to support their drug use, they prefer non-violent crime such as prostitution, theft, or working in the illicit drug business.

The *systemic effect* of drug use on violence arises from the fact that violence is intrinsic to illegal activities. Drug users may fight among themselves over a scarce supply of drugs. Drug dealers may resort to violence when problems arise—

for example, to punish those who fail to pay debts, to resolve disputes over territory with rival dealers, to enforce their authority, or to eliminate informers. Also, when children or youth engage in drug abuse, they associate with other youth or adults who may initiate them into criminal behavior, including violence.

Goldstein's review of research indicates that violence due to involvement in drug activities is common and may influence patterns of homicide. As explained in previous issues of this magazine, the homicide rate in the United States peaked in the mid-1970s, dropped somewhat, surged to a higher point in 1980, decreased again, and then, beginning in the late 1980s, climbed to a still higher level in the early 1990s.<sup>24</sup> (For young African-American males—a group with a high risk of murder victimization—the peaks in 1980 and the early 1990s were especially pronounced.) Goldstein sees a cyclical pattern in drug markets that may help explain these fluctuations in homicide rates. He believes that the 1980 peak may have been a result of the market for powder cocaine, and the 1990s peak a result of the market for crack cocaine.

Goldstein theorizes that when a new drug is introduced and becomes popular, with the number of users growing rapidly, there is little violence among dealers because they are busy trying to obtain sufficient product to meet demand. But when the number of new customers begins to level off, dealers—who tend to carry firearms—compete with one another for market share. The result is violence, which increases the homicide rate. Later, suppliers, dealers, and consumers tend to reach equilibrium in their dealings. Also, communities suffering the most from high drug use and drug markets begin to reject the using and selling of drugs. Both of these developments tend to bring down the level of homicide.

Goldstein warns that what happened twice with powder cocaine and then with crack cocaine could happen again. Although homicide has been decreasing in the 1990s, it may increase again as soon as the next drug craze comes along.

In summary, Goldstein finds little evidence of the economic compulsive effect of drug use on violence. He finds much

**Table 1. Proportions of Current Illicit Drug Users Aged 12 and Older Using Various Illicit Drugs, United States, 1999**

Drug	Current Users (%)
Marijuana and hashish	75.4
Prescription drugs used nonmedically	26.9
Cocaine (any form)	10.1
Inhalants	6.8
Hallucinogens	6.1
Cocaine in crack form	2.8
Methamphetamine	2.7
Heroin	1.4

Source: UNITED STATES DEP'T OF HEALTH AND HUMAN SERV., SUBSTANCE ABUSE AND MENTAL HEALTH SERV. ADMIN., OFFICE OF APPLIED STUDIES, SUMMARY OF FINDINGS FROM THE 1999 NATIONAL HOUSEHOLD SURVEY ON DRUG ABUSE tbl. G.5 (Washington, D.C.: USDHHS, 2000).

Note: The size of the sample was 14,820,000. Percentages add to more than 100 because a person may use more than one drug.

evidence of the psychopharmacological effect, but mostly from alcohol rather than from illicit drugs. There also is considerable evidence of the systemic effect—violence engendered by involvement in illegal drug dealings—which may have a powerful influence on homicide trends.

The primary effect of illicit drug use on violence, Goldstein's analysis suggests, stems from the legal prohibition of drugs. Those who buy prohibited drugs expose themselves to a dangerous underworld, as do those who sell or otherwise participate in the market. Legal prohibition also is partly responsible for economic compulsion because it makes drug prices higher, thereby creating more incentive to steal or commit other nonviolent crime to get money for drugs.

Thus most of the crime connected with illicit drug use—both violent and nonviolent crime—is not intrinsic to drug use but a result of the legal prohibition of certain drugs, as well as severe punishments. Those who support the nation's current regime of drug laws and sanctions must confront the evidence that this regime contributes to homicide and other serious violence.

### What are recent trends in prevalence of drug use?

#### Use in the General Population

The NHSDA estimates that in 1999, 14.8 million Americans—6.2 percent of

the population aged twelve or older—were current users of illicit drugs.<sup>25</sup> Fifty-seven percent of these used only marijuana, 25 percent used only a drug other than marijuana, and 18 percent used marijuana plus some other drug.

Seventy-five percent used marijuana and hashish, the usual forms of the drug cannabis, making them by far the most popular. Twenty-seven percent used prescription drugs nonmedically (that is, without a prescription or other legitimate access). Ten percent used some form of cocaine, while 3 percent used cocaine in crack form. Seven percent used inhalants such as glue, 6 percent hallucinogens such as LSD (lysergic acid diethylamide), 3 percent methamphetamines, and 1 percent heroin. (See Table 1.)

Comparing rates of drug use in 1999 for the United States and North Carolina shows that North Carolina generally had a slightly lower rate of use than the nation as a whole, as well as a slightly lower rate of drug dependence (see Table 2, page 8). For youth aged 12–17, however, current illicit drug use was somewhat higher in North Carolina than in the nation. This was due to greater use of drugs other than marijuana; in that category North Carolina's rate was 6.2 percent compared with the nation's rate of 5.3 percent. This high rate for youth put North Carolina in the top fifth of all states in 1999, according to the NHSDA.

In terms of absolute numbers of illicit drug users living in North Carolina, the

NHSDA estimates that the state had 392,000 current users in 1999. Of this total, 315,000 used marijuana (possibly in addition to other drugs), and 169,000 used an illicit drug other than marijuana. Only about a fourth of the current users (estimated at 92,000) were dependent on some illicit drug under the medical criteria used by NHSDA.

Regarding use of legal but dangerous drugs, North Carolina had substantially lower rates of “binge” drinking<sup>26</sup> than the country as a whole did, ranking in the lowest fifth of the states in that respect. On the other hand, the state had very high rates of cigarette smoking for both adults and youth aged 12–17, ranking it in the highest fifth of the states. Further, the number of binge drinkers (those who had engaged in binge drinking during the month preceding the survey) was an estimated 1,038,000—far more than the number of current users of illicit drugs. The number dependent on alcohol or on an illicit drug was estimated at 259,000. Thus in North Carolina, alcohol use seems to affect many more people than illicit drug use does.

### Recent Trends in Illicit Drug Use

During the 1980s, according to NHSDA estimates, current use of illicit drugs in the United States decreased substantially (see Figure 1). From 1979 to 1991, the percentage of people aged twelve or older who were current users of any type of illicit drug dropped by more than half, from 14.1 to 6.6 percent.<sup>27</sup> This downward trend reflected decreased use of marijuana (by far the most commonly used illicit drug), but use of other drugs also declined. Current marijuana use dropped from 13.2 to 5.1 percent and consumption of cocaine from 2.6 to 1.0 percent. Looking at the data by age, one sees sharp drops in current use for the 12–17, 18–25, and 26–34 age groups. Furthermore, each ethnic group (white, black, and Hispanic) showed comparable decreases.

After 1992 the downward trend halted (see Figure 1). From 1992 to 1999, while current use of any illicit drug stayed about the same in the population as a whole (6 to 7 percent), use among teenagers and young adults increased. Among youth aged 12–17, current use of any illicit drug more than doubled from

**Table 2. Rates of Drug Use, United States and North Carolina, 1999**

Drug and Type of Use	Age Group	U.S. (%)	N.C. (%)
Any illicit drug*: Past month	12 and older	6.7	6.3
	12–17	10.9	11.5
	18–25	17.1	14.7
Marijuana: Past month	12 and older	5.1	5.0
	12–17	7.7	7.3
	18–25	14.8	13.8
Illicit drug other than marijuana: Past month	12 and older	2.9	2.7
	12–17	5.3	6.2
	18–25	6.4	5.9
Dependence† on illicit drugs: Past year	12 and older	1.6	1.5
	12–17	3.3	3.2
	18–25	4.7	3.5
“Binge” alcohol use (five or more drinks on same occasion at least once): Past month	12 and older	20.2	16.6
	12–17	10.9	9.1
	18–25	38.3	31.3
Cigarettes: Past month	12 and older	25.8	30.0
	12–17	14.9	19.2
	18–25	39.7	45.3

Source: UNITED STATES DEP’T OF HEALTH AND HUMAN SERV., SUBSTANCE ABUSE AND MENTAL HEALTH SERV. ADMIN., OFFICE OF APPLIED STUDIES, SUMMARY OF FINDINGS FROM THE 1999 NATIONAL HOUSEHOLD SURVEY ON DRUG ABUSE tbls. G.5, G.6, G.7, G.8 (Washington, D.C.: USDHHS, 2000).

\*The NHSDA includes the following illicit drugs: marijuana or hashish, cocaine (including both crack and powder forms), inhalants such as glue, hallucinogens [such as PCP (phencyclidine) and LSD (lysergic acid diethylamide)], heroin, and all prescription-type psychotherapeutic drugs if used nonmedically.

†The NHSDA defines “dependence” on the basis of seven criteria: health, emotional problems, attempts to cut down on use, tolerance, withdrawal, and other symptoms associated with drug use.

1992 to 1997, going from 5.3 to 11.4 percent. Thereafter it dropped somewhat, reaching 9.0 percent in 1999. For adults aged 18–25, use increased from 13.1 percent in 1992 to 18.8 percent in 1999. This trend is primarily due to marijuana use (for example, for youth aged 12–17, current marijuana use increased from 3.6 percent in 1991 to 9.4 percent in 1997, then dropped to 7.0 percent in 1999). For cocaine use, there was no clear trend for any age group.<sup>28</sup>

Further evidence of a national increase in youth drug involvement is a sharp rise in current illicit drug use among high school seniors during the 1990s, as shown by the Monitoring the Future survey. High school seniors’ estimated rate of current use of all illicit drugs declined from 16.4 percent in 1991 to 14.4 percent in 1992, increased until 1997, and then leveled off, reaching 24.9 percent in 2000. Most of the increase during the 1990s was attributable to

marijuana consumption, which went from 11.9 percent in 1992 to 23.1 percent in 1999, then dropped slightly to 21.6 percent in 2000. Cocaine use also increased in the 1990s, from 1.3 percent in 1992 to 2.6 percent in 1999, but dropped to 2.1 percent in 2000. Heroin use increased from 0.3 percent in 1992 to 0.7 percent in 2000.<sup>29</sup>

In North Carolina the High School Youth Risk Behavior Survey showed that current use for high school seniors was about the same as nationwide use as measured by the Monitoring the Future survey. The rate of marijuana use increased from 16.2 percent in 1993 to 23.2 percent in 1995 and 26.4 percent in 1997. The rate of cocaine use, while slightly higher than the national rate, did not increase. It was 3.0, 3.3, and 2.9 percent, respectively, for those years.<sup>30</sup>

The 1999 NHSDA points out some reasons why illicit drug use continues among youth. Only about a third (37.2

percent) of youngsters aged 12–17 perceive a great risk in smoking marijuana once a month, and 56.5 percent say that obtaining it is “fairly easy” or “very easy.” Forty-two percent report that they have one or more friends who use marijuana or hashish.<sup>31</sup>

Even while attending school, youth are exposed to illicit drugs. In the North Carolina survey, among high school students (in grades 9–12), the proportion reporting that they had been offered, had bought, or had received illegal drugs at school during the past year was 28.9 percent in 1993, 29.8 percent in 1995, and 31.8 percent in 1997.<sup>32</sup> Nationally the proportions have been about the same—30.2 percent in 1999, for example.<sup>33</sup>

### Divergent Trends for Younger and Older People

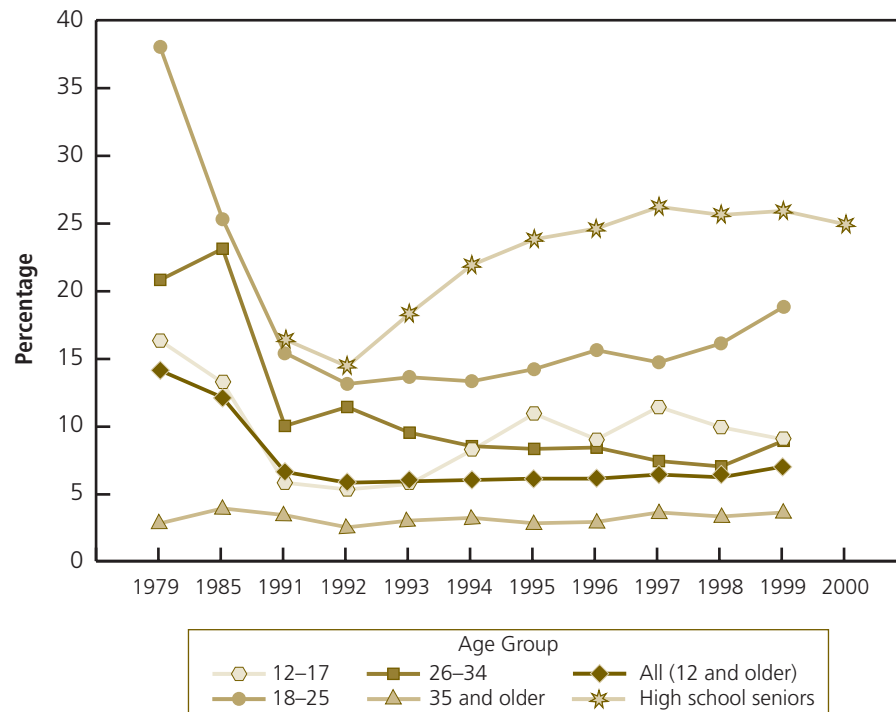
To summarize, in the U.S. population as a whole, illicit drug use decreased substantially in the 1980s. From 1992 to 2000, divergent trends emerged: illicit drug use increased for young people but declined among those 26–34 years of age, while for people over 34, there was hardly any change. The increase in the 1990s for 18- to 25-year-olds was considerably less than the increase for high school seniors, who presumably are about 18. This suggests that among young adults over age 18, there has been either a slower increase or some decrease.

There is a plausible, if optimistic, interpretation of the divergent trends. Illicit drug use usually starts in the late teens, as explained earlier, perhaps because of the natural tendency of youth to seek adventure and take risks. It appears that, during the last decade, while more youth have been taking risks with drugs, fewer young experimenters are becoming addicted or dependent as they grow older. Some possible explanations for discontinuing drug use are public disapproval of drugs, prevention and treatment programs, fear of prosecution for drug offenses, and increased incarceration of drug sellers, many of whom also are drug users.

### Medical Emergencies Related to Drug Use

Drug use may result in a medical emergency, and there is some indication that such emergencies are increasing in the

**Figure 1. Percentage Currently Using Any Illicit Drug, by Age Group, 1979, 1985, 1991–2000**



Source: NHSDA, 2000; TRENDS, 1919–1992; and MONITORING THE FUTURE SURVEY, 2000 (for complete citations, see notes 3, 27, and 29 of the article).

United States. From 1991 through 1998, according to DAWN, drug-related medical emergencies increased in relation to the U.S. population.<sup>34</sup> The total number of emergency department episodes<sup>35</sup> per 100,000 population increased 28 percent (from 175.8 to 225.4 episodes) over the period. Most of that growth occurred between 1991 and 1994.

In 1998, DAWN estimated a total of 542,544 emergency department episodes involving drug use, nationwide. Drug overdose was the major cause, accounting for 45 percent. Other common reasons were having an unexpected reaction to a drug, seeking detoxification, and suffering from effects of chronic drug use or withdrawal.

In 1998 the drugs most often involved in emergency episodes, according to DAWN, were alcohol combined with other drugs (34 percent of episodes); cocaine (32 percent); heroin or morphine (14 percent); and cannabis (14 percent).<sup>36</sup> Use of amphetamines and use of methamphetamines each accounted for 2 percent (the data do not indicate how often these drugs were used in combination).

While drug-related medical emergen-

cies generally increased from 1991 to 1998, the amount of increase varied among types of drugs involved. The DAWN data suggest that special concern about amphetamines and cannabis may be called for, because emergencies involving them have been increasing so rapidly. Episodes involving amphetamines nearly quintupled, from 1.0 per 100,000 population in 1991 to 4.9 in 1998, and those involving cannabis more than quadrupled, from 7.3 to 31.9. Cocaine-related emergencies per capita grew by 58 percent, heroin- and morphine-related emergencies per capita by 102 percent, and emergencies per capita related to alcohol in combination with other drugs by 41 percent.

The recent increase in drug-related medical emergencies may mean that dependence or addiction is increasing, even though generally among adults illicit drug use has not been increasing. But another possible explanation of these data is that increasing numbers of users are recognizing their drug problems and seeking help from hospitals. If so, the trend would be a sign of progress rather than an indication of a worsening of the drug problem.



## How does the prevalence of drug use in the United States compare with that in other industrialized nations?

Compared with eighteen other highly industrialized nations, the United States has a high rate of cannabis and cocaine use but only moderate rates of other illicit drug use (see Figures 2–5 and Table 3, pages 11–13). The data supporting this statement, obtained from annual reports of the United Nations International Drug Control Programme, are based on questionnaires submitted to each nation. Most nations' responses derive from survey data of the type described in the introduction to this article. Most of the data are for people aged 15 and older, with a few exceptions. One exception is the United States, whose data include people aged 12 and over. Including youth aged 12–14 probably produces a lower use rate than excluding them, because use is lower for youngsters in that age range than for older teenagers. Therefore the U.S. survey may understate its use rates somewhat in comparison with countries that do not include people under 15 years of age. From an international perspective, use of both cannabis and cocaine in the United States is high. The annual prevalence of cannabis use among the countries compared ranges from 0.05 percent (Japan) to 17.9 percent (Australia) (see Figure 2), with most countries in the range of 1 to 9 percent. The United States, with 8.6 percent,<sup>37</sup> is close to the top of this range; it is exceeded only by the United Kingdom (9.0 percent) and Australia.

The United States also has a high rate of cocaine use (see Figure 3): its 1.7 percent rate is at the top of the range.

Use of other illicit drugs in the United States does not appear to be high. Regarding amphetamines as well as methamphetamines such as ecstasy, the United States' annual prevalence of 1.1 percent is well below the midpoint of the range, 0.1 to 6.0 percent, for the eighteen other nations (see Figure 4, page 12). Regarding the use of opiates such as heroin, the United States, with 0.04 percent, is near the center of the range—0.02 to 0.90 percent—for the eighteen other countries (see Figure 5, page 12).



## What are the results of the criminal justice system's "war on drugs" in the United States?

### History

Public policy toward drug use in the United States has been, and remains, primarily punitive. Legal regulation in the early twentieth century quickly turned into criminalization.

Alfred Lindesmith, in his book *The Addict and the Law*,<sup>38</sup> traces regulation starting with the federal Harrison Act,<sup>39</sup> enacted in 1914. Ostensibly a revenue measure, this act turned out to be punitive in application. It led to increasing criminalization of drug use by the federal government as well as state governments.<sup>40</sup>

The Harrison Act applied to opium, coca leaves, and their derivatives. It required manufacturers and distributors of these substances to register with the federal government, pay a nominal tax of \$1 per year, and keep records of drug transactions. It made manufacturing, distributing, or possessing the substances

without registration a crime punishable by no more than five years' imprisonment, but exempted possession of the drugs if "prescribed in good faith" by a physician. The act also made criminal the distribution of these substances without receiving a special government-issued order form from the recipient (only registered people were allowed to obtain the forms), as well as the use of the order form to obtain drugs other than in conducting "a lawful business in said drugs or in the legitimate practice of his profession." The law did not require the order form for distribution to a patient by a physician "in the course of his professional practice only" and for distribution by a dealer pursuant to a physician's prescription. Furthermore, possession of the regulated drugs was allowed if "prescribed in good faith by a physician."

The Harrison Act did not attempt to define either "legitimate practice" of the medical profession or prescription of drugs "in good faith" in the treatment of addicts. Thus it appeared to leave the door open to doctors' prescribing main-

tenance doses of drugs to addicts as part of treatment.

But courts and law enforcement agencies, rather than the medical profession, ultimately defined what medical use would be allowed. The result was to reject the idea that addiction is a disease, and to criminalize addiction (that is, to make it a crime), as well as prescription of drugs to ease the addict's suffering while in treatment. Law enforcement exploited the weaknesses of addicts because of its need for informers. To extract information, addicts were repeatedly arrested with periods of detention so that they experienced withdrawal without recovery or treatment. Meanwhile, important drug traffickers were rarely caught.

Legislation continued the punitive trend. As federal law became more severe, the U.S. government created a Narcotics Bureau to enforce it. The bureau advocated a Uniform Narcotics Law, which most states adopted. This law's penalties have become harsher over time. In North Carolina, drug offense penalties have grown more severe since the 1980s. For example, possession of any amount of cocaine or heroin is punishable as a felony, even if the user is an addict and possesses the drug only for his or her own use.<sup>41</sup>

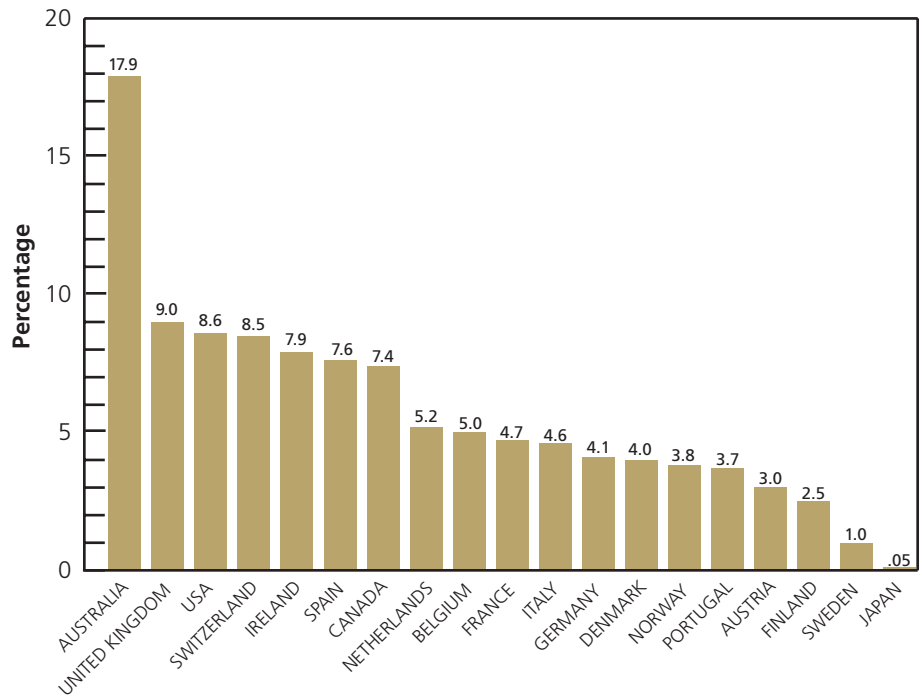
### Arrest and Incarceration

Drug use seems to be more criminalized in the United States than in similar countries. The nation's incarceration rate is high, and its rates of prosecution and incarceration of drug offenders have been increasing in recent years.

In the United States, the war on drugs is reflected in arrests and incarcerations (see Figure 6, page 14). From 1980 to 1998, arrests of adults for drug offenses increased by 187 percent, from 471,200 to 1,353,300. Actually there were two increases in this kind of arrest, one in the late 1980s, which was followed by a steep decline, and another from 1992 to 1998. In contrast, arrests of juveniles for drug offenses were relatively stable at about 100,000 per year until 1994. At that point an increase began, reaching a new level of a little more than 200,000 per year for the years 1995–98.<sup>42</sup>

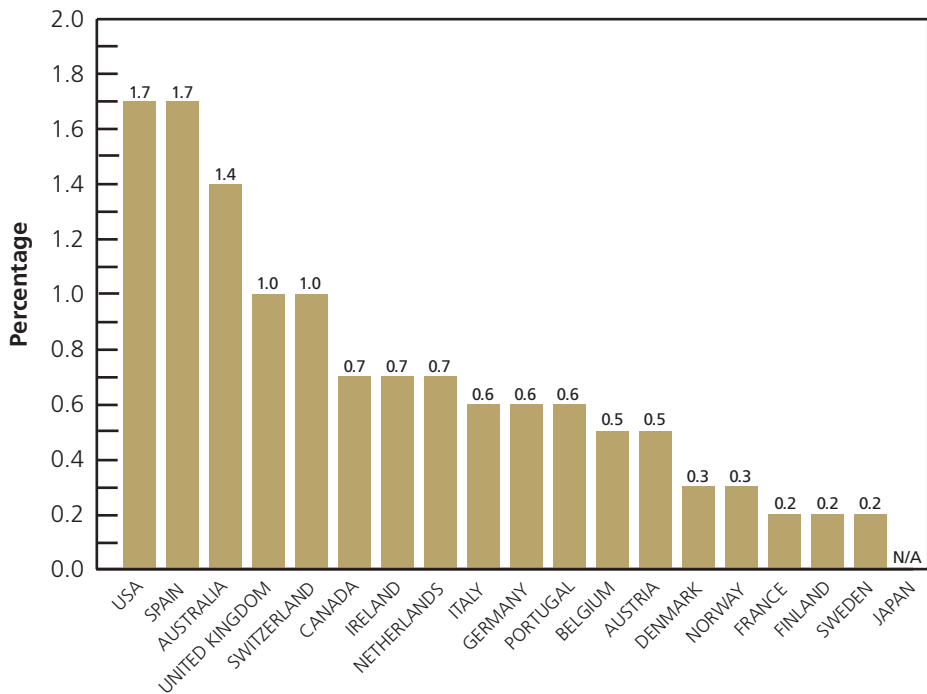
The United States' correctional system also has become more and more involved in drug criminalization as its laws and policies have become increas-

**Figure 2. Rates of Cannabis Use, 19 Industrialized Nations, Mid and Late 1990s**



Source: UNITED NATIONS OFFICE FOR DRUG CONTROL AND CRIME PREVENTION, GLOBAL ILLICIT DRUG TRENDS 2000 (Vienna, Aus.: UNODCCP, 2001). Data provided to author by Dr. Adrian Moicean.

**Figure 3. Rates of Cocaine Use, 19 Industrialized Nations, Mid and Late 1990s**

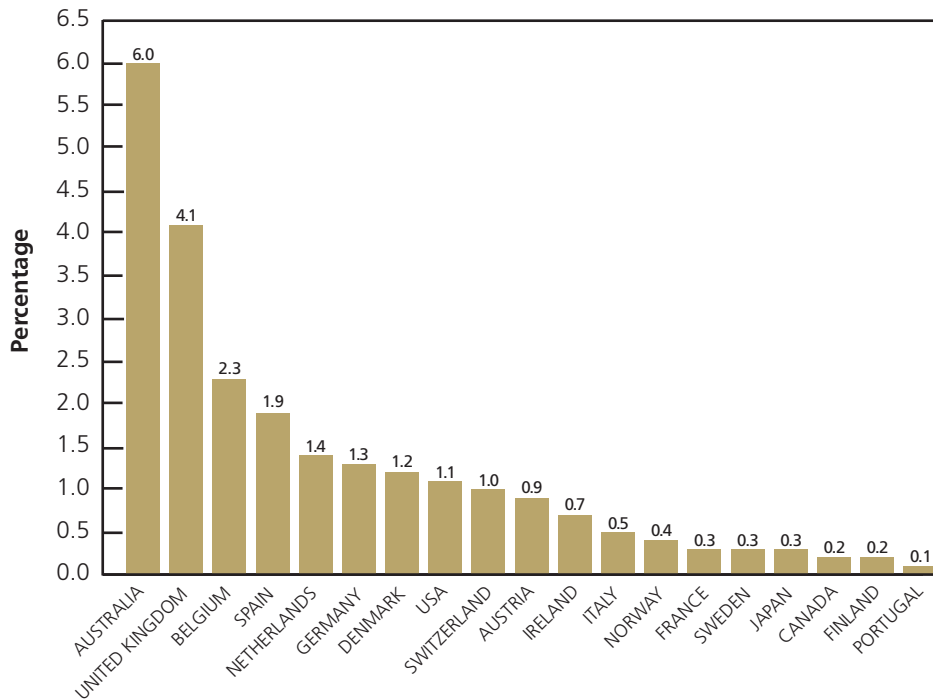


Source: UNITED NATIONS OFFICE FOR DRUG CONTROL AND CRIME PREVENTION, GLOBAL ILLICIT DRUG TRENDS 2000 (Vienna, Aus.: UNODCCP, 2001). Data provided to author by Dr. Adrian Moicean.

Note: Data were not available for Japan.



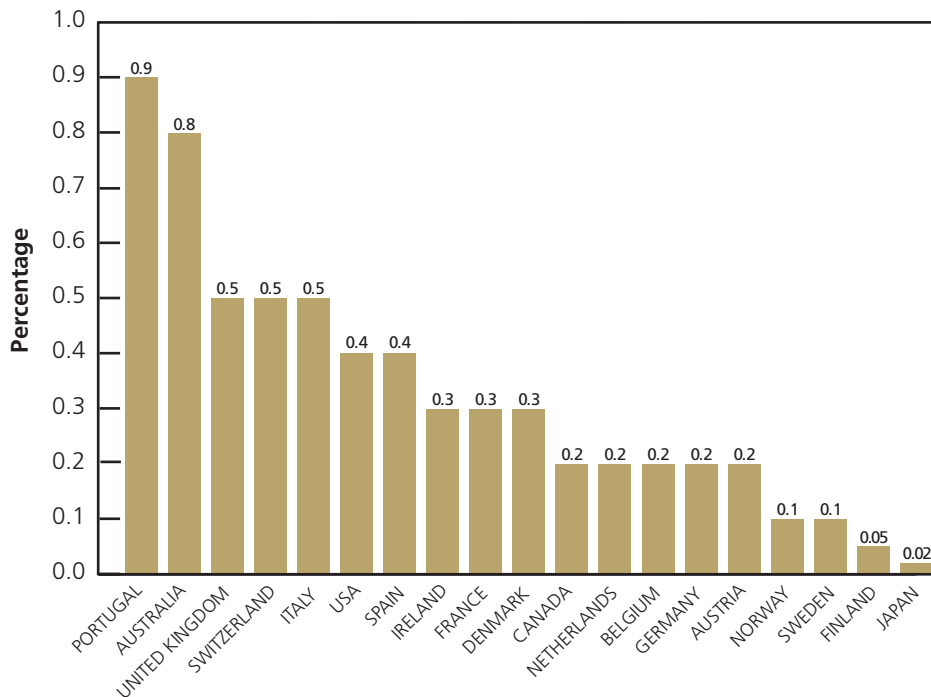
**Figure 4. Rates of Amphetamine Use, 19 Industrialized Nations, Mid and Late 1990s**



Source: UNITED NATIONS OFFICE FOR DRUG CONTROL AND CRIME PREVENTION, GLOBAL ILLICIT DRUG TRENDS 2000 (Vienna, Aus.: UNODCCP, 2001). Data provided to author by Dr. Adrian Moicean.

Note: The data include rates of use of amphetamine-type stimulants such as ecstasy.

**Figure 5. Rates of Opiate Use, 19 Industrialized Nations, Mid and Late 1990s**



Source: UNITED NATIONS OFFICE FOR DRUG CONTROL AND CRIME PREVENTION, GLOBAL ILLICIT DRUG TRENDS 2000 (Vienna, Aus.: UNODCCP, 2001). Data provided to author by Dr. Adrian Moicean.

ingly severe toward crime in general. While the total U.S. prison population has grown, the number of people incarcerated for drug offenses has grown more rapidly (see Figure 7, page 14). From 1980 to 1996, the total population locked up for four types of offenses grew from an index of 100 to an index of 350—in other words, it increased by 250 percent. Over the same period, the number incarcerated for violent offenses increased more slowly (by 182 percent) than the total, as did the number incarcerated for property offenses (by 165 percent). The number in prison for offenses against public order grew faster than the total (by 467 percent). But by far the greatest growth was in the drug offense category, which increased by 1,132 percent. The result of this disproportionate growth was that, from 1980 to 1996, drug offenders' share of the total population in state prisons grew from 5 to 23 percent, while the share of violent and property offenders declined (see Figure 8, page 16).<sup>43</sup>

In North Carolina the criminal justice system's response to drugs has followed the national trend. From 1980 to 1998, the number of people arrested for drug crimes grew from 16,858 to 42,131, an increase of 150 percent, according to the State Bureau of Investigation. Meanwhile, from 1980 to 1999, imprisonment of drug offenders increased. While the state's prison population doubled, from 15,479 to 31,333, the number imprisoned for drug crimes increased sixfold, from 720 to 4,512. Drug offenders' share of the total prison population nearly tripled, from 5 percent in 1980 to 14 percent in 1999.<sup>44</sup>

There appear to be no data that compare international rates of incarceration specifically for drug offenses. However, it seems likely that the rate of incarceration for drug offenses is quite high in the United States because the country's overall rate of incarceration (for all offenses) is so high and is increasing so rapidly. In 1995 the United States had nearly 1.6 million people in state and federal prisons and jails serving sentences for crimes, or in local jails, producing an incarceration rate of 600 inmates per 100,000 residents. In the same year, according to Marc Mauer's recent survey, incarceration rates of other highly industrialized nations—Canada,

**Table 3. Residents Using Illegal Drugs during Last Year, 19 Highly Industrialized Nations, Mid and Late 1990s**

Country	Cannabis (Marijuana and Hashish) (%)	Cocaine (%)	Amphetamine-Type Stimulants, Including Ecstasy (%)	Opiates (%)
USA	8.6*	1.7	1.1	0.4
Canada	7.4	0.7	0.2	0.2
United Kingdom	9.0	1.0	4.1	0.5
Switzerland	8.5	1.0	1.0	0.5
Ireland	7.9	0.7	0.7	0.3
Spain	7.6	1.7	1.9	0.4
Netherlands	5.2	0.7	1.4	0.2
Belgium	5.0	0.5	2.3	0.2
France	4.7	0.2	0.3	0.3
Italy	4.6	0.6	0.5	0.5
Germany	4.1	0.6	1.3	0.2
Denmark	4.0	0.3	1.2	0.3
Norway	3.8	0.3	0.4	0.1
Portugal	3.7	0.6	0.1	0.9
Austria	3.0	0.5	0.9	0.2
Finland	2.5	0.2	0.2	0.05
Sweden	1.0	0.2	0.3	0.1
Australia	17.9	1.4	6.0	0.8
Japan	0.05	n/a	0.3	0.02

Source: UNITED NATIONS OFFICE FOR DRUG CONTROL AND CRIME PREVENTION, GLOBAL ILLICIT DRUG TRENDS 2000 (Vienna, Aus.: UNODCCP, 2001). Data provided to author by Dr. Adrian Moicean.

Note: The age range of people surveyed varies. Most nations' surveys cover people aged 15 and older. The U.S. survey includes people aged 12 and older with regard to cannabis, cocaine, and opiates; most others are limited to people aged 18 and older.

\*This figure is from UNITED STATES DEP'T OF HEALTH AND HUMAN SERV., SUBSTANCE ABUSE AND MENTAL HEALTH SERV. ADMIN., OFFICE OF APPLIED STUDIES, SUMMARY OF FINDINGS FROM THE 1998 NATIONAL HOUSEHOLD SURVEY ON DRUG ABUSE 91, tbl. 28 (Washington, D.C.: USDHHS, 1999). The U.N. publication reported 12.3 percent.

Spain, England and Wales, France, Germany, Switzerland, the Netherlands, Norway, and Japan—were much lower, ranging from 37 to 115. By the end of 1999, nearly 1.9 million persons were in U.S. prisons and jails, and the incarceration rate had reached 690,<sup>45</sup> reflecting both increasing arrests and increasingly severe legislation.

### Source-Country Control

Source-country control, another federal government policy, refers to trying to reduce the production of drugs in other countries. This policy, which is carried out with the help of foreign military forces and law enforcement agencies, has significant social and environmental consequences, as illustrated by the *New York Times* report concerning cocaine

eradication in Colombia, discussed at the beginning of this article.

### Expenditure and Effectiveness

The commitment of U.S. drug policy to punishment is evident in public expenditures. According to research reviewed by Robert MacCoun and Peter Reuter, in the mid-1990s, two-thirds of the federal government's \$16 billion expenditure on drug use control went to supply-reduction programs such as attempts to cut off supplies from other countries, rather than to demand-reduction programs such as treatment or prevention. State and local governments devoted 75 to 80 percent of their \$18 billion expenditures to policing, prosecution, and corrections.

This tough policy of increased prosecution and incarceration has not reduced

the supply of illicit drugs, according to MacCoun and Reuter. Although the probability that a seller of cocaine or heroin will be incarcerated has increased sharply since 1985, prices of these drugs have not risen, nor has their availability declined.<sup>46</sup>

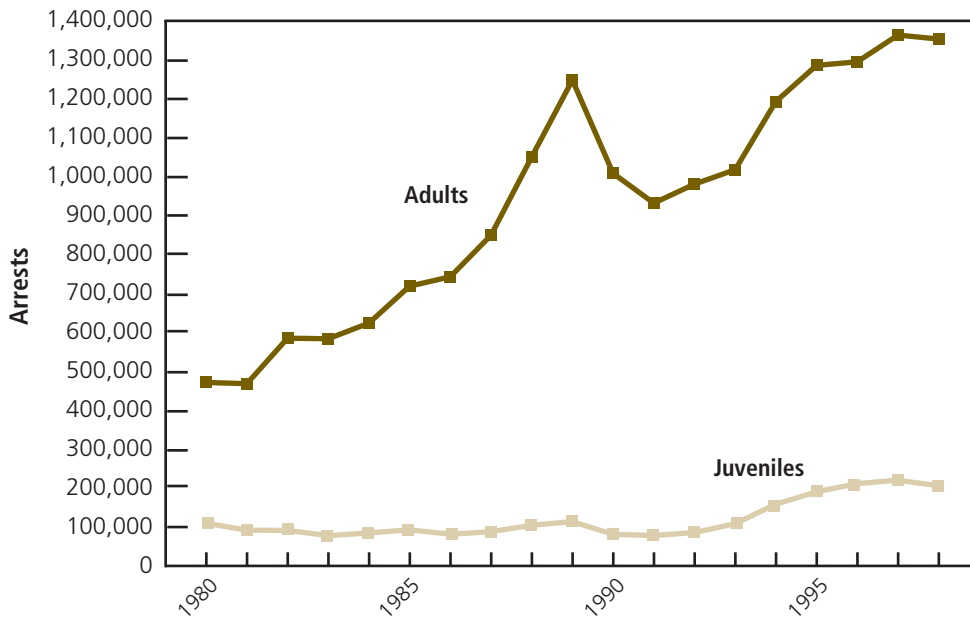
In recent years, support has grown for a government policy of treating drug-dependent people instead of, or perhaps in addition to, locking them up for drug offenses. California's Proposition 36, approved by the voters in 2000, formally adopts a policy of treatment in lieu of incarceration (see sidebar, page 15).

### Racial Disparity in Drug Law Enforcement

The United States' emphasis on punishment for drug use affects minorities disproportionately. Although racial dispar-

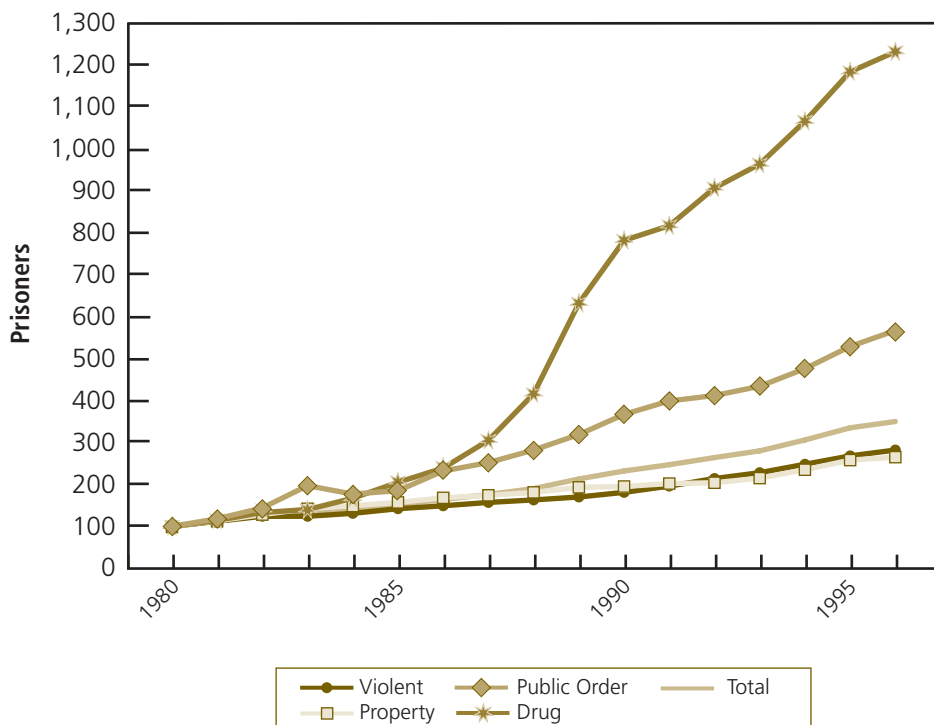


**Figure 6. Arrests of Adults and Juveniles for Drug Offenses, United States, 1980–98**



Source: UNITED STATES DEP'T OF JUSTICE, FEDERAL BUREAU OF INVESTIGATION, UNIFORM CRIME REPORTS (Washington, D.C.: FBI, 1981–99).

**Figure 7. Growth of Four Categories of Prisoners in State Prisons, Relative to Number in 1980**



Source: UNITED STATES DEP'T OF JUSTICE, BUREAU OF JUSTICE STATISTICS, CORRECTIONAL POPULATIONS IN THE UNITED STATES, 1996, at 6, tbl. 1.13 (Washington, D.C.: USDOJ, 1997).

Note: An index value of 100 is assigned to 1980.

ity is seen in prosecution of other crimes, it is especially evident with regard to drug crimes. This is another problem for supporters of the nation's present drug policy to address.

For all types of criminal offenses in 1999, the national arrest rate was 7,459 per 100,000 black residents and 2,797 per 100,000 white residents. The black-to-white ratio—the ratio of the black per capita rate to the white per capita rate—was 2.7 to 1. For drug offenses the arrest rate was 1,015 per 100,000 black residents and 285 per 100,000 white residents, for a black-to-white ratio of 3.6 to 1.<sup>47</sup> (See Table 4, page 17.)

The data for North Carolina are similar. In 1998, according to the State Bureau of Investigation, for all offenses the arrest rate per 100,000 residents was 15,347 for blacks and 4,549 for whites, producing a black-to-white ratio of 3.4 to 1. For drug offenses the arrest rate was 1,429 for blacks and 313 for whites, producing a ratio of 4.6 to 1.<sup>48</sup>

The higher arrest rate for blacks might be understandable if blacks had a much higher rate of illicit drug use than whites and if one assumed that blacks tended to buy drugs from black sellers. But, according to the NHSDA, blacks' use is very close to that of whites. In 1999, 7.7 percent of blacks were current users of all types of illicit drugs, compared with 6.6 percent of whites.<sup>49</sup>

Incarceration for drug offenses involves greater racial disparity than arrest. In 1998 in the nation as a whole, among prisoners in state prisons serving a sentence of more than a year, the incarceration rate for all types of offenses was 1,542 per 100,000 black residents and 171 per 100,000 white residents—a ratio of 9.0 to 1. The black-to-white disparity was twice as high for drug offenses: 392 per 100,000 for blacks and 21 per 100,000 for whites, a ratio of 18.7 to 1. (See Table 4.)<sup>50</sup>

In North Carolina, among all prisoners in state prison at the end of 1999 regardless of sentence length, there were 19,792 black inmates and 10,255 white inmates. This works out to incarceration rates of 1,174 per 100,000 for black residents and 178 per 100,000 for white residents, yielding a black-to-white ratio of 6.6 to 1. Among drug law offenders only, there were 3,566 black inmates and 682 white

## CALIFORNIA'S PROPOSITION 36

In November 2000, California's voters approved a ballot initiative known as Proposition 36. Its stated purposes are as follows:<sup>1</sup>

- (a) *To divert from incarceration into community-based substance abuse treatment programs nonviolent defendants, probationers and parolees charged with simple drug possession or drug use offenses;*
- (b) *To halt the wasteful expenditure of hundreds of millions of dollars each year on the incarceration—and reincarceration—of nonviolent drug users who would be better served by community-based treatment; and*
- (c) *To enhance public safety by reducing drug-related crime and preserving jails and prison cells for serious and violent offenders, and to improve public health by reducing drug abuse and drug dependence through proven and effective drug treatment strategies.*

At the heart of the measure is a requirement that a person convicted of a nonviolent drug-possession offense receive probation with treatment rather than imprisonment. The person must complete a licensed or certified treatment program for drug dependency lasting no more than a year. If the person is found not to be amenable to one program, the court may substitute another program. If no form of treatment proves suitable or if the person commits drug-related probation violations (such as a new nonviolent drug-possession offense), the court may revoke probation and imprison the person. If a drug-related probation violation occurs, the court also has the option of intensifying or altering the treatment plan and continuing probation, unless it finds that the person is either dangerous to public safety or not amenable to any form of treatment.<sup>2</sup> If the person successfully completes treatment, the court may dismiss the charges.

Proposition 36 excludes any person convicted of sale, possession for the purpose of sale, or manufacture of illicit drugs. The measure also excludes the following people:

- A person who possesses methamphetamines, cocaine, heroin, or certain other drugs while using a firearm

- A person who refuses drug treatment as a condition of probation
- A person who has previously received two convictions for nonviolent drug possession as well as two separate courses of drug treatment under the measure, and whom the court finds not to be amenable to any available drug treatment (the court must sentence such a person to at least thirty days in jail, apart from any other provision of law)

Thus the measure provides a carrot as well as a stick. The stick is the minimum thirty-day imprisonment for a third conviction after going through treatment for two previous ones, plus the possibility of revocation of probation at all times. The carrot is the possibility of dismissal of charges. But the real incentive for the person is recovery from drug dependency.

Proposition 36 provides funding for its treatment scheme. It creates a Substance Abuse Treatment Trust Fund in the State Treasury, appropriating \$60 million to it for 2000–2001 and \$120 million annually through 2005–6. The measure also respects the role of local government. The state's Health and Human Services Agency is to distribute these funds to counties for treatment programs, as well as to the courts and the probation department for their associated costs. Local treatment programs must abide by local government zoning ordinances and development agreements.

The legislature's fiscal analysis estimates that Proposition 36 will divert as many as 24,000 offenders from state prison within several years after it goes into effect, saving \$200 million annually; plus as many as 12,000 offenders from county jails, saving \$40 million annually. For more information on Proposition 36, visit the League of Women Voters' Internet site at <http://www.smartvoter.org/2000/11/07/ca/state/prop/36/>.

### Notes

1. Substance Abuse and Crime Prevention Act of 2000, 2000 Cal. Legis. Serv. Prop. 36 (WESTLAW).

2. Probation also may be revoked for non-drug-related violations such as committing a new crime or violating a non-drug-related condition of probation.

inmates, producing an incarceration rate of 211 per 100,000 for black residents and 12 per 100,000 for white residents, and a black-to-white ratio of 17.6 to 1.<sup>51</sup>

### Treatment Needs of Drug Law Offenders

Part of the rationale for drug law enforcement in the United States is to catch and punish "drug pushers" and "drug

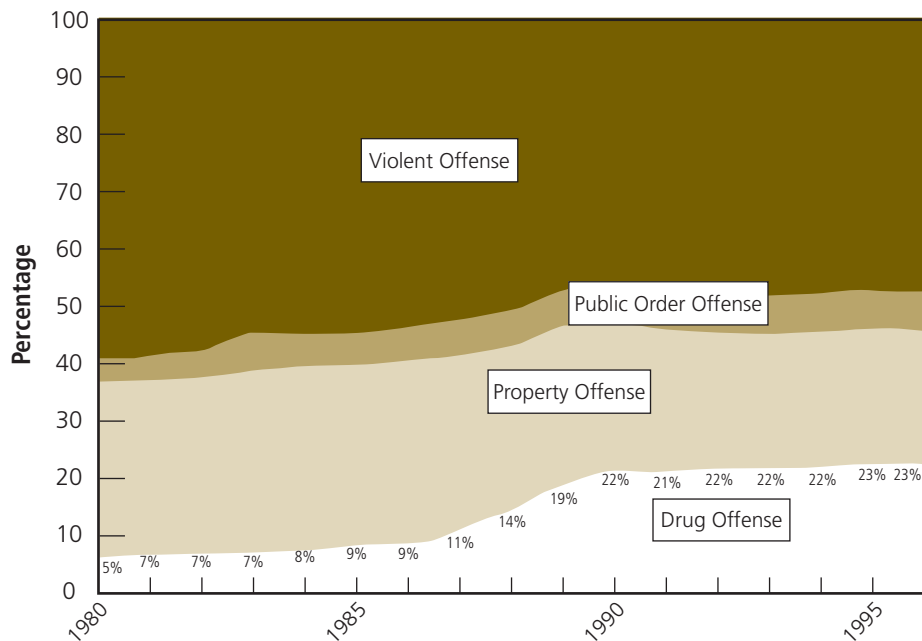
kingpins," who victimize other people while enriching themselves. But many drug lawbreakers, including sellers, are themselves dependent on drugs. This is evident in urinalysis to detect recent drug use, conducted in samples of people arrested and held in detention up to forty-eight hours in thirty-five metropolitan areas across the country (none in North Carolina).<sup>52</sup> In some cities of the

South, a majority of people arrested on drug charges have tested positive for illegal drugs of one kind or another.<sup>53</sup>

Many people sentenced for crimes of all kinds, and specifically for drug crimes, are drug users. In a 1997 survey of state prisoners incarcerated for all types of crimes, 33 percent reported being under the influence of illicit drugs at the time of their offense, 37 percent being under the



**Figure 8. Composition of State Prison Population by Most Serious Offense, 1980–96**



Source: UNITED STATES DEP'T OF JUSTICE, BUREAU OF JUSTICE STATISTICS, CORRECTIONAL POPULATIONS IN THE UNITED STATES, 1996, at 6, tbl. 1.13 (Washington, D.C.: USDOJ, 1997).

Note: The data omit juvenile offenses and unspecified felonies.

influence of alcohol, and 53 percent being under the influence of both.<sup>54</sup> Of prisoners serving time for drug crimes, 42 percent reported being under the influence of illicit drugs at the time of their offense, 27 percent being under the influence of alcohol, and 52 percent being under the influence of both. In a survey of people placed on probation for drug crimes in 1995, 32 percent reported drug use at the time of the offense, 16 percent alcohol use, and 38 percent use of both.<sup>55</sup>

The widespread use of drugs by offenders does not excuse their violation of criminal laws. It does suggest a need for treatment to prevent criminal recidivism (a relapse into previous behavior) caused by drug dependency. But many drug-dependent offenders receive no treatment. Christopher Mumola, in a survey of state prisoners, found that among those who said they had been influenced by drugs or alcohol at the time of their offense, only 17 percent had received treatment (such as treatment in a residential facility, professional counseling, detoxification, or a maintenance drug) since admission to prison. Thirty-five percent had participated in other programs such as self-help groups. A total of 41 percent had been in treatment or other programs or both since admission.

A majority had never received any treatment for drug use either before or after being in prison.<sup>56</sup>

As noted earlier, the lack of treatment for convicted drug users has led California to adopt a new policy requiring treatment rather than imprisonment for certain offenders.

### How effective is treatment of drug dependency, and how does treatment compare with other ways of reducing drug use?

#### Prevention versus Treatment

Most readers will probably agree that it is better to prevent illicit drug use, concentrating efforts on children and youth, than to deal with it after it has occurred. But there also seems to be a continued need for treatment of those who have become dependent on drugs. Whatever the merits of prevention programs, they have been unable to thwart an increase in drug use among teenagers and young adults in the last decade. This increase, as explained earlier, may indicate only youthful experimentation. In any event, use by older adults seems to have remained at the same level.

#### Effectiveness of Treatment

There has been much research on the effectiveness of various forms of treatment for drug dependency. The results are promising, although questions about them remain. Cocaine dependency provides an example. Several types of treatment have shown a drop in cocaine use during and after treatment. According to a review by Robert Hubbard and others, among cocaine users who managed to stay in treatment for at least three months, 40 percent or more abstained from cocaine for a year after treatment. The percentage who were heavy users (those who used it once a week) dropped during treatment, although it increased afterward. The longer users stayed in treatment, the more their drug use was reduced.<sup>57</sup>

These results sound good—people treated at least three months are able to reduce their cocaine use, at least for a while. However, many dependent users do not enter treatment, and many who enter drop out before they complete it. Therefore those who complete three months of treatment may be able to reduce their use without treatment.<sup>58</sup> One cannot be sure because most evaluative studies do not use a control group (that is, an untreated group similar to the treated group). Douglas Anglin and Yih-Ing Hser make this point:

*In the absence of a control group, it is difficult to determine whether unanticipated bias occurred in selecting the subjects for study, and whether the resulting experimental group is sufficiently representative for generalizations to be made about the outcome findings. Furthermore, without comparison groups, behavioral changes during and after treatment that result from the passage of time may wrongly be attributed to program activities.<sup>59</sup>*

What makes treatment evaluation even more difficult is that addiction is really a “career,” extending over years of varying levels of use, abstinence, and treatment. This calls for a research design that covers several years before and after treatment, as Anglin and Hser have pointed out.<sup>60</sup> Such research is difficult to carry out.

Despite concerns about research methodology, treatment has shown considerable promise. Leshner advises that

Table 4. **Black-to-White Ratio of Per Capita Arrests and Incarcerations, 1998–99**

		Black Total	White Total	Blacks per 100,000 Black Residents	Whites per 100,000 White Residents	Ratio of Black Rate to White Rate
<b>Arrests</b>						
U.S. 1999	All offenses	2,600,510	6,283,294	7,459	2,797	2.7 to 1
	Drug offenses only	353,851	639,277	1,015	285	3.6 to 1
N.C. 1998	All offenses	255,581	258,560	15,347	4,549	3.4 to 1
	Drug offenses only	23,797	17,807	1,429	313	4.6 to 1
<b>Prisoners in State Prison*</b>						
U.S. 1998	All offenses	531,100	380,400	1,542	171	9.0 to 1
	Drug offenses only	134,800	46,300	392	21	18.7 to 1
N.C. 1998	All offenses	19,792	10,255	1,174	178	6.6 to 1
	Drug offenses only	3,566	682	211	12	17.6 to 1
<b>Estimated Resident Population</b>						
U.S. 1998		34,427,000	222,980,000			
U.S. 1999		34,862,000	224,611,000			
N.C. 1998		1,665,368	5,683,891			
N.C. 1999		1,686,143	5,759,680			

Source: Arrest and incarceration data from UNITED STATES DEP'T OF JUSTICE, FEDERAL BUREAU OF INVESTIGATION, UNIFORM CRIME REPORTS, 1998, 1999, at tbl. 43 (Washington, D.C.: FBI, 1999, 2000); ALLEN J. BECK, PRISONERS IN 1999, at 9, tbl. 13 (Washington, D.C.: U.S. Dep't of Justice, Bureau of Justice Statistics, 2000). Estimated 1998 and 1999 population data from Census Bureau's Internet site, <http://www.census.gov/> (last visited March 2001).

\*Data for the United States include only prisoners serving sentences of more than one year. Data for North Carolina include all prisoners in state prisons.

treatment be expected not to *cure* addiction but to *manage* it. In most cases, he says, addiction is a “chronic, relapsing disorder” rather than an acute illness. Total abstinence is rare.

*Thus, addiction must be approached more like other chronic illnesses—such as diabetes and chronic hypertension—than like an acute illness, such as a bacterial infection or a broken bone. . . . [A] good treatment outcome, and the most reasonable expectation, is a significant decrease in drug use and long periods of abstinence, with only occasional relapses.*<sup>61</sup>

#### Reduction of the Demand: Treatment versus Other Means

Adult drug users, presumably, are the main source of demand fueling the illegal drug trade, supplying the profits that keep the cartels in business despite the risks. With the steady demand from the affluent United States, economic law guarantees that youth will have drugs available to experiment with, and a few

of these youth inevitably will become the next generation of dependent or addicted adults. Treatment of dependent adults may be essential to break this cycle.

As Peter Rydell and Susan Everingham explain, to reduce demand for illicit drugs, the best strategy may be to *reduce heavy use*. Their analysis focuses on cocaine. According to their calculations, in 1990 heavy cocaine users constituted about one-fifth of all users but accounted for about two-thirds of total cocaine consumption. To reduce the demand for cocaine, as they see it, the objective should be to help heavy users either quit altogether or become light users.<sup>62</sup>

Treatment of heavy users can be cost-effective, according to research reviewed by Rydell and Everingham. They estimate that, without treatment, 2 percent of heavy cocaine users become nonusers each year and another 4 percent become light users. In other words, a total of 6 percent cease being heavy users. With treatment, 13 percent more will cease being heavy users—that is, 13 percent in addition to the 6 percent who would cease in the absence of treatment. Rydell and Evering-

ham's data indicate that, at the time of their publication (1994), only about one-third of heavy users received treatment.<sup>63</sup>

Rydell and Everingham conclude that, on average, “treatment programs are about 80 percent effective at keeping users off cocaine while they are actually in the program” but the effect usually does not last. After treatment is completed, there is much less of an effect (and, of course, many participants leave treatment before completing it). Eighty percent of the reduction in consumption of cocaine attributable to treatment occurs while users are in treatment and only 20 percent after treatment.<sup>64</sup>

Even though its effects may not be lasting, treatment does reduce cocaine use. Involving more heavy users in treatment and treating them for longer periods both could have a substantial impact on total demand for cocaine. Furthermore, treatment is considerably more cost-effective than other programs to reduce cocaine consumption, according to Rydell and Everingham. They compare four types of programs: source-country control (measures such as eradication of

coca leaf and seizures of coca products in Colombia, Peru, and Bolivia); interdiction efforts (actions such as seizures by the U.S. Customs Service, Coast Guard, Army, and Immigration and Naturalization Service); domestic law enforcement efforts (for example, seizures, arrests, and imprisonment); and treatment of heavy drug users. The last is by far the most cost-effective, according to their analysis. Their estimates of the cost of a 1 percent reduction in annual cocaine consumption for four programs are as follows: source-country control, \$783 million; interdiction, \$366 million; law enforcement efforts within the United States, \$246 million; and treatment of heavy users in the United States, \$34 million.<sup>65</sup>

## Summary and Conclusions

Half of the adults in the United States experiment with illicit drugs at some point in their lives, usually in their teens or early twenties, but most stop as they get older. Drug use exposes the user to the risk of addiction and other health hazards. Addiction harms not only the addict but the public, in a variety of ways. Addiction to illicit drugs contributes to crime, primarily to property crime, although that relationship is largely due to the criminalization of drug activity.

From an international perspective, illicit drug use in the United States is a mixed picture. The use of cocaine and cannabis in the United States is high compared with that in other highly industrialized nations. On the other hand, this country's use of amphetamines is relatively low, and its use of opiates is in the middle of the range for these other nations. North Carolina's rate of drug use by teenagers is rather high, ranking in the top fifth among states.

Some recent trends in illicit drug use are troubling. One example is the increase in drug-related medical emergencies reported by hospitals, although perhaps that means only that more users are seeking help. Another example is that, among teenagers and young adults in their early twenties, use of illicit drugs of all kinds (but primarily marijuana) increased during the 1990s. Use among older adults did not increase. The increase among young people could be due to one-time experimentation, but it also

could eventually result in an increase in heavy users if more experimenting users become dependent.

Addiction to drugs may be regarded either as immoral or as unhealthy and harmful. In the history of drug policy in the United States, the "immoral" view has been dominant, leading to a more punitive and military-oriented approach than is seen in other highly industrialized nations. This approach has been particularly evident in the last two decades as the criminal justice system, in the war on drugs, has increased sixfold the number of people imprisoned for drug crimes and as the government has pursued various schemes to reduce foreign drug production, such as helping Colombia's army defoliate farmers' fields. Another result of the war on drugs has been racial disparity. For example, on a per capita basis, almost five times as many blacks as whites are arrested for drug offenses in North Carolina, and nearly eighteen times as many are incarcerated. Similar ratios exist in the nation as a whole.

In 1965, Lindesmith concluded that the punitive approach had not succeeded in eliminating illicit drugs, and he observed,

*[I]t is inconceivable that the illicit traffic in narcotics would be wiped out by police action unless something were done to eliminate or greatly reduce the demand for illicit drugs. The effective demand for illicit narcotics obviously comes from the addict. To reduce the demand it is necessary to take the addict out of the market (a) by curing him of his craving, (b) by locking him up in establishments to which peddlers do not have access, or (c) by providing him with access to legal drugs.<sup>66</sup>*

Lindesmith believed that only approach (c) was "successful anywhere in minimizing illicit operations."<sup>67</sup> This is true—in fact, it is a truism—because legalizing means that access is no longer an illicit operation. There is much to be said for and against legalization of drugs, but it is beyond the scope of this article. I for one do not favor legalization. My inclination is to concentrate on reducing the harm caused by drug use as well as the harm caused by punitive policies.

Lindesmith also predicted, correctly, that "if there is to be a new program in this country in the near future, it will be based on the first two of the above alternatives [curing the craving and locking up users] and will reject the third [legalizing drugs]."<sup>68</sup> Since 1965, when these words were published, the country has aggressively locked up users and to a much lesser extent has provided treatment to cure the craving.

Treatment can help. The current view of medical science is that addiction is a chronic illness involving both physical components (such as changes in the brain) and psychological and social components (such as sensitivity to certain conditions or events in the addict's surroundings that cause relapses). Research findings suggest that treatment can help to manage and alleviate drug dependency, if not cure it.

Many who are dependent on or addicted to illicit drugs, probably a majority, do not get treatment. A substantial percentage of people arrested and imprisoned for crime, especially for drug offenses, are under the influence of drugs at the time of the crime. Many of these will leave prison in a short time or be free on probation, yet the majority do not receive treatment at any time in their lives. As noted, California's voters recently decided to remedy this situation by mandating that drug-dependent offenders receive treatment as the first option, rather than incarceration.

Most readers would probably agree that continued efforts are needed to educate youth about the dangers of experimenting with illicit drugs. Youth drug use, particularly marijuana use, has increased during the past decade, probably because many teenagers don't think it risky, find marijuana easy to get, and have friends who use it.

While pursuing youth-focused prevention, the country also might be wise to concentrate on lessening drug consumption among heavy users. Heavy users of cocaine, for example, constitute a small proportion of all users but account for the bulk of total consumption. Therefore, targeting them can have a significant impact on the total demand for the drug, even if treatment is only partly effective. If the total demand can be reduced, arguably the supply available in



the United States will be lessened, making the drug less available to young people and preventing first use. Research suggests that treatment of heavy users is considerably more cost-effective than other ways of reducing drug consumption, such as law enforcement and source-country control.

## Notes

1. Juan Forero, *No Crops Spared in Colombia's Coca War*, NEW YORK TIMES, Jan. 31, 2001, p. 1.

2. The National Institute on Drug Abuse defines "ecstasy" as follows: "MDMA (3,4-methylenedioxymethamphetamine) has a chemical structure similar to the stimulant methamphetamine and the hallucinogen mescaline and can produce both stimulant and psychedelic effects. Reportedly, MDMA's psychedelic effects are milder than those produced by hallucinogens such as LSD [lysergic acid diethylamide] and mescaline. MDMA has been available as a street drug since the 1980s. Its use has escalated in the 1990s among college students and young adults, particularly those who participate in all-night dance parties called 'raves.' MDMA's street names include 'ecstasy,' 'XTC,' 'clarity,' 'essence,' and 'Adam.'" *NIDA Notes* (newsletter of the National Institute on Drug Abuse), vol. 14, no. 4 (Nov. 1999), available at the institute's Internet site, [http://www.nida.nih.gov/NIDA\\_Notes/NNVo114N4/tearoff.html](http://www.nida.nih.gov/NIDA_Notes/NNVo114N4/tearoff.html) (last visited May 16, 2001).

3. A more precise definition of "dependence," used by the National Household Survey on Drug Abuse, is based on seven standard criteria used by physicians and psychologists. These criteria deal with health, emotional problems, attempts to cut down on use, tolerance, withdrawal, and other symptoms associated with drug use. UNITED STATES DEP'T OF HEALTH AND HUMAN SERV., SUBSTANCE ABUSE AND MENTAL HEALTH SERV. ADMIN., OFFICE OF APPLIED STUDIES, SUMMARY OF FINDINGS FROM THE 1999 NATIONAL HOUSEHOLD SURVEY ON DRUG ABUSE § 2.6 (Washington, D.C.: USDHHS, 2000), hereinafter cited as NHSDA, 2000.

4. NHSDA, 2000. This information also is available through the Office of Applied Studies' Internet site, <http://www.samhsa.gov/oas/oasftp.htm>.

5. LLOYD D. JOHNSTON ET AL., THE MONITORING THE FUTURE NATIONAL RESULTS ON ADOLESCENT DRUG USE: OVERVIEW OF KEY FINDINGS, 1999 (Bethesda, Md.: U.S. Dep't of Health and Human Serv., Nat'l Inst. on Drug Abuse, 2000). This information also is available through the survey's Internet site, <http://monitoringthefuture.org>.

6. The results of the most current study are available on the Department of Public

Instruction's Internet site, [http://www.dpi.state.nc.us/accountability/evaluation/youth\\_risk\\_behavior/high\\_school\\_97](http://www.dpi.state.nc.us/accountability/evaluation/youth_risk_behavior/high_school_97) (last visited May 14, 2001). This confidential survey is conducted by the Evaluation Section of the Division of Accountability Services, Department of Public Instruction. The survey has been done only for 1993, 1995, and 1997. In 1997 the sample was 2,340 students in thirty-nine randomly selected schools.

7. UNITED STATES DEP'T OF JUSTICE, NAT'L INST. OF JUSTICE, ARRESTEE DRUG ABUSE MONITORING PROGRAM, 1998 ANNUAL REPORT ON DRUG USE AMONG ADULT AND JUVENILE ARRESTEES (Washington, D.C.: USDOJ, 1999), hereinafter cited as ADAM, 1999.

8. The data do not include emergencies resulting from taking medications as prescribed or from accidentally ingesting or inhaling a substance. To be included in DAWN, the patient must be six years of age or older, be treated in a hospital's emergency department, and present a problem induced by or related to drug use regardless of when the drug use occurred. Furthermore, the episode must involve either the use of an illicit drug or the use of a legal drug or other substance contrary to directions, and the patient's reason for using the drug must be dependence, an attempt to commit suicide, or a desire to obtain the psychic effects of the drug. UNITED STATES DEP'T OF HEALTH AND HUMAN SERV., MID-YEAR 1999 PRELIMINARY EMERGENCY DEPARTMENT DATA FROM THE DRUG ABUSE WARNING NETWORK 6 (Washington, D.C.: USDHHS, Mar. 2000).

9. Alan I. Leshner, *Addiction Is a Brain Disease, and It Matters*, SCIENCE, Oct. 3, 1997, p. 45.

10. *Id.* at 45-46.

11. As an example of environment, Leshner cites the Vietnam War, in which many American soldiers became addicted to heroin. When these soldiers returned home, treating them proved much easier than treating people who became addicts "on the streets of the United States." The returning veterans "had become addicted while in a setting almost totally different from the one to which they had returned. At home in the United States, they were exposed to few of the conditioned environmental cues that had initially been associated with their drug use in Vietnam." *Id.* at 46.

12. NHSDA, 2000, tbls. G.9, G.12.

13. JOHNSTON ET AL., MONITORING THE FUTURE NATIONAL RESULTS tbl. 2. Injection of drugs and use of heroin are two other indicators of heavy or dependent use. According to the NHSDA, in 1998 only 1.1 percent of 26- to 34-year-olds said that they had injected themselves with drugs at some time in their lives, and only 0.9 percent said that they had smoked or snorted heroin. UNITED STATES DEP'T OF HEALTH AND HUMAN SERV., SUBSTANCE ABUSE AND MENTAL HEALTH SERV. ADMIN., OFFICE OF APPLIED STUDIES, SUMMARY

OF FINDINGS FROM THE 1998 NATIONAL HOUSEHOLD SURVEY ON DRUG ABUSE 104, tbl. 40B (Washington, D.C.: USDHHS, 1999), hereinafter cited as NHSDA, 1999.

14. NHSDA, 2000, § 2.1.

15. *Id.* at § 2.6.

16. Of the 15,024 new AIDS cases in 1998 attributed to injection of drugs, 74 percent were directly due to injection. The rest were indirectly due to injection—for example, through having sexual relations with intravenous drug users. This information is published by the CDCP at [http://www.cdc.gov/nchstp/hiv\\_aids/pubs/facts/idu.pdf](http://www.cdc.gov/nchstp/hiv_aids/pubs/facts/idu.pdf) (last visited May 14, 2001).

17. URBAN DELINQUENCY AND SUBSTANCE ABUSE: TECHNICAL REPORT (David Huizinga et al. eds.) 5-9 (Washington, D.C.: U.S. Dep't of Justice, Office of Juvenile Justice and Delinquency Prevention, 1993).

18. ADAM, 1999, at 3.

19. NHSDA, 2000, tbl. G.70. In these statistics, youth who reported *attempting* to steal are included with those who reported actually stealing.

20. Jan M. Chaiken & Marcia R. Chaiken, *Drugs and Predatory Crime*, in DRUGS AND CRIME (Michael Tonry & James Q. Wilson eds.), vol. 13 of CRIME AND JUSTICE: A REVIEW OF RESEARCH, 203-39, 205 (Chicago: Univ. of Chicago Press, 1990). In "predatory crime" the authors include offenses committed for material gain, such as larceny, burglary, and robbery, and exclude assaultive crimes unrelated to robbery or burglary as well as consensual crimes such as prostitution.

21. "Index" crimes, as defined by the FBI's UNIFORM CRIME REPORTS, include homicide, rape, robbery, aggravated assault, burglary, larceny, and motor vehicle theft.

22. URBAN DELINQUENCY (Huizinga et al. eds.), at 5-23.

23. Paul J. Goldstein, *The Relationship between Drugs and Violence in the United States of America*, in UNITED NATIONS INT'L DRUG CONTROL PROGRAMME, WORLD DRUG REPORT 116-21 (New York: Oxford Univ. Press, 1997); and *The Drugs/Violence Nexus: A Tripartite Conceptual Framework*, 85 JOURNAL OF DRUG ISSUES 493 (Fall 1985).

24. See Stevens H. Clarke, *Murder in North Carolina*, POPULAR GOV'T, Summer 1995, p. 2; *At Last, Some Good News about Violent Crime*, POPULAR GOV'T, Summer 1998, p. 2.

25. NHSDA, 2000, "Highlights."

26. The NHSDA defines "binge drinking" as consumption of five or more drinks on the same occasion. The numbers discussed here refer to binge drinking during the month preceding the survey.

27. The data in this and the next few paragraphs come from NHSDA, 2000, and from UNITED STATES DEP'T OF HEALTH AND HUMAN SERV., SUBSTANCE ABUSE AND MENTAL HEALTH SERV. ADMIN., OFFICE OF APPLIED STUDIES, TRENDS IN THE INCIDENCE OF DRUG

USE IN THE UNITED STATES, 1919–1992 (Washington, D.C.: USDHHS, 1996). The information also is available through the Substance Abuse and Mental Health Services Administration's Internet site, <http://www.samhsa.gov>. The NHSDA publication provides data for 1979, 1985, and 1991 but not for intervening years; therefore only these years appear in Figure 1. From 1991 to 1999, yearly data are available.

28. Cocaine data, however, are less reliable than marijuana data because cocaine use is comparatively rare. For the population aged twelve and older, current cocaine use remained at approximately 1 percent from 1991 through 1999.

29. JOHNSTON ET AL., *THE MONITORING THE FUTURE NATIONAL RESULTS*, at 22. The researchers attribute the rise in heroin use to more smoking or snorting of heroin, rather than to increased injecting. The former has been made possible by the growing purity of heroin available to users.

30. The results of the most current study are available on the Department of Public Instruction's Internet site, [http://www.dpi.state.nc.us/accountability/evaluation/youth\\_risk\\_behavior/high\\_school\\_97](http://www.dpi.state.nc.us/accountability/evaluation/youth_risk_behavior/high_school_97) (last visited May 14, 2001).

31. NHSDA, 2000, "Highlights."

32. For the results of the most current study, see [http://www.dpi.state.nc.us/accountability/evaluation/youth\\_risk\\_behavior/high\\_school\\_97](http://www.dpi.state.nc.us/accountability/evaluation/youth_risk_behavior/high_school_97) (last visited May 14, 2001).

33. UNITED STATES DEP'T OF HEALTH AND HUMAN SERV., CENTERS FOR DISEASE CONTROL AND PREVENTION, MORTALITY AND MORBIDITY WEEKLY REPORT, SURVEILLANCE SUMMARIES, YOUTH RISK BEHAVIOR SURVEILLANCE—UNITED STATES 1999, vol. 49 (SS05), tbl. 28 (Washington, D.C.: USDHHS, June 9, 2000). This information also is available on the CDCP Internet site, <http://www.cdc.gov/mmwr/preview/mmwrhtml/ss4905a1.htm> (last visited May 14, 2001).

34. All the data in this section come from UNITED STATES DEP'T OF HEALTH AND HUMAN SERV., SUBSTANCE ABUSE AND MENTAL HEALTH SERV. ADMIN., OFFICE OF APPLIED STUDIES, MID-YEAR 1999 PRELIMINARY EMERGENCY DEPARTMENT DATA FROM THE DRUG ABUSE WARNING NETWORK 79, tbl. 30 (Washington, D.C.: USDHHS, 2000).

35. An "episode" is a single emergency department visit involving one or more drugs.

36. A single incident may involve more than one drug.

37. The 8.6 percent comes from NHSDA, 1999, at 78, tbl. 6.

38. ALFRED LINDESMITH, *THE ADDICT AND THE LAW* (Bloomington, Ind.: Ind. Univ. Press, 1965).

39. Harrison Act, Pub. L. No. 223, 38 Stat. 785 (1914).

40. This modest debut by the federal government into the regulation of drug use is

understandable if one recalls that in 1914 the federal government's role in the legal system, compared with the states' role, was considerably more limited than it is today.

41. Section 90-95(d)(2) of the North Carolina General Statutes (hereinafter G.S.) makes simple possession of cocaine a Class I felony. For a first offense when the offender has no criminal record, probation must be imposed, with a suspended prison term ranging from three to eight months. G.S. 15A-1340.17(c).

42. UNITED STATES DEP'T OF JUSTICE, FEDERAL BUREAU OF INVESTIGATION, UNIFORM CRIME REPORTS (Washington, D.C.: FBI, 1981–99).

43. UNITED STATES DEP'T OF JUSTICE, BUREAU OF JUSTICE STATISTICS, CORRECTIONAL POPULATIONS IN THE UNITED STATES, 1996, at 6, tbl. 1.13 (Washington, D.C.: USDOJ, 1997).

44. The arrest data come from NORTH CAROLINA DEP'T OF JUSTICE, STATE BUREAU OF INVESTIGATION, CRIME IN NORTH CAROLINA (Raleigh: SBI, 1980–2000), the prison data from NORTH CAROLINA DEP'T OF CORRECTION, ANNUAL STATISTICAL REPORT (Raleigh: NCDOC, 1980–2000). The 42,131 drug arrests in 1998 include 4,445 arrests of juveniles (people under eighteen years of age). At the time of this writing, arrest data by offense were unavailable for 1999.

45. ALLEN J. BECK, PRISONERS IN 1999, at 2, tbl. 1 (Washington, D.C.: U.S. Dep't of Justice, Bureau of Justice Statistics, 2000).

46. Robert MacCoun & Peter Reuter, *Interpreting Dutch Cannabis Policy: Reasoning by Analogy in the Legalization Debate*, SCIENCE, Oct. 3, 1997, pp. 47–52.

47. UNITED STATES DEP'T OF JUSTICE, FEDERAL BUREAU OF INVESTIGATION, UNIFORM CRIME REPORTS, 1999, at tbl. 43 (Washington, D.C.: FBI, 2000).

48. NORTH CAROLINA DEP'T OF JUSTICE, STATE BUREAU OF INVESTIGATION, CRIME IN NORTH CAROLINA 1998 (Raleigh: SBI, 1999).

49. NHSDA, 2000, at tbl. G.13.

50. BECK, PRISONERS IN 1999, at 9, tbl. 13. The per capita rates were computed using the Census Bureau's estimated 1998 population data, available from <http://www.census.gov/> (last visited March 2001).

51. The prison data come from the North Carolina Department of Correction's Internet site, <http://www.doc.state.nc.us/rap/rapweb/web/reportgen.htm> (last visited May 15, 2001). The per capita rates were computed using Census Bureau data from <http://www.census.gov/> (last visited March 2001).

52. Drugs for which tests are performed are cocaine, marijuana, opiates, amphetamines, barbiturates, PCP (phencyclidine), and other substances. A person may test positive for more than one drug.

53. Here are some examples, considering only people arrested and charged with drug offenses. In Atlanta in 1998, 50 percent of men tested positive for cocaine, 50 percent for

marijuana, and 83 percent for any illegal drug. In Birmingham, 45 percent of men and 69 percent of women tested positive for cocaine; 49 and 39 percent, respectively, for marijuana; and 76 and 92 percent, respectively, for any drug. In Dallas, 41 percent of men and 28 percent of women tested positive for cocaine; 63 and 36 percent, respectively, for marijuana; and 90 and 52 percent, respectively, for any drug. ADAM, 1999.

54. CHRISTOPHER J. MUMOLA, SUBSTANCE ABUSE AND TREATMENT, STATE AND FEDERAL PRISONERS, 1997 (Washington, D.C.: U.S. Dep't of Justice, Bureau of Justice Statistics, 1999).

55. CHRISTOPHER J. MUMOLA & THOMAS P. BONCZAR, SUBSTANCE ABUSE AND TREATMENT OF ADULTS ON PROBATION, 1995 (Washington, D.C.: U.S. Dep't of Justice, Bureau of Justice Statistics, 1998).

56. MUMOLA, SUBSTANCE ABUSE.

57. The one-year abstinence rates were 47 percent for those treated in a residential program, 40 percent for those treated in an outpatient methadone program, and 42 percent for those treated in an outpatient drug-free program. ROBERT L. HUBBARD ET AL., DRUG ABUSE TREATMENT: A NATIONAL STUDY OF EFFECTIVENESS 108–09 (Chapel Hill, N.C.: The Univ. of N.C. Press, 1989).

58. Alternatively these results could simply show "regression to the mean." That is, people who enter and stay in treatment may be seeking treatment after a period of what, for them, is abnormally high drug use, and their "reduction" of use during or after treatment could simply be a return to their normal level of use.

59. M. Douglas Anglin & Yih-Ing Hser, *Treatment of Drug Abuse*, in DRUGS AND CRIME (Michael Tonry & James Q. Wilson eds.), vol. 13 of CRIME AND JUSTICE: A REVIEW OF RESEARCH, 393–460, 408 (Chicago: Univ. of Chicago Press, 1990).

60. *Id.* at 407.

61. Leshner, *Addiction*, at 46.

62. C. PETER RYDELL & SUSAN S. EVERINGHAM, CONTROLLING COCAINE: SUPPLY VERSUS DEMAND PROGRAMS 2, 17–27 (Santa Monica, Cal.: Drug Policy Research Center, RAND, 1994). Rydell and Everingham define "light users" as those who use cocaine less than once a week but at least once a year.

63. *Id.* The figure of 13 percent is a weighted average of the rate who leave heavy use after residential treatment (17 percent) and the rate who leave heavy use after outpatient treatment (12 percent).

64. *Id.* at 20–23.

65. *Id.* at 24. Rydell and Everingham cite HUBBARD ET AL., DRUG ABUSE TREATMENT, who suggest that three months is the shortest period of treatment that can have any effect on heavy users of cocaine.

66. LINDESMITH, *THE ADDICT*, at 62.

67. *Id.*

68. *Id.*